OOPD Assignment
Problem Bank 04

- **Objective of the assignment:**

  The assignment aims to provide deeper understanding of Java Programming Language and principles of software design using Java Programming language.

- **Submission :**

  Please submit your assignment as a single folder containing:

1. **Statement.docx:** Clearly write the problem statement as a project proposal with as much detail as you can. It should contain the problem statement, and any explanations. Feel free to make assumptions. This file should also contain the contribution made by the student.
   Contribution table should contain the list of all the students in the group. Clearly mention each student's contribution towards the assignment. Mention "No Contribution" in cases applicable.

Group Number =			
Sl. No.	Name (as appears in Canvas)	ID NO	Contribution

2. **Design.docx:** Your system design diagram
3. **Test case file**: Must include all test files.
4. **Code folder:** All Java source code. If your application needs a GUI, you must include all front-end files with clear instructions about how to run. However, there are no extra points for developing a front-end.
5. **Readme.txt**: Group information, assumptions made, instructions to run your code and any other important information. Also this document should contain all the details about the Java version and packages used etc. Add a paragraph about how your system development adopted the quality measures during your software development life cycle.
6. **Database.txt**: It is not expected that you should use any specific database technology to store your data. You provide your data as a .txt or .csv or .xls file format.

You will have to create a Zip folder containing all the above files and the name of the Zip file should be GROUP-NUMBER.Zip For Example, if your group number is 1, then the file name should be GROUP-1.Zip

Submit the assignment by **25th Aug 2022, through canvas only**. File submitted by any means outside CANVAS will not be accepted and marked.

Caution!!!

Assignments are designed for individual groups which may look similar and you may not notice minor changes in the assignments. Hence, refrain from copying or sharing documents with others. Any evidence of such practice will attract severe penalty.

Evaluation:

- The assignment carries 20 marks (Part I 10 Marks and Part II 10 Marks)
- Grading will depend on
  - Contribution of each student in the implementation of the assignment
  - **Plagiarism or copying will result in -10 marks**

Instructions

1. Code must be annotated in clear English sentences.
2. Clearly write functions prototypes. Messy code gets a straight zero.
3. Methods should read input from the file and write output to the files, wherever necessary.
4. Implement all classes and methods in Java.
5. Indicate group member name against each of the function implemented.
6. Follow coding standards while writing your code
7. All assumptions made must be clearly mentioned in the Readme.txt file
8. Mention all memory optimization aspects you might have followed.
9. Apply relevant OO concepts as much as possible in your design and code to achieve high scores.

Problem Statement

Create an application for Super cab system. (Super cabs run similar to UBER). Any licensed driver who is driving in a particular city for atleast 10 years with a car with minimum 4 guest-seating capacity is eligible to be subscribed to Super cabs. Your Super Cab system assigns a car to a guest by checking the geographical location proximity of the guest to the car location. A geographical location is defined by latitude and longitude. The cab system only can ping a cab driver. It is upto the cab driver to accept the booking. When a nearby driver refuses a ride, cab system must search for other cab drivers nearby.

Cab charges are as follows:

Distance	charge	Super cabs cut	Heavy Traffic
Minimum (2 miles)	100 Rs	15%	10 Rs / Every 5 min waiting
Upto 10 miles	100 for first two miles + 50 Rs /every half a mile (up to 10 miles)	25%	(i) 10Rs for the first 15 minutes (ii) 15 Rs/every 5 min waiting after initial 15 min
Upto 15 miles	100 for first two miles + 50 Rs /every half a mile (up to 10 miles) + 75 Rs / every half mile there after	35%	I) 10Rs for the first 15 minutes ii) 15 Rs/every 5 min waiting after initial 15 min

Part-I: : Develop Requirements, design diagrams for the cab system

Part-II: Create at least 6 user stories for various types of guests booking through your super cabs app for reaching various locations