**Week 12 – Lab 8**

**Inheritance & Polymorphism**

1. **First question:**

Create a class "**Student**" and another class "**Teacher**", both descendants of "**Person**".

The class "Student" will have a public method "**GoToClasses**", which will write on screen "I’m going to class."

The class "**Teacher**" will have a public method "**Explain**", which will show on screen "Explanation begins". Also, it will have a private string attribute "**subject**".

The class "**Person**" must have two methods:

* a method "SetAge (int n)" which will indicate the value of their age (eg, 20 years old)
* A method "Greet" which will show on screen "Hello"

The student will have a public method "**ShowAge**" which will write on the screen "My age is: 20 years old" (or the corresponding number).

You must create another test class called "**StudentAndTeacherTest**" that will contain "**main**" method and:

* Create a Person and make it say hello
* Create a student, set his age to 21, tell him to Greet and display his age
* Create a teacher, 40 years old, ask him to say hello and then explain.

**Typical run of the program**

Graphical user interface, text, application

Description automatically generatedGraphical user interface, diagram, application

Description automatically generated

1. **Second question:**

Write a java program to depict the use of **super** keyword to invoke the overridden methods and to invoke a superclass's constructor.

* Create a class **Employee** with 3 data members **Id**, **Name**, **Salary** and define a parameterized constructor to initialize this data.
* Create the method **void** **PutData**() in this class to print all the data.
* Create a derived class **Company** with two data items **Cname** and **RegNo**.
* Create a constructor in the derived class to initialize all the data items from both the child as well as the super class using the **super** keyword.
* Override the **PutData()** in Company to print the **Cname** and **RegNo** and also call the **PutData()** of the base class to print the details of the Employee using **super** keyword.
* Write the main method to invoke the appropriate methods.

**Typical run of the program**

 