

LAB 8 Solution

POLYMORPHISM

```
public class Student {

    protected String name;
    protected int gpa;

    public Student()
    {
        name = " ";
        gpa = 0;
    }

    public Student(String nn, int gg)
    {
        name = nn;
        gpa = gg;
    }

    public String getName() {
        return name;
    }

    public void setName(String name) {
        this.name = name;
    }

    public int getGpa() {
        return gpa;
    }

    public void setGpa(int gpa) {
        this.gpa = gpa;
    }

    public void computeGrade()
    {
        System.out.println("Hello my friend.");
    }

}
```

```

public class undergrad extends Student
{
    public undergrad(String nn, int gg)
    {
        super(nn, gg);
    }
    public void computeGrade()
    {
        if(gpa > 60)
            System.out.println("Pass");
        else
            System.out.println("fail");
    }
}

```

```

public class Graduate extends Student{
    public Graduate(String nn, int gg)
    {
        super(nn, gg);
    }
    public void computeGrade()
    {
        if(gpa > 70)
            System.out.println("Pass");
        else
            System.out.println("fail");
    }
}

```

```

public class test_Student {
    public static void main(String args[])
    {
        Student Arr[] = new Student[3];
        Arr[0]= new undergrad("Ali", 65);
        Arr[1]= new undergrad("Bader", 59);
        Arr[2]= new Graduate("Saoud", 69);

        for(int i=0; i<3; i++)
            Arr[i].computeGrade();
        int count = 0;
        for(int i=0; i<3; i++)
            if(Arr[i] instanceof undergrad)
                count++;
        System.out.println("nb of undergrad is: " + count);
    }
}

```