

# OOPL

## Week 5

Udeet Mittal

CSE C3

Roll Number 64

1.

**filename: Series.java**

```
public interface Series{  
  
    public void getNext();  
    public void reset();  
    public void setStart(int start_point);  
}
```

**filename: q1.java**

```
import java.util.*;  
import java.io.*;  
class ByTwos implements Series{  
    int start_value;  
    int current_value;  
  
    public int get_current(){  
        return current_value;  
    }  
  
    public void getNext(){  
        current_value += 2;  
    }  
  
    public void setStart(int start_point){  
        start_value = start_point;  
        current_value = start_point;  
    }  
  
    public void reset(){  
        current_value = start_value;  
    }  
}
```

```
}
```

```
class ByFives implements Series{
```

```
    int start_value;
```

```
    int current_value;
```

```
    public int get_current(){
```

```
        return current_value;
```

```
    }
```

```
    public void getNext(){
```

```
        current_value += 5;
```

```
    }
```

```
    public void setStart(int start_point){
```

```
        start_value = start_point;
```

```
        current_value = start_point;
```

```
    }
```

```
    public void reset(){
```

```
        current_value = start_value;
```

```
    }
```

```
}
```

```
public class q1{
```

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

```
        ByTwos series1 = new ByTwos();
```

```
        System.out.println("\nPrinting the Twos Series up to 5 elements: ");
```

```
        series1.setStart(2);
```

```
        for (int i = 1;i<=5;i++){
```

```
            System.out.print(series1.current_value+" ");
```

```
            series1.getNext();
```

```
        }
```

```
        System.out.println("\nThe current Value in the series is:
```

```
        "+series1.get_current());
```

```
        System.out.print("\nThe Value after Resetting the series: ");
```

```
        series1.reset();
```

```
        System.out.print(series1.get_current());
```

```
        System.out.println();
```

```
        ByFives series2 = new ByFives();
```

```

        System.out.println("\nPrinting the Fives Series up to 5 elements: ");
        series2.setStart(5);
        for (int i = 1; i <= 5; i++) {
            System.out.print(series2.get_current() + " ");
            series2.getNext();
        }

        System.out.println("\nThe current Value in the series
is:" + series2.get_current());
        System.out.print("\nThe Value after Resetting the series: ");
        series2.reset();
        System.out.print(series2.get_current());
        System.out.println();
    }
}

```

```

MINGW64:/d/OOPL/Week5
Udeet@udeethp MINGW64 /d/OOPL/Week5
$ javac q1.java
Udeet@udeethp MINGW64 /d/OOPL/Week5
$ java q1

Printing the Twos Series up to 5 elements:
1 3 5 7 9
The current value in the series is: 11

The value after Resetting the series: 1

Printing the Fives Series up to 5 elements:
1 6 11 16 21
The current value in the series is: 26

The value after Resetting the series: 1

Udeet@udeethp MINGW64 /d/OOPL/Week5
$

```

2.

**Filename: CurrentDate.java**

```

import java.util.Scanner;
class CurrentDate
{
    int day;
    int month;
    int year;
}

```

```

boolean checkLeap(int year)
{
return (((year % 4 == 0) && (year % 100 != 0)) ||
(year % 400 == 0));
}
void createDate(int day,int month,int year) throws
InvalidDayException,InvalidMonthException
{
this.year=year;
if(month<=12 && month>=1)
{
this.month=month;
}
else throw new InvalidMonthException();
if(checkLeap(year))
{
if(month==2 && day<=29 && day>=1)
{
this.day=day;
}
else
{
throw new InvalidDayException(true);
}
}
else
{
if((month==2 && day<=28 && day>=1)||
(month!=2 && day<=30 && day>=1))
{
this.day=day;
}
else
{
throw new InvalidDayException(false);
}
}
}
public void display()
{
System.out.println("\nDate: "+day+"/"+month+"/"+year);
}
}
class InvalidDayException extends Exception
{
InvalidDayException(boolean b)
{
if(b)
System.out.println("Not a valid day!");
}
}

```

```

else
System.out.println("Not a valid day!");
}
}
class InvalidMonthException extends Exception
{InvalidMonthException()
{
System.out.println("Month isn't valid");
}
}
}

```

**Filename: q2.java**

```

import java.util.*;
class q2
{
    public static void main(String[] args) {
        Scanner sc=new Scanner(System.in);
        System.out.println("\nEnter the Date: (dd/mm/yyyy)\n");
        int d=sc.nextInt();
        int m=sc.nextInt();
        int y=sc.nextInt();
        CurrentDate obj=new CurrentDate();
        try
        {
            obj.createDate(d,m,y);
            obj.display();
        }
        catch(InvalidDayException e)
        {
        }
        catch(InvalidMonthException e)
        {
        }

    }
}

```

```
MINGW64:/d/OOPL/Week5
Udeet@udeethp MINGW64 /d/OOPL/Week5
$ javac q2.java
Udeet@udeethp MINGW64 /d/OOPL/Week5
$ java q2
Enter the Date: (dd/mm/yyyy)
27 9 2002
Date: 27/9/2002
Udeet@udeethp MINGW64 /d/OOPL/Week5
$ java q2
Enter the Date: (dd/mm/yyyy)
29 2 2020
Date: 29/2/2020
Udeet@udeethp MINGW64 /d/OOPL/Week5
$ java q2
Enter the Date: (dd/mm/yyyy)
29 2 2019
Not a valid day!
Udeet@udeethp MINGW64 /d/OOPL/Week5
$ java q2
Enter the Date: (dd/mm/yyyy)
31 4 2020
Not a valid day!
Udeet@udeethp MINGW64 /d/OOPL/Week5
$ |
```

3.

**Filename: Result.java**

```
import java.util.*;

class Student
{
    int rollno;
    int marks;
    int getNumber()
    {
        return this.rollno;
    }
    void putNumber(int m)
```

```

{
this.rollno=m;
}
int getMarks()
{
return this.marks;
}
void putMarks(int m)
{
this.marks=m;
}
}

```

```

interface Sports
{
public void putGrade(char c);
}

```

```

public class Result extends Student implements Sports
{
int fin;
char Grade;
public void putGrade(char c)
{
Grade=c;
}
public int final_marks()
{
    if(Grade=='A')
        fin=marks+100;
    else if(Grade=='B')
        fin=marks+90;
    else if(Grade=='C')
        fin=marks+80;
    else if(Grade=='D')
        fin=marks+70;
    else
        fin=marks+60;
    return fin;
}
}

```

**Filename:q3.java**

```

import java.util.Scanner;

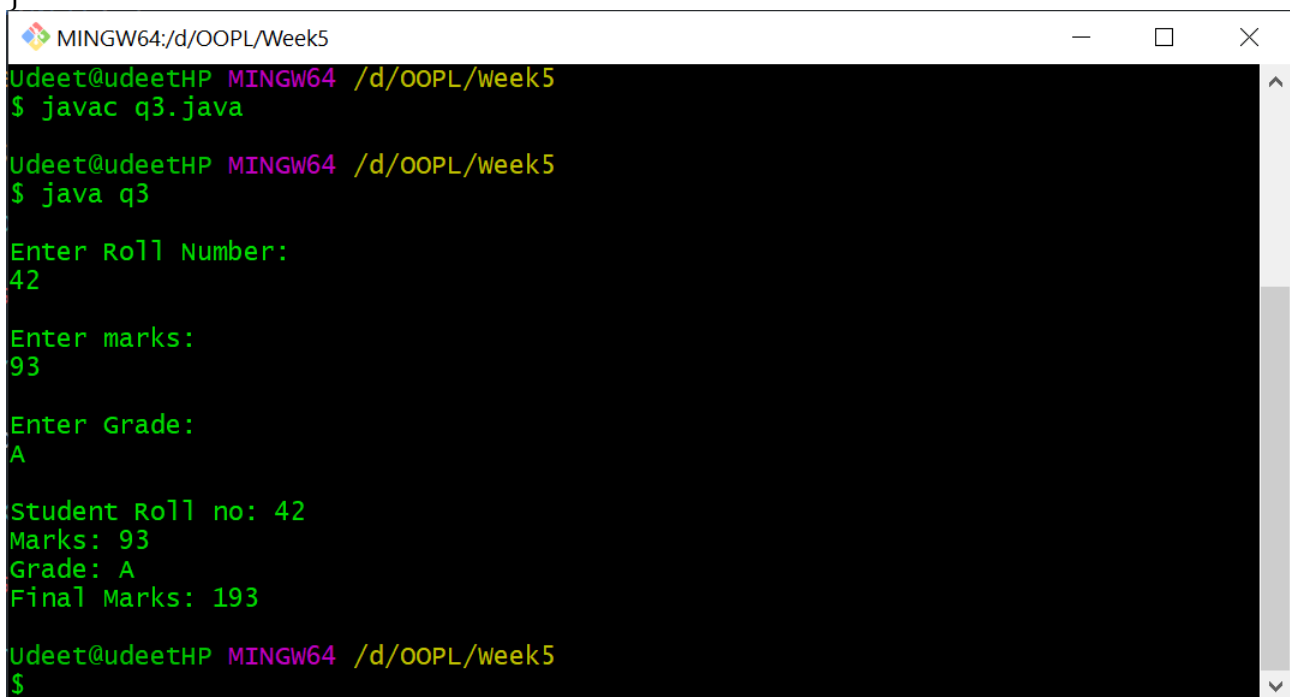
public class q3{
public static void main(String args[])

```

```

{
    Scanner    sc=new Scanner(System.in);
System.out.println("\nEnter Roll Number:");
int roll=sc.nextInt();
System.out.println("\nEnter marks:");
int mar=sc.nextInt();
System.out.println("\nEnter Grade:");
char g=sc.next().charAt(0);
Result q=new Result();
q.putNumber(roll);
q.putMarks(mar);
q.putGrade(g);
System.out.println("\nStudent Roll no: "+q.getNumber());
System.out.println("Marks: "+q.getMarks());
System.out.println("Grade: "+q.Grade);
System.out.println("Final Marks: "+q.final_marks());
}
}

```



```

MINGW64: d:/OOPL/Week5
Udeet@udeetHP MINGW64 /d/OOPL/Week5
$ javac q3.java

Udeet@udeetHP MINGW64 /d/OOPL/Week5
$ java q3

Enter Roll Number:
42

Enter marks:
93

Enter Grade:
A

Student Roll no: 42
Marks: 93
Grade: A
Final Marks: 193

Udeet@udeetHP MINGW64 /d/OOPL/Week5
$

```