

```

1
2 #ifndef dataManager_h
3 #define dataManager_h
4
5 #include <stdio.h>
6 #include <stdlib.h>
7 #include <time.h>
8 #include <stdbool.h>
9 #include <string.h>
10
11 // CONSTANTS
12 #define MAX_SIZE 100 // max size of a string
13 #define REGISTERED 1 // the registered member
14 #define CASUAL 0 // the casual user
15 #define MALE 1 // the male gender
16 #define FEMALE 2 // the female gender
17 #define EXISTING 1
18 #define REMOVED 0
19
20 //ALL THE STRUCT
21
22 // define a type of date
23 typedef struct{
24     int month;
25     int day;
26     int year;
27     int hour;
28     int minute;
29 }Date;
30
31 // Linked List of Trips
32 typedef struct Trip{
33     long int id;
34     int duration; // in seconds
35     Date start;
36     int id_start_station;
37     Date end;
38     int id_final_station;
39     char bike[7];
40     int type; // the user can be casual or members
41     int year_birthday; // only in case of members
42     int gender; // female or man only in case of members
43     struct Trip *next;
44 }Trip;
45
46 // Linked List of Stations
47 typedef struct Station{
48     int id;
49     char name[7];
50     char full_name[MAX_SIZE];
51     char municipal[MAX_SIZE];
52     double latitude;
53     double longitude;
54     int status; // existing or removed
55     int max_bikesIn;
56     int min_bikesIn;
57     int max_bikesOut;
58     int min_bikesOut;
59     float avg_bikesIn;
60     float avg_bikesOut;
61     struct Station *next;
62 }Station;
63
64 // LinkedList of Routes
65 typedef struct Route{
66     int total;

```

```

67     int id_start_station;
68     char name_start_station[7];
69     char id_final_station;
70     char name_final_station[7];
71     struct Route *next;
72 }Route;
73
74 // FUNCTIONS
75
76 // file readers
77 Station * readStationData(char*);
78 Trip * readTripsData(char*);
79
80 // list creators
81 Route * createRoutesList(Trip*, Station*, int);
82 Station * countBikes(Trip*, Station*, int, int);
83
84 // list filters
85 Trip* selectTripsByTime(Trip*, int, int);
86 Trip* selectTripsByDuration(Trip*, int);
87 Trip* selectTripsByDay(Trip*, int);
88 Trip* selectTripsByIdStation(Trip*, int);
89
90 // helpers
91 Trip* copyTripToList(Trip*, Trip*);
92 int calculateWeekDateFromDate(int, int, int);
93 void sortedInsert(Route**, Route*);
94 char * getStationNameById(int, Station*);
95
96 #endif /* dataManager_h */

```