## INTRODUCTION

Once the main data collection was complete, two rounds of cleaning were conducted on the trip purpose variable. The cleaning tasks were carried out based on observations from the quality control and data checks as outlined in Appendix H.

The list of locations reported by each individual on the assigned travel date comprises of a starting location (i.e. origin of the first trip) and a series of activity locations (i.e. destinations of the trips). For each location, individuals were required to provide a "name" that described the location. The name information in turn was used by the online survey instrument to construct and present follow up questions in a way that is more meaningful and relatable to the respondents. The location name often contained information that could confirm the trip purpose. Two rounds of data cleaning were carried out utilizing the name information, to enhance the purpose variable in the dataset. Results from the first round of data cleaning were formalized into version 5 of the dataset. Results from the second round of data cleaning were incorporated into version 6 of the dataset, also referred to as the final version of the dataset.

Details regarding the two rounds of data cleaning are presented in the next two sections. Where appropriate, actual variable names are used to describe the data cleaning process. For example, d_name in the text refers to the variable that contains the name used by respondents to describe a trip destination. For more information about the variable names, please see Appendix O. When referring to a particular value of the trip purpose variable, either in reference to a particular cleaning task or in reference to being recoded to a new value, both the numeric value and the associated definition are presented. For example, "Recode trips with origin purpose of 1-Go home" indicates that the particular recoding task attempted to recode those trips where the origin purpose was assigned a value 1 i.e. to go home.

## FIRST ROUND OF PURPOSE CLEANING

The name information was used to confirm and clean 1) the purpose of the starting location and 2) the purpose of the primary activity at all trip destinations. Also, the purpose cleaning was limited to only fixed activity locations (including home, work, and school). The purpose corrections regarding fixed activity locations could be ascertained with a high degree of confidence using programmable heuristics. The same is not possible with other locations – the cleaning of other locations requires manual corrections on a trip-by-trip basis which can be subject to interpretation biases. The purpose cleaning process for each of the fixed activity locations took the form of series of steps. Additionally, different criterion were applied based on whether the location was the starting location or the destination location for the trips. Table below provides a description of the steps for cleaning the purpose variable for different fixed activity locations. It must be noted that origin or destination purpose of those trips that do not satisfy the criterion outlined in the table were retained without any change.

| Candidate Fixed Activity Location for Purpose Cleaning | Criterion for Purpose Cleaning | Recoded Value |
|---|---|---|
| Starting location is home | 1. trip_num is 1<br>2. o_name_recode is "HOME"<br>3. o_purpose_recode is not equal to 1<br>4. distance between (home_lat, home_lng) and (o_lat_recode, o_lng_recode) is within 50 feet<br>5. d_purpose_recode is not equal to 1 | o_purpose_recode_2 = 1 |
| Starting location is work | 1. trip_num is 1<br>2. o_name_recode is "WORK"<br>3. o_purpose_recode is not equal to 2<br>4. distance between (work_lat, work_lng) and (o_lat_recode, o_lng_recode) is within 50 feet<br>5. d_purpose_recode is not equal to 2 | o_purpose_recode_2 = 2 |
| Destination of the trip is home | 1. trip_num is greater than 1<br>2. d_name is "HOME"<br>3. d_purpose_recode is not equal to 1<br>4. distance between (home_lat, home_lng) and (d_lat, d_lng) is within 50 feet<br>5. o_purpose_recode is not equal to 1<br>6. d_purpose_recode of next trip is not equal to 1 | d_purpose_recode_2 = 1 |
| Destination of the trip is work | 1. trip_num is greater than 1<br>2. d_name is "WORK"<br>3. d_purpose_recode is not equal to 2<br>4. distance between (work_lat, work_lng) and (d_lat, d_lng) is within 50 feet<br>5. o_purpose_recode is not equal to 2<br>6. d_purpose_recode of the next trip is not equal to 2 | d_purpose_recode_2 = 2 |
| Destination of the trip is school | 1. trip_num is greater than 1<br>2. d_name is "SCHOOL"<br>3. d_purpose_recode is not equal to 4<br>4. distance between (work_lat, work_lng) and (d_lat, d_lng) is within 50 feet<br>5. o_purpose_recode is not equal to 4<br>6. d_purpose_recode of next trip is not equal to 4 | d_purpose_recode_2 = 4 |

Recoding the purpose of the activity at the location necessitates performing changes to other variables due to the cascading impacts. For example, if the destination purpose of a trip is modified, it also means that the origin purpose of the next trip should also be modified. Table 3 provides the list of cascading changes applied in response to recoding the activity purpose at the location. It must be noted that the list of variables and changes to their contents listed in table below only reflect the cascading changes. Primary changes to the variables and their contents were listed in the previous table.

| Data File | Original Variable | Recoded Variable | Summary of Change |
|---|---|---|---|
| Trip File | o_address_recode | o_address_recode_2 | Origin address of subsequent trip (trp_num greater than 1) was modified to be same as destination address of previous trip |
| | o_lat_recode | o_lat_recode_2 | Origin latitude of subsequent trip (trp_num greater than 1) was modified to be same as destination latitude of previous trip |
| | o_lng_recode | o_lng_recode_2 | Origin longitude of subsequent trip (trp_num greater than 1) was modified to be same as destination longitude of previous trip |
| | o_purpose_recode | o_purpose_recode_2 | Origin purpose of subsequent trip (trp_num greater than 1) was modified to be same as destination purpose of previous trip |
| | d_address | d_address_recode | Destination address of any trip for which purpose was modified is altered to be same as the corresponding fixed activity location |
| | d_lat | d_lat_recode | Destination address of any trip for which purpose was modified is altered to be same as the corresponding fixed activity location |
| | d_lng | d_lng_recode | Destination address of any trip for which purpose was modified is altered to be same as the corresponding fixed activity location |
| | t_purpose | t_purpose_recode | New trip purpose was derived based on the d_purpose_recode_2 variable. More details regarding the detailed categories and their definitions can be found in the codebook. |
| Person File | diary_loc_start_recode | diary_loc_start_recode_2 | Modified to reflect the actual start location |
| | diary_loc_end_recode | diary_loc_end_recode_2 | Modified to reflect the actual end location |

**SECOND ROUND OF PURPOSE CLEANING**

As noted in the last section, the first round cleaning was aimed at enhancing the origin or destination purpose of trips carried out at fixed activity locations. In the second round of cleaning, the origin or destination purpose of all trips were considered. Also, unlike the first round of cleaning where cleaning was carried out using programmable heuristics, in this round, manual corrections were performed on a trip-by-trip basis. In order to rectify possible issues due to interpretation biases of the analyst, a comprehensive quality assurance and quality control process as outlined in Section 3.7.3 was adopted. Similar to the first round of changes, cascading changes were applied after manually cleaning the origin or destination purposes. However, unlike the first round of changes, address, latitude and longitude for origins and destinations were not modified.

The specific cleaning tasks carried out and the criterion used to carry out the cleaning tasks are described in the remaining section. A total of 20 cleaning tasks were carried out. For each task, specific criterion used for recoding the purpose is presented. Also, where applicable, an overview of the task is presented

**Recode trips with origin purpose of 1-Go home**

Overview of the Data Cleaning Task
If the origin purpose of the trips were originally coded as 1-Go home, but the distance from trip origin to home is greater than 50 feet, the trips were highlighted for recoding. Also, a new purpose of 19-*Home other* was created for this task.

Specific Heuristics Applied to Recode the Values
Heuristics for changing origin purpose from 1-Go home to other values are shown in the table below.

| Recoded Value | Criterion for Cleaning |
|---|---|
| 19-Home other | o_name implies the trip origin is home (e.g. home, second home) or an ambiguous address, but the distance from trip origin to home is greater than 50 feet. |
| 97-Other | o_name implies that the trip origin is not individual's home or primary work location (e.g. father's home, home depot). |

**Recode trips with destination purpose of 1-Go home**

Overview of the Data Cleaning Task
If the destination purpose of the trips were originally coded as 1-Go home, but the distance from trip destination to home is greater than 50 feet, the trips were highlighted for recoding. Similar to the previous task, a new purpose of 19-Home other was created.

Specific Heuristics Applied to Recode the Values
Heuristics for changing destination purpose from 1-Go home to other values are shown in the table below.

| Recoded Value | Criterion for Cleaning |
|---|---|
| 2-Go to primary workplace | d_name implies that the destination is one's primary place of work or used similar expressive language (e.g. went back to work), and the distance from destination to the primary workplace is within 50 feet. However, if the purpose of previous or subsequent trip is 2-Go to primary workplace, the corresponding trip is not be recoded in order to avoid work to work loop. |
| 3-Go to other work-related place | • d_name specifies a destination separate from primary work location using language like "work related" or "for work" (e.g. off-site business meeting).<br>• d_name implies that the destination is the person's primary place of work or used similar expressive language (e.g. work), but the distance from destination to the primary workplace is greater than 50 feet, or the workplace location information of this person is not applicable. |
| 4-Attend school/class | d_name is linked with an educational institution (e.g. UConn), and the distance from destination to the person's school location is within 50 feet. However, if the purpose of previous or subsequent trip is 4-Attend school/class, the corresponding trip is not be recoded in order to avoid school to school loop. |
| 5-Other school-related activity | • d_name is linked with an educational institution, but not necessarily directly linked to an individual's education (e.g. piano lessons, after school program). |

| Recoded Value | Criterion for Cleaning |
|---|---|
| | • d_name is linked with an educational institution (e.g. UConn), but the distance from destination to the person's school location is greater than 50 feet, or the school location information of this person is not applicable. |
| 6-Grocery shopping | d_name is related to a grocery store (e.g. Stop and Shop, Big Y), or d_name includes language like "grocery shopping". |
| 7-Do other shopping (e.g. mall, hardware store) | d_name is related to a store (e.g. Staples, Nordstrom Rack), or d_name includes language like "shopping". |
| 8-Run errands | d_name indicates bank visits, gas stop, mailing and picking up of items or pets (e.g. bank, post office, pick up cat). |
| 9-Go to restaurant/ bar/ take out | If d_name is related to a restaurant or a coffee shop (e.g. Dunkin Donuts), or d_name includes language like "lunch", "dinner", "breakfast", or "eat". |
| 10-Drop off/ pick up/ accompany other person | • d_name includes language like "pick up", "drop off" or "accompany".<br>• If d_name has key words like "child's school", "wife's work", and the trip duration is short (usually less than 30 minutes) and also traveler_total of the subsequent trip changes, then the trip is classified as a drop off/pick up other person trip. Sometimes, the traveler_total could be misreported. Therefore, trip list of entire household was reviewed to identify and confirm who got picked up or dropped off.<br>• If d_name indicates a visit for household members (e.g. "child's school"), but traveler_total does not change, checks were made to see if other household members also made the same trip. If so, the trip is classified as an accompany trip.<br>• If d_name indicates a visit for non-household members (e.g. grandchild's school), and the traveler_total indicates presence of a non-household member (traveler_total is greater than traveler_hh), the trip list of the person was reviewed to ensure that trips were made to accompany non-household members. For example, if d_name of a candidate trip is "sister's work". By reviewing the trip list of this person, if it was found that the person first went to sister's home and picked up the sister – also, confirmed through change of traveler_total. It is highly likely that the candidate trip with d_name of "sister's work" was made to accompany the sister. In this case, the purpose should be recoded to 10-drop off/pick up/accompany other person.<br>• For all the scenarios described above, it was ensured that the person is not the one who got picked up, dropped off or accompanied. For example "pick up child" could be the d_name for both the trip of the parent and the child due to the copy trip feature. However, the trip purpose for the parent is pick up whereas for the child, trip purpose should be some other valid value (e.g. school). |
| 11-Exercise (e.g. gym, walk, jog/run) | d_name indicates a physical activity (e.g. gym, walk, walk the dog) |
| 12-Family activity (e.g. child's game) | d_name indicates attending activities together as a family (e.g. child's art show, daughter's softball game) |
| 13-Medical visit (e.g. doctor, dentist) | d_name implies a medical appointment (e.g. hospital, doctor's office) |

| Recoded Value | Criterion for Cleaning |
|---|---|
| 14-Social (e.g. visit friends/relatives) | d_name implies social visits with other persons, family or friends regardless of the venue (e.g. visit a friend, father's home) |
| 15-Leisure/ entertainment (e.g. movies) | d_name is related to activities that were purely voluntary with the caveat that they were done for no other benefit than relaxation or fun (e.g. gallery, watch a show, park, library) |
| 16-Religious/ civic/ volunteer | Trips that were made for religious purposes (e.g. church), civic obligations (e.g. vote, town hall), charity, group/club meetings, or volunteering. |
| 17-Vacation/ holiday/ traveling (e.g. hotel) | Trips that were made for vacation or traveling (e.g. hotel, on vacation) |
| 18-Change travel mode (e.g. wait for bus, change planes) | <ul><li>d_name implies that the trip is made for purpose of changing mode (e.g. train station, walk to bus stop, park & ride lot).</li><li>Sometimes trip list of the entire household needs to be reviewed to confirm change mode trips. For example, when parents drop off/pick up their child at a bus stop, caution was exercised. If the mode of the subsequent trip did not change, but the traveler_total changed, the trip was likely made by the parent to drop off/pick up the child. In this case, the parent's trip needs to be recoded to 10-Drop off/pick up/accompany other person. On the other hand, if the mode of the subsequent trip changes, the trip was likely made by the child. In this case, the child's trip needs be recoded to 18-Change travel mode.</li><li>In other instances, the reported trip mode is wrong and a potential change of mode may not be observed. In such instances, trip list of the person needs to be reviewed to confirm if the purpose is indeed for changing mode. For example, if a person went from parking lot to work and then went back to parking lot after work, it is highly likely that the trips made to and from parking lot are to change mode to car.</li><li>If the recoded purpose causes a fixed activity loop (e.g. home-change mode-home), then it should not be recoded.</li></ul> |
| 19-Home other | d_name implies the trip destination is home (e.g. home, second home) or an ambiguous address, but the distance from trip destination to home is greater than 50 feet. This category is only applicable to destination purposes that were originally coded as 1-Go home |
| 20-Go to airport/switch airport | <ul><li>d_name implies that the trip is made to the airport to catch a flight. For example, a person drove to airport, and then took flight to Florida, the trip to the airport is recoded to 20-Go to airport.</li><li>d_name implies that the trip is part of a multi stop flight travel. For example, a person took flight to airport A and then took another flight to airport B. In this case, both trips are recoded to 20-Go to airport.</li><li>d_name implies that the person took flight to airport. For example, a person took flight to airport and then drove home. In this case, the trip to airport is recoded to 20-Go to airport.</li><li>Sometimes people went to airport to pick up or drop off other persons, so if the mode of current trip or subsequent trip is not 17-Airplane/helicopter, and the traveler_total of subsequent trip changes, the trip was more likely made for dropping off/picking up the other person at the airport.</li></ul> |

| Recoded Value | Criterion for Cleaning |
|---|---|
| 97-Other | d_name implies that the trip destination is not home (grandchild's school), and the purpose does not fall into any of the 20 categories. |

**Recode trips with destination purpose of 2-Go to primary workplace**

Overview of the Data Cleaning Task
- If the destination purpose of the trips were originally coded as 2-Go to primary workplace, but the distance from trip destination to workplace is greater 50 feet, the trips were highlighted for recoding.
- Caution was exercised when recoding trips with long dwell time (more than 3 hours), because the trips were likely made for work or work-related.
- If the person did not report his or her work location information, it was not possible to calculate the distance from trip destination to work location. In this case, distance from home to trip destination was used as a surrogate indicator. If a person made multiple trips to the same place, distances from home to trip destination are going to be the same, and if all the trips have d_name as "work", the trip purpose is recoded as 2-Go to primary workplace.
- If the d_name of highlighted trip indicated an education institution, and the person is a worker but not a student, the purpose was recoded to 3-Go to other work related place. In this case it was assumed that the person could be working at the education institution. If the person is not a worker, the purpose is recoded to 4-Attend school/class when the distance from destination to their reported school location is less than 50 feet, otherwise, the purpose is recoded to 5-Other school-related activities.
- If only a noun is noted in the d_name (e.g. "Big Y", "church", "post office"), it is hard to tell why they went there. It is possible that they were at the location to perform work related actives. Therefore, the purpose of such trips is recoded to 3-Go to other work-related place.
- If d_name of highlighted trips does not provide strong evidence for recoding the purpose to other categories (e.g. work), dwell time, person status (e.g. if the person is a worker), and distance to primary work location (e.g. if destination is close to work location) were reviewed. If the purpose 2-Go to primary workplace is plausible, no change is made to the trip purpose. However, if there was some evidence that this is not the individual's primary workplace, the trip purpose is changed to 3-Go to other work-related place.

Specific Heuristics Applied to Recode the Values
Table below lists the heuristics applied to recode the values.

| Recoded Value | Criterion for Cleaning |
|---|---|
| 1-Go home | d_name implies the destination is home (e.g. went back home, work from home), and the distance from destination to home is within 50 feet. However, if the purpose of previous or subsequent trip is 1-Go home, the corresponding trip should not be recoded in order to avoid home to home loop. |
| 3-Go to other work-related place | <ul><li>d_name specifies a destination separate from primary work location using language like "work related" or "for work" (e.g. off-site business meeting).</li><li>d_name implies that the destination is the person's primary place of work or used similar expressive language (e.g. went back to work) but the distance from destination to the primary workplace is greater than 50 feet.</li><li>Library visit is usually recoded as 15-leisure/entertainment, but since trips in this group are originally recoded as 2-go to primary workplace, it is highly</li></ul> |

| Recoded Value | Criterion for Cleaning |
|---|---|
| | likely that the trip was made for work-related purpose rather than for leisure. |
| 4-Attend school/ class | d_name is linked with an educational institution (e.g. UConn), and the distance from destination to the person's school location is within 50 feet, and also the person is not a worker. However, if the purpose of previous or subsequent trip is 4-Attend school/class, the corresponding trip is not be recoded in order to avoid school to school loop. |
| 8-Run errands | d_name indicates gas stop or errands for pets. |
| 9-Go to restaurant/ bar/ take out | d_name includes language like "lunch" or "dinner" or "breakfast" or "eat". |
| 10-Drop off/ pick up/ accompany other person | <ul><li>d_name includes language like "pick up", "drop off" or "accompany".</li><li>If d_name has key words like "child's school", "wife's work", and the trip duration is short (usually less than 30 minutes) and also traveler_total of the subsequent trip changes, then the trip is classified as a drop off/pick up other person trip. Sometimes, the traveler_total could be misreported. Therefore, trip list of entire household is reviewed to identify and confirm who got picked up or dropped off.</li><li>If d_name indicates a visit for household members (e.g. "child's school"), but traveler_total does not change, checks were made to see if other household members also made the same trip. If so, the trip is classified as an accompany trip.</li><li>If d_name indicates a visit for non-household members (e.g. grandchild's school), and the traveler_total indicates presence of a non-household member (traveler_total is greater than traveler_hh), the trip list of the person was reviewed to ensure that trips were made to accompany non-household members. For example, if d_name of a candidate trip is "sister's work". By reviewing the trip list of this person, if it was found that the person first went to sister's home and picked up the sister – also, confirmed through change of traveler_total. It is highly likely that the candidate trip with d_name of "sister's work" was made to accompany the sister. In this case, the purpose should be recoded to 10-drop off/pick up/accompany other person.</li><li>For all the scenarios described above, it was ensured that the person is not the one who got picked up, dropped off or accompanied. For example "pick up child" could be the d_name for both the trip of the parent and the child due to the copy trip feature. However, the trip purpose for the parent is pick up whereas for the child, trip purpose should be some other valid value (e.g. school).</li></ul> |
| 11-Exercise (e.g. gym, walk, jog/run) | d_name indicates a physical activity (e.g. gym, walk, walk the dog) |
| 16-Religious/ civic/ volunteer | Trips that were made for religious purposes (e.g. church), civic obligations (e.g. vote, town hall), charity, group/club meetings, or volunteering. |
| 18-Change travel mode (e.g. wait for bus, change planes) | <ul><li>d_name implies that the trip is made for purpose of changing mode (e.g. train station, walk to bus stop, park & ride lot).</li><li>Sometimes trip list of the entire household needs to be reviewed to confirm change mode trips. For example, when parents drop off/pick up their child</li></ul> |

| Recoded Value | Criterion for Cleaning |
|---|---|
| | at a bus stop, caution was exercised. If the mode of the subsequent trip did not change, but the traveler_total changed, the trip was likely made by the parent to drop off/pick up the child. In this case, the parent's trip needs to be recoded to 10-Drop off/pick up/accompany other person. On the other hand, if the mode of the subsequent trip changes, the trip was likely made by the child. In this case, the child's trip needs be recoded to 18-Change travel mode.<br>• In other instances, the reported trip mode is wrong and a potential change of mode may not be observed. In such instances, trip list of the person needs to be reviewed to confirm if the purpose is indeed for changing mode. For example, if a person went from parking lot to work and then went back to parking lot after work, it is highly likely that the trips made to and from parking lot are to change mode to car.<br>• If the recoded purpose causes a fixed activity loop (e.g. home-change mode-home), then it should not be recoded. |
| 97-Other | d_name implies that the trip destination is not work, and the purpose does not fall into any of the 19 categories. |

**Recode trips with destination purpose of 3-Go to other work-related place**

Overview of the Data Cleaning Task
• Caution was exercised when recoding trips with long dwell time (i.e. more than 3 hours), because it is highly likely the trip could be made for work-related activity.
• If d_name indicates a place outside CT, it was not recoded because the trip could be work-related.
• If only a noun is noted in the d_name (e.g. friend's place, church), such trips have not been recoded. In such cases, it is hard to tell why they went there, and they could likely have been doing work-related activity.

Specific Heuristics Applied to Recode the Values
Table below lists the heuristics applied to recode the values.

| Recoded Value | Criterion for Cleaning |
|---|---|
| 5-Other school-related activity | • d_name is linked with an educational institution, but not directly linked to an individual's education (e.g. piano lessons, after school program).<br>• d_name is linked with an educational institution (e.g. UConn), but the distance from destination to the person's school location is greater than 50 feet, or the school location information of this person is not applicable. |
| 8-Run errands | d_name indicates gas stop or activities related to pets. |
| 9-Go to restaurant/ bar/ take out | d_name includes language like "lunch", "dinner", "breakfast", or "eat", and the dwell time is reasonable. |
| 10-Drop off/ pick up/ accompany other person | • d_name includes language like "pick up", "drop off" or "accompany".<br>• If d_name has key words like "child's school", "wife's work", and the trip duration is short (usually less than 30 minutes) and also traveler_total of the subsequent trip changes, then the trip is classified as a drop off/pick up other person trip. Sometimes, the traveler_total could be misreported. Therefore, trip list of entire household was reviewed to identify and confirm who got picked up or dropped off. |

| Recoded Value | Criterion for Cleaning |
|---|---|
| | • If d_name indicates a visit for household members (e.g. "child's school"), but traveler_total does not change, checks were made to see if other household members also made the same trip. If so, the trip is classified as an accompany trip.<br>• If d_name indicates a visit for non-household members (e.g. grandchild's school), and the traveler_total indicates presence of a non-household member (traveler_total is greater than traveler_hh), the trip list of the person was reviewed to ensure that trips were made to accompany non-household members. For example, if d_name of a candidate trip is "sister's work". By reviewing the trip list of this person, if it was found that the person first went to sister's home and picked up the sister – also, confirmed through change of traveler_total. It is highly likely that the candidate trip with d_name of "sister's work" was made to accompany the sister. In this case, the purpose should be recoded to 10-drop off/pick up/accompany other person.<br>• For all the scenarios described above, it was ensured that the person is not the one who got picked up, dropped off or accompanied. For example "pick up child" could be the d_name for both the trip of the parent and the child due to the copy trip feature. However, the trip purpose for the parent is pick up whereas for the child, trip purpose should be some other valid value (e.g. school). |
| 11-Exercise (e.g. gym, walk, jog /run) | d_name indicates a physical activity (e.g. gym, walk, walk the dog). When only a noun qualifier is used in the d_name, such as softball game, karate, baseball practice, it is hard to say whether it is done as part of exercise or for something else. For example they may be just watching a game, or they are a player by profession, in which case this qualifies as work. Given the ambiguity for such instances, trips were not recoded when a noun qualifier is used. |
| 12-Family activity (e.g. child's game) | d_name indicates performing trips together as a family (e.g. "child's art show", "daughter's softball game") |
| 13-Medical visit (e.g. doctor, dentist) | d_name implies a medical appointment (e.g. doctor's appointment ) |
| 14-Social (e.g. visit friends/ relatives) | d_name clearly indicates social visits with others with key words like "visit". |
| 18-Change travel mode (e.g. wait for bus, change planes) | • d_name implies that the trip is made for purpose of changing mode (e.g. train station, walk to bus stop, park & ride lot).<br>• Sometimes trip list of the entire household needs to be reviewed to confirm change mode trips. For example, when parents drop off/pick up their child at a bus stop, caution was exercised. If the mode of the subsequent trip did not change, but the traveler_total changed, the trip was likely made by the parent to drop off/pick up the child. In this case, the parent's trip needs to be recoded to 10-Drop off/pick up/accompany other person. On the other hand, if the mode of the subsequent trip changes, the trip was likely made by the child. In this case, the child's trip needs be recoded to 18-Change travel mode.<br>• In other instances, the reported trip mode is wrong and a potential change of mode may not be observed. In such instances, trip list of the person needs |

| Recoded Value | Criterion for Cleaning |
|---|---|
| | to be reviewed to confirm if the purpose is indeed for changing mode. For example, if a person went from parking lot to work and then went back to parking lot after work, it is highly likely that the trips made to and from parking lot are to change mode to car.<br>• If the recoded purpose causes a fixed activity loop (e.g. home-change mode-home), then it should not be recoded. |
| 20-Go to airport/switch airport | • d_name implies that the trip is made to the airport to catch a flight. For example, a person drove to airport, and then took flight to Florida, the trip to the airport is recoded to 20-Go to airport/switch airport.<br>• d_name implies that the trip is part of a multi stop flight travel. For example, a person took flight to airport A and then took another flight to airport B. In this case, both trips are recoded to 20-Go to airport/switch airport.<br>• d_name implies that the person took flight to airport. For example, a person took flight to airport and then drove home. In this case, the trip to airport is recoded to 20-Go to airport/switch airport.<br>• Sometimes people went to airport to pick up or drop off other persons, so if the mode of current trip or subsequent trip is not 17-Airplane/helicopter, and the traveler_total of subsequent trip changes, the trip was more likely made for dropping off/picking up the other person at the airport. |

**Recode trips with destination purpose of 4-Attend school/class**

Overview of the Data Cleaning Task
The approach for adults is described below:

• If it is a multiple person trip, and the person is not a student and/or school type information is coded as "not applicable", these were likely coded as 10-Pick-up/drop-off/accompany.
• In the cases where it was obvious that, the person him-/her-self was making the trip (e.g. traveler_total is 1 and the person is not a student, the trip purpose has been recoded to school-related (5) rather than school (4). The logic for such reconciliation is that the person thinks that they went to the location to "learn" something, however, they are not students, and so their trips are school related (read as learning related).
• There were also some occasions, where the d_name indicated the adult went to a school/college/university, given that, no school information is available for these persons, the trips have been recoded to school related (5).

The approach for children is described below:

• If a child makes multiple back to back school trips, the one closest to the school location has been recoded as attend school/classes (4) and the other ones are recoded as school related (5). The logic was since school/class (4) purpose refers to a fixed activity location, trips made to different locations cannot be coded as school/class (4). Also, back to back school/class (4) trips do not make sense when it was obvious that the person was changing place. Some examples of d_name that was coded to school related include dance, kungfu, karate, music class, violin lesson, cello lesson, photo class, swim lesson, riding lesson, flute lesson, choir practice, and field trip. For many of these coding the intention was to break the school (4) to school (4) loop and not to code multiple locations as school (4).
• If d_name of highlighted trips does not provide strong evidence for recoding the purpose to other categories (e.g. University), dwell time, person status (e.g. if the person is a student), and distance to

school location (e.g. if destination is close to school location) are reviewed. If the purpose 4-Attend school is plausible, no change is made. If it can be confirmed that the trip was not destined to the individual's reported school location, the trip purpose is changed to 5-Other school-related activities.

Specific Heuristics Applied to Recode the Values
Table below lists the heuristics applied to recode the values.

| Recoded Value | Criterion for Cleaning |
|---|---|
| 1-Go home | d_name implies the destination is home (e.g. went back home, work from home), and the distance from destination to home is within 50 feet. However, if the purpose of previous or subsequent trip is 1-Go home, the corresponding trip should not be recoded in order to avoid home to home loop. |
| 3-Go to other work-related place | • d_name specifies a destination separate from primary work location using language like "work related" or "for work" (e.g. off-site business meeting).<br>• d_name implies that the destination is the person's primary place of work or used similar expressive language (e.g. went back to work), but the distance from destination to the primary workplace is greater than 50 feet, or the workplace location information of this person is not applicable. |
| 5-Other school-related activity | • d_name is linked with an educational institution, but not directly linked to an individual's education (e.g. piano lessons, after school program, dance) regardless of the student status.<br>• d_name is linked with an educational institution (e.g. UConn), but the distance from destination to the person's school location is greater than 50 feet, or the school location information of this person is not applicable.<br>• Library visit is usually recoded as 15-leisure/entertainment, but since it was originally reported as 4-Attend school/class, it is highly likely that the trip was made for school-related purpose rather than for leisure.<br>• If d_name indicates a visit to church, town hall or other charity organization, and the person is a child, it is highly likely that the trip was school-related. |
| 8-Run errands | d_name indicates bank visits, gas stop, mailing and picking up of items or related to pets (e.g. bank, post office, pick up cat), and the dwell time is reasonable for an errand. |
| 9-Go to restaurant/ bar/ take out | d_name is related to a restaurant or a coffee shop (e.g. Dunkin Donuts), or d_name includes language like "lunch", "dinner", "breakfast", or "eat", and the dwell time is reasonable. |
| 10-Drop off/ pick up/ accompany other person | • d_name includes language such as "pick up", "drop off" or "accompany".<br>• If d_name has key words such as "child's school", "wife's work", and the trip duration is short (usually less than 30 minutes), and also traveler_total of the subsequent trip changes, then the trip is classified as a drop off/pick up other person trip. Sometimes, the traveler_total could be misreported. Therefore, trip list of entire household was reviewed to identify and confirm who got picked up or dropped off.<br>• If d_name indicates a visit for household members (e.g. "child's school"), but traveler_total does not change, checks were made to see if other household members also made the same trip. If so, the trip is classified as an accompany trip.<br>• If d_name indicates a visit for non-household members (e.g. grandchild's school), and the traveler_total indicates presence of a non-household |

| Recoded Value | Criterion for Cleaning |
|---|---|
| | member (traveler_total is greater than traveler_hh), the trip list of the person was reviewed to ensure that trips were made to accompany non-household members. For example, if d_name of a candidate trip is "sister's work". By reviewing the trip list of this person, if it was found that the person first went to sister's home and picked up the sister – also, confirmed through change of traveler_total. It is highly likely that the candidate trip with d_name of "sister's work" was made to accompany the sister. In this case, the purpose should be recoded to 10-drop off/pick up/accompany other person. <br>• For all the scenarios described above, it was ensured that the person is not the one who got picked up, dropped off or accompanied. For example "pick up child" could be the d_name for both the trip of the parent and the child due to the copy trip feature. However, the trip purpose for the parent is pick up whereas for the child, trip purpose should be some other valid value (e.g. school). |
| 11-Exercise (e.g. gym, walk, jog/run) | Trips made for gym, yoga, tennis club and weight watcher. If the d_name implies physical activity such as dance class, but with a learning aspect attached to it, it is recoded to 5-other school-related activity. |
| 12-Family activity (e.g. child's game) | d_name indicates completing trips together as a family (e.g. "child's art show", "daughter's softball game") |
| 13-Medical visit (e.g. doctor, dentist) | d_name implies a medical appointment (e.g. doctor's appointment) |
| 14-Social (e.g. visit friends/relatives) | d_name clearly indicates social visits with others with keywords like "visit". If d_name only implies someone's home (e.g. father's home), the purpose has been recoded to 5-Other school-related activity, because person could have been doing school-related activity at someone's home. |
| 15-Leisure/ entertainment (e.g. movies) | d_name is related to things that were done for no other benefit than relaxation or fun (e.g. gallery, watch a show, park, library) |
| 16-Religious/ civic/ volunteer | • Trips that were made for religious purposes (e.g. church), civic obligations (e.g. vote, town hall), charity, group/club meetings, or volunteering, and the person is an adult. <br>• If d_name indicates a visit to church, town hall or other charity organization, and the person is a child, it is highly likely that the trip was school-related, so the purpose has been recoded to 5-Other school-related activity. |
| 18-Change travel mode (e.g. wait for bus, change planes) | • d_name implies that the trip is made for purpose of changing mode (e.g. train station, walk to bus stop, park & ride lot). <br>• Sometimes trip list of the entire household needs to be reviewed to confirm change mode trips. For example, when parents drop off/pick up their child at a bus stop, caution was exercised. If the mode of the subsequent trip did not change, but the traveler_total changed, the trip was likely made by the parent to drop off/pick up the child. In this case, the parent's trip needs to be recoded to 10-Drop off/pick up/accompany other person. On the other hand, if the mode of the subsequent trip changes, the trip was likely made by the child. In this case, the child's trip needs be recoded to 18-Change travel mode. |

| Recoded Value | Criterion for Cleaning |
|---|---|
| | • In other instances, the reported trip mode is wrong and a potential change of mode may not be observed. In such instances, trip list of the person needs to be reviewed to confirm if the purpose is indeed for changing mode. For example, if a person went from parking lot to work and then went back to parking lot after work, it is highly likely that the trips made to and from parking lot are to change mode to car.<br>• If the recoded purpose causes a fixed activity loop (e.g. home-change mode-home), then it should not be recoded. |
| 97-Other | d_name implies that the trip destination is not school, and the purpose does not fall into any of the 19 categories. |

**Recode trips with destination purpose of 5-Other school-related activity**

Overview of the Data Cleaning Task
• If only a noun is noted in the d_name, such as church, mall, father's home, hospital and the person is a student, it is hard to tell why they went there. They could have been doing school-related activity at the destination so such trips have not been recoded.

Specific Heuristics Applied to Recode the Values
Table below lists the heuristics applied to recode the values.

| Recoded Value | Criterion for Cleaning |
|---|---|
| 3-Go to other work-related place | • d_name specifies a destination separate from primary work location using language like "work related" or "for work" (e.g. off-site business meeting).<br>• d_name implies that the destination is the person's primary place of work or used similar expressive language (e.g. went back to work), but the distance from destination to the primary workplace is greater than 50 feet, or the workplace location information of this person is not applicable. |
| 8-Run errands | d_name indicates bank visits, gas stop, mailing and picking up of items or related to pets (e.g. bank, post office, pick up cat), and the dwell time is reasonable for an errand. |
| 9-Go to restaurant/ bar/ take out | D_name is related to a restaurant or a coffee shop (e.g. Dunkin Donuts), or d_name includes language like "lunch", "dinner", "breakfast", or "eat", and the dwell time is reasonable. |
| 10-Drop off/ pick up/ accompany other person | • d_name includes language like "pick up", "drop off" or "accompany".<br>• If d_name has key words like "child's school", "wife's work", and the trip duration is short (usually less than 30 minutes) and also traveler_total of the subsequent trip changes, then the trip is classified as a drop off/pick up other person trip. Sometimes, the traveler_total could be misreported. Therefore, trip list of entire household was reviewed to identify and confirm who got picked up or dropped off.<br>• If d_name indicates a visit for household members (e.g. "child's school"), but traveler_total does not change, checks were made to see if other household members also made the same trip. If so, the trip is classified as an accompany trip.<br>• If d_name indicates a visit for non-household members (e.g. grandchild's school), and the traveler_total indicates presence of a non-household member |

| Recoded Value | Criterion for Cleaning |
|---|---|
| | (traveler_total is greater than traveler_hh), the trip list of the person was reviewed to ensure that trips were made to accompany non-household members. For example, if d_name of a candidate trip is "sister's work". By reviewing the trip list of this person, if it was found that the person first went to sister's home and picked up the sister – also, confirmed through change of traveler_total. It is highly likely that the candidate trip with d_name of "sister's work" was made to accompany the sister. In this case, the purpose should be recoded to 10-drop off/pick up/accompany other person.<br><br>• For all the scenarios described above, it was ensured that the person is not the one who got picked up, dropped off or accompanied. For example "pick up child" could be the d_name for both the trip of the parent and the child due to the copy trip feature. However, the trip purpose for the parent is pick up whereas for the child, trip purpose should be some other valid value (e.g. school). |
| 12-Family activity (e.g. child's game) | d_name is related to child's game or activity, and the person is not the child. The trip purpose was recoded to 12-Family activity for adults, while the trip purpose for the child was left as 5-Other school-related activity. |
| 14-Social (e.g. visit friends/relatives) | d_name clearly indicates social visits with others with keyword "visit". If d_name only implies someone's home (e.g. father's home), the purpose was not recoded because the person could have been doing school-related activity at someone's home. |
| 16-Religious/ civic/ volunteer | • Trips that were made for religious purposes (e.g. church), civic obligations (e.g. vote, town hall), charity, group/club meetings, or volunteering, and the person is an adult.<br><br>• If d_name indicates a visit or church, town hall or other charity organization, and the person is a child, it is highly likely that the trip were school-related. Such trips were not recoded. |
| 18-Change travel mode (e.g. wait for bus, change planes) | • d_name implies that the trip is made for purpose of changing mode (e.g. train station, walk to bus stop, park & ride lot).<br><br>• Sometimes trip list of the entire household needs to be reviewed to confirm change mode trips. For example, when parents drop off/pick up their child at a bus stop, caution was exercised. If the mode of the subsequent trip did not change, but the traveler_total changed, the trip was likely made by the parent to drop off/pick up the child. In this case, the parent's trip needs to be recoded to 10-Drop off/pick up/accompany other person. On the other hand, if the mode of the subsequent trip changes, the trip was likely made by the child. In this case, the child's trip needs be recoded to 18-Change travel mode.<br><br>• In other instances, the reported trip mode is wrong and a potential change of mode may not be observed. In such instances, trip list of the person needs to be reviewed to confirm if the purpose is indeed for changing mode. For example, if a person went from parking lot to work and then went back to parking lot after work, it is highly likely that the trips made to and from parking lot are to change mode to car.<br><br>• If the recoded purpose causes a fixed activity loop (e.g. home-change mode-home), then it should not be recoded. |

| Recoded Value | Criterion for Cleaning |
|---|---|
| 20-Go to airport/ switch airport | • d_name implies that the trip is made to the airport to catch a flight. For example, a person drove to airport, and then took flight to Florida, the trip to the airport is recoded to 20-Go to airport/switch airport.<br>• d_name implies that the trip is part of a multi stop flight travel. For example, a person took flight to airport A and then took another flight to airport B. In this case, both trips are recoded to 20-Go to airport/switch airport.<br>• d_name implies that the person took flight to airport. For example, a person took flight to airport and then drove home. In this case, the trip to airport is recoded to 20-Go to airport/switch airport.<br>• Sometimes people went to airport to pick up or drop off other persons, so if the mode of current trip or subsequent trip is not 17-Airplane/helicopter, and the traveler_total of subsequent trip changes, the trip was more likely made for dropping off/picking up the other person at the airport. |

**Recode trips with destination purpose of 6-Grocery shopping**

Overview of the Data Cleaning Task
• If d_name implies a visit to a store, and the store has a grocery section, the trip has not been recoded.
• If d_name only has key word of "shopping" or "store", it has not been recoded.
• If d_name only has key words of "gas station" or "shell station", it has not been recoded, because many gas stations have convenience store.

Specific Heuristics Applied to Recode the Values
Table below lists the heuristics applied to recode the values.

| Recoded Value | Criterion for Cleaning |
|---|---|
| 1-Go home | d_name implies the destination is home (e.g. went back home, work from home), and the distance from destination to home is within 50 feet. However, if the purpose of previous or subsequent trip is 1-Go home, the corresponding trip should not be recoded in order to avoid home to home loop. |
| 3-Go to other work-related place | • d_name specifies a destination separate from primary work location using language like "work related" or "for work" (e.g. off-site business meeting).<br>• d_name implies that the destination is the person's primary place of work or used similar expressive language (e.g. work), but the distance from destination to the primary workplace is greater than 50 feet, or the workplace location information of this person is not applicable. |
| 7-Do other shopping (e.g. mall, hardware store) | d_name is related to a store that does not provide any grocery (e.g. Petco, hardware store). |
| 8-Run errands | d_name indicates bank visits, gas stop, mailing and picking up of items or related to pets (e.g. bank, post office, pick up cat). |
| 9-Go to restaurant/ bar/ take out | d_name is related to a restaurant or a coffee shop (e.g. Dunkin Donuts), or d_name includes language like "lunch", "dinner", "breakfast", or "eat". |
| 10-Drop off/ pick up/ accompany other person | d_name includes language like "pick up", "drop off" or "accompany", and the person is not the one who got picked up or dropped off. |

| Recoded Value | Criterion for Cleaning |
|---|---|
| 11-Exercise (e.g. gym, walk, jog /run) | d_name indicates a physical activity (e.g. gym, walk, walk the dog). |
| 14-Social (e.g. visit friends/relatives) | d_name implies social visits with other persons, family or friends regardless of the venue (e.g. visit a friend, father's home) |
| 15-Leisure/ entertainment (e.g. movies) | d_name is related to things that were done for no other benefit than relaxation or fun (e.g. gallery, watch a show, park). |
| 16-Religious/ civic/ volunteer | Trips that were made for religious purposes (e.g. church), civic obligations (e.g. vote, town hall), charity, group/club meetings, or volunteering, and the person is an adult. |
| 18-Change travel mode (e.g. wait for bus, change planes) | <ul><li>d_name implies that the trip is made for purpose of changing mode (e.g. train station, walk to bus stop, park & ride lot).</li><li>Sometimes trip list of the entire household needs to be reviewed to confirm change mode trips. For example, when parents drop off/pick up their child at a bus stop, caution was exercised. If the mode of the subsequent trip did not change, but the traveler_total changed, the trip was likely made by the parent to drop off/pick up the child. In this case, the parent's trip needs to be recoded to 10-Drop off/pick up/accompany other person. On the other hand, if the mode of the subsequent trip changes, the trip was likely made by the child. In this case, the child's trip needs be recoded to 18-Change travel mode.</li><li>In other instances, the reported trip mode is wrong and a potential change of mode may not be observed. In such instances, trip list of the person needs to be reviewed to confirm if the purpose is indeed for changing mode. For example, if a person went from parking lot to work and then went back to parking lot after work, it is highly likely that the trips made to and from parking lot are to change mode to car.</li><li>If the recoded purpose causes a fixed activity loop (e.g. home-change mode-home), then it should not be recoded.</li></ul> |

**Recode trips with destination purpose of 7-Do other shopping**

Overview of the Data Cleaning Task
- If d_name indicates a grocery store or a supermarket, the purpose was not recoded. It is hard to tell if they went there to purchase grocery since most of the grocery stores and markets provide multiple products including gardening products and pet products.
- If d_name is "gas station", then the purpose was not recoded because people could shop at the convenience store at the gas station. But if the d_name clearly indicates to get gas, the purpose has been recoded to 8-Run errands.

Specific Heuristics Applied to Recode the Values
Table below lists the heuristics applied to recode the values.

| Recoded Value | Criterion for Cleaning |
|---|---|
| 1-Go home | d_name implies the destination is home (e.g. went back home, work from home), and the distance from destination to home is within 50 feet. However, if the purpose of previous or subsequent trip is 1-Go home, the corresponding trip should not be recoded in order to avoid home to home loop. |

| Recoded Value | Criterion for Cleaning |
|---|---|
| 3-Go to other work-related place | • d_name specifies a destination separate from primary work location using language like "work related" or "for work" (e.g. off-site business meeting).<br>• d_name implies that the destination is the person's primary place of work or used similar expressive language (e.g. went back to work), but the distance from destination to the primary workplace is greater than 50 feet. |
| 8-Run errands | d_name indicates bank visits, gas stop, mailing and picking up of items or related to pets (e.g. bank, get gas, pick up cat). |
| 9-Go to restaurant/ bar/ take out | d_name is related to a restaurant or a coffee shop (e.g. Dunkin Donuts), or d_name includes language like "lunch", "dinner", "breakfast", or "eat". |
| 10-Drop off/ pick up/ accompany other person | • d_name includes language like "pick up", "drop off" or "accompany".<br>• If d_name has key words like "child's school", "wife's work", and the trip duration is short (usually less than 30 minutes) and also traveler_total of the subsequent trip changes, then the trip is classified as a drop off/pick up other person trip. Sometimes, the traveler_total could be misreported. Therefore, trip list of entire household was reviewed to identify and confirm who got picked up or dropped off.<br>• If d_name indicates a visit for household members (e.g. "child's school"), but traveler_total does not change, checks were made to see if other household members also made the same trip. If so, the trip is classified as an accompany trip.<br>• If d_name indicates a visit for non-household members (e.g. grandchild's school), and the traveler_total indicates presence of a non-household member (traveler_total is greater than traveler_hh), the trip list of the person was reviewed to ensure that trips were made to accompany non-household members. For example, if d_name of a candidate trip is "sister's work". By reviewing the trip list of this person, if it was found that the person first went to sister's home and picked up the sister – also, confirmed through change of traveler_total. It is highly likely that the candidate trip with d_name of "sister's work" was made to accompany the sister. In this case, the purpose should be recoded to 10-drop off/pick up/accompany other person.<br>• For all the scenarios described above, it was ensured that the person is not the one who got picked up, dropped off or accompanied. For example "pick up child" could be the d_name for both the trip of the parent and the child due to the copy trip feature. However, the trip purpose for the parent is pick up whereas for the child, trip purpose should be some other valid value (e.g. school). |
| 11-Exercise (e.g. gym, walk, jog /run) | d_name indicates a physical activity (e.g. gym, walk, walk the dog). |
| 13-Medical visit (e.g. doctor, dentist) | d_name implies a medical appointment (e.g. hospital, doctor's office) |
| 14-Social (e.g. visit friends/relatives) | d_name implies social visits with other persons, family or friends regardless of the venue (e.g. visit a friend, father's home) |
| 15-Leisure/ entertainment (e.g. movies) | d_name is related to things that were done for no other benefit than relaxation or fun (e.g. gallery, watch a show, park, library) |

| Recoded Value | Criterion for Cleaning |
|---|---|
| 18-Change travel mode (e.g. wait for bus, change planes) | • d_name implies that the trip is made for purpose of changing mode (e.g. train station, walk to bus stop, park & ride lot).<br>• Sometimes trip list of the entire household needs to be reviewed to confirm change mode trips. For example, when parents drop off/pick up their child at a bus stop, caution was exercised. If the mode of the subsequent trip did not change, but the traveler_total changed, the trip was likely made by the parent to drop off/pick up the child. In this case, the parent's trip needs to be recoded to 10-Drop off/pick up/accompany other person. On the other hand, if the mode of the subsequent trip changes, the trip was likely made by the child. In this case, the child's trip needs be recoded to 18-Change travel mode.<br>• In other instances, the reported trip mode is wrong and a potential change of mode may not be observed. In such instances, trip list of the person needs to be reviewed to confirm if the purpose is indeed for changing mode. For example, if a person went from parking lot to work and then went back to parking lot after work, it is highly likely that the trips made to and from parking lot are to change mode to car.<br>• If the recoded purpose causes a fixed activity loop (e.g. home-change mode-home), then it should not be recoded. |
| 97-Other | d_name implies that the trip purpose is not for shopping (off site meeting) and but the purpose does not fall into any of the 20 categories. |

**Recode trips with destination purpose of 8-Run errands**

Overview of the Data Cleaning Task
• If d_name implies a visit to library, the purpose was left as 8-Run errands.
• If d_name implies a visit to pharmacy stores, the purpose was left as 8-run errands.

Specific Heuristics Applied to Recode the Values
Table below lists the heuristics applied to recode the values.

| Recoded Value | Criterion for Cleaning |
|---|---|
| 1-Go home | d_name implies the destination is home (e.g. went back home, work from home), and the distance from destination to home is within 50 feet. However, if the purpose of previous or subsequent trip is 1-Go home, the corresponding trip should not be recoded in order to avoid home to home loop. |
| 2-Go to primary workplace | d_name implies that the destination is one's primary place of work or used similar expressive language (e.g. went back to work), and the distance from destination to the primary workplace is within 50 feet. However, if the purpose of previous or subsequent trip is 2-Go to primary workplace, the corresponding trip should not be recoded in order to avoid work to work loop. |
| 3-Go to other work-related place | • d_name specifies a destination separate from primary work location using language like "work related" or "for work" (e.g. off-site business meeting).<br>• d_name implies that the destination is the person's primary place of work or used similar expressive language (e.g. went back to work), but the distance from destination to the primary workplace is greater than 50 feet, or the workplace location information of this person is not applicable. |

| Recoded Value | Criterion for Cleaning |
|---|---|
| 4-Attend school/class | d_name is linked with an educational institution (e.g. UConn), and the distance from destination to the person's school location is within 50 feet. However, if the purpose of previous or subsequent trip is 4-Attend school/class, the corresponding trip should not be recoded in order to avoid school to school loop. |
| 6-Grocery shopping | d_name clearly indicates grocery shopping (e.g. food shopping). However, if d_name only has the name of a grocery store, it was not recoded because there isn't enough evidence to recode the purpose as grocery shopping instead of run errands. |
| 7-Do other shopping (e.g. mall, hardware store) | d_name clearly indicates shopping (e.g. shopping, buy wood). However, if d_name only has the name of a store or a pharmacy, it was not recoded because there isn't enough evidence to recode the purpose as other shopping instead of run errands. |
| 9-Go to restaurant/ bar/ take out | d_name is related to a restaurant or a coffee shop (e.g. Dunkin Donuts), or d_name includes language like "lunch", "dinner", "breakfast", or "eat". |
| 10-Drop off/ pick up/ accompany other person | d_name includes language like "pick up", "drop off" or "accompany", and the person is not the one who got picked up or dropped off. |
| 11-Exercise (e.g. gym, walk, jog/run) | d_name indicates a physical activity (e.g. gym, walk, walk the dog). |
| 13-Medical visit (e.g. doctor, dentist) | d_name implies a medical appointment (e.g. hospital, doctor's office) |
| 14-Social (e.g. visit friends/relatives) | d_name implies social visits with other persons, family or friends regardless of the venue (e.g. visit a friend, father's home) |
| 15-Leisure/ entertainment (e.g. movies) | d_name is related to trips that were done for no other benefit than relaxation or fun (e.g. gallery, watch a show, park). |
| 16-Religious/ civic/ volunteer | Trips that were made for religious purposes (e.g. church), civic obligations (e.g. vote, town hall), charity, group/club meetings, or volunteering, and the person is an adult. |
| 18-Change travel mode (e.g. wait for bus, change planes) | <ul><li>d_name implies that the trip is made for purpose of changing mode (e.g. train station, walk to bus stop, park & ride lot).</li><li>Sometimes trip list of the entire household needs to be reviewed to confirm change mode trips. For example, when parents drop off/pick up their child at a bus stop, caution was exercised. If the mode of the subsequent trip did not change, but the traveler_total changed, the trip was likely made by the parent to drop off/pick up the child. In this case, the parent's trip needs to be recoded to 10-Drop off/pick up/accompany other person. On the other hand, if the mode of the subsequent trip changes, the trip was likely made by the child. In this case, the child's trip needs be recoded to 18-Change travel mode.</li><li>In other instances, the reported trip mode is wrong and a potential change of mode may not be observed. In such instances, trip list of the person needs to be reviewed to confirm if the purpose is indeed for changing mode. For example, if a person went from parking lot to work and then went back to parking lot after work, it is highly likely that the trips made to and from parking lot are to change mode to car.</li></ul> |

| Recoded Value | Criterion for Cleaning |
|---|---|
| | • If the recoded purpose causes a fixed activity loop (e.g. home-change mode-home), then it should not be recoded. |

**Recode trips with destination purpose of 9-Go to restaurant**

Specific Heuristics Applied to Recode the Values
Table below lists the heuristics applied to recode the values.

| Recoded Value | Criterion for Cleaning |
|---|---|
| 1-Go home | d_name implies the destination is home (e.g. went back home, work from home), and the distance from destination to home is within 50 feet. However, if the purpose of previous or subsequent trip is 1-Go home, the corresponding trip should not be recoded in order to avoid home to home loop. |
| 2-Go to primary workplace | d_name implies that the destination is one's primary place of work or used similar expressive language (e.g. went back to work), and the distance from destination to the primary workplace is within 50 feet. However, if the purpose of previous or subsequent trip is 2-Go to primary workplace, the corresponding trip should not be recoded in order to avoid work to work loop. |
| 3-Go to other work-related place | • d_name specifies a destination separate from primary work location using language like "work related" or "for work" (e.g. off-site business meeting). <br> • d_name implies that the destination is the person's primary place of work or used similar expressive language (e.g. went back to work), but the distance from destination to the primary workplace is greater than 50 feet, or the workplace location information of this person is not applicable. |
| 5-Other school-related activity | • d_name is linked with an educational institution, but not directly linked to an individual's education (e.g. piano lessons, after school program, dance) regardless of the student status. <br> • d_name is linked with an educational institution (e.g. UConn), but the distance from destination to the person's school location is greater than 50 feet, or the school location information of this person is not applicable. |
| 6-Grocery shopping | d_name is related to a grocery store (e.g. Stop and Shop, Big Y), or d_name includes language like "grocery shopping" |
| 7-Do other shopping (e.g. mall, hardware store) | d_name is related to a store (e.g. Staples, Nordstrom Rack), or d_name includes language like "shopping" |
| 8-Run errands | d_name indicates bank visits, gas stop, mailing and picking up of items or related to pets (e.g. bank, post office, pick up cat). |
| 10-Drop off/ pick up/ accompany other person | d_name includes language like "pick up", "drop off" or "accompany", and the person is not the one who got picked up or dropped off. |
| 11-Exercise (e.g. gym, walk, jog/run) | d_name indicates a physical activity (e.g. gym, walk, walk the dog). |
| 14-Social (e.g. visit friends/relatives) | d_name implies social visits with other persons, family or friends regardless of the venue (e.g. visit a friend, father's home) |
| 15-Leisure/ entertainment (e.g. movies) | d_name is related to trips that were done for no other benefit than relaxation or fun (e.g. gallery, watch a show, park, library) |

| Recoded Value | Criterion for Cleaning |
|---|---|
| 16-Religious/ civic/ volunteer | Trips that were made for religious purposes (e.g. church), civic obligations (e.g. vote, town hall), charity, group/club meetings, or volunteering. |
| 17-Vacation/ holiday/ traveling (e.g. hotel) | Trips that were made for vacation or traveling (e.g. hotel, on vacation) |
| 18-Change travel mode (e.g. wait for bus, change planes) | • d_name implies that the trip is made for purpose of changing mode (e.g. train station, walk to bus stop, park & ride lot). <br> • Sometimes trip list of the entire household needs to be reviewed to confirm change mode trips. For example, when parents drop off/pick up their child at a bus stop, caution was exercised. If the mode of the subsequent trip did not change, but the traveler_total changed, the trip was likely made by the parent to drop off/pick up the child. In this case, the parent's trip needs to be recoded to 10-Drop off/pick up/accompany other person. On the other hand, if the mode of the subsequent trip changes, the trip was likely made by the child. In this case, the child's trip needs be recoded to 18-Change travel mode. <br> • In other instances, the reported trip mode is wrong and a potential change of mode may not be observed. In such instances, trip list of the person needs to be reviewed to confirm if the purpose is indeed for changing mode. For example, if a person went from parking lot to work and then went back to parking lot after work, it is highly likely that the trips made to and from parking lot are to change mode to car. <br> • If the recoded purpose causes a fixed activity loop (e.g. home-change mode-home), then it should not be recoded. |

**Recode trips with destination purpose of 10-Drop off/pick up/accompany other person**

Overview of the Data Cleaning Task
- d_name includes language like "pick up", "drop off" or "accompany".
- If the total number of travelers of the subsequent trip changed, the corresponding trip was not recoded.
- If the total number of travelers of the subsequent trip did not change, but it could be confirmed that the trip was made for accompanying other persons, the corresponding trip is not recoded.
- For all the trips that were originally coded as 10-Drop off/pick up/accompany other person, it was ensured that the person is not the one who got picked up, dropped off or accompanied. For example "pick up child" could be the d_name for both the trip of the parent and the child due to the copy trip feature. However, the trip purpose for the parent is pick up whereas for the child, trip purpose should be some other valid value (e.g. school).

Specific Heuristics Applied to Recode the Values
Table below lists the heuristics applied to recode the values.

| Recoded Value | Criterion for Cleaning |
|---|---|
| 1-Go home | d_name implies the destination is home (e.g. went back home, work from home), and the distance from destination to home is within 50 feet. However, if the purpose of previous or subsequent trip is 1-Go home, the corresponding trip should not be recoded in order to avoid home to home loop. |

| Recoded Value | Criterion for Cleaning |
|---|---|
| 3-Go to other work-related place | • d_name specifies a destination separate from primary work location using language like "work related" or "for work" (e.g. off-site business meeting).<br>• d_name implies that the destination is the person's primary place of work or used similar expressive language (e.g. went back to work), but the distance from destination to the primary workplace is greater than 50 feet, or the workplace location information of this person is not applicable. |
| 4-Attend school/class | d_name is linked with an educational institution (e.g. UConn), and the distance from destination to the person's school location is within 50 feet. However, if the purpose of previous or subsequent trip is 4-Attend school/class, the corresponding trip should not be recoded in order to avoid school to school loop. |
| 5-Other school-related activity | • d_name is linked with an educational institution, but not directly linked to an individual's education (e.g. piano lessons, after school program, dance) regardless of the student status.<br>• d_name is linked with an educational institution (e.g. UConn), but the distance from destination to the person's school location is greater than 50 feet, or the school location information of this person is not applicable. |
| 6-Grocery shopping | d_name is related to a grocery store (e.g. Stop and Shop, Big Y), or d_name includes language like "grocery shopping" |
| 7-Do other shopping (e.g. mall, hardware store) | d_name is related to a store (e.g. Staples, Nordstrom Rack), or d_name includes language like "shopping" |
| 8-Run errands | d_name indicates bank visits, gas stop, mailing and picking up of items or related to pets (e.g. bank, post office, pick up cat). |
| 9-Go to restaurant/ bar/ take out | d_name is related to a restaurant or a coffee shop (e.g. Dunkin Donuts), or d_name includes language like "lunch", "dinner", "breakfast", or "eat". |
| 12-Family activity (e.g. child's game) | d_name is related to child's game or activity, and the person is not the child. |
| 14-Social (e.g. visit friends/relatives) | d_name implies social visits with other persons, family or friends regardless of the venue (e.g. visit a friend, father's home) |
| 18-Change travel mode (e.g. wait for bus, change planes) | • d_name implies that the trip is made for purpose of changing mode (e.g. train station, walk to bus stop, park & ride lot).<br>• Sometimes trip list of the entire household needs to be reviewed to confirm change mode trips. For example, when parents drop off/pick up their child at a bus stop, caution was exercised. If the mode of the subsequent trip did not change, but the traveler_total changed, the trip was likely made by the parent to drop off/pick up the child. In this case, the parent's trip needs to be recoded to 10-Drop off/pick up/accompany other person. On the other hand, if the mode of the subsequent trip changes, the trip was likely made by the child. In this case, the child's trip needs be recoded to 18-Change travel mode.<br>• In other instances, the reported trip mode is wrong and a potential change of mode may not be observed. In such instances, trip list of the person needs to be reviewed to confirm if the purpose is indeed for changing mode. For example, if a person went from parking lot to work and then went back to parking lot after work, it is highly likely that the trips made to and from parking lot are to change mode to car. |

| Recoded Value | Criterion for Cleaning |
|---|---|
| | • If the recoded purpose causes a fixed activity loop (e.g. home-change mode-home), then it should not be recoded. |

**Recode trips with destination purpose of 11-Exercise (e.g. gym, walk, jog /run)**

Specific Heuristics Applied to Recode the Values
Table below lists the heuristics applied to recode the values.

| Recoded Value | Criterion for Cleaning |
|---|---|
| 1-Go home | d_name implies the destination is home (e.g. went back home, work from home), and the distance from destination to home is within 50 feet. However, if the purpose of previous or subsequent trip is 1-Go home, the corresponding trip should not be recoded in order to avoid home to home loop. |
| 3-Go to other work-related place | • d_name specifies a destination separate from primary work location using language like "work related" or "for work" (e.g. off-site business meeting).<br>• d_name implies that the destination is the person's primary place of work or used similar expressive language (e.g. went back to work), but the distance from destination to the primary workplace is greater than 50 feet, or the workplace location information of this person is not applicable. |
| 7-Do other shopping (e.g. mall, hardware store) | d_name is related to a store (e.g. Staples, Nordstrom Rack), or d_name includes language like "shopping" |
| 8-Run errands | d_name indicates bank visits, gas stop, mailing and picking up of items or related to pets (e.g. bank, post office, pick up cat). |
| 9-Go to restaurant/ bar/ take out | d_name is related to a restaurant or a coffee shop (e.g. Dunkin Donuts), or d_name includes language like "lunch", "dinner", "breakfast", or "eat". |
| 10-Drop off/ pick up/ accompany other person | d_name includes language like "pick up", "drop off" or "accompany", and the person is not the one who got picked up or dropped off. |
| 13-Medical visit (e.g. doctor, dentist) | d_name implies a medical appointment (e.g. hospital, doctor's office) |
| 14-Social (e.g. visit friends/relatives) | d_name implies social visits with other persons, family or friends regardless of the venue (e.g. visit a friend, father's home) |
| 15-Leisure/ entertainment (e.g. movies) | d_name is related to things that were done for no other benefit than relaxation or fun (e.g. gallery, watch a show, park). |
| 18-Change travel mode (e.g. wait for bus, change planes) | • d_name implies that the trip is made for purpose of changing mode (e.g. train station, walk to bus stop, park & ride lot).<br>• Sometimes trip list of the entire household needs to be reviewed to confirm change mode trips. For example, when parents drop off/pick up their child at a bus stop, caution was exercised. If the mode of the subsequent trip did not change, but the traveler_total changed, the trip was likely made by the parent to drop off/pick up the child. In this case, the parent's trip needs to be recoded to 10-Drop off/pick up/accompany other person. On the other hand, if the mode of the subsequent trip changes, the trip was likely made by the child. In this case, the child's trip needs be recoded to 18-Change travel mode. |

| Recoded Value | Criterion for Cleaning |
|---|---|
| | • In other instances, the reported trip mode is wrong and a potential change of mode may not be observed. In such instances, trip list of the person needs to be reviewed to confirm if the purpose is indeed for changing mode. For example, if a person went from parking lot to work and then went back to parking lot after work, it is highly likely that the trips made to and from parking lot are to change mode to car. <br> • If the recoded purpose causes a fixed activity loop (e.g. home-change mode-home), then it should not be recoded. |

**Recode trips with destination purpose of 12-Family activity**

Overview of the Data Cleaning Task
• If d_name includes language like "child's soccer practice", "son's dance class", and the person is the parent who accompanied the child, the purpose was unchanged, because it looks appropriate, and there is no strong evidence to say that it is an accompany trip rather than a family activity.
• If d_name includes language like "child's soccer practice", "son's dance class", and the person is the parent. But the parent did not stay there, s/he just picked up or dropped off their child, the trip purpose of the parent was recoded to 10-Drop off/ pick up/ accompany other person. The corresponding trip purpose of the child was also recoded.

Specific Heuristics Applied to Recode the Values
Table below lists the heuristics applied to recode the values.

| Recoded Value | Criterion for Cleaning |
|---|---|
| 3-Go to other work-related place | • d_name specifies a destination separate from primary work location using language like "work related" or "for work" (e.g. off-site business meeting). <br> • d_name implies that the destination is the person's primary place of work or used similar expressive language (e.g. work), but the distance from destination to the primary workplace is greater than 50 feet, or the workplace location information of this person is not applicable. |
| 5-Other school-related activity | • d_name is linked with an educational institution, but not directly linked to an individual's education (e.g. piano lessons, after school program). <br> • d_name is linked with an educational institution (e.g. UConn), but the distance from destination to the person's school location is greater than 50 feet, or the school location information of this person is not applicable. |
| 8-Run errands | d_name indicates bank visits, gas stop, mailing and picking up of items or related to pets (e.g. bank, post office, pick up cat). |
| 10-Drop off/ pick up/ accompany other person | • d_name includes language like "pick up", "drop off" or "accompany". <br> • If d_name has key words like "child's school", "wife's work", and the trip duration is short (usually less than 30 minutes) and also traveler_total of the subsequent trip changes, then the trip is classified as a drop off/pick up other person trip. Sometimes, the traveler_total could be misreported. Therefore, trip list of entire household was reviewed to identify and confirm who got picked up or dropped off. <br> • If d_name indicates a visit for household members (e.g. "child's school"), but traveler_total does not change, checks were made to see if other household |

| Recoded Value | Criterion for Cleaning |
|---|---|
| | members also made the same trip. If so, the trip is classified as an accompany trip.<br>• If d_name indicates a visit for non-household members (e.g. grandchild's school), and the traveler_total indicates presence of a non-household member (traveler_total is greater than traveler_hh), the trip list of the person was reviewed to ensure that trips were made to accompany non-household members. For example, if d_name of a candidate trip is "sister's work". By reviewing the trip list of this person, if it was found that the person first went to sister's home and picked up the sister – also, confirmed through change of traveler_total. It is highly likely that the candidate trip with d_name of "sister's work" was made to accompany the sister. In this case, the purpose should be recoded to 10-drop off/pick up/accompany other person.<br>• For all the scenarios described above, it was ensured that the person is not the one who got picked up, dropped off or accompanied. For example "pick up child" could be the d_name for both the trip of the parent and the child due to the copy trip feature. However, the trip purpose for the parent is pick up whereas for the child, trip purpose should be some other valid value (e.g. school). |
| 11-Exercise (e.g. gym, walk, jog/run) | d_name indicates a physical activity (e.g. gym, walk, walk the dog) |
| 16-Religious/ civic/ volunteer | Trips that were made for religious purposes (e.g. church), civic obligations (e.g. vote, town hall), charity, group/club meetings, or volunteering. |
| 18-Change travel mode (e.g. wait for bus, change planes) | • d_name implies that the trip is made for purpose of changing mode (e.g. train station, walk to bus stop, park & ride lot).<br>• Sometimes trip list of the entire household needs to be reviewed to confirm change mode trips. For example, when parents drop off/pick up their child at a bus stop, caution was exercised. If the mode of the subsequent trip did not change, but the traveler_total changed, the trip was likely made by the parent to drop off/pick up the child. In this case, the parent's trip needs to be recoded to 10-Drop off/pick up/accompany other person. On the other hand, if the mode of the subsequent trip changes, the trip was likely made by the child. In this case, the child's trip needs be recoded to 18-Change travel mode.<br>• In other instances, the reported trip mode is wrong and a potential change of mode may not be observed. In such instances, trip list of the person needs to be reviewed to confirm if the purpose is indeed for changing mode. For example, if a person went from parking lot to work and then went back to parking lot after work, it is highly likely that the trips made to and from parking lot are to change mode to car.<br>• If the recoded purpose causes a fixed activity loop (e.g. home-change mode-home), then it should not be recoded. |

**Recode trips with destination purpose of 13-Medical visit**

Overview of the Data Cleaning Task
If d_name indicates a visit to pediatrics and there is an infant in the travel party, the trip purpose for the adults got recoded to 10-drop off/pick up/accompany other person, while the trip purpose of the infant remained as 13-Medical visit.

Specific Heuristics Applied to Recode the Values
Table below lists the heuristics applied to recode the values.

| Recoded Value | Criterion for Cleaning |
|---|---|
| 3-Go to other work-related place | • d_name specifies a destination separate from primary work location using language like "work related" or "for work" (e.g. off-site business meeting).<br>• d_name implies that the destination is the person's primary place of work or used similar expressive language (e.g. work), but the distance from destination to the primary workplace is greater than 50 feet, or the workplace location information of this person is not applicable. |
| 7-Do other shopping (e.g. mall, hardware store) | d_name is related to a store (e.g. Staples, Nordstrom Rack), or d_name includes language like "shopping" |
| 8-Run errands | d_name indicates bank visits, gas stop, mailing and picking up of items or related to pets (e.g. bank, post office, pick up cat). |
| 10-Drop off/ pick up/ accompany other person | • d_name includes language like "pick up", "drop off" or "accompany".<br>• If d_name has key words like "child's school", "wife's work", and the trip duration is short (usually less than 30 minutes)and also traveler_total of the subsequent trip changes, then the trip is classified as a drop off/pick up other person trip. Sometimes, the traveler_total could be misreported. Therefore, trip list of entire household was reviewed to identify and confirm who got picked up or dropped off.<br>• If d_name indicates a visit for household members (e.g. "child's school"), but traveler_total does not change, checks were made to see if other household members also made the same trip. If so, the trip is classified as an accompany trip.<br>• If d_name indicates a visit for non-household members (e.g. grandchild's school), and the traveler_total indicates presence of a non-household member (traveler_total is greater than traveler_hh), the trip list of the person was reviewed to ensure that trips were made to accompany non-household members. For example, if d_name of a candidate trip is "sister's work". By reviewing the trip list of this person, if it was found that the person first went to sister's home and picked up the sister – also, confirmed through change of traveler_total. It is highly likely that the candidate trip with d_name of "sister's work" was made to accompany the sister. In this case, the purpose should be recoded to 10-drop off/pick up/accompany other person.<br>• For all the scenarios described above, it was ensured that the person is not the one who got picked up, dropped off or accompanied. For example "pick up child" could be the d_name for both the trip of the parent and the child due to the copy trip feature. However, the trip purpose for the parent is pick up whereas for the child, trip purpose should be some other valid value (e.g. school). |
| 11-Exercise (e.g. gym, walk, jog/run) | d_name indicates a physical activity (e.g. gym, walk, walk the dog) |
| 14-Social (e.g. visit friends/relatives) | d_name implies social visits with other persons, family or friends regardless of the venue (e.g. visit a friend, father's home) |

| Recoded Value | Criterion for Cleaning |
|---|---|
| 18-Change travel mode (e.g. wait for bus, change planes) | • d_name implies that the trip is made for purpose of changing mode (e.g. train station, walk to bus stop, park & ride lot).<br>• Sometimes trip list of the entire household needs to be reviewed to confirm change mode trips. For example, when parents drop off/pick up their child at a bus stop, caution was exercised. If the mode of the subsequent trip did not change, but the traveler_total changed, the trip was likely made by the parent to drop off/pick up the child. In this case, the parent's trip needs to be recoded to 10-Drop off/pick up/accompany other person. On the other hand, if the mode of the subsequent trip changes, the trip was likely made by the child. In this case, the child's trip needs be recoded to 18-Change travel mode.<br>• In other instances, the reported trip mode is wrong and a potential change of mode may not be observed. In such instances, trip list of the person needs to be reviewed to confirm if the purpose is indeed for changing mode. For example, if a person went from parking lot to work and then went back to parking lot after work, it is highly likely that the trips made to and from parking lot are to change mode to car.<br>• If the recoded purpose causes a fixed activity loop (e.g. home-change mode-home), then it should not be recoded. |

**Recode trips with destination purpose of 14-Social (e.g. visit friends/relatives)**

Specific Heuristics Applied to Recode the Values
Table below lists the heuristics applied to recode the values.

| Recoded Value | Criterion for Cleaning |
|---|---|
| 1-Go home | d_name implies the destination is home (e.g. went back home, work from home), and the distance from destination to home is within 50 feet. However, if the purpose of previous or subsequent trip is 1-Go home, the corresponding trip should not be recoded in order to avoid home to home loop. |
| 3-Go to other work-related place | • d_name specifies a destination separate from primary work location using language like "work related" or "for work" (e.g. off-site business meeting).<br>• d_name implies that the destination is the person's primary place of work or used similar expressive language (e.g. went back to work), but the distance from destination to the primary workplace is greater than 50 feet, or the workplace location information of this person is not applicable. |
| 4-Attend school/class | d_name is linked with an educational institution (e.g. UConn), and the distance from destination to the person's school location is within 50 feet. However, if the purpose of previous or subsequent trip is 4-Attend school/class, the corresponding trip should not be recoded in order to avoid school to school loop. |
| 7-Do other shopping (e.g. mall, hardware store) | d_name is related to a store (e.g. Staples, Nordstrom Rack), or d_name includes language like "shopping" |
| 8-Run errands | d_name indicates bank visits, gas stop, mailing and picking up of items or related pets (e.g. bank, post office, pick up cat). |
| 10-Drop off/ pick up/ accompany other person | d_name includes language like "pick up", "drop off" or "accompany", and the person is not the one who got picked up or dropped off. |

| Recoded Value | Criterion for Cleaning |
| --- | --- |
| 11-Exercise (e.g. gym, walk, jog/run) | d_name indicates a physical activity (e.g. gym, walk, walk the dog). |
| 12-Family activity (e.g. child's game) | d_name indicates that completing trips together as a family (e.g. "child's art show", "daughter's softball game") |
| 13-Medical visit (e.g. doctor, dentist) | d_name implies a medical appointment (e.g. hospital, doctor's office) |
| 15-Leisure/ entertainment (e.g. movies) | d_name is related to trips that were done for no other benefit than relaxation or fun (e.g. gallery, watch a show, park). |
| 16-Religious/ civic/ volunteer | Trips that were made for religious purposes (e.g. church), civic obligations (e.g. vote, town hall), charity, group/club meetings, or volunteering, and the person is an adult. |
| 17-Vacation/ holiday/ traveling (e.g. hotel) | Trips that were made for vacation or traveling (e.g. hotel, on vacation) |
| 18-Change travel mode (e.g. wait for bus, change planes) | <ul><li>d_name implies that the trip is made for purpose of changing mode (e.g. train station, walk to bus stop, park & ride lot).</li><li>Sometimes trip list of the entire household needs to be reviewed to confirm change mode trips. For example, when parents drop off/pick up their child at a bus stop, caution was exercised. If the mode of the subsequent trip did not change, but the traveler_total changed, the trip was likely made by the parent to drop off/pick up the child. In this case, the parent's trip needs to be recoded to 10-Drop off/pick up/accompany other person. On the other hand, if the mode of the subsequent trip changes, the trip was likely made by the child. In this case, the child's trip needs be recoded to 18-Change travel mode.</li><li>In other instances, the reported trip mode is wrong and a potential change of mode may not be observed. In such instances, trip list of the person needs to be reviewed to confirm if the purpose is indeed for changing mode. For example, if a person went from parking lot to work and then went back to parking lot after work, it is highly likely that the trips made to and from parking lot are to change mode to car.</li><li>If the recoded purpose causes a fixed activity loop (e.g. home-change mode-home), then it should not be recoded.</li></ul> |

**Recode trips with destination purpose of 15-Leisure/entertainment**

Specific Heuristics Applied to Recode the Values
Table below lists the heuristics applied to recode the values.

| Recoded Value | Criterion for Cleaning |
| --- | --- |
| 1-Go home | d_name implies the destination is home (e.g. went back home, work from home), and the distance from destination to home is within 50 feet. However, if the purpose of previous or subsequent trip is 1-Go home, the corresponding trip should not be recoded in order to avoid home to home loop. |
| 3-Go to other work-related place | <ul><li>d_name specifies a destination separate from primary work location using language like "work related" or "for work" (e.g. off-site business meeting).</li></ul> |

| Recoded Value | Criterion for Cleaning |
|---|---|
| | • d_name implies that the destination is the person's primary place of work or used similar expressive language (e.g. went back to work), but the distance from destination to the primary workplace is greater than 50 feet, or the workplace location information of this person is not applicable. |
| 7-Do other shopping (e.g. mall, hardware store) | d_name is related to a store (e.g. convenience store, store). However, if d_name has keyword like "mall" or "shopping center", the purpose has not been recoded because there could be entertainment facilities there. |
| 8-Run errands | d_name indicates bank visits, gas stop, mailing and picking up of items or related to pets (e.g. bank, post office, pick up cat). |
| 10-Drop off/ pick up/ accompany other person | d_name includes language like "pick up", "drop off" or "accompany", and the person is not the one who got picked up or dropped off. |
| 11-Exercise (e.g. gym, walk, jog/run) | d_name indicates a physical activity (e.g. gym, walk, walk the dog). |
| 16-Religious/ civic/ volunteer | Trips that were made for religious purposes (e.g. church), civic obligations (e.g. vote, town hall), charity, group/club meetings, or volunteering, and the person is an adult. |
| 17-Vacation/ holiday/ traveling (e.g. hotel) | Trips that were made for vacation or traveling (e.g. hotel, on vacation) |
| 18-Change travel mode (e.g. wait for bus, change planes) | • d_name implies that the trip is made for purpose of changing mode (e.g. train station, walk to bus stop, park & ride lot).<br>• Sometimes trip list of the entire household needs to be reviewed to confirm change mode trips. For example, when parents drop off/pick up their child at a bus stop, caution was exercised. If the mode of the subsequent trip did not change, but the traveler_total changed, the trip was likely made by the parent to drop off/pick up the child. In this case, the parent's trip needs to be recoded to 10-Drop off/pick up/accompany other person. On the other hand, if the mode of the subsequent trip changes, the trip was likely made by the child. In this case, the child's trip needs be recoded to 18-Change travel mode.<br>• In other instances, the reported trip mode is wrong and a potential change of mode may not be observed. In such instances, trip list of the person needs to be reviewed to confirm if the purpose is indeed for changing mode. For example, if a person went from parking lot to work and then went back to parking lot after work, it is highly likely that the trips made to and from parking lot are to change mode to car.<br>• If the recoded purpose causes a fixed activity loop (e.g. home-change mode-home), then it should not be recoded. |

**Recode trips with destination purpose of 16-Religious/civic/volunteer**

Overview of the Data Cleaning Task
• Trips made to library, school were not recoded because people could do volunteer related activity at library or school.

Specific Heuristics Applied to Recode the Values
Table below lists the heuristics applied to recode the values.

| Recoded Value | Criterion for Cleaning |
|---|---|
| 6-Grocery shopping | d_name is related to a grocery store (e.g. Stop and Shop, Big Y), or d_name includes language like "grocery shopping" |
| 7-Do other shopping (e.g. mall, hardware store) | d_name is related to a store (e.g. Staples, Nordstrom Rack), or d_name includes language like "shopping" |
| 8-Run errands | d_name indicates bank visits, gas stop, mailing and picking up of items or related to pets (e.g. bank, post office, pick up cat). |
| 9-Go to restaurant/ bar/ take out | d_name is related to a restaurant or a coffee shop (e.g. Dunkin Donuts), or d_name includes language like "lunch", "dinner", "breakfast", or "eat". |
| 10-Drop off/ pick up/ accompany other person | d_name includes language like "pick up", "drop off" or "accompany", and the person is not the one who got picked up or dropped off. |
| 11-Exercise (e.g. gym, walk, jog/run) | d_name indicates a physical activity (e.g. gym, walk, walk the dog). |
| 13-Medical visit (e.g. doctor, dentist) | d_name implies a medical appointment (e.g. hospital, doctor's office) |
| 14-Social (e.g. visit friends/relatives) | d_name implies social visits with other persons, family or friends regardless of the venue (e.g. visit a friend, father's home) |
| 15-Leisure/ entertainment (e.g. movies) | d_name is related to things that were purely voluntary with the caveat that they were done for no other benefit than relaxation or fun (e.g. gallery, watch a show, park). |
| 18-Change travel mode (e.g. wait for bus, change planes) | • d_name implies that the trip is made for purpose of changing mode (e.g. train station, walk to bus stop, park & ride lot).<br>• Sometimes trip list of the entire household needs to be reviewed to confirm change mode trips. For example, when parents drop off/pick up their child at a bus stop, caution was exercised. If the mode of the subsequent trip did not change, but the traveler_total changed, the trip was likely made by the parent to drop off/pick up the child. In this case, the parent's trip needs to be recoded to 10-Drop off/pick up/accompany other person. On the other hand, if the mode of the subsequent trip changes, the trip was likely made by the child. In this case, the child's trip needs be recoded to 18-Change travel mode.<br>• In other instances, the reported trip mode is wrong and a potential change of mode may not be observed. In such instances, trip list of the person needs to be reviewed to confirm if the purpose is indeed for changing mode. For example, if a person went from parking lot to work and then went back to parking lot after work, it is highly likely that the trips made to and from parking lot are to change mode to car.<br>• If the recoded purpose causes a fixed activity loop (e.g. home-change mode-home), then it should not be recoded. |

**Recode trips with destination purpose of 17-Vacation/holiday/travelling (e.g. hotel)**

Specific Heuristics Applied to Recode the Values
Table below lists the heuristics applied to recode the values.

| Recoded Value | Criterion for Cleaning |
|---|---|
| 8-Run errands | d_name indicates bank visits, gas stop, mailing and picking up of items or related to pets (e.g. bank, get gas, pick up cat). |
| 9-Go to restaurant/ bar/ take out | d_name is related to a restaurant or a coffee shop (e.g. Dunkin Donuts), or d_name includes language like "lunch", "dinner", "breakfast", or "eat". |
| 10-Drop off/ pick up/ accompany other person | • d_name includes language like "pick up", "drop off" or "accompany".<br>• If d_name has key words like "child's school", "wife's work", and the trip duration is short (usually less than 30 minutes) and also traveler_total of the subsequent trip changes, then the trip is classified as a drop off/pick up other person trip. Sometimes, the traveler_total could be misreported. Therefore, trip list of entire household was reviewed to identify and confirm who got picked up or dropped off.<br>• If d_name indicates a visit for household members (e.g. "child's school"), but traveler_total does not change, checks were made to see if other household members also made the same trip. If so, the trip is classified as an accompany trip.<br>• If d_name indicates a visit for non-household members (e.g. grandchild's school), and the traveler_total indicates presence of a non-household member (traveler_total is greater than traveler_hh), the trip list of the person was reviewed to ensure that trips were made to accompany non-household members. For example, if d_name of a candidate trip is "sister's work". By reviewing the trip list of this person, if it was found that the person first went to sister's home and picked up the sister – also, confirmed through change of traveler_total. It is highly likely that the candidate trip with d_name of "sister's work" was made to accompany the sister. In this case, the purpose should be recoded to 10-drop off/pick up/accompany other person.<br>• For all the scenarios described above, it was ensured that the person is not the one who got picked up, dropped off or accompanied. For example "pick up child" could be the d_name for both the trip of the parent and the child due to the copy trip feature. However, the trip purpose for the parent is pick up whereas for the child, trip purpose should be some other valid value (e.g. school). |
| 15-Leisure/ entertainment (e.g. movies) | d_name is related to things that were done for no other benefit than relaxation or fun (e.g. gallery, watch a show, park, library) |
| 20-Go to airport/switch airport | • d_name implies that the trip is made to the airport to catch a flight. For example, a person drove to airport, and then took flight to Florida, the trip to the airport is recoded to 20-Go to airport/switch airport.<br>• d_name implies that the trip is part of a multi stop flight travel. For example, a person took flight to airport A and then took another flight to airport B. In this case, both trips are recoded to 20-Go to airport/switch airport.<br>• d_name implies that the person took flight to airport. For example, a person took flight to airport and then drove home. In this case, the trip to airport is recoded to 20-Go to airport/switch airport.<br>• Sometimes people went to airport to pick up or drop off other persons, so if the mode of current trip or subsequent trip is not 17-Airplane/helicopter, and |

| Recoded Value | Criterion for Cleaning |
|---|---|
| | the traveler_total of subsequent trip changes, the trip was more likely made for dropping off/picking up the other person at the airport. |
| 97-Other | d_name implies that the trip purpose is not for vacation/holiday/travelling (grandchild's home to babysit) and the purpose does not fall into any of the 20 categories. |

**Recode trips with destination purpose of 18 change travel mode (e.g. wait for bus, change planes)**

Specific Heuristics Applied to Recode the Values
Table below lists the heuristics applied to recode the values.

| Recoded Value | Criterion for Cleaning |
|---|---|
| 7-Do other shopping (e.g. mall, hardware store) | d_name is related to a store (e.g. Staples, Nordstrom Rack), or d_name includes language like "shopping" |
| 10-Drop off/ pick up/ accompany other person | d_name includes language like "pick up", "drop off" or "accompany", and the person is not the one who got picked up or dropped off. |

**Recode trips with destination purpose of 97-Other**

Overview of the Data Cleaning Task
- If d_name only has the name of the school or institution but no other information provided, and the destination is not within 50 feet to one's reported school location, the trip was not recoded because it is hard to confirm the purpose of the trip.
- If d_name only has the name of a hospital but no other information provided, the trip was not recoded because it is hard to tell if the purpose is for medical visit or for visiting someone at hospital.
- If d_name only indicates someone's home but no other information is provided, it was recoded to 14-Social. Sometimes people provided additional descriptions such as "walk the dog for friend". In such cases, the trip was recoded to corresponding purpose instead of 14-Social.

Specific Heuristics Applied to Recode the Values
Table below lists the heuristics applied to recode the values.

| Recoded Value | Criterion for Cleaning |
|---|---|
| 1-Go home | d_name implies the destination is home (e.g. went back home, work from home), and the distance from destination to home is within 50 feet. However, if the purpose of previous or subsequent trip is 1-Go home, the corresponding trip should not be recoded in order to avoid home to home loop. |
| 2-Go to primary workplace | d_name implies that the destination is one's primary place of work or used similar expressive language (e.g. went back to work), and the distance from destination to the primary workplace is within 50 feet. However, if the purpose of previous or subsequent trip is 2-Go to primary workplace, the corresponding trip should not be recoded in order to avoid work to work loop. |
| 3-Go to other work-related place | <ul><li>d_name specifies a destination separate from primary work location using language like "work related" or "for work" (e.g. off-site business meeting, job interview).</li></ul> |

| Recoded Value | Criterion for Cleaning |
|---|---|
| | • d_name implies that the destination is the person's primary place of work or used similar expressive language (e.g. work), but the distance from destination to the primary workplace is greater than 50 feet, or the workplace location information of this person is not applicable. |
| 4-Attend school/class | d_name is linked with an educational institution (e.g. UConn, daycare), and the distance from destination to the person's school location is within 50 feet. However, if the purpose of previous or subsequent trip is 4-Attend school/class, the corresponding trip should not be recoded in order to avoid school to school loop. |
| 5-Other school-related activity | • d_name is linked with an educational institution, but not directly linked to an individual's education (e.g. piano lessons, after school program). <br> • d_name is linked with an educational institution (e.g. UConn), but the distance from destination to the person's school location is greater than 50 feet, or the school location information of this person is not applicable. |
| 6-Grocery shopping | d_name is related to a grocery store (e.g. Stop and Shop, Big Y), or d_name includes language like "grocery shopping". |
| 7-Do other shopping (e.g. mall, hardware store) | d_name is related to a store (e.g. Staples, Nordstrom Rack), or d_name includes language like "shopping". |
| 8-Run errands | d_name indicates bank visits, gas stop, mailing and picking up of items or related to pets (e.g. bank, post office, pick up cat). |
| 9-Go to restaurant/ bar/ take out | If d_name is related to a restaurant or a coffee shop (e.g. Dunkin Donuts), or d_name includes language like "lunch", "dinner", "breakfast", or "eat". |
| 10-Drop off/ pick up/ accompany other person | • d_name includes language like "pick up", "drop off" or "accompany". <br> • If d_name has key words like "child's school", "wife's work", and the trip duration is short (usually less than 30 minutes) and also traveler_total of the subsequent trip changes, then the trip is classified as a drop off/pick up other person trip. Sometimes, the traveler_total could be misreported. Therefore, trip list of entire household was reviewed to identify and confirm who got picked up or dropped off. <br> • If d_name indicates a visit for household members (e.g. "child's school"), but traveler_total does not change, checks were made to see if other household members also made the same trip. If so, the trip is classified as an accompany trip. <br> • If d_name indicates a visit for non-household members (e.g. grandchild's school), and the traveler_total indicates presence of a non-household member (traveler_total is greater than traveler_hh), the trip list of the person was reviewed to ensure that trips were made to accompany non-household members. For example, if d_name of a candidate trip is "sister's work". By reviewing the trip list of this person, if it was found that the person first went to sister's home and picked up the sister – also, confirmed through change of traveler_total. It is highly likely that the candidate trip with d_name of "sister's work" was made to accompany the sister. In this case, the purpose should be recoded to 10-drop off/pick up/accompany other person. <br> • For all the scenarios described above, it was ensured that the person is not the one who got picked up, dropped off or accompanied. For example "pick up |

| Recoded Value | Criterion for Cleaning |
|---|---|
| | child" could be the d_name for both the trip of the parent and the child due to the copy trip feature. However, the trip purpose for the parent is pick up whereas for the child, trip purpose should be some other valid value (e.g. school). |
| 11-Exercise (e.g. gym, walk, jog/run) | d_name indicates a physical activity (e.g. gym, walk, walk the dog) |
| 12-Family activity (e.g. child's game) | d_name indicates taking trips together as a family (e.g. "child's art show", "daughter's softball game") |
| 13-Medical visit (e.g. doctor, dentist) | d_name implies a medical appointment (e.g. hospital, doctor's office) |
| 14-Social (e.g. visit friends/relatives) | d_name implies social visits with other persons, family or friends regardless of the venue (e.g. visit a friend, father's home) |
| 15-Leisure/ entertainment (e.g. movies) | d_name is related to things that were done for no other benefit than relaxation or fun (e.g. gallery, watch a show, park, library). |
| 16-Religious/ civic/ volunteer | Trips that were made for religious purposes (e.g. church), civic obligations (e.g. vote, town hall), charity, group/club meetings, or volunteering. |
| 17-Vacation/ holiday/ traveling (e.g. hotel) | Trips that were made for vacation or traveling (e.g. hotel, on vacation) |
| 18-Change travel mode (e.g. wait for bus, change planes) | <ul><li>d_name implies that the trip is made for purpose of changing mode (e.g. train station, walk to bus stop, park & ride lot).</li><li>Sometimes trip list of the entire household needs to be reviewed to confirm change mode trips. For example, when parents drop off/pick up their child at a bus stop, caution was exercised. If the mode of the subsequent trip did not change, but the traveler_total changed, the trip was likely made by the parent to drop off/pick up the child. In this case, the parent's trip needs to be recoded to 10-Drop off/pick up/accompany other person. On the other hand, if the mode of the subsequent trip changes, the trip was likely made by the child. In this case, the child's trip needs be recoded to 18-Change travel mode.</li><li>In other instances, the reported trip mode is wrong and a potential change of mode may not be observed. In such instances, trip list of the person needs to be reviewed to confirm if the purpose is indeed for changing mode. For example, if a person went from parking lot to work and then went back to parking lot after work, it is highly likely that the trips made to and from parking lot are to change mode to car.</li><li>If the recoded purpose causes a fixed activity loop (e.g. home-change mode-home), then it should not be recoded.</li></ul> |