

Functions Mapping:

For all these functions the input which needs to be given will be shown in the CLI screen when the function is called and the format will also be mentioned.

1. AddLot (...) : This function should take permit identifier and address of lot, number of spaces in lot, beginning space number, initial zone designation (single zone initially).

Function: `def addLot(self, lot_name, lot_addr, total_spaces, init_space_num, init_zone_desgn)`

Menu Option: 1. Add Lot

2. AssignZoneToLot (...): Assigns Zone to a given Lot Name

Function: `def assignZoneToLot(self, lot_name, zone)`

Menu Option: 2. Assign Zone to Lot

3. AssignTypeToSpace (.....): Assigns a new type to a given Lot as per available spaces

Function: `def assignTypeToSpace(self, lot_name,type_to_add)`

Menu Option: 3. Assign Type to Space

4. AssignPermit (univid, type, zone,) : assigns a permit to user with univid for parking zone given in input and type (default is used if no input is given). Things like expiration etc are computed based on the description given earlier.

****Before running this function, make sure that the we have a valid user maintained in the nvuser table and his corresponding car details are maintained in vehicles table.**

Function: `def assignPermit(self,university_id, type, zone)`

Menu Option: 4. Assign Permit

5. CheckVValidParking (CurrentTime, Date,Space#, Lot, License#) : checks if car has valid permit in visitors lot.

Function:

`checkVisitorValidParking(self,current_time,current_date,space_number,car_license_plate,lot_name,)`

Menu Option: 5. Check Visitor Valid Parking

6. CheckNVValidParking(...): checks valid parking in nonvisitor parking lot

Function: `def checkNonVisitorValidParking(self,current_date, current_time, zone, car_license_plate,lot_name)`

Menu Option: 6. Check Non Visitor Valid Parking

7. GetVisitorPermit (Lot, duration, time beginning, type = default is standard, ...): Gives Permit to a Visitor.

Function: def getVisitorPermit(self, lot_name, duration, type, car_license_plate, car_year, car_model, car_color, car_manf, mobile_num)

Menu Option: 21. Get Visitor Permit

8. ExitLot() : takes a permit number as input makes the status of a visitor space available and computes any time overages for the reservation (in the case that a visitor overstayed their booked amount of time). This can just be recorded as a time overage for the permit.

Function: def exitLot(self, permit_id)

Menu Option: 22. Exit Lot

9. ChangeVehicleList() : this is to allow university users (employees) modify the vehicles on their permit. They may remove or add vehicles. However, note the students can only have one vehicle on a permit at a time, employees up to 5. The input to this should be the permit number and univid (use for verifying if the correct user is making the modification).

Functions: def changeVehicleList(self, permit_id, university_id, add_car)

Menu Option: 19. Change Vehicle List of Employee/Student

10. IssueCitation ()

Function: def issueCitation(self, non_visitor_flag, violation_category, car_license_plate, lot_name=None)

Menu Option: 7. Issue Citation

11. PayCitation ()

Function: def payCitation(self, citation_number)

Menu Option: 20. Pay Citation

12. Show the list of zones for each lot as tuple pairs (lot, zone)

Functions: def getZonesForLot(self, lot_name=None)

Menu Option: 12. Get Zones to Lot

13. Get permit information for a given employee

Function: def getPermitInfo(self, university_id)

Menu Option: 10. Get Permit Information for Employee

14. Get vehicle information for a particular univid

Function: def getVehicleInfo(self, university_id)

Menu Option: 8. Get Vehicle Information for Employee

15. Find an available space# for an electric vehicle in a specific parking lot

Function: def getSpaceNumberForVisitor(self,lot_name, type)
Menu Option: 11. Get Space Number for Visitor

16. Find any cars that are currently in violation

Function: def carsInViolation(self)
Menu Option: 13. Get Cars in Violation

17. How many employees have permits for Zone

Function: def getEmployeePermitsPerZone(self,zone_id)
Menu Option: 17. Get Employee Permits per Zone

18. For each lot, generate the total number of citations given in all zones in the lot for a three-month period.

Function: def getCitationsPerLot(self, start_date, end_date)
Menu Option: 14. Get Citation Per Lot

19. For lotX, generate the number of visitor permits in a date range, grouped by permit type e.g. regular, electric, handicapped.

Function: def getVisitorNumberPerLot(self,lot_name,start_date, expiry_date)
Menu Option: 18. Get Visitor Number per Lot

20. For each visitor's parking zone, show the total amount of revenue generated (including pending citation fines) for each day in some given month and year.

Function: def getVisitorRevenuePerZone(self, month, year)
Menu Option: 15. Get Visitor Revenue Per Zone