



University of Central Punjab

## **Faculty of Information Technology**

### **Object Oriented Programming**

#### **Lab 8**

##### **Instructions:**

- Indent your code.
- Comment your code.
- Use meaningful variable names.
- Plan your code carefully on a piece of paper before you implement it.
- Name of the program should be the same as the task name. i.e. the first program should be Task\_1.cpp

**Students are required to complete the following tasks in lab timings.**

# TASK 1

In this lab task you are going to create three classes

1. driver
2. rider
3. ride

Create a class **driver** with the following data members and methods:

## Data members:

- driver's name (string)
- driver's contact Number (string)
- driver's address (string)
- driver's CNIC (string)
- trips completed (int)
- driver's rating (float)

## Methods:

- default parametrized constructor (by default: store 0 in all numerical and NULL in all string variables)
- setter and constant getter functions for each data member.
- constant members function Driver's info. This function should display all the info related to driver.

Create a class **rider** with the following data members and methods:

## Data members:

- rider's name (string)
- rider's contact (string)
- rider's rating (float)
- trips cancelled (int)

### Methods:

- default parameterized constructor (by default: store 0 in all numerical and NULL in all string variables)
- setter and constant getter functions for each data member.
- constant member function Rider's info. This function should display all the info related to rider.

Create a class **ride** with the following data members and methods:

### Data members:

- an object of driver
- an object of rider
- pickup location (string)
- destination (string)
- vehicle number (string)
- tracking id (int)
- category (string, provided below)
- base fare (float)
- per km charges (float, provided below)
- per min charges (float, provided below)
- promo code (string)
- discount (float)
- start time (preferably string that stores the time in 24hr clock e.g 1620 for 4:20PM)
- arrival time (preferably string that stores the time in 24hr clock e.g 1658 for 4:58PM)

### Methods:

- default parameterized constructor (by default: by default: store 0 in all numerical and NULL in all string variables)
- setter functions for each data member including data members of driver and rider class.
- constant getter function calculateBill.
  - if the promo code provided by the user matches with the string "pk8976" than provide 25% discount.
  - calculate the total time of journey by subtracting ending time from start time. since their data types are string so use function stoi to convert these string values into integers. if stoi function is not working in your compiler than execute your code on onlinegdb compiler.
- constant member function showTrip info which display all the trip related info e.g.,
  - total fare:
  - fare of distance:
  - fare of time:
  - discount
  - This function should also call the member functions of driver and rider info to display their data.

## Description of fares on different

### categories: Bike:

- base fare: 60
- per minute charges: 3.67
- per km charges: 6.17

### Auto:

- Base Fare: Rs. 50.71
- Per KM: Rs.12.09
- Per Minute: Rs. 2.79

### Mini:

- Base Fare: Rs. 65
- Per KM: Rs. 8.13
- Per Minute: Rs. 3.63

### Go:

- Base Fare: Rs. 80
- Per KM: Rs. 10.16
- Per Minute: Rs. 4.54

### UberX:

- Base Fare: Rs. 100
- Per KM: Rs. 15.16
- Per Minute: Rs. 8.54

