**Course: Object Oriented Programming**

**Lab 06**

**Composition**

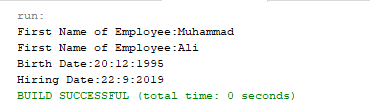
**Task 1**:

Make a class **Date** with three attributes, day, month and year. All attribute are private. In constructor, you have to validate day. If day is out of range, you have to print a message, “Invalid Date”. Suppose all months have 30 days.

Make a class **Employee** that has four instance variable firstName, lastName, birthdate and hiringDate. firstNmae and lastName are reference to String object while birthdate and hiringDate are references to Date object. All instance variable are private. Employee class has a fully parameterized constructor.

Make another class **EmployeeTest**. In main method, instantiate two Date object to represent birthdate and hiringDate of employee. Now instantiate one object for Employee named employee1 and initialize firstName and lastName using constructor. Print values of all attributes using getter method.

**Expected Output:**



**Task 2:**

For each class/attributes described below, choose appropriate data type. All attributes of each class should be private and exposed via get/set methods. Also define at least one constructor for each class that shall take and initialize 2-3 attributes of the object.

1. Define a class **Course** with courseCode and courseTitle attributes.
2. Define a class **Address** with streetAddress, town, city, country and phoneNumber attributes.
3. Define a class **Student** with name, email, cnic, a reference array of course type and postalAddress attributes. Where postalAddress shall be of type Address. Define a constructor in the Student class that takes cnic, name ,address and a reference array of course type only.

Create a **StudentTest** class, in its main method, create a Student object i.e. student1. Fully initialize its’ all attributes. cnic, name ,address and course type array shall be initialized by constructor, other attributes shall be initialized using setter methods. **All attributes values shall be taken from user.** After the object is fully initialized, print all, attribute values from student object reference.

Make another object student2, assume the student live at same address as student1. Reuse the address object of student1 to initialize student2 address. You do not need to take attributes from user input for student2 object. Change some attribute of address from student1 and check, does it also change for student2, understand why and why not?