GUVI-Task 2

1.1) Create a class Person with properties (name and age) with following features.

a. Default age of person should be 18;

b. A person object can be initialized with name and age;

c. Method to display name and age of person

```
package Task_2.Solution_1;

import java.util.Scanner;
public class Person {
   String name;
   int age;
   Person(String name){
      this.name=name;
      this.age=18;
      this.display();
   }
   Person(String name, int age){
      this.name=name;
      this.age=age;
      this.display();
   }
   void display(){
      System.out.println("Name:" + name);
      System.out.println("Age:" + age);
   }
}

class Main{
   public static void main(String[] args) {
      Scanner sc=new Scanner(System.in);
         Person p1 = new Person("Regin", 22);
         Person p2 = new Person("Regin");
   }
}
```

Output:

```
Name:Regin
Age:22
Name:Regin
Age:18
```

1.2). Create class Product (pid, price, quantity) with parameterized constructor.
Create a main function in different class (say ProductMain) and perform following task:
a. Accept five product information from user and store in an array
b. Find Pid of the product with the highest price.
c. Create method (with array of product's object as argument) in ProductMain class to calculate and return the total amount spent on all products. (amount spent on single product-price of product* quantity of product

```
package Task_2.Solution_2;

public class Product {
    int pId;
    double price;
    int quantity;
    Product(int pId,double price,int quantity){
        this.pId=pId;
        this.price=price;
        this.quantity=quantity;
    }
    static double costOfSIngleProducts(double price,int quantity){
        return price*quantity;
    }
}
```

```
package Task_2.Solution_2;

import java.util.Scanner;


    public static void main(String[] args) {
        Scanner sc=new Scanner(System.in);
        Product products[] =new Product[5];
        for (int i = 0; i < 5; i++) {
            System.out.println("Enter the details of product "+ (i+1) +":");
            System.out.println("Enter Product ID :");
            int pId=sc.nextInt();
            System.out.println("Enter Product price :");
            double price=sc.nextDouble();
            System.out.println("Enter Product quantity :");
            int quantity=sc.nextInt();
            products[i]=new Product(pId,price,quantity);
        }
        Product highestPriceProduct= products[0];
        for (int i = 0; i < 5; i++) {
            if(products[i].price>highestPriceProduct.price){
                highestPriceProduct= products[i];
            }
        }
        System.out.println("The highest priced product's pID is :"+highestPriceProduct.pId);
        System.out.println("Total amount of all the products is "+ totalAmount(products));
    }
    static double totalAmount(Product p[]){
        double total=0;
        for (int i = 0; i < 5; i++) {
            total+=Product.costOfSIngleProducts(p[i].price,p[i].quantity);
        }
        return total;
    }
}
```

Output:

```
Enter the details of product 1:
Enter Product ID :
1
Enter Product price :
10
Enter Product quantity :
1
Enter the details of product 2:
Enter Product ID :
2
Enter Product price :
20
Enter Product quantity :
2
```

```
Enter the details of product 3:
Enter Product ID :
3
Enter Product price :
30
Enter Product quantity :
3
Enter the details of product 4:
Enter Product ID :
4
Enter Product price :
40
Enter Product quantity :
4
Enter the details of product 5:
Enter Product ID :
5
Enter Product price :
50
Enter Product quantity :
5
The highest priced product's pID is :5
Total amount of all the products is 550.0
```

1.3) Create Class Account with data member as Balance. Create two constructors (no argument, and with argument) and perform following task

a. method to deposit the amount to the account.
b. method to withdraw the amount from the account.
C. method to display the Balance

```
package Task_2.Solution_3;

public class Account {
    private double balance;
    Account(){
        balance=0.0;
    }
    Account(double balance){
        this.balance=balance;
    }
    void displayBalance(){
        System.out.println("Available Balance: "+balance);
    }
    void withdrawAmount(double amount){
        if(amount<=balance){
            balance=balance-amount;
            System.out.println("Amount Withdrawn: "+amount);
        }
    }
    void depositAmount(double amount){
        if(amount>0){
            balance=balance+amount;
            System.out.println("Amount deposited: "+amount);
        }else {
            System.out.println("Insufficient Balance.");
        }
    }
}
class Main{
    public static void main(String[] args) {
        Account a1=new Account();
        a1.displayBalance();
        a1.depositAmount(25000.0);
        a1.withdrawAmount(12500.50);
        a1.displayBalance();

System.out.println("****************************************************
*****");
        Account a2=new Account(20000.50);

        a2.displayBalance();
        a2.depositAmount(25000.0);
        a2.withdrawAmount(12500.50);
        a2.displayBalance();
    }
}
```

Output:

```
Available Balance: 0.0
```

```
Amount deposited: 25000.0
Amount Withdrawn: 12500.5
Available Balance: 12499.5
****************************************************************
Available Balance: 20000.5
Amount deposited: 25000.0
Amount Withdrawn: 12500.5
Available Balance: 32500.0
```

1.4) Define a base class Person with attributes name and age. Create a subclass Employee that inherits from Person and adds attributes like employeeID and salary. Use the super keyword to initialize the Person attributes in the Employee constructor.

```java
package Task_2.Solution_4;
public class Person {
    String name;
    int age;

    public Person(String name, int age) {
        this.name=name;
        this.age=age;
    }
}
class Employee extends Person{
    int empID;
    double salary;
    Employee(String name,int age,int empID,double salary){
        super(name,age);
        this.empID=empID;
        this.salary=salary;
    }
}
class Main{
    public static void main(String[] args) {
        Employee p1=new Employee("Regin",22,8,45000.00);
        System.out.println(p1.name);
        System.out.println(p1.age);
        System.out.println(p1.empID);
        System.out.println(p1.salary);

    }
}
```

Output:

```
Regin
22
8
45000.0
```