

Assignment 01 – Object Oriented Programming with Java

- Goal: Create a car park management application to manage car parking areas in University of Colombo premises.
- Business Requirements:
 - Application should be able to manage car parking slots in every institute of university of Colombo.
 - Parking slots are logically divided into different parking areas in each institute/faculty premises. Parking slot should have a unique id, GPS coordinates string and an indicator to identify if slot is available or already occupied. There are three main types of parking slots. Standard, Handicapped and Long Vehicles. Length and width of long vehicle parking slots need to be maintained in the system. Nearest building name should be maintained under handicapped parking slots.
 - Each parking area belongs to a specific faculty or institute of University of Colombo. A unique id, GPS coordinates string of entrance, GPS coordinates string of exit and an indicator to identify if parking area is full or not should be maintained. Assume each parking area has only one entrance and exit.
 - When a driver enters to a parking area, driver's vehicle number, mobile number and university id (staff id or student id) will be collected by the staff.
 - User should be able to view/list available parking areas and parking slots. Any special slots should be displayed along with the parking slot id.
 - A parking slot from the parking area will be assigned (check in) to the entering vehicle upon arrival and the slot will be released (check out) upon exit.
- Technical Requirements:
 - Identify classes and objects need to be created to implement this application.
 - Identify class relationships.
 - Implement an application in Java language to cater above business requirement. No need to implement database connections etc. Application should have the capability to insert and retrieve related data which are saved in the data structures (i.e. ArrayList) and perform the system actions (check-in, check-out) on top of those data.
 - Minimum requirement is to implement a Java console application to read data using standard input and print the outputs to console.
- Group
 - Each group has 3 members
 - Team leader must create a git repository in github and grant permission to other team members. All coding changes must be visible in git repository. Each significant feature/code segment (not each line) should be committed to the repository with a proper commit message.

- Evaluation
 - Points will be granted for the completeness, accuracy and quality of the solution including clean code and proper comments.
 - Usage of Git tool for source code management.
 - 5 mins demonstration session.
 - Additional points can be earned by implementing any extended features 😊.
i.e. – GUI using JavaFX, DB connections. (Not mandatory)

Happy coding!