
Project Component
Course: Object Oriented Programming (CS F213)
24th March, 2024
Course IC : Prof. Anita Agrawal

Question: Bus/Taxi Booking System

Design and develop an application for booking buses and taxis. The application must handle the following functionalities:

Maintain a repository of bus and taxi information, comprising a minimum of 10 fields such as bus company name, bus number, source, etc.

Reserve seats based on the source, destination, time(for taxi), seat availability(for bus) of the required bus/ taxi service.

Enable users to create new accounts, log in to existing accounts, make bookings from their accounts, and delete accounts.

These basic minimum features are essential, but to establish a comprehensive system, additional functionalities may need to be incorporated.

The entire system has to be designed using OOP concepts:

Minimum 6 classes are required to accommodate all the requirements specified in the design problem. Additionally it should include the following:

- (I) Overloaded methods (minimum 2)
- (II) Overloaded constructors (minimum 2)
- (III) Vararg overloading (minimum 2)
- (IV) Nested classes (static or nonstatic, atleast 1, this is a part of I above)
- (V) Abstract class (minimum 1)
- (VI) Interface (minimum 1, it can be nested interface or single level or multiple inheritance)
- (VII) Hierarchical Inheritance (atleast 1)
- (VIII) Multiple Inheritance (atleast 1, this should be in addition to VI above)
- (IX) Wrappers
- (X) Package
- (XI) Exception handling (atleast two cases)
- (XII) I/O: File Handling, scanner class etc. (atleast one from each of these)
- (XIII) Multithreading (by either Implementing the Runnable interface or extending the thread class)

These are the minimum requirements, but you have the freedom to incorporate a greater number of each as needed.

Note: The names of variables, methods and classes should be lexically rational and should be accompanied with their description in the comments alongside. It goes without saying that the code should be well indented and should compile and run error free. However, do remember that a non-running code is better than a plagiarized one, and hence the latter one will be penalised heavily if it exceeds 10-15% (may result in recession of this component).

Draw the UML diagram for the above system.

Your submission folder should include:

- (1) Word doc which explains your project thoroughly along with the UML diagram.
 - (2) The actual UML diagram
 - (3) Code appended to the above word doc.
 - (4) .java files
 - (5) PPT.
 - (6) Rubrics of the usage of all of the above (I to XIII) . Make a table and list the above components and mention how many have you used in each of the category.
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