

## PRACTICAL – 1

**AIM:**

Using a text editor, create a file that contains a list of at least 15 six-digit account numbers. Read in each account number and display whether it is valid. An account number is valid only if the last digit is equal to the remainder when the sum of the first five digits is divided by 10. For example, the number 223355 is valid because the sum of the first five digits is 15, the remainder when 15 is divided by 10 is 5, and the last digit is 5. Write only valid account numbers to an output file, each on its own line. Save the application as **ValidateCheckDigits.java**.

**Program:**

```
import java.io.BufferedReader;
import java.io.File;
import java.io.FileReader;

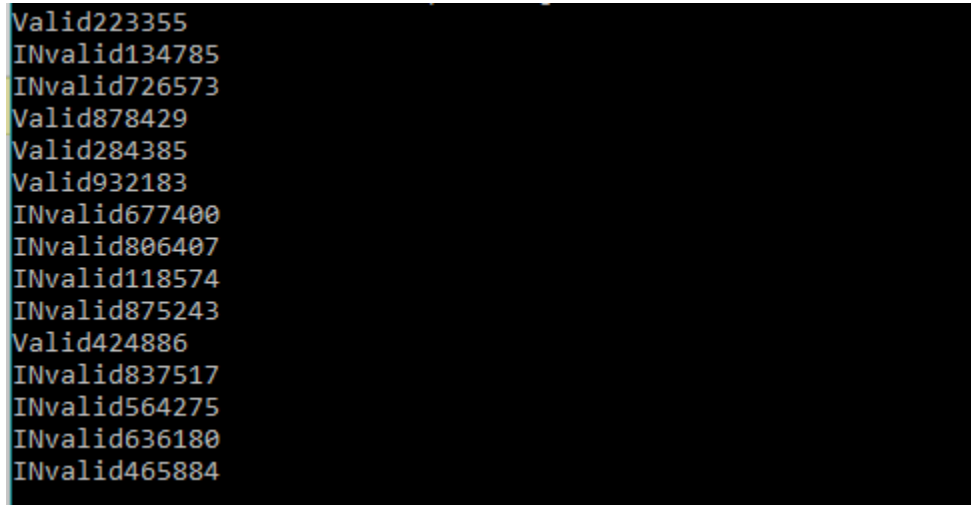
public class Prac1 {
    public static void main(String[] args){

        try {
            File f = new File("prac1.txt");
            FileReader fr = new FileReader(f);
            BufferedReader bf = new BufferedReader(fr);
            String s;

            while ((s = bf.readLine()) != null)
            {
                int arr[] = new int[s.length()];
                int num = Integer.parseInt(s);
                for (int i = 0; i < s.length(); i++) {
                    arr[i] = Character.getNumericValue(s.charAt(i));
                }
                int sum = 0;
                for (int i = 0; i < 5; i++) {
                    sum += arr[i];
                }
                int res = num % 10;
                if ((sum % 10) == res) {
                    System.out.println("Valid" + num);
                } else {
                    System.out.println("INvalid" + num);
                }
            }
        }
    }
}
```

```
        }  
    }  
    System.out.println();  
  
    } catch (Exception e) {  
        //TODO: handle exception  
        System.out.println("Error occurred "+e);  
    }  
  
    }  
}
```

**Output:**



```
Valid223355  
INvalid134785  
INvalid726573  
Valid878429  
Valid284385  
Valid932183  
INvalid677400  
INvalid806407  
INvalid118574  
INvalid875243  
Valid424886  
INvalid837517  
INvalid564275  
INvalid636180  
INvalid465884
```

## PRACTICAL – 1

### AIM:

Create student result processing system with a Result interface. All year's student's data can be entered and displayed by inherited sub classes. Abstract class should contain student roll, name and registration

number. All classes will be inside some meaningful package. Create separate class inside the given package name

Code:

Code:

FirstSemester.java

```
package charusat.it;

import charusat.result.*;
import charusat.students.*;

public class FirstSemester extends Students implements Result{
    private String subject1, subject2;
    private Float mark1, mark2, grade1, grade2, credit1, credit2;
    FirstSemester(String name, String roll, String reg)
    {
        super(name, roll, reg);
    }

    public void setMarks(float mark1, float mark2) {
        this.mark1 = mark1;
        this.mark2 = mark2;
        grade1 = markToGrade(mark1);
        grade2 = markToGrade(mark2);
    }

    public Float calculateGpa()
    {
        return ((grade1 * credit1 + grade2 * credit2) / (credit1 + credit2));
    }

    public void getSubject()
    {
        subject1 = "Java Programming";
        subject2 = "C Programming";
        credit1 = 2.0f;
        credit2 = 3.0f;
    }

    public void showResult()
    {
```

```
System.out.println(name+"\n"+roll+"\n"+reg+"\n"+subject1+"\n"+grade1+subject2+"\n"+grade2+GPA);
}
```

```
}
```

SecondSemester.java

package charusat.it;

import charusat.result.\*;

import charusat.students.\*;

public class SecondSemester extends Students implements Result {

private String subject1, subject2;

private Float mark1, mark2, grade1, grade2, credit1, credit2;

SecondSemester(String name, String roll, String reg)

{

super(name, roll, reg);

}

public void setMarks(float mark1, float mark2) {

this.mark1 = mark1;

this.mark2 = mark2;

grade1 = markToGrade(mark1);

grade2 = markToGrade(mark2);

}

public Float calculateGpa()

{

return ((grade1 \* credit1 + grade2 \* credit2) / (credit1 + credit2));

}

public void getSubject()

{

subject1 = "Java Programming";

subject2 = "C Programming";

credit1 = 2.0f;

credit2 = 3.0f;

}

```
public void showResult()
{

System.out.println(name+"\n"+roll+"\n"+reg+"\n"+subject1+"\n"+grade1+subject2+"\n"+grade2+GPA);
}

}

}
```

StudentResult.java

package charusat.it;

import charusat.result.\*;

import charusat.students.\*;

```
public class StudentResult {
    public static void main(String[] args) {
        System.out.println("Enter First Semester Student's Info:");
        FirstSemester f1 = new FirstSemester("Jay", "16001", "31");
        f1.setMarks(70, 80);

    }
}
```

charusat\result\Result.java

```
package charusat.result;
public interface Result {
    float calculateGpa();

    void getSubject();

    void showResult();

    void setMarks(float mark1, float mark2);

}
```

charusat\students\Students.java

package charusat.students;

```
import charusat.result.*;
public class Students {
    private String name, roll, reg;
    Float gradePoint;
    Students(String name, String roll, String reg)
    {
        this.name = name;
        this.roll = roll;
        this.reg = reg;
    }

    public String getRoll()
    {
        return roll;
    }

    public String getName() {
        return name;
    }
    public String getReg()
    {
        return reg;
    }

    public Float markToGrade(Float mark) {

        if(mark>=80 && mark<=100)
        {
            gradePoint = 4.00f;
        }
        else if (mark >= 75 && mark <= 79) {
            gradePoint = 3.75f;
        }
        else if( mark>=70 && mark<=74 )
        {
            gradePoint = 3.50f;
        }
        //
        else if (mark >= 65 && mark <= 69) {
            gradePoint = 3.25f;
        }
        else if (mark >= 60 && mark <= 64) {
```

```
        gradePoint = 3.00f;
    }
    else if( mark>=55 && mark<=59 )
    {
        gradePoint = 2.75f;
    }
    else if (mark >= 50 && mark <= 54) {
        gradePoint = 2.50f;
    }
    else if (mark >= 45 && mark <= 49) {
        gradePoint = 2.25f;
    }
    else if (mark >= 40 && mark <= 44) {
        gradePoint = 2.00f;
    }
    else
    {
        gradePoint = 0.0f;
    }
}

}
```