

## ASSIGNMENT 2

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Note- Screenshots of output are added separately .

Q1)

```
package com;
```

```
public class problem1 {
static boolean isPrime(int a)
{
    for(int i=2;i*i<=a;i++)
    {
        if(a%i==0){
            return false;
        }
    }
    return true;
}

    public static void main(String[] args) {
int[] arr=new int[100];int j=1;arr[0]=2;
        for(int i=3;i<=100;i++)
        {
            if(isPrime(i))
            {
                arr[j]=i;j++;
            }
        }
        for(int i=0;arr[i]!=0;i++)
        {
            if(arr[i+1]!=0){
                System.out.println(arr[i]+" "+arr[i+1]);
            }
        }
    }
}
```

Q2)

```
package com;
class admin{
    int age;
    String name;
    public void setName(int a,String s)
    {
        age=a;
        name=s;
    }
}

class customer{
    int mbNum=123456789;
    String ans="catch me ,if you can :)";
    public void getName()
    {
        System.out.println("MbNUm : "+mbNum);
        System.out.println("Msg : "+ans);
    }
}

public class problem2 {
    public static void main(String[] args) {
        System.out.println("setter method invoked");
        admin you=new admin();
        you.setName(20,"shankar");
        System.out.println("getter method invoked for diff class");
        customer rush=new customer();
        rush.getName();

    }
}
```

Q3)

```
package com;
class mobile{
    private int cost;
    private String camera;
    public String username;
    public mobile(int c,String c1,String u)
    {
        cost=c;
```

```

        camera=c1;
        username=u;
    }
    public void getInfo()
    {
        System.out.println("username : "+username);
        System.out.println("cost : "+cost );
        System.out.println("camera : "+camera);
    }
}

}
public class problem3 {
    public static void main(String[] args) {
        mobile samsung=new mobile(20000,"64px","carl");
        mobile oppo=new mobile(15000,"48px","lay");
        mobile apple=new mobile(60000,"56px","andrew");
        System.out.println("samsung mobile user");
        samsung.getInfo();
        System.out.println();
        System.out.println("oppo mobile user");
        oppo.getInfo();
        System.out.println();
        System.out.println("apple mobile user");
        apple.getInfo();
    }
}

```

**Q4)**

**Ans-** Encapsulation and abstraction concepts are used in given problem .

Encapsulation is used to wrap data and methods in a unit.

Abstraction is used to display only essential data ,keeping implementation and data hidden .

**Q5)**

```
public class problem5 {  
    public static void main(String[] args) {  
        System.out.println("circle : 1");  
        System.out.println("pentagon : 2");  
        System.out.println("triangle : 3");  
        System.out.println("square : 4");  
        System.out.println("rectangle : 5");  
        System.out.println("select one of above options ,area of which you want to calculate  
");  
  
        int a;  
        Scanner it=new Scanner(System.in);  
        a=it.nextInt();  
        switch (a){  
            case 1:  
                System.out.println("Enter radius of circle");  
                double r;  
                r=it.nextInt();  
                System.out.println("Area of circle is : "+ 3.14*r*r);  
                break;  
  
            case 2:  
                System.out.println("Enter side of pentagon");  
                double s ;  
                s=it.nextInt();  
                double ans=(Math.sqrt(5*(5+2*Math.sqrt(5)))*a*a)/4;  
                System.out.println("Area of pentagon is : "+ ans);  
                break;  
  
            case 3:  
                System.out.println("Enter base and height of triangle");  
                int b,h;  
                b=it.nextInt();  
                h=it.nextInt();  
  
                System.out.println("Area of triangle is : "+ 0.5*(double)b*h);  
        }  
    }  
}
```

```
break;
```

```
case 4:
```

```
System.out.println("Enter side of square");
```

```
int s1;
```

```
s1=it.nextInt();
```

```
System.out.println("Area of square is : "+ s1*s1);
```

```
break;
```

```
case 5:
```

```
System.out.println("Enter sides of rectangle");
```

```
int a1,a2;
```

```
a1=it.nextInt();
```

```
a2=it.nextInt();
```

```
System.out.println("Area of rectangle is : "+ a1*a2);
```

```
break;
```

```
}
```

```
}
```

```
}
```

**Q6)**

```
package com;
```

```
public class problem6 {
```

```
    public static void main(String[] args) {
```

```
        System.out.println("general formula for pentagonal number is
```

```
p(n)=n*(n-1)+n*(n+1)/2");
```

```
        System.out.println("displaying first 50 pentagonal numbers");
```

```
        for(int i=1;i<=50;i++)
```

```
        {
```

```
            System.out.println(i*(i-1)+(i*(i+1))/2);
```

```
        }
```

```
    }
```

```
}
```

**Q7a)**

```
package com;
class multiply{
    private int a;
    private int b;
    private int c;
    private float a1;
    private float b1;
    private float c1;
    multiply(int as,int bs){
        a=as;
        b=bs;
        System.out.println("multiplication of integer numbers is "+ a*b);
    }
    multiply(int as,int bs,int cs)
    {
        a=as;
        b=bs;
        c=cs;
        System.out.println("multiplication of three integers is "+a*b*c);
    }
    multiply(float a11,float b11)
    {
        a1=a11;
        b1=b11;
        System.out.println("multiplication of floating numbers is "+ a1*b1);
    }
    multiply(float a11,float b11,float c11 )
    {
        a1=a11;
        b1=b11;
        c1=c11;
        System.out.println("multiplication of three floating numbers is "+ a1*b1*c1);
    }
}

public class problem7a {
    public static void main(String[] args) {
        System.out.println("constructor overloading ");
    }
}
```

```

multiply ms=new multiply(2,5);
multiply ms2=new multiply(5,3,7);
    multiply mf=new multiply(1.2f,5.4f);
    multiply msf=new multiply(2.1f,2.36f,5.1f);

}
}

```

Q7b)

```
package com;
```

```

class mult{
    private int a;
    private int b;
    private int c;
    private float a1;
    private float b1;
    private float c1;

    public void multi(int a11,int b11)
    {a=a11;
        b=b11;
        System.out.println("multiplication of integer numbers is "+ a*b);
    }
    public void multi(int a11,int b11,int c11)
    {a=a11;
        b=b11;
        c=c11;
        System.out.println("multiplication of three integer numbers is "+ a*b*c);
    }
    public void multi(float a11,float b11)
    {a1=a11;
        b1=b11;
        System.out.println("multiplication of floating numbers is "+ a1*b1);
    }
    public void multi(float a11,float b11,float c11)
    {a1=a11;
        b1=b11;
        c1=c11;
        System.out.println("multiplication of three floating numbers is "+ a1*b1*c1);
    }
}
}

```

```

public class problem7b {
    public static void main(String[] args) {
        System.out.println("method overloading");
        mult m1=new mult();
        m1.multi(2,5);
        m1.multi(4,7,8);
        m1.multi(2.1f,5.7f);
        m1.multi(3.7f,6.4f,9.8f);
    }
}

```

Q8)

```

package com;
public class problem8 {
    public static void main(String[] args) {
        System.out.println("displaying fibonacci series upto 100");
        long []fib=new long[101];
        fib[0]=1;
        fib[1]=1;
        System.out.println(fib[0]);
        System.out.println(fib[1]);
        for(int i=2;i<=10;i++)
        {
            fib[i]=fib[i-1]+fib[i-2];

            System.out.println(fib[i]);
        }
    }
}

```



