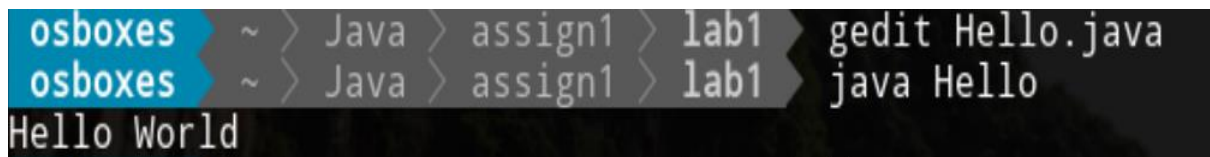


Assignment 1

1.Print hello world.

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

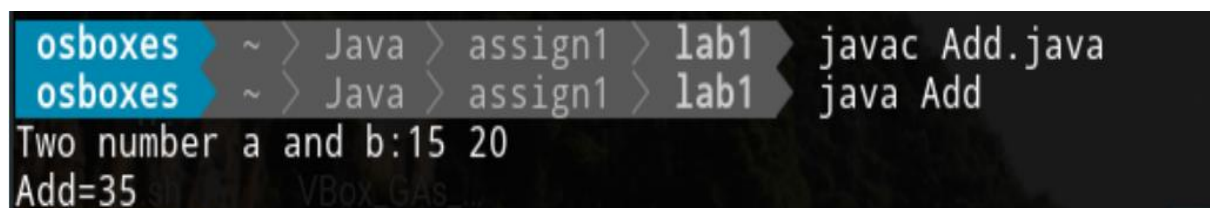
Output:

A terminal window with a dark background and light blue text. The prompt is 'osboxes ~ >'. The user enters 'Java > assign1 > lab1 > gedit Hello.java'. The prompt changes to 'osboxes ~ >'. The user enters 'java Hello'. The output is 'Hello World'.

2.Add two number/binary/character.

```
public class Add{  
    public static void main(String[] args){  
        int a=15;  
        int b=20;  
        int add=(a+b);  
        System.out.println("Two number a and b:" +(a)+" "+(b));  
        System.out.println("Add="+add);  
    }  
}
```

Output:

A terminal window with a dark background and light blue text. The prompt is 'osboxes ~ >'. The user enters 'Java > assign1 > lab1 > javac Add.java'. The prompt changes to 'osboxes ~ >'. The user enters 'java Add'. The output is 'Two number a and b:15 20' and 'Add=35'.

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

```

int a=0b0100,b=0b0010;

int add=a+b;

System.out.println (add);

}

}

```

```

osboxes ~ > Java > assign1 > lab1 > javac Binary.java
osboxes ~ > Java > assign1 > lab1 > java Binary
addition of binary number is:6

```

3.Calculate compound interest.

```

public class Compound{

public static void main(String[] args){

float p=2000;

float r=5;

float n=3;

float pow=(float)Math.pow((1+r/100),n);

float ci=p*(pow-1);

System.out.println("p="+p)+" "+"r="+r)+" "+"n="+n));

System.out.println("ci:="+ci));

}

}

```

Output:

```

osboxes ~ > Java > assign1 > lab1 > javac Compound.java
osboxes ~ > Java > assign1 > lab1 > java Compound
p=2000.0 r=5.0 n=3.0
ci:=315.2497

```

4.calculate the power of number.

```

public class Power{

public static void main(String[] args){

```

```

int base=3;

int expo=4;

long power = 1;

System.out.println("value of base and expo=" +(base)+":"+expo));

    for (;expo != 0; --expo) {

        power *= base;

    }

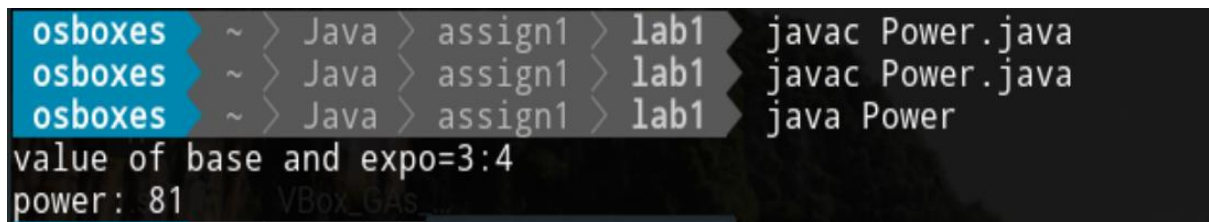
    System.out.println("power: " + power);

}

}

```

Output:



```

osboxes ~ > Java > assign1 > lab1 > javac Power.java
osboxes ~ > Java > assign1 > lab1 > javac Power.java
osboxes ~ > Java > assign1 > lab1 > java Power
value of base and expo=3:4
power: 81

```

5.swap two numbers.

```

public class Swap{

    public static void main(String[] args){

        int a=10,b=20;

        System.out.println("Number before swap:" +(a)+" " +(b));

        a=a+b;

        b=a-b;

        a=a-b;

        System.out.println("Number after swap:" +(a) +" " +(b));

    }

}

```

Output:

```
osboxes ~ > Java > assign1 > lab1 > javac Swap.java
osboxes ~ > Java > assign1 > lab1 > java Swap
Number before swap:10 20
Number after swap:20 10
```

6 calculate area of rectangle.

```
public class Area{
    public static void main(String []args){
        int l=20,b=30;
        int area=0;
        System.out.println("Lenght and Breath are:"+(l)+" "+(b));
        area=l*b;
        System.out.println("Area of rectangle are:"+(area));
    }
}
```

Output:

```
osboxes ~ > Java > assign1 > lab1 > javac Area.java
osboxes ~ > Java > assign1 > lab1 > java Area
Lenght and Breath are:20 30
Area of rectangle are:600
```

8.Java program to find ASCII value of a character

```
import java.util.Scanner;

public class Ascii {

    public static void main(String[] args) {
        Scanner sc = new Scanner(System.in);
        System.out.print("Input a character: ");
        // reading a character
        char ch = sc.next().charAt(0);
        int ascii = ch;
        System.out.println("The ASCII value of " + ch + " is: " + ascii);
    }
}
```

```
}  
}
```

Output:

```
osboxes ~ > Java > assign1 > lab1 java Ascii  
Input a character: A  
The ASCII value of A is: 65  
osboxes ~ > Java > assign1 > lab1 java Ascii  
Input a character: r  
The ASCII value of r is: 114
```

9. Print default values of primitive data type variables.

```
class Default
```

```
{  
    static byte b;  
    static short s;  
    static int i;  
    static long l;  
    static float f;  
    static double d;  
    static char c;  
    static boolean bl;
```

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

```
{  
    System.out.println("Byte :"+b);  
    System.out.println("Short :"+s);  
    System.out.println("Int :"+i);  
    System.out.println("Long :"+l);  
    System.out.println("Float :"+f);  
    System.out.println("Double :"+d);  
    System.out.println("Char :"+c);  
    System.out.println("Boolean :"+bl);  
}
```

```
}
```

```
osboxes ~ > Java > assign1 > lab1 javac Default.java
osboxes ~ > Java > assign1 > lab1 java Default
Byte :0
Short :0
Int :0
Long :0
Float :0.0
Double :0.0
Char :
Boolean :false
```

10. .swap two numbers without using third variable.

```
public class Swap{
    public static void main(String[] args){
        int a=10,b=20;
        System.out.println("Number before swap:" +(a)+" " +(b));
        a=a+b;
        b=a-b;
        a=a-b;
        System.out.println("Number after swap:" +(a) +" " +(b));
    }
}
```

Output:

```
osboxes ~ > Java > assign1 > lab1 javac Swap.java
osboxes ~ > Java > assign1 > lab1 java Swap
Number before swap:10 20
Number after swap:20 10
```

11.Print Fibonacci series till n.

```
import java.util.*;
public class Fibonacci
{
    public static void main(String[] args)
    {
        Scanner s=new Scanner();
```

```

int t1 = 0, t2 = 1;

System.out.print("Enter the number of terms: ");

int n=s.nextInt();

System.out.println("First " + n + " terms of fibonnaci series: ");

//Print the fibonacci series

int i = 1;

while (i <= n)
{
    System.out.print(t1 + " ");

    int sum = t1 + t2;

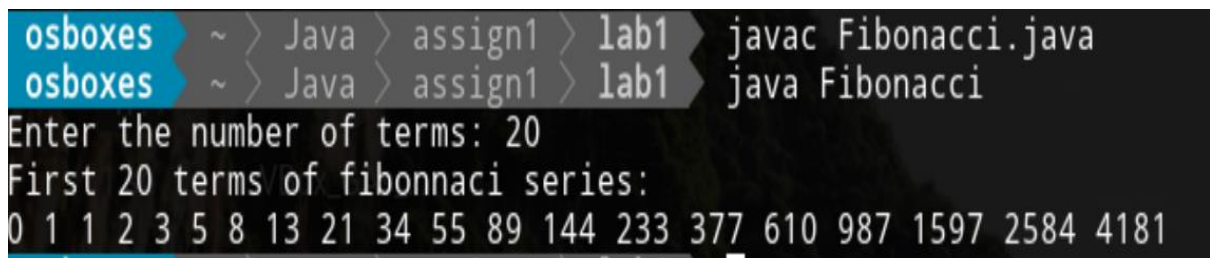
    t1 = t2;

    t2 = sum;

    i++;
}

System.out.println();
}
}

```



```

osboxes ~ > Java > assign1 > lab1 > javac Fibonacci.java
osboxes ~ > Java > assign1 > lab1 > java Fibonacci
Enter the number of terms: 20
First 20 terms of fibonnaci series:
0 1 1 2 3 5 8 13 21 34 55 89 144 233 377 610 987 1597 2584 4181

```

Lab2

1.Display prime number between 1 to 100 or 1 to n.

```

import java.util.Scanner;

public class Prn{

    public static void main(String[] args){

        Scanner s=new Scanner(System.in);

        System.out.print("Enter the number:" );

        int n =s.nextInt();
    }
}

```

```

for(int num=2;num<=n;num++)
{
    int temp=0;
    for(int i=2;i<=num-1;i++)
    {
        if(num%i==0)
        {
            temp=temp+1;
        }
    }
    if(temp==0)
    {
        System.out.print(num+" ");
    }
}

System.out.println();
}
}

```

```

osboxes ~ > Java > assign1 > lab2 > java Prn
Enter the number:100
2 3 5 7 11 13 17 19 23 29 31 37 41 43 47 53 59 61 67 71 73 79 83 89 97

```

2.Find factorial of a number.

```

import java.util.*;

public class Factorial{

    public static void main(String args []){

        Scanner s=new Scanner(System.in);

        System.out.print("Enter the number:");

        int n=s.nextInt();

        int fact=1;

        if(n<0)

```



```

{ System.out.println("cannot find factorial");}

else

{

for (int i = 1; i <= n; i++) {

    fact=fact*i;

}

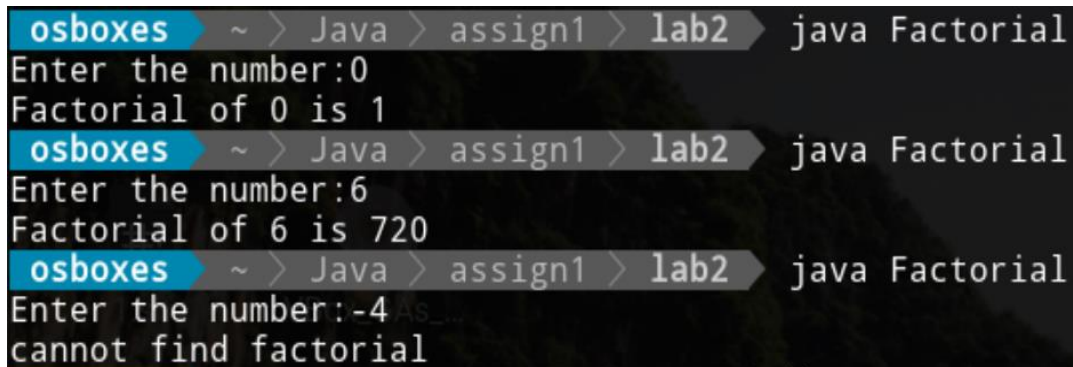
System.out.println("Factorial of "+n+" is "+fact);

}

}

}

```



```

osboxes ~ > Java > assign1 > lab2 > java Factorial
Enter the number:0
Factorial of 0 is 1
osboxes ~ > Java > assign1 > lab2 > java Factorial
Enter the number:6
Factorial of 6 is 720
osboxes ~ > Java > assign1 > lab2 > java Factorial
Enter the number:-4
cannot find factorial

```

3.Check number palindrome or not.

```

import java.util.*;

class Palindrome{

public static void main(String[]args){

Scanner s=new Scanner(System.in);

System.out.print("Enter the number:");

int n=s.nextInt();

    int rev = 0, rem;

    // store the number to originalNum

    int originaln = n;

    // get the reverse of originalNum

    while (n != 0) {

        rem = n%10;

```

```

    rev = rev *10 + rem;

    n /= 10;
}

if (originaln == rev) { //compare original num and reverse number equal or not
    System.out.println(originaln + " is Palindrome.");
}
else {
    System.out.println(originaln + " is not Palindrome.");
}
}
}

```

```

osboxes ~ > Java > assign1 > lab2 java Palidrome
Enter the number:121
121 is Palindrome.
osboxes ~ > Java > assign1 > lab2 java Palidrome
Enter the number:234
234 is not Palindrome.

```

4.Add two interger variable using different ways

```

import java.util.Scanner;

public class A2{
    public static void main(String[] args){
        Scanner s=new Scanner(System.in);

        System.out.print("Enter the value of a and b:");

        int a=s.nextInt();           //taking input from user
        int b=s.nextInt();

        int add=0;

        System.out.println(a+b);
    }
}

```

```
osboxes ~ > Java > assign1 > lab2 > javac A2.java
osboxes ~ > Java > assign1 > lab2 > java A2
Enter the value of a and b:34 67
Addition of a and b:101
Linux Lite Terminal -
```

//using function

```
import java.util.Scanner;

class A4{

public static void main(String[]args){

int n1,n2,add=0;

Scanner s=new Scanner(System.in);

System.out.print("enter the value of n1 and n2:");

n1=s.nextInt();

n2=s.nextInt();

add = add(n1, n2);

System.out.println("add of two number are : " + add);

}

public static int add(int a, int b)

{

int add=a+b;

return add;

}

}
```

```
osboxes ~ > Java > assign1 > lab2 > javac A4.java
osboxes ~ > Java > assign1 > lab2 > java A4
enter the value of n1 and n2:20 34
add of two number are : 54
```

//using - operator

```
import java.util.Scanner;

public class A3{

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

```

Scanner s=new Scanner(System.in);

System.out.print("Enter two number a and b:");

int a=s.nextInt();

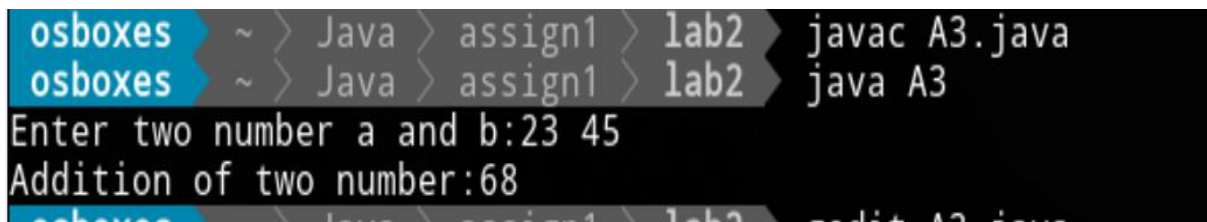
int b=s.nextInt();

System.out.println("Addition of two number:"+a+(-b));

}

}

```



```

osboxes ~ > Java > assign1 > lab2 javac A3.java
osboxes ~ > Java > assign1 > lab2 java A3
Enter two number a and b:23 45
Addition of two number:68
osboxes ~ > Java > assign1 > lab2 javac A3.java

```

5.Find square root of a number with out sqrt method

```

import java.util.*;

class Square{

    static void squareRoot(int num){

        double temp;

        double b=num/2;

        do{

            temp=b;

            b=(temp+(num/temp))/2;

        }while((temp-b)!=0);

        System.out.println("square root of "+num+" "+"is:"+b);

    }

    public static void main(String[]args){

        System.out.print("Enter any number:");

        Scanner sc=new Scanner(System.in);

        int c=sc.nextInt();
    }
}

```

```

    Square.squareRoot(c);
}
}

```

```

osboxes ~ > Java > assign1 > lab2 > java Square
Enter any number:5
square root of 5 is:2.23606797749979
osboxes ~ > Java > assign1 > lab2 > java Square
Enter any number:2
square root of 2 is:1.414213562373095

```

6.Check Armstrong number

```

public class Armstrong {
    public static void main(String[] args) {
        int num = Integer.parseInt(args[0]);
        int originalnum, rem, result = 0;
        originalnum = num;
        while (originalnum != 0)
        {
            rem = originalnum % 10;
            result += Math.pow(rem, 3);
            originalnum /= 10;
        }
        if(result == num)
            System.out.println(num + " is an Armstrong number.");
        else
            System.out.println(num + " is not an Armstrong number.");
    }
}

```

```

osboxes ~ > Java > assign1 > lab2 > java Armstrong 721
721 is not an Armstrong number.
osboxes ~ > Java > assign1 > lab2 > java Armstrong 371
371 is an Armstrong number.

```

6.Calculate grades of students using their marks

```

import java.util.Scanner;

```

```
public class Grade{

    public static void main(String args[]){

        int marks[] = new int[6];

        int i;

        float total=0, avg;

        Scanner scanner = new Scanner(System.in);

        for(i=0; i<6; i++) {

            System.out.print("Enter Marks of Subject" +(i+1)+":");

            marks[i] = scanner.nextInt();

            total = total + marks[i];

        }

        //Calculating average here

        avg = total/6;

        System.out.print("The student Grade is: ");

        if(avg>=80)

        {

            System.out.print("A");

        }

        else if(avg>=60 && avg<80)

        {

            System.out.print("B");

        }

        else if(avg>=40 && avg<60)

        {

            System.out.print("C");

        }

        else

        {

            System.out.print("D");

        }

        System.out.println();

    }

}
```

```
}  
}
```

```
osboxes ~ > Java > assign1 > lab2 > gedit Grade.java  
osboxes ~ > Java > assign1 > lab2 > java Grade  
Enter Marks of Subject1:20  
Enter Marks of Subject2:45  
Enter Marks of Subject3:67  
Enter Marks of Subject4:78  
Enter Marks of Subject5:90  
Enter Marks of Subject6:56  
The student Grade is: C
```

8. Use switch case, recursion, print patterns, etc

```
public class Switc{  
    public static void main(String[]args){  
        int monthno=Integer.parseInt(args[0]);  
        switch(monthno)  
        {  
            case 1:  
            case 2:  
            case 3: System.out.println("January");  
                    break;  
            case 4:  
            case 5: System.out.println("hello");  
                    break;  
            case 6:  
            case 7:  
            case 8:  
            case 9:  
            case 10: System.out.println("hii");  
                    break;  
            case 11:  
            case 12:  
            default:  
                System.out.println("Please select valid case");  
        }  
    }  
}
```

```
}  
}
```

```
osboxes ~ > Java > assign1 > lab2 1 java Switc 1  
January  
osboxes ~ > Java > assign1 > lab2 java Switc 2  
January  
osboxes ~ > Java > assign1 > lab2 java Switc 4  
hello  
osboxes ~ > Java > assign1 > lab2 java Switc 7  
hii  
osboxes ~ > Java > assign1 > lab2 java Switc 11  
Please select valid case
```

Recursion

```
public class Recursion{  
    static int factorial(int num){  
        if(num==0)  
            return 1;  
        else  
            return (num*factorial(num-1));  
    }  
  
    public static void main(String[] args){  
        int n=Integer.parseInt(args[0]);  
        int fact=Recursion.factorial(n);  
        System.out.println("factorial of "+n+" " +"is:" +fact);  
    }  
}
```

```
osboxes ~ > Java java Recursion 7  
factorial of 7 is:5040
```

Pattern


```
public class Pattern  
{  
    public static void main(String args[])  
    {  
        int r=5; String num="hii";
```



```

for(int i=0; i<r; i++)
{
    for(int j=0; j<=i; j++)
        System.out.print(num+ " ");
    System.out.print("\n");
}
}
}

```



```

osboxes ~ > Java > assign1 > lab2 > java Pattern
hii
hii hii
hii hii hii
hii hii hii hii
hii hii hii hii hii

```

```

public class Pattern1
{
    public static void main(String args[])
    {
        int r=5; String n="{vp}";

        for(int i=0; i<r; i++)
        {
            for(int j=i; j<r; j++)
                System.out.print(n+ " ");
            System.out.print("\n");
        }
    }
}

```

```

osboxes ~ > Java > assign1 > lab2 > javac Pattern1.java
osboxes ~ > Java > assign1 > lab2 > java Pattern1
{vp} {vp} {vp} {vp} {vp}
{vp} {vp} {vp} {vp}
{vp} {vp} {vp}
{vp} {vp}
{vp}

```

```

public class Pattern2{
public static void main(String args[]){
    int r=5; String s="%%";
    for(int i=0; i<r; i++)
    {
        for(int k=i; k<r; k++)
            System.out.print(" ");
        for(int j=0; j<=i; j++)
            System.out.print(s+ " ");

        System.out.print("\n");
    }
}
}

```

```

osboxes ~ > Java > assign1 > lab2 > javac Pattern1.java
osboxes ~ > Java > assign1 > lab2 > javac Pattern2.java
osboxes ~ > Java > assign1 > lab2 > java Pattern2
%%
%% %%
%% %% %%
%% %% %% %%
%% %% %% %% %%

```

```

public class Pattern3
{public static void main(String args[])
{
    int r=8; String s="@";

```

```

for(int i=0; i<r; i++)
{
    for(int k=0; k<i; k++)
        System.out.print(" ");
    for(int j=i; j<r; j++)
        System.out.print(s+ " ");
    System.out.print("\n");
}
}
}

```

```

osboxes ~ > Java > assign1 > lab2
osboxes ~ > Java > assign1 > lab2
javac Pattern3.java
java Pattern3
@ @ @ @ @ @ @ @
@ @ @ @ @ @ @
@ @ @ @ @ @
@ @ @ @ @
@ @ @ @
@ @ @
@ @
@

```

Lab-3

1.Build a class Employee which contains details about the employee and compile and run its instance.

```

public class Employee{
    int id;
    String name;
    int age;
    String Dept;
    int mobileno;
    void setData(int i,String n,int a,String d,int m){
        id=i;
        name=n;

```

```

age=a;

Dept=d;

mobilenos=m;

}

void display(){

System.out.println("id="+id+"\n"+"name="+name+"\n"+"age="+age+"\n"+"dept="+Dept+"\n"+"mobile="+mobilenos);

}

public static void main(String[] args){

Employee e=new Employee();

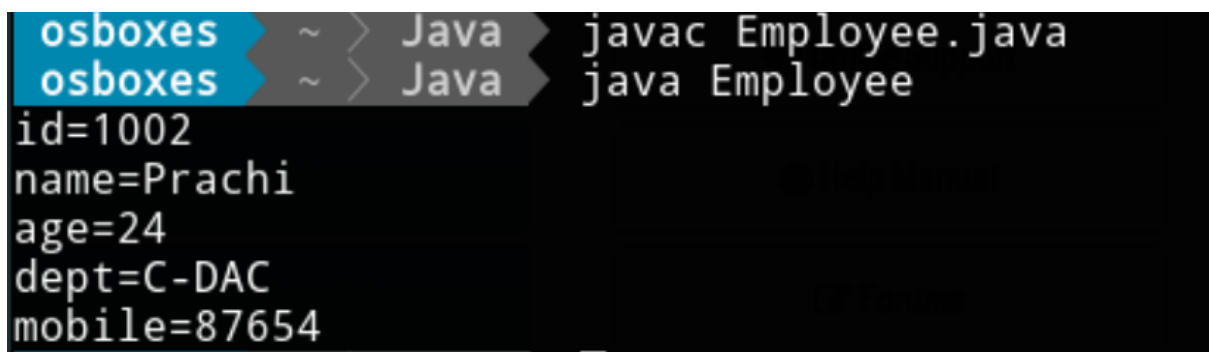
e.setData(1002,"Prachi",24,"C-DAC",87654);

e.display();

}

}

```



```

osboxes ~ > Java javac Employee.java
osboxes ~ > Java java Employee
id=1002
name=Prachi
age=24
dept=C-DAC
mobile=87654

```

2. Build a class which has references to other classes .Instantiate these reference variables and invoke instance methods

```

class Emp{

int id;

String name;

double salary;

static String org="C-DAC";

Address add;    //using object reference-----Address

```

```

//constructor
Emp(int id,String name,double salary,Address add){
    this.id=id;
    this.name=name;
    this.salary=salary;
    this.add=add;
}

void display(){
    System.out.println("Employee Id:"+id+"\nEmployee Name:"+name+"\nEmployee
Salary:"+salary+"\nEmployee Org:"+org);
        add.display();
    }

//define main method
public static void main(String[]args){
    Address a=new Address("C-876","Spring Valley","New Delhi","Delhi",201005);
    Emp e=new Emp(1003,"Prachi Yadav",40000,a); //create object of employee class
    e.display(); //access method display using object
}
}

```

Create another file Address.java

```

class Address{
    String hno;
    String street;
    String city;
    String state;
    int pin;
    Address(String hno,String street,String city,String state,int pin){

```

```

this.hno=hno;

this.street=street;

this.city=city;

this.state=state;

this.pin=pin;

}

//method to display data

void display(){

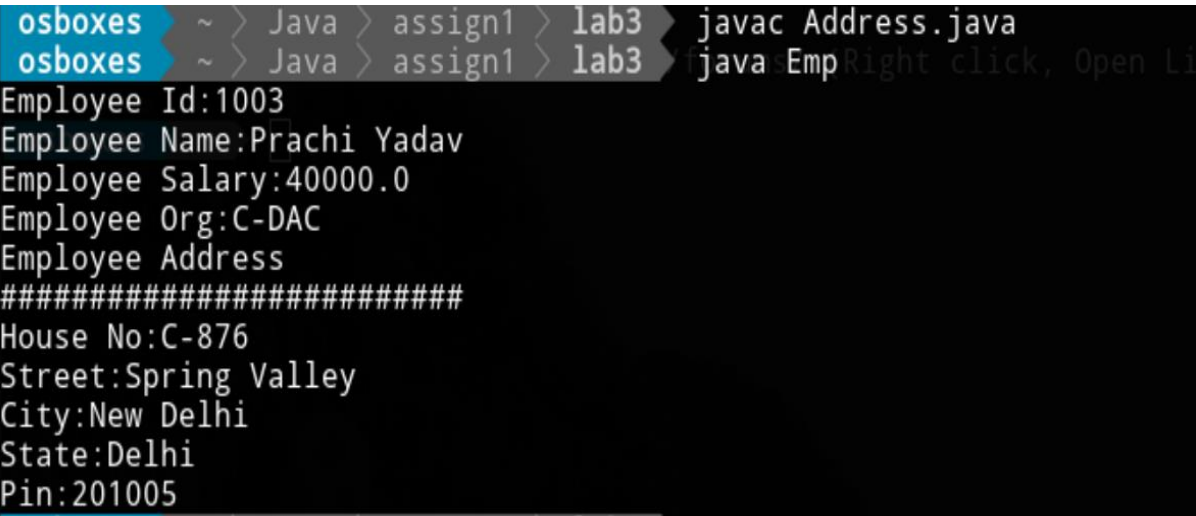
    System.out.println("Employee Address");

    System.out.println("#####");

    System.out.println("House
    No:"+hno+"\nStreet:"+street+"\nCity:"+city+"\nState:"+state+"\nPin:"+pin);

}

```



```

osboxes ~ > Java > assign1 > lab3 > javac Address.java
osboxes ~ > Java > assign1 > lab3 > java sEmp
Employee Id:1003
Employee Name:Prachi Yadav
Employee Salary:40000.0
Employee Org:C-DAC
Employee Address
#####
House No:C-876
Street:Spring Valley
City:New Delhi
State:Delhi
Pin:201005

```

LAB-4

1.Calculate average of numbers using Array

```

import java.util.*;

class Avg{

    public static void main(String[] args)

```

```

{

    Scanner s=new Scanner(System.in);

    System.out.print("Enter the array length:");

    int n=s.nextInt();

    System.out.print("Enter the array elements:");

    int []a=new int [n];

    int sum=0;

    for(int i=0;i<a.length;i++)

    { a[i]=s.nextInt();}

    //add array element.

    for(int i=0;i<a.length;i++)

    { sum = sum + a[i];}

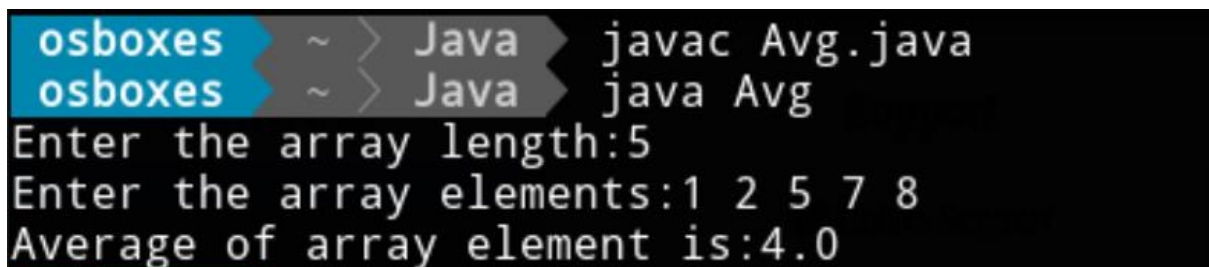
    float avg=sum/a.length;

    System.out.println("Average of array element is:" +avg);

}

}

```



```

osboxes ~ > Java javac Avg.java
osboxes ~ > Java java Avg
Enter the array length:5
Enter the array elements:1 2 5 7 8
Average of array element is:4.0

```

2.Reverse an array

```

import java.util.*;

public class Reverse{

    public static void main(String[]args){

        Scanner s=new Scanner(System.in);

        System.out.print("Enter the length of array:");

        int n =s.nextInt();

        int[]arr=new int [n];

        System.out.print("Enter the element of array:");
    }
}

```

```

for(int i=0;i<n;i++)
arr[i] =s.nextInt();
System.out.println("Array before reverse");
for( int x:arr)
{
System.out.print(+x+" ");
System.out.println();
System.out.println("*****");
System.out.println("Array after reverse");
for( int i=n;i>0;i--)

System.out.print(+arr[i-1]+" ");
System.out.println();
}
}

```

```

osboxes ~ > Java javac Reverse.java
osboxes ~ > Java java Reverse
Enter the length of array:7
Enter the element of array:2 3 4 5 6 7 8
Array before reverse
2 3 4 5 6 7 8
*****
Array after reverse
8 7 6 5 4 3 2

```

3.Sort an array in ascending order.

```

import java.util.*;

public class S{

public static void main(String[]args){

//int a[] =new int [n];

Scanner s=new Scanner(System.in);

```



```
System.out.print("Enter the lenght of array:");
int n=s.nextInt();
int a[] =new int [n];
System.out.print("Enter the element of array:");
for(int i=0;i<n;i++){

    a[i]=s.nextInt();

}
System.out.print("Array before sort:");
for (int x: a)

    {System.out.print(" "+x);}
Arrays.sort(a);
System.out.println();
System.out.println("\n*****");

System.out.print("Array after sort:");
for(int x:a)

    {System.out.print(" "+x);}
System.out.println();

}

}
```

```

osboxes ~ > Java javac S.java
osboxes ~ > Java java S
Enter the lenght of array:6
Enter the element of array:4 6 2 0 3 1
Array before sort: 4 6 2 0 3 1

*****
Array after sort: 0 1 2 3 4 6

```

4.Convert char Array to String

```

import java.util.*;

public class Char {

    public static void main(String args[]) {

        Scanner sc=new Scanner(System.in);

        System.out.print("Enter the lenght of character array:");

        int n=sc.nextInt();

        System.out.print("Enter the element of char array:");

        char []ch=new char[n];

        for(int i =0;i<ch.length;i++)

        {

            ch[i]=sc.next().charAt(0);

        }

        //constructor of the String class that parses char array as a parameter

        String s = new String(ch);

        System.out.println(s);

    }

}

```

```

osboxes ~ > Java 1 java Char
Enter the lenght of character array:11
Enter the element of char array:H e l l o P r a c h i
HelloPrachi

```

5.Add two Matrix using Multi-dimensional Arrays.

```
import java.util.*;

class Threed{

public static void main(String[] args){

Scanner s=new Scanner(System.in);

int[][]matrix1=new int[3][3];

int[][]matrix2=new int[3][3];

//int c[][]=new int[3][3];

System.out.println("Enter element of first matrix:");

for(int i=0;i<3;i++)

{

    for(int j=0;j<3;j++)

    {

        matrix1[i][j]=s.nextInt();

    }

}

System.out.println("Enter the element of of second matrix:");

for(int i=0;i<3;i++)

{for(int j=0;j<3;j++)

{ matrix2[i][j]=s.nextInt();

}

}

//int i,j;

int[][] c = new int[3][3];

for (int i = 0; i < 3; i++) {

for (int j = 0; j < 3; j++) {

c[i][j] = matrix1[i][j] + matrix2[i][j];

}

}

}
```

```

System.out.println("Additon of two matrix are:");

for(int i=0;i<3;i++){
    for (int j=0;j<3; j++) {
        System.out.print(c[i][j]+" ");
    }
}

}

}

```

The screenshot shows a terminal window with a dark background. At the top, there are two tabs labeled 'osboxes' and 'Java'. The terminal content is as follows:

```

~ > Java ~ > javac Threaded.java click,
~ > Java ~ > java Threaded
Enter element of first matrix:
1 2 3
4 5 6
2 1 4
Enter the element of of second matrix:
2 4 6
0 1 5
3 4 6
Additon of two matrix are:
3 6 9
4 6 11
5 5 10

```

6. Sort strings in alphabetical order

```

import java.util.*;

public class Sorting {

    public static void main(String args[]) {

        Scanner sc = new Scanner(System.in);

        System.out.print("Enter a string: ");

        String s = sc.nextLine();

        char ch[] = s.toCharArray();
    }
}

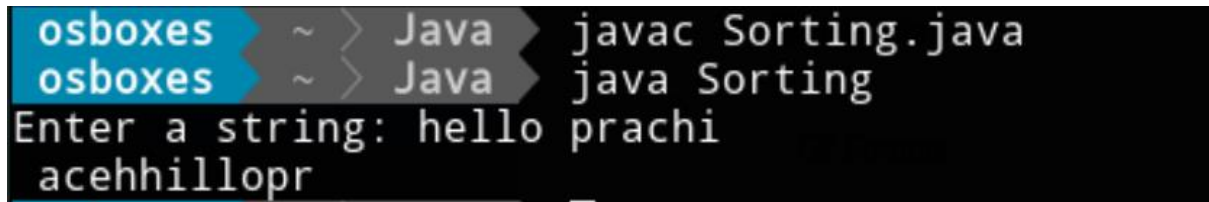
```

```

        Arrays.sort(ch);

        System.out.println(new String(ch)+ " ");
    }
}

```



```

osboxes ~ > javac Sorting.java
osboxes ~ > java Sorting
Enter a string: hello prachi
acehhillopr

```

7 .Find out the highest and second highest numbers in an array

```

import java.util.*;

public class SecondHighest {

    public static void main(String[] args) {

        Scanner s=new Scanner(System.in);

        System.out.print("Enter the lenght of array:");

        int n =s.nextInt();

        System.out.print("Enter the elements of array:");

        int []arr=new int [n];

        for(int i=0;i<arr.length;i++)

        { arr[i]=s.nextInt();}


        //Sort the array

        Arrays.sort(arr);


        System.out.println("First Highest Number: "+arr[n-1]);

        System.out.println("Second Highest Number: "+arr[n-2]);


    }
}

```

```

osboxes ~ > Java gedit SecondHighest.java
osboxes ~ > Java javac SecondHighest.java
osboxes ~ > Java java SecondHighest
Enter the length of array:7
Enter the elements of array:3 1 9 7 3 0 4
First Highest Number: 9
Second Highest Number: 7

```

8.Concatenate two arrays.

```

import java.util.*;

public class Cat{

    public static void main(String[] args) {

        Scanner s=new Scanner(System.in);


        System.out.println("Enter the first array");          //taking array elements from user
        int[]a = new int [5];
        for(int i=0;i<a.length;i++)
        { a[i]=s.nextInt();}

        System.out.println("Enter the second array");        // taking second array elements
        int[]b = new int [5];
        for(int i=0;i<a.length;i++)
        { b[i]=s.nextInt();}

        int[]c = new int[a.length+b.length];                //concat
        int count = 0;
        for(int i = 0;i<a.length;i++) {
            c[i] = a[i];
            count++;
        }
        for(int j = 0;j<b.length;j++) {

```

```
        c[count++] = b[j];  
    }  
    System.out.println("Array after concatenate");  
    for(int i=0;i<c.length;i++)  
        System.out.print(c[i]+" ");  
    System.out.println();  
}
```



The screenshot shows a terminal window with a dark background. At the top, there are three command prompts from 'osboxes' with a tilde symbol and a right arrow, indicating the directory is 'Java'. The first two prompts show 'javac Cat.java' and 'java C' being executed. Below these, the text 'Cat Char' is visible. The third prompt shows 'java Cat' being executed. The program's output follows: 'Enter the first array' is followed by the input '2 3 5 6 7'; 'Enter the second array' is followed by the input '9 7 3 2 1'; and 'Array after concatenate' is followed by the output '2 3 5 6 7 9 7 3 2 1'.

```
osboxes ~ > Java javac Cat.java  
osboxes ~ > Java java C  
Cat Char  
osboxes ~ > Java java Cat  
Enter the first array  
2 3 5 6 7  
Enter the second array  
9 7 3 2 1  
Array after concatenate  
2 3 5 6 7 9 7 3 2 1
```