**Lab Task –Composition**

1. Create an Employee class with following attributes:
   * Data Members: firstNAme(String) , lastName(String), birthDate(Date), hireDate(Date)
   * Create three constructors (default, argument and copy) , set , get , display and equals method.
   * Write a function in **Employee** class to check if an Employee is experienced. An employee is considered experienced if he has served for more than 5 years.
2. Create a class **Job** with following attributes:
   * Data Members: Designation, Salary, Id
   * Create constructors and setters and getters for all

Modify the Employee class and add a Job Object as data member.

Modify the constructors and display function of Employee class accordingly

Create a new method in **Employee** class that checks if Salary of the Employee is greater than 50,000.

1. Create a class Address with following Data members:
   * home;
   * street;
   * city;

Create three constructors (default, argument and copy) , set and get methods.

Now create a class Person which contain “has-a” relation with Address class. It has data members : firstName and LastName.

Create constructors, set get methods and display function in Person Class.

Create a function in **Person** class that returns true if he lives in “Islamabad” and false otherwise.

1. Create another class Book that contains an author of type Person. Other data members are bookName and publisher. Give constructors and a display function that prints all details of Book.

Write a function in **Book** class that checks if the street number is less than 10. Return true or false.

Test class Book in main. Modify the address of the author in runner class.

1. Create a class Geometric collection.
   * Create arrays of circle and rectangle of length 10 as data members.
   * Create default and argument constructor
   * Create display function
   * Create method to find area of Geometric collection
2. Create a class named Pizza that stores information about a single pizza. It should contain the following:

* Private instance variables to store the size of the pizza (either small, medium, or large), the number of cheese toppings, the number of pepperoni toppings, and the number of ham toppings.
* Constructor(s) that set all of the instance variables.
* Public methods to get and set the instance variables.
* A public method named calcCost( ) that returns a double that is the cost of the pizza.

Pizza cost is determined by:

Small: $10 + $2 per topping

Medium: $12 + $2 per topping

Large: $14 + $2 per topping

• A public method named getDescription( ) that returns a String containing the pizza size, quantity of each topping.

Now Create a PizzaOrder class that allows up to three pizzas to be saved in an order. Each pizza saved should be a Pizza object. In addition to appropriate instance variables and constructors (one, two and three argument). Add the following methods:

* public void setPizza1(Pizza pizza1) —sets the first pizza in the order.

• public void setPizza2(Pizza pizza2) —sets the second pizza in the order.

• public void setPizza3(Pizza pizza3) —sets the third pizza in the order.

• public double calcTotal() —returns the total cost of the order.

In the runner order two pizzas and return the total cost.