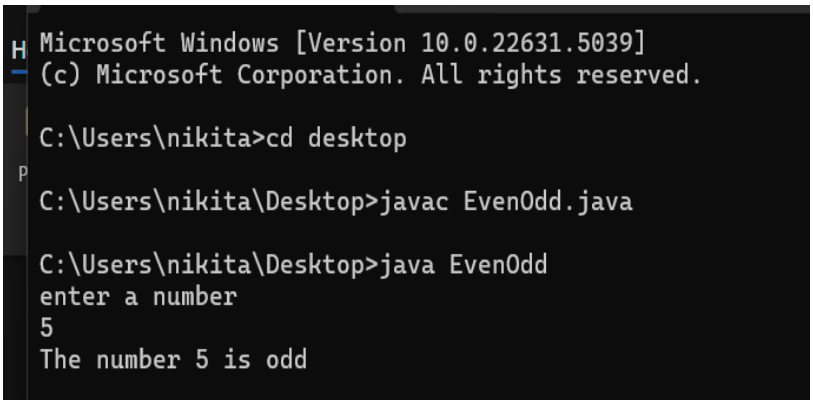
ASSIGNMENT QUESTIONS

1.Any integer is input by the user.Write a program to find out whether it is an odd number or even number.

Code:

```
import java.util.Scanner;

class EvenOdd

{

public static void main(String args[])

{

Scanner scanner=new Scanner(System.in);

System.out.println("enter a number");

int num1=scanner.nextInt();

if(num1%2==0)

{

System.out.println("The number "+num1+" is even");

}

else

{

System.out.println("The number "+num1+" is odd");

}

scanner.close();

}

}
```

Output from the above code:

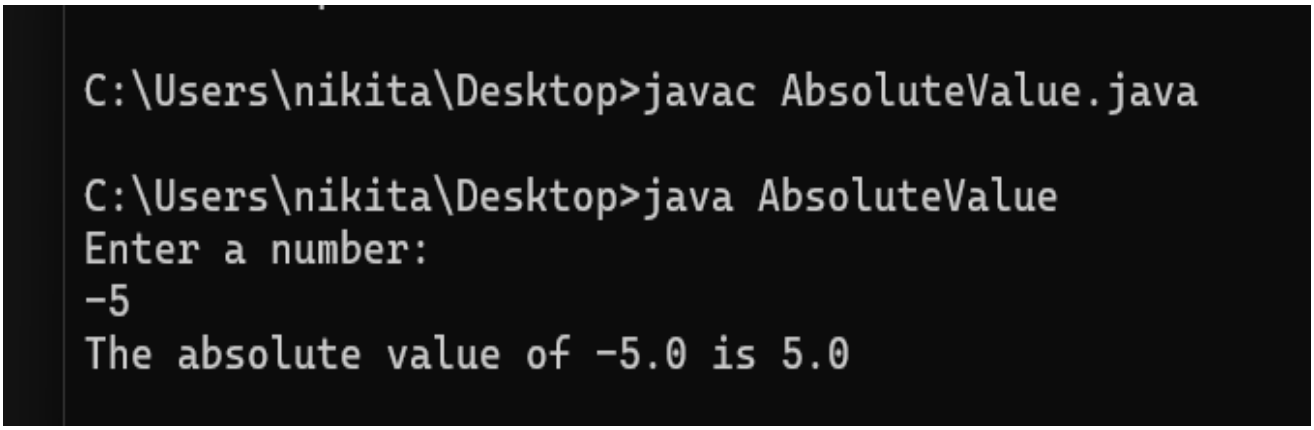


2. Find the absolute value of a number entered by the user.

Code:

```
import java.util.Scanner;
 public class AbsoluteValue
{
   public static void main(String[] args)
{
      Scanner scanner = new Scanner(System.in);
     System.out.println("Enter a number:");
      double number = scanner.nextDouble();
      double absoluteValue = Math.abs(number);
      System.out.println("The absolute value of " + number + " is " +
absoluteValue);
      scanner.close();
   }
}
```

Output from the above code:



3. Write a program to calculate the total expenses. Quantity and price per item are input by the user and discount of 10% is offered if the expense is more than 5000.

Code: import java.util.Scanner;

public class TotalExpenses

{

public static void main(String args[])

{

Scanner scanner= new Scanner(System.in);

System.out.println("Enter the quantity:");

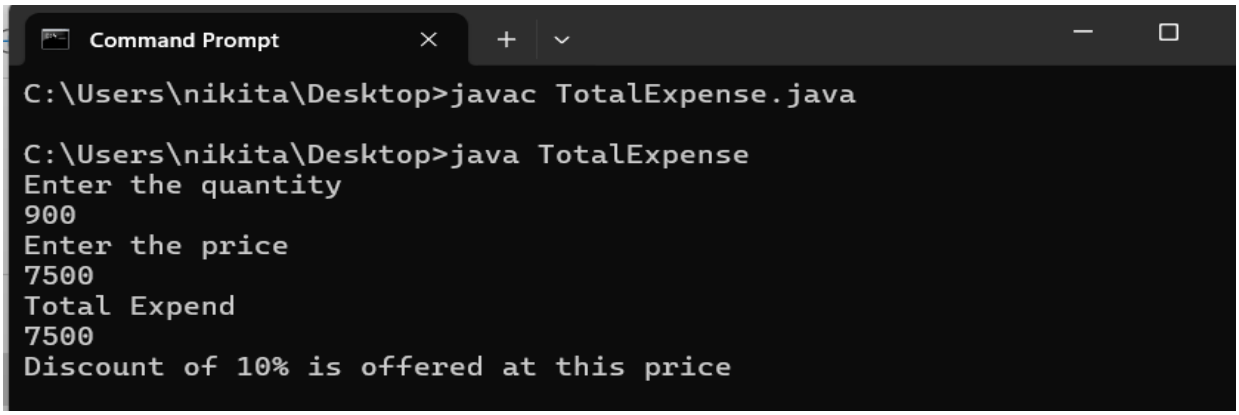
int quantity=scanner.nextInt();

System.out.println("Enter the price per item:");

double price =scanner.nextDouble();

```
double totalExpense =quantity * price;


if(totalExpense >=5000)
{
  double discount= totalExpense * 0.10;
totalExpense =discount;
System.out.println("Discount of 10% is offered at this price:" +discount);


System.out.println("Total Expense :" +totalExpense);
}
scanner.close();
}
}
```

Output from the above code:



4. Write a program to determine whether the seller has made profit or incurred loss. Also determine how much profit he made or loss he incurred. Cost price and selling price of an item is input by the user.

Code: import java.util.Scanner;

```
public class ProfitLoss
{
  public static void main(String args[])
{
  Scanner scanner=new Scanner(System.in);
  System.out.println("Enter the CostPrice of an item:");
  double CostPrice =scanner.nextDouble();
  System.out.println("Enter the SellingPrice of an item:");
  double SellingPrice =scanner.nextDouble();
//SP>CP --Profit
//CP>SP --Loss
if(CostPrice>SellingPrice)
{
  double loss= CostPrice - SellingPrice;
  System.out.println("The seller suffers a loss of: Rs." + loss );
}
else if(SellingPrice>CostPrice)
{
  double profit=SellingPrice - CostPrice;
  System.out.println("The seller has made a Profit of: Rs." + profit);
}
else
{
```

System.out.println("No Profit or Loss");

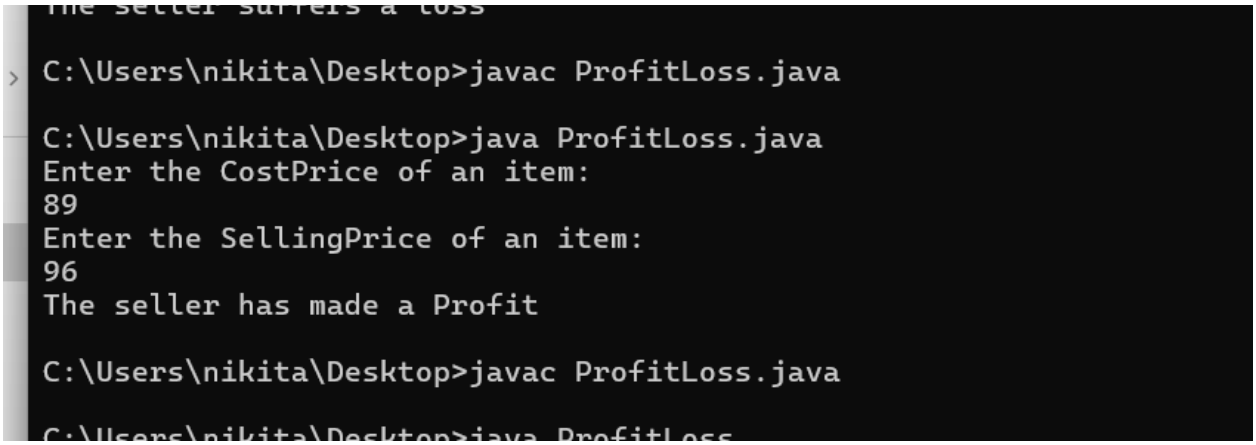
}

scanner.close();

}

}

Output from the above code:



5. If the ages of Ram, Sulabh and Ajay are input by the user, write a program to determine the youngest of the three.

Code: import java.util.Scanner;

public class TheYoungest

{

public static void main(String args[])

{

Scanner scanner=new Scanner(System.in);

System.out.println("Enter the age of Ram:");

int RamAge= scanner.nextInt();

System.out.println("Enter the age of Sulabh:");

```
  int SulabhAge= scanner.nextInt();
System.out.println("Enter the age of Ajay:");
 int AjayAge= scanner.nextInt();

//find who its the youngest among them
if((RamAge<=SulabhAge) && (RamAge<=AjayAge))
{
 System.out.println("Ram is the youngest");
}
else if((SulabhAge<=RamAge) && (SulabhAge<=AjayAge))
{
 System.out.println("Sulabh is the youngest");
}
else
{
System.out.println("Ajay is the youngest");
}
scanner.close();
}
}
```

Output from the above code:

```
C:\Users\nikita\Desktop>javac TheYoungest.java

C:\Users\nikita\Desktop>java TheYoungest
Enter the age of Ram:
56
Enter the age of Sulabh:
45
Enter the age of Ajay:
72
Sulabh is the youngest
```

6. Write a program to check whether a triangle is valid or not, when the three angles of the triangle are entered by the user. A triangle is valid if the sum of all the three angles is equal to 180 degrees.

Code: import java.util.Scanner;

public class Triangle

{

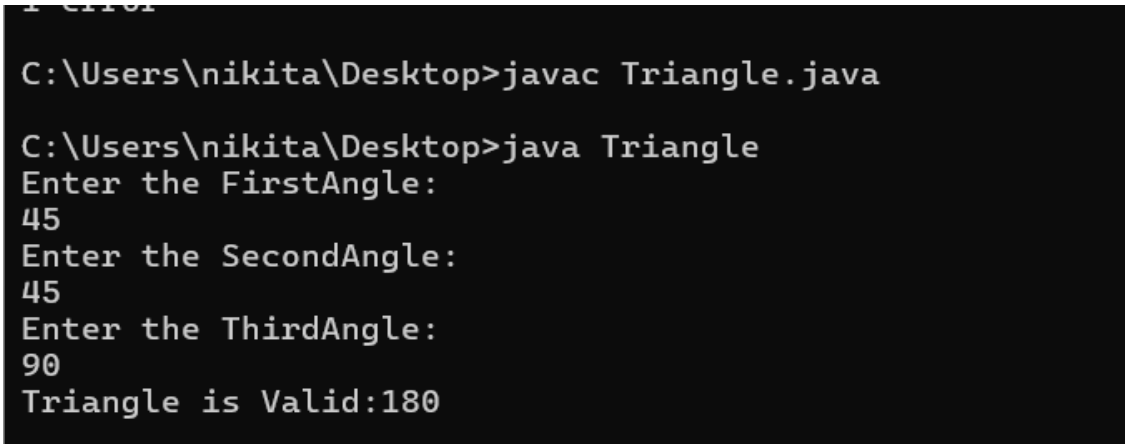
public static void main(String args[])

{

```
 Scanner scanner= new Scanner(System.in);
 System.out.println("Enter the FirstAngle:");
 int a= scanner.nextInt();
 System.out.println("Enter the SecondAngle:");
 int b= scanner.nextInt();
 System.out.println("Enter the ThirdAngle:");
 int c= scanner.nextInt();


 int SumOfAngle =a+b+c;
```

```
//a+b+c = 180


if(SumOfAngle==180)
{
  System.out.println("Triangle is Valid:" + SumOfAngle);
}
else
{
System.out.println("Triangle is not Valid:" + SumOfAngle);
System.out.println("Because sumofangle should be 180 but it is:" +
SumOfAngle  + "degree");
}
scanner.close();
}
}
```

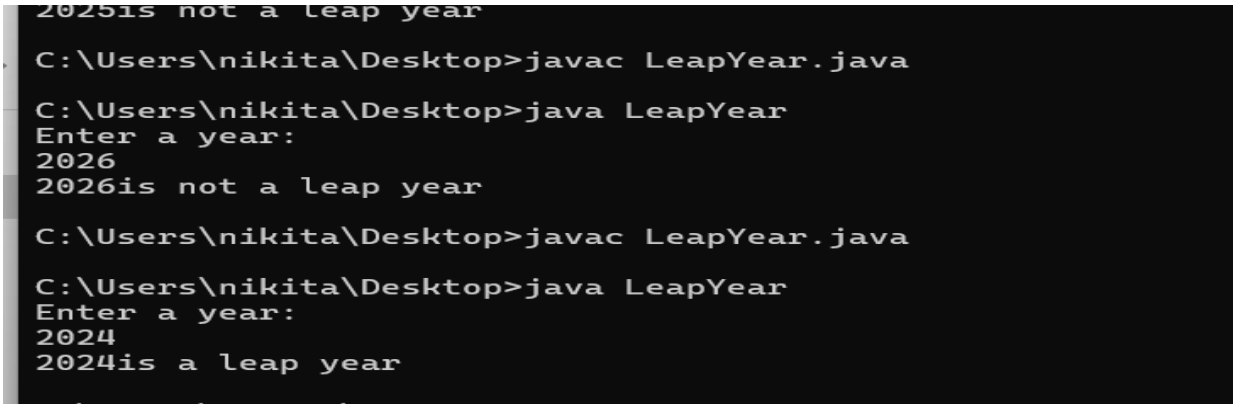
Output from the above code:



7. Any year is input by the user. Write a program to determine whether the year is a leap year or not.

Code: import java.util.Scanner;

```
public class LeapYear
{
public static void main(String args[])
{
  Scanner scanner= new Scanner(System.in);
  System.out.println("Enter a year:");
   int year= scanner.nextInt();
//year is evenly divisible by 400 and if year is century year then it is divisible by 100.

if((year%4==0 && year%100!=0) || (year%400==0))
{
 System.out.println(year  + "is a leap year");
}
else
{
  System.out.println(year + "is not a leap year");
}
scanner.close();
}
}
```



8. In a company an employee is paid as under:

If his basic salary is less than Rs. 1500, then HRA = 10% of basic salary

and DA = 90% of basic salary.

If his salary is either equal to or above Rs. 1500, then HRA = Rs. 500

and DA = 98% of basic salary.

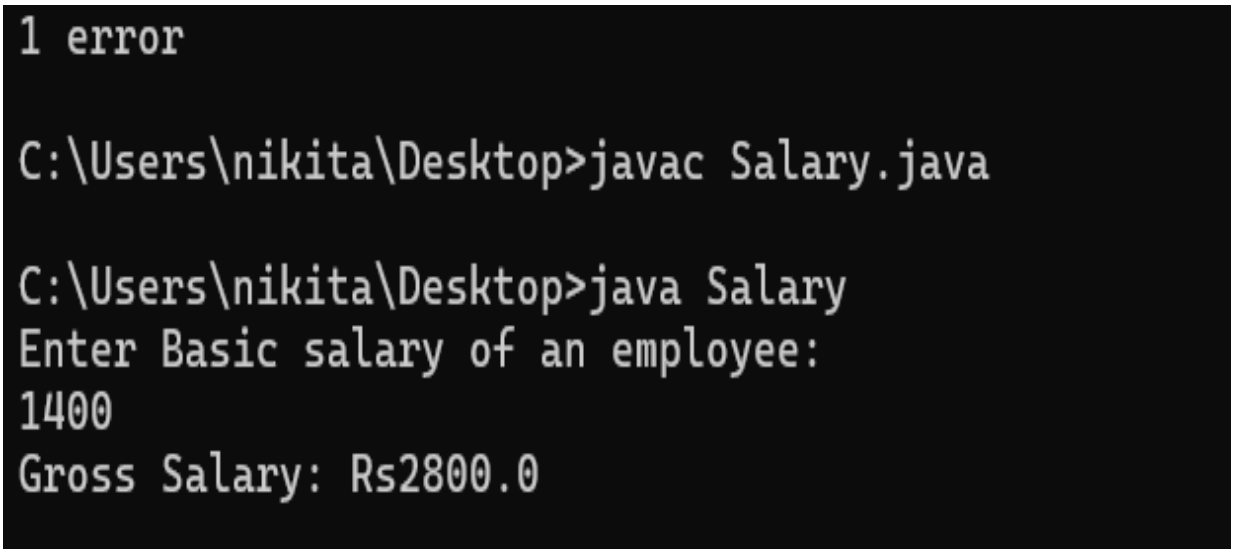
If the employee's salary is input by the user write a program to find his gross salary.

Code: import java.util.Scanner;

```
public class Salary
{
public static void main(String args[])
{
  Scanner scanner= new Scanner(System.in);
  System.out.println("Enter Basic salary of an employee:");
  double BasicSalary =scanner.nextDouble();

 double grossSalary ,hra ,da;

//HRA- home rent allowance
```

```
//DA-dearest allowance
//BASICSALARY- before any allowance.

if(BasicSalary <1500)
{
hra=BasicSalary * 0.10;
da=BasicSalary * 0.90;
}
else{
   hra=BasicSalary * 500;
  da=BasicSalary * 0.98;
}

grossSalary = BasicSalary +hra +da;
System.out.println("Gross Salary: Rs" + grossSalary);
scanner.close();
}
}
```

Output from the above code:



Write a program to calculate the monthly telephone bills as per the following rule:

Minimum Rs. 200 for upto 100 calls.

Plus Rs. 0.60 per call for next 50 calls.

Plus Rs. 0.50 per call for next 50 calls.

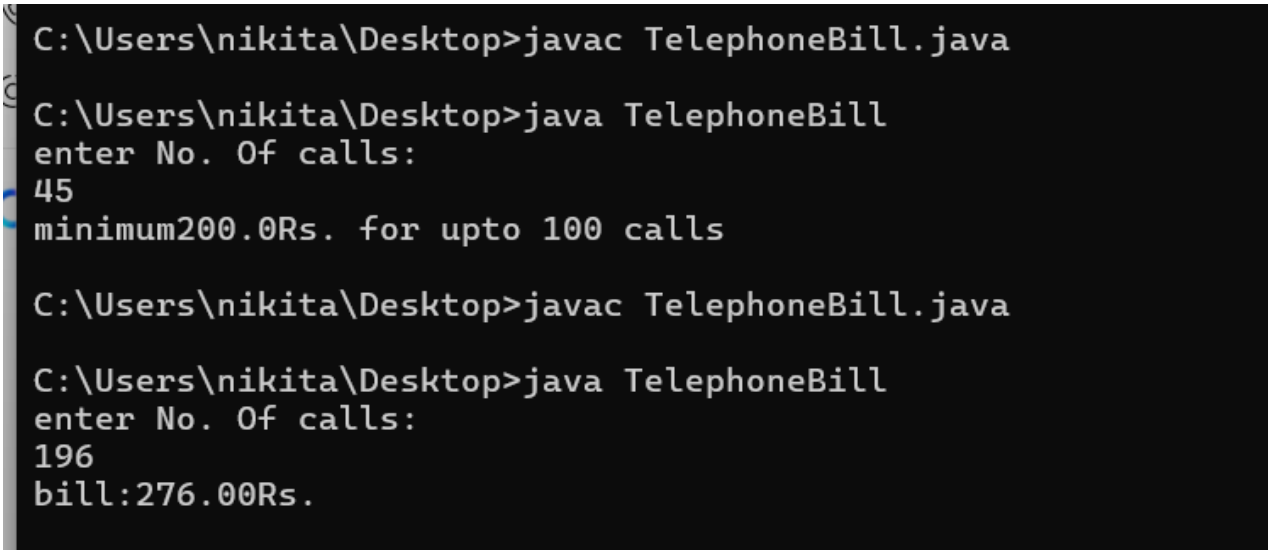
Plus Rs. 0.40 per call for any call beyond 200 calls.

Code: import java.util.Scanner;

```
public class TelephoneBill
{
public static void main(String args[])
 {
 Scanner scanner= new Scanner(System.in);
 System.out.println("enter No. Of calls:");
 int calls=scanner.nextInt();
double bill=200;
if(calls<=100)
```

```
{
System.out.println("minimum" +bill+ "Rs. for upto 100 calls");
}
else if(calls<=150)
{
 bill+=(calls-100)0.60;
{
 System.out.println("bill:"+String.format("%.2f",bill)+"Rs.");
}
else if(calls<=200)
 {
 bill+=500.60+(calls-150);
 System.out.println("bill:"+String.format("%.2f",bill)+"Rs.");
}
 else
{
bill+= 500.60+500.50+(calls -200)*0.40;
System.out.println("bill:"+String.format("%.2f",bill)+"Rs.");
}
 scanner.close(); } }
```

Output from the above code:



10. The marks obtained by a student in 5 different subjects are input by the user. The student gets a division as per the following rules:

Percentage above or equal to 60 - First division

Percentage between 50 and 59 - Second division

Percentage between 40 and 49 - Third division

Percentage less than 40 - Fail

Write a program to calculate the division obtained by the student.

Code: import java.util.Scanner;

public class Marks

{

public static void main(String args[])

{

```
 Scanner scanner= new Scanner(System.in);
 System.out.println("Enter marks of s1:");
 double s1= scanner.nextDouble();
```

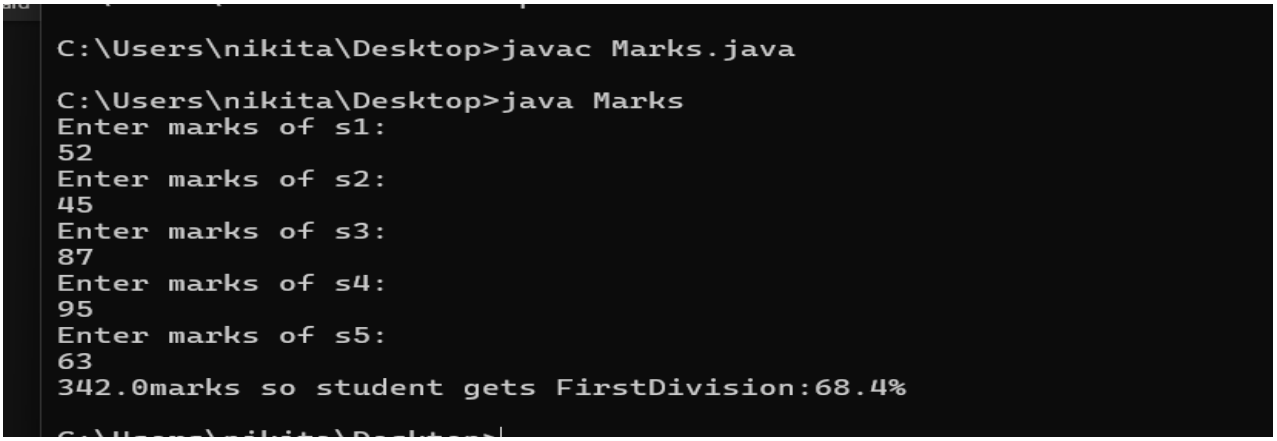
```
 System.out.println("Enter marks of s2:");
 double s2= scanner.nextDouble();
 System.out.println("Enter marks of s3:");
 double s3= scanner.nextDouble();
 System.out.println("Enter marks of s4:");
 double s4= scanner.nextDouble();
 System.out.println("Enter marks of s5:");
 double s5= scanner.nextDouble();

 double total= s1+s2+s3+s4+s5;
 double percentage=total/5;
if(percentage>=60)
{
System.out.println(total + "marks so student gets FirstDivision:"+  percentage+"%");
}
else if(percentage>=50)
{
System.out.println(total + "marks so student gets SecondDivision:"+  percentage+"%");
}
else if(percentage>=40)
{
System.out.println(total + "marks so student gets ThirdDivision:"+  percentage+"%");
}
else
{
 System.out.println(total + "marks so student gets Fail:"+   percentage+"%");
```

}

scanner.close();

}}

Output from the above code:



11.Any character is entered by the user; write a program to determine whether the character entered is a capital letter, a small case letter, a digit or a special symbol. The following table shows the range of ASCII values for various characters.

Characters

ASCII Values

A – Z

65 – 90

a – z

97 – 122

Code: import java.util.Scanner;

public class CaseLetter

{

public static void main(String args[])

{

```
 Scanner scanner= new Scanner(System.in);
 System.out.println("Enter any character:");
 char c=scanner.next().charAt(0);

//0-9-range= 48-57(digit)

if((c>=65) && (c<=90))
{
System.out.println(c+ " is a capital letter");
}
else if((c>=97) && (c<=122))
{
 System.out.println(c+ " is a small case letter");
}
else if((c>=48) && (c<=57))
{
System.out.println(c+ " is a digit");
}
else
{
 System.out.println(c+ " It is special symbol");
}
scanner.close();
}
}
```

Output from the above code:

```
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C:\Users\nikita>cd desktop

C:\Users\nikita\Desktop>javac CaseLetter.java

C:\Users\nikita\Desktop>java CaseLetter
Enter any character:
g
g is a small case letter

C:\Users\nikita\Desktop>
```