

**Lab Record**  
**of**  
**Java Programming Concepts**  
**(CS202)**



**Submitted to:**

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**Session 2020-21**

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3	Write a program to design accounts class and two instance functions withdraw () and deposit (). Also, declare two variables accno and balance. Display total balance updations after withdrawl and deposit.	16-09-2020	
4	Write a program in Java to implement a class car with engineno, car_type (sedan or hatchback), and a constructor with two parameters. Create a child class alto with color and a constructor. Display all the information of alto car using a display() function.	23-09-2020	
5	Write a program to the concept of Method overloading by designing functions to sum different type of numbers (Minimum 3 functions).	30-09-2020	
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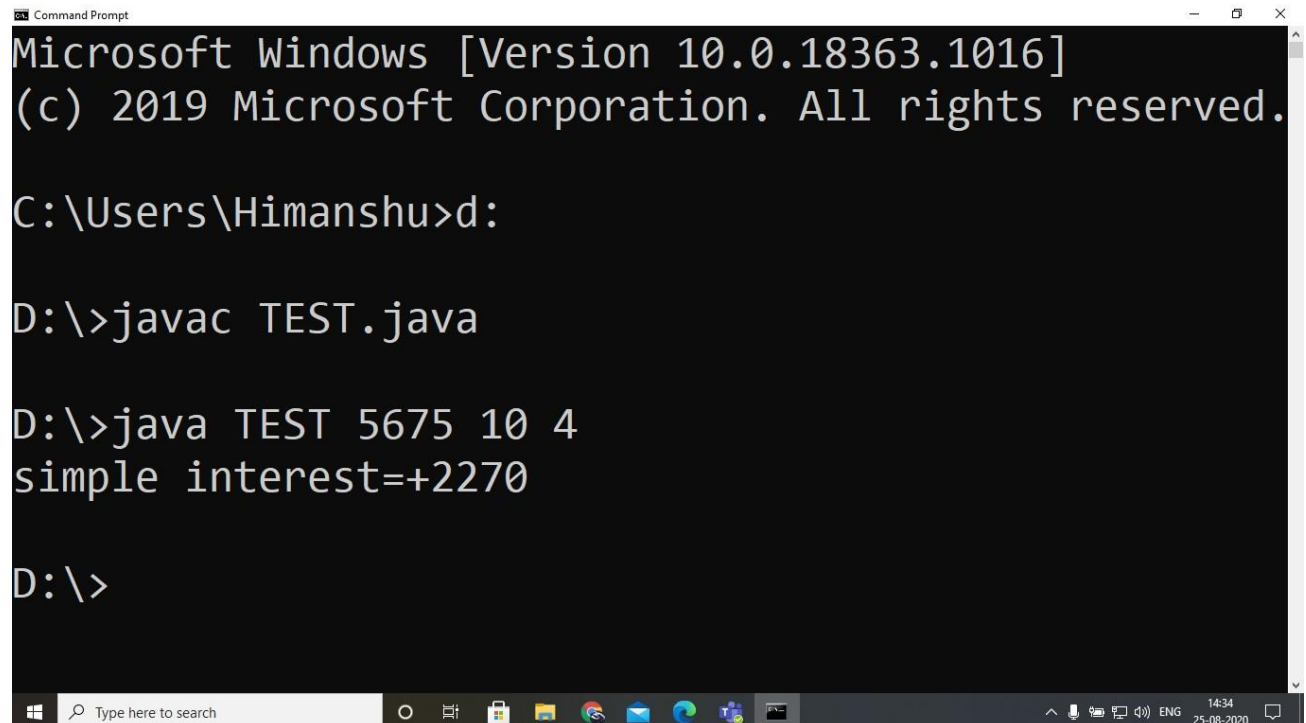
## Experiment – 1

**Objective:** Write a program in java to calculate simple interest.

**CODE:**

```
public class TEST {  
  
    public static void main(String[] ar) {  
        int p,r,t,si;  
        p=Integer.parseInt(ar[0]);  
        r=Integer.parseInt(ar[1]);  
        t=Integer.parseInt(ar[2]);  
        si=p*r*t/100;  
        System.out.println("simple interest=+"+si);  
    }  
}
```

**OUTPUT:**



```
Microsoft Windows [Version 10.0.18363.1016]  
(c) 2019 Microsoft Corporation. All rights reserved.  
  
C:\Users\Himanshu>d:  
  
D:\>javac TEST.java  
  
D:\>java TEST 5675 10 4  
simple interest=+2270  
  
D:\>
```

## Experiment – 2

**Objective:** Write a program to design simple calculator for (+, -, \*, and /) using switch case.

**Code:**

```
import java.util.Scanner;
public class Calculator{
public static void main(String[] ar){
Scanner sc=new Scanner(System.in);
System.out.println("enter first no.");
int a=sc.nextInt();
System.out.println("enter second no.");
int b=sc.nextInt();
System.out.println("Enter Operator(+ - * / or %)");
char operator=sc.next().charAt(0);
float result=0;
switch(operator)
{ case '+':{result=a+b;
break;}
case '-':{result=a-b;
break;}
case '*':{result=a*b;
break;}
case '/':{result=a/b;
break;}
case '%':{result=a%b;
break;}
}
System.out.print(a+" "+operator+" "+b+"="+result);
}
}
```

## OUTPUT:

```
Command Prompt
D:\>java Calculator
enter first no.
10000
enter second no.
123
Enter Operator(+ - * / or %)
*
10000 * 123=1230000.0
D:\>java Calculator
enter first no.
188828
enter second no.
382
Enter Operator(+ - * / or %)
/
188828 / 382=494.0
D:\>java Calculator
enter first no.
188828
enter second no.
382
Enter Operator(+ - * / or %)
%
188828 % 382=120.0
D:\>
```

## Experiment – 3

### Objective:

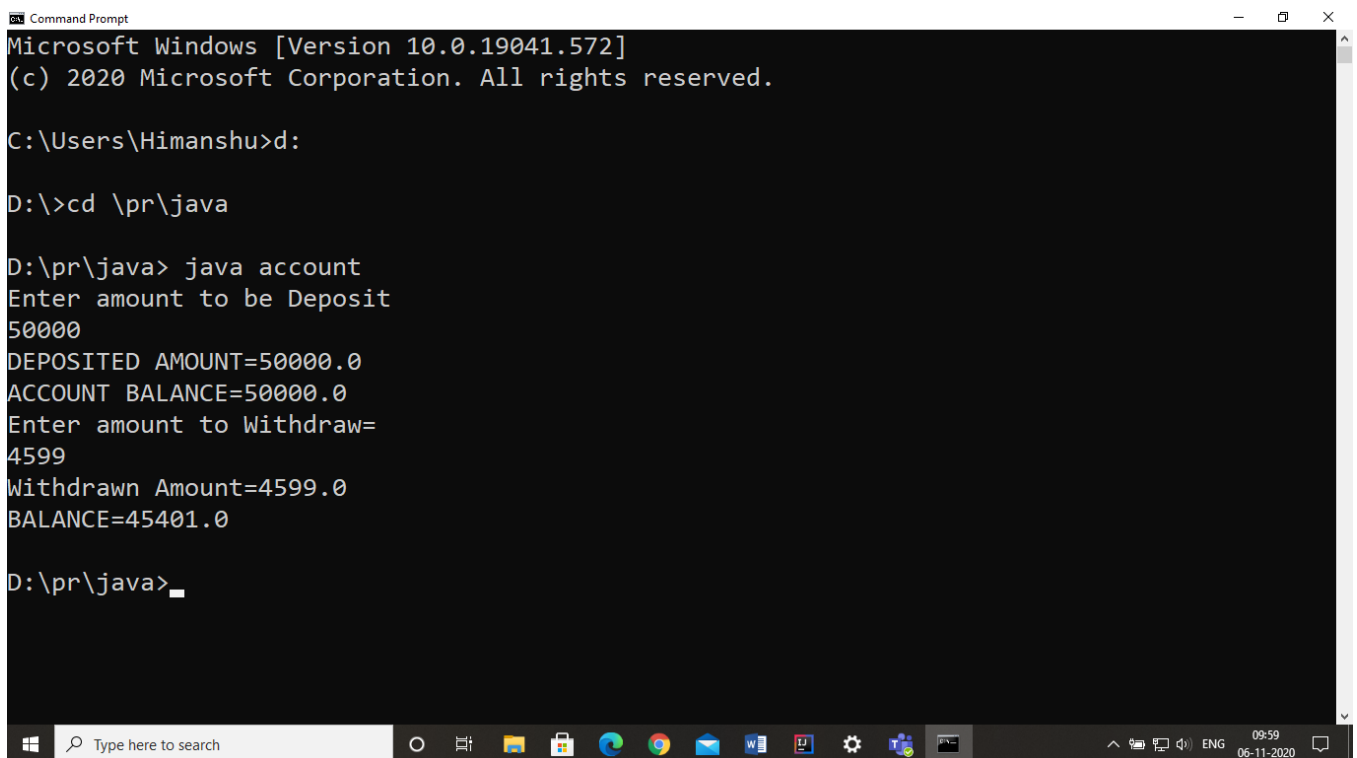
Write a program to design accounts class and two instance functions withdraw () and deposit (). Also, declare two variables accno and balance. Display total balance updations after withdrawl and deposit.

### Code:

```
import java.util.Scanner;
public class account{
    static float balance=0;
    void deposit(){
        Scanner in=new Scanner(System.in);
        System.out.println("Enter amount to be Deposit");
        float d=in.nextFloat();
        balance=d+balance;
        System.out.println("DEPOSITED AMOUNT="+d);
        System.out.println("ACCOUNT BALANCE="+balance);
    }
    void withdraw(){
        Scanner in=new Scanner(System.in);
```

```
        System.out.println("Enter amount to Withdraw=");  
        float w=in.nextFloat();  
        balance=balance-w;  
        System.out.println("Withdrawn Amount="+w);  
        System.out.println("BALANCE="+balance);  
  
    }  
    public static void main(String[] args){  
        account a=new account();  
        a.deposit();  
        a.withdraw();  
    }  
}
```

## OUTPUT:



```
Microsoft Windows [Version 10.0.19041.572]  
(c) 2020 Microsoft Corporation. All rights reserved.  
  
C:\Users\Himanshu>d:  
  
D:\>cd \pr\java  
  
D:\pr\java> java account  
Enter amount to be Deposit  
50000  
DEPOSITED AMOUNT=50000.0  
ACCOUNT BALANCE=50000.0  
Enter amount to Withdraw=  
4599  
Withdrawn Amount=4599.0  
BALANCE=45401.0  
  
D:\pr\java>_
```

## Experiment-4

**Objective:** Write a program in Java to implement a class car with engine no, car\_type (sedan or hatchback), and a constructor with two parameters. Create a child class alto with color and a constructor. Display all the information of alto car using a display() function.

### Code:

```
import java.util.*;
class car
{
    int engineNo;
    String car_type;
    car(int a,String b)
    {
        engineNo=a;
        car_type=b;
    }
}
class alto extends car
{
    String color;
    alto()
    {
        super(123,"Hatchback");
        color="Silver";
    }
    void display()
    {
        System.out.println("The Car Details of Alto are as follows:");
        System.out.println("Car Name - Alto");
        System.out.println("Engine Number - "+engineNo);
        System.out.println("Car Type - "+car_type);
        System.out.println("Color - "+color);
    }
}
public class A
{
    public static void main( String args[])
    {
        alto n= new alto();
        n.display();
    }
}
```

## Output:

```
Select Command Prompt
see also, -agentlib:jvmti=help and -agentlib:hprof=help
-agentpath:<pathname>[=<options>]
    load native agent library by full pathname
-javaagent:<jarpath>[=<options>]
    load Java programming language agent, see java.lang.instrument
-splash:<imagepath>
    show splash screen with specified image
See http://www.oracle.com/technetwork/java/javase/documentation/index.html for more details.

D:\pr>cd java

D:\pr\java>javac A.java

D:\pr\java>java A
The Car Details of Alto are as follows:
Car Name - Alto
Engine Number - 123
Car Type - Hatchback
Color - Silver

D:\pr\java>
```

## Experiment-5

**Objective:** Write a program to the concept of Method overloading by designing functions to sum different type of numbers.

### Code:

```
import java.util.*;
public class fnooverriding{
    int sum(int a,int b,int c)
    {

        int s=a+b+c;
        return (s);
    }
}
```

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```
int sum(int a,int b)
{

    int s=a+b;
    return(s);

}

void sum(){
    Scanner sc=new Scanner(System.in);
    System.out.println("enter 3 no.s");
    int a= sc.nextInt();
    int b=sc.nextInt();
    int c=sc.nextInt();
    int s=a+b+c;
    System.out.println("sum="+s);
}

public static void main(String[] args){
    fnoverriding fn=new fnoverriding();
    Scanner sc=new Scanner(System.in);
    System.out.println("enter 3 no.s");
    int g=sc.nextInt();
    int h=sc.nextInt();
    int i=sc.nextInt();
    System.out.println("sum="+fn.sum(g,h,i));
    System.out.println("enter 2 no.s");
    int d=sc.nextInt();
    int e=sc.nextInt();

    System.out.println("sum="+fn.sum(d,e));

    fn.sum();

}
}
```

## **Output:**

```

Microsoft Windows [Version 10.0.19041.508]
(c) 2020 Microsoft Corporation. All rights reserved.

C:\Users\Himanshu>d:

D:\>cd pr\java\

D:\pr\java>javac fnoverriding.java

D:\pr\java>java fnoverriding
enter 3 no.s
23
56
45
sum=124
enter 2 no.s
242
565
sum=807
enter 3 no.s
789
466
34
sum=1289

D:\pr\java>
  
```

## Experiment-6

### Objective:

```

import java.util.Scanner;
public class JavaExample
{
    public static void main(String[] args)
    {
        int count;
        String temp;
        Scanner scan = new Scanner(System.in);

        //User will be asked to enter the count of strings
        System.out.print("Enter number of strings you would like to enter:");
        count = scan.nextInt();

        String str[] = new String[count];
        Scanner scan2 = new Scanner(System.in);

        //User is entering the strings and they are stored in an array
        System.out.println("Enter the Strings one by one:");
        for(int i = 0; i < count; i++)
        {
            str[i] = scan2.nextLine();
        }
        scan.close();
        scan2.close();

        //Sorting the strings
  
```

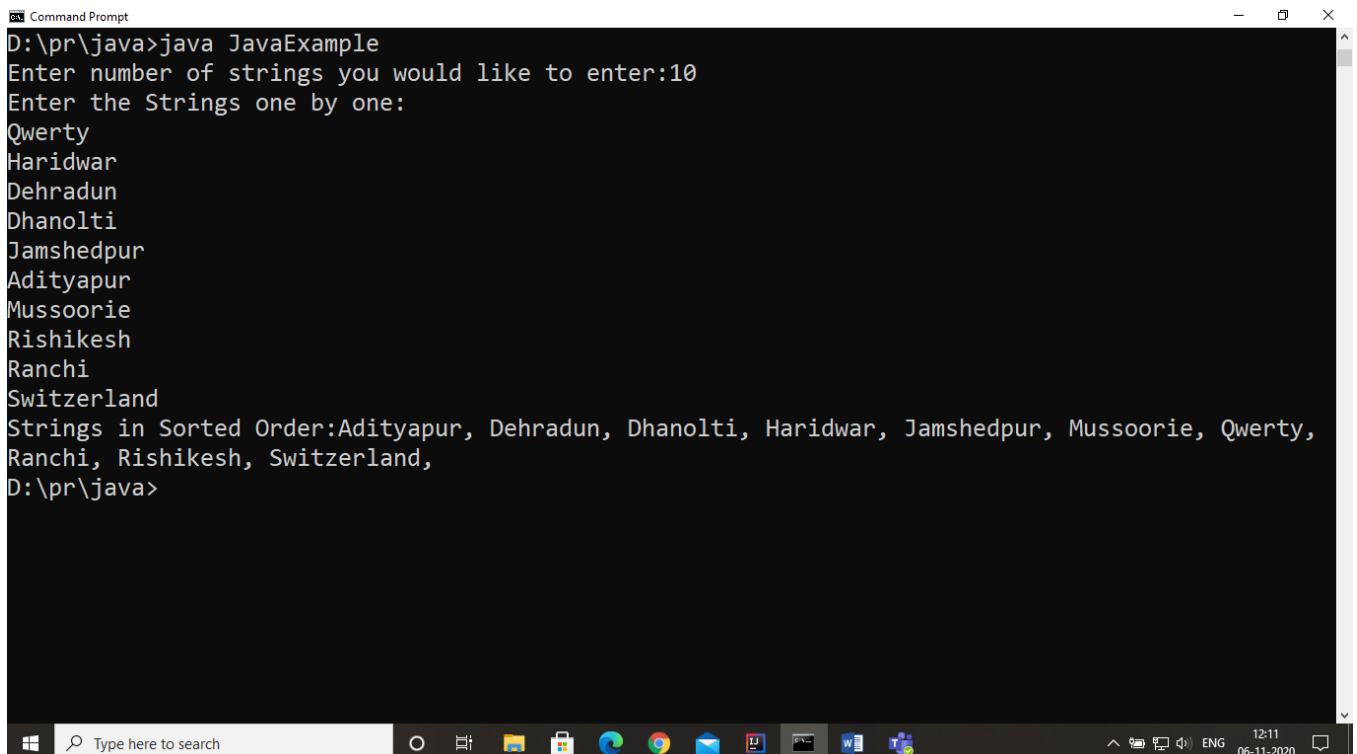
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```
for (int i = 0; i < count; i++)
{
    for (int j = i + 1; j < count; j++) {
        if (str[i].compareTo(str[j])>0)
        {
            temp = str[i];
            str[i] = str[j];
            str[j] = temp;
        }
    }
}

//Displaying the strings after sorting them based on alphabetical order
System.out.print("Strings in Sorted Order:");
for (int i = 0; i <= count - 1; i++)
{
    System.out.print(str[i] + ", ");
}
}
```

## Output:



```
Command Prompt
D:\pr\java>java JavaExample
Enter number of strings you would like to enter:10
Enter the Strings one by one:
Qwerty
Haridwar
Dehradun
Dhanolti
Jamshedpur
Adityapur
Mussoorie
Rishikesh
Ranchi
Switzerland
Strings in Sorted Order:Adityapur, Dehradun, Dhanolti, Haridwar, Jamshedpur, Mussoorie, Qwerty,
Ranchi, Rishikesh, Switzerland,
D:\pr\java>
```

## Experiment-7

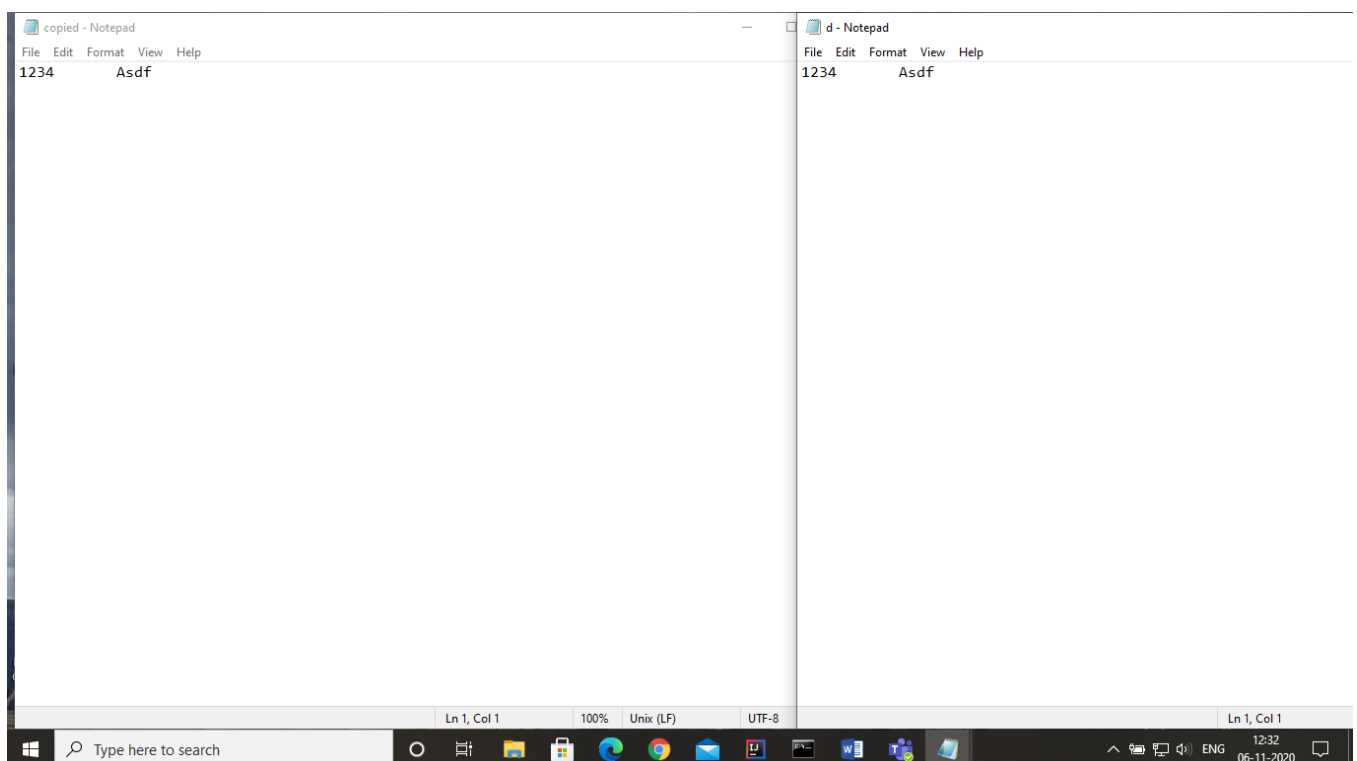
**Objective:** Write a program to create a copy of text file n harddisk using I/O stream class in java.

**Code:**

```
import java.io.*;
public class copyfile{
    public static void main(String[] args){
        try {
            FileInputStream fin = new FileInputStream("d.txt");

            FileOutputStream fout = new FileOutputStream("copied.txt");
            int c;
            while ((c = fin.read()) != -1)
                fout.write(c);
        } catch (IOException e){}
    }
}
```

**Output:**



## Experiment-8

**Objective:** WAP to Handle the user defined Exception using throw keyword to check user age is valid or not (must be  $\geq 18$ ).

### Code:

```
import java.util.*;
class jexception extends Exception{
    String m;
    jexception(String message){
        m=message;
    }
    public String toString(){
        return (m);
    }
}

public class uException{
    public static void main(String[] args){
        Scanner sc=new Scanner(System.in);
        System.out.println("Enter no. of to vote");
        int i=0,n;
        n=sc.nextInt();
        int age[]=new int[n];
        try{
            for(i=0;i<n;i++){
                System.out.println("enter no. of person age");
                age[i]=sc.nextInt();
                if(age[i]<18){
                    throw new jexception("Age is Less than 18");
                }
            }
        }catch (jexception j){
            System.out.println("Exception:"+j);
        }
    }
}
```

### Output:

```
Command Prompt

D:\pr\java>java uException
Enter no. of to vote
2
enter no. of person age
19
enter no. of person age
12
Exception:Age is Less than 18

D:\pr\java>
```

## Experiment-9

**Objective:** WAP to create a thread that Implement the Runnable interface for implementing loop in forward and reverse order simultaneously.

### Code:

```
class thread implements Runnable{
    String message;
    thread(String s){
        message=s;
    }
    public void run(){
        try {
            for(int i=0;i<5;i++)
                System.out.println(message+" "+i);
            for (int i = 5; i>0 ; i--) {
                System.out.println(message+" "+i);
                Thread.sleep(1000);
            }
        }catch (Exception e){
            System.out.println("Exception:"+e);
        }
    }
}
```

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```

    }
}
}
public class runnable{
    public static void main(String args[]){
        thread t1=new thread("Hello");
        thread t2=new thread("World");

        Thread T1=new Thread(t1);
        Thread T2=new Thread(t2);
        T1.start();
        T2.start();

    }
}

```

## Output:

```

D:\pr\java>java runnable
Hello 0
World 0
Hello 1
Hello 2
Hello 3
Hello 4
World 1
Hello 5
World 2
World 3
World 4
World 5
World 4
Hello 4
World 3
Hello 3
Hello 2
World 2
Hello 1
World 1

D:\pr\java>

```

## EXPERIMENT – 10

**Objective:** WAP to Draw the line, Rectangle, oval, text using the graphics method in applet

**CODE:**

```
import java.applet.Applet;

import java.awt.*;

public class Rectangleovaline extends Applet
{

public void paint(Graphics g)
{

g.setColor(Color.red);

g.drawString("Welcome",50, 50);

g.drawLine(20,30,20,300);

g.drawRect(70,100,30,30);

g.fillRect(170,100,30,30);

g.drawOval(70,200,30,30);

g.setColor(Color.pink);

g.fillOval(170,200,30,30);

g.drawArc(90,150,30,30,30,270);

g.fillArc(270,150,30,30,0,180);

}

}
```

### **OUTPUT :**



C:\windows\system32\cmd.exe - appletviewer Rectangleovaline.java

```
C:\Users\User\Desktop\java 2>javac Rectangleovaline.java
```

```
C:\Users\User\Desktop\java 2>appletviewer Rectangleovaline.java
```