**Assignment 2**

**Date: 03/03/2022**

**Submission Date: 05/03/2022**

**1. Write a Java program to print 'Hello' on screen and then print your name on a separate line.**

Expected Output :

Hello

Alexandra Abramov

class Asg

{

public static void main(String args[])

{

System.out.print("Hello\nDevi Dinesh");

}

}

**2. Write a Java program to print the sum of two numbers.**

Test Data: 74 + 36

class Asg

{

public static void main(String args[])

{

int a=74, b=36;

System.out.print(a+"+"+b+"="+(a+b));

}

}

**3. Write a Java program to divide two numbers and print on the screen.**

Test Data : 50/3

Expected Output : 16

class Asg

{

public static void main(String args[])

{

int a=50, b=3;

System.out.print(a+"/"+b+" = "+(a/b));

}

}

**4. Write a Java program to print the result of the following operations.**

Test Data:

a. -5 + 8 \* 6

b. (55+9) % 9

c. 20 + -3\*5 / 8

d. 5 + 15 / 3 \* 2 - 8 % 3

Expected Output :

43

1

19

13

class Asg

{

public static void main(String args[])

{

System.out.println("-5 + 8 \* 6 = "+(-5 + 8 \* 6 ) );

System.out.println("(55+9) % 9 = "+((55+9) % 9 ) );

System.out.println("20 + -3\*5 / 8 = "+(20 + -3\*5 / 8 ) );

System.out.println("5 + 15 / 3 \* 2 - 8 % 3 = "+(5 + 15 / 3 \* 2 - 8 % 3 ) );

}

}

**5. Write a Java program that takes two numbers as input and display the product of two numbers.**

Test Data:

Input first number: 25

Input second number: 5

Expected Output :

25 x 5 = 125

import java.util.Scanner;

class Asg

{

public static void main(String args[])

{

Scanner sc=new Scanner(System.in);

System.out.print("Input first number: ");

int a=sc.nextInt();

System.out.print("Input Second number: ");

int b=sc.nextInt();

System.out.println(a+" x "+b+" = " +(a\*b));

}

}

**6. Write a Java program to print the sum (addition), multiply, subtract, divide and remainder of two numbers.**

Test Data:

Input first number: 125

Input second number: 24

Expected Output :

125 + 24 = 149

125 - 24 = 101

125 x 24 = 3000 125 / 24 = 5

125 mod 24 = 5

import java.util.Scanner;

class Asg

{

public static void main(String args[])

{

Scanner sc=new Scanner(System.in);

System.out.print("Input first number: ");

int a=sc.nextInt();

System.out.print("Input Second number: ");

int b=sc.nextInt();

System.out.println(a+" + "+b+" = " +(a+b));

System.out.println(a+" - "+b+" = " +(a-b));

System.out.println(a+" x "+b+" = " +(a\*b));

System.out.println(a+" / "+b+" = " +(a/b));

System.out.println(a+" mod "+b+" = " +(a%b));

}

}

**7. Write a Java program that takes a number as input and prints its multiplication table upto 10.**

Test Data:

Input a number: 8

Expected Output :

8 x 1 = 8

8 x 2 = 16

8 x 3 = 24

...

8 x 10 = 80

import java.util.Scanner;

class Asg

{

public static void main(String args[])

{

Scanner sc=new Scanner(System.in);

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

int a=sc.nextInt();

int i=1;

System.out.println(a+" x "+i+" = " +(a\*i++));

System.out.println(a+" x "+i+" = " +(a\*i++));

System.out.println(a+" x "+i+" = " +(a\*i++));

System.out.println(a+" x "+i+" = " +(a\*i++));

System.out.println(a+" x "+i+" = " +(a\*i++));

System.out.println(a+" x "+i+" = " +(a\*i++));

System.out.println(a+" x "+i+" = " +(a\*i++));

System.out.println(a+" x "+i+" = " +(a\*i++));

System.out.println(a+" x "+i+" = " +(a\*i++));

System.out.println(a+" x "+i+" = " +(a\*i++));

}

}

import java.util.Scanner;

class Asg

{

public static void main(String args[])

{

Scanner sc=new Scanner(System.in);

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

int a=sc.nextInt();

for(int i=1;i<=10;i++)

System.out.println(a+" x "+i+" = " +(a\*i));

}

}

**8. Write a Java program to display the following pattern.**

Sample Pattern :



class Asg

{

public static void main(String args[])

{

System.out.println(" J a V V a");

System.out.println(" J a a V V a a");

System.out.println("J J aaaaa V V aaaaa ");

System.out.println(" JJ a a V a a");

}

}

**9. Write a Java program to compute the specified expressions and print the output.**

Test Data:

((25.5 \* 3.5 - 3.5 \* 3.5) / (40.5 - 4.5))

Expected Output

2.138888888888889

class Asg

{

public static void main(String args[])

{

System.out.println("((25.5\*3.5-3.5\*3.5)/(40.5-4.5))="+((25.5\*3.5-3.5\*3.5)/(40.5-4.5)));

}

}

**10. Write a Java program to compute a specified formula.**

Specified Formula :

4.0 \* (1 - (1.0/3) + (1.0/5) - (1.0/7) + (1.0/9) - (1.0/11))

Expected Output

2.9760461760461765

class Asg

{

public static void main(String args[])

{

System.out.print("4.0 \* (1 - (1.0/3) + (1.0/5) - (1.0/7) + (1.0/9) - (1.0/11)) = ");

System.out.print(4.0\*(1-(1.0/3)+(1.0/5)-(1.0/7)+(1.0/9)-(1.0/11)));

}

}

**11. Write a Java program to print the area and perimeter of a circle.**

Test Data:

Radius = 7.5

Expected Output

Perimeter is = 47.12388980384689

Area is = 176.71458676442586

import java.util.Scanner;

class Asg

{

public static void main(String args[])

{

final float PI=3.14f;

Scanner sc=new Scanner(System.in);

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

double r=sc.nextDouble();

System.out.println("Perimeter = "+(2\*PI\*r));

System.out.println("Area = "+(PI\*r\*r));

}

}

**12. Write a Java program that takes three numbers as input to calculate and print the average of the numbers.**

import java.util.Scanner;

class Asg

{

public static void main(String args[])

{

Scanner sc=new Scanner(System.in);

System.out.print("Enter number 1: ");

int n1=sc.nextInt();

System.out.print("Enter number 2: ");

int n2=sc.nextInt();

System.out.print("Enter number 2: ");

int n3=sc.nextInt();

System.out.println("Average = "+((n1+n2+n3)/3.0));

}

}

**13. Write a Java program to print the area and perimeter of a rectangle.**

Test Data:

Width = 5.5 Height = 8.5

Expected Output Area is 5.6 \* 8.5 = 47.60

Perimeter is 2 \* (5.6 + 8.5) = 28.20

import java.util.Scanner;

class Asg

{

public static void main(String args[])

{

Scanner sc=new Scanner(System.in);

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

double w=sc.nextDouble();

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

double h=sc.nextDouble();

System.out.println("Perimeter = "+(2\*(w+h)));

System.out.println("Area = "+(w\*h));

}

}

**14. Write a Java program to print an American flag on the screen.**

Expected Output



class Asg

{

public static void main(String args[])

{

System.out.println("\* \* \* \* \* \*====================================");

System.out.println(" \* \* \* \* \* ====================================");

System.out.println("\* \* \* \* \* \*====================================");

System.out.println(" \* \* \* \* \* ====================================");

System.out.println("\* \* \* \* \* \*====================================");

System.out.println(" \* \* \* \* \* ====================================");

System.out.println("\* \* \* \* \* \*====================================");

System.out.println(" \* \* \* \* \* ====================================");

System.out.println("\* \* \* \* \* \*====================================");

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

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

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

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

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

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

}

}

class Asg

{

public static void main(String args[])

{

int j;

for(int i=1;i<=15;i++)

{

if(i<=9)

{

if(i%2==0)

{

System.out.print("\* \* \* \* \* \*");

for(j=0; j<45; j++)

System.out.print("=");

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

}

else

{

System.out.print(" \* \* \* \* \* ");

for(j=0; j<45; j++)

System.out.print("=");

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

}

}

else

{

for(j=0; j<56; j++)

System.out.print("=");

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

}

}

}

}

**15. Write a Java program to swap two variables.**

import java.util.Scanner;

class Asg

{

public static void main(String args[])

{

Scanner sc=new Scanner(System.in);

System.out.print("Enter content of variable 'a': ");

String a=sc.next();

System.out.print("Enter content of variable 'b': ");

String b=sc.next();

String temp;

temp=a;

a=b;

b=temp;

System.out.println("AFTER SWAPPING\nContent in 'a' = "+a);

System.out.println("Content in 'b' = "+b);

}

}

**16. Write a Java program to print a face.**



class Asg

{

public static void main(String args[])

{

System.out.println(" +\"\"\"\"\"+");

System.out.println("[| o o |]");

System.out.println(" | ^ |");

System.out.println(" | '\_' |");

System.out.println(" +-----+");

}

}

**17. Write a Java program to add two binary numbers.**

Input Data:

Input first binary number: 10

Input second binary number: 11

Expected Output

Sum of two binary numbers: 101

**18. Write a Java program to multiply two binary numbers.**

Input Data:

Input the first binary number: 10

Input the second binary number: 11

Expected Output

Product of two binary numbers: 110

**19. Write a Java program to convert a decimal number to binary number.**

Input Data:

Input a Decimal Number : 5

Expected Output Binary number is: 101

import java.util.Scanner;

class Asg

{

public static void main(String args[])

{

Scanner sc=new Scanner(System.in);

System.out.print("Enter a decimal number: ");

int n=sc.nextInt();

int b=0,m=n,i=0;

while(n>0)

{

b=(int)((b)+((n%2)\*(Math.pow(10,i))));

i++;

n/=2;

}

System.out.print("("+m+")10 = ("+b+")2");

}

}

import java.util.Scanner;

class Asg

{

public static void main(String args[])

{

Scanner sc=new Scanner(System.in);

System.out.print("Enter a decimal number: ");

int n=sc.nextInt();

String b="";

int r, m=n;

while(n>0)

{

r=n%2;

b=r+b;

n/=2;

}

System.out.print("("+m+")10 = ("+b+")2");

}

}

**20. Write a Java program to convert a decimal number to hexadecimal number.**

Input Data:

Input a decimal number: 15

Expected Output

Hexadecimal number is : F

import java.util.Scanner;

class Asg

{

public static void main(String args[])

{

Scanner sc=new Scanner(System.in);

System.out.print("Enter a Decimal number: ");

int d=sc.nextInt();

int a[];

a=new int[5];

int t1=d, i=0,j=0;

while(t1>0)

{

a[j]=t1%16;

t1/=16;

j++;

}

System.out.print("("+d+")10 = (");

for(i=j-1;i>=0;i--)

{

if(a[i]<=9)

System.out.print(a[i]);

else

System.out.print((char)(a[i]+65-10));

}

System.out.print(")16");

}

}

**21. Write a Java program to convert a decimal number to octal number.**

Input Data:

Input a Decimal Number: 15

Expected Output

Octal number is: 17

import java.util.Scanner;

class Asg

{

public static void main(String args[])

{

Scanner sc=new Scanner(System.in);

System.out.print("Enter a decimal number: ");

int n=sc.nextInt();

int b=0,m=n,i=0;

while(n>0)

{

b=(int)((b)+((n%8)\*(Math.pow(10,i))));

i++;

n/=8;

}

System.out.print("("+m+")10 = ("+b+")8");

}

}

**22. Write a Java program to convert a binary number to decimal number.**

Input Data:

Input a binary number: 100

Expected Output

Decimal Number: 4

import java.util.Scanner;

class Asg

{

public static void main(String args[])

{

Scanner sc=new Scanner(System.in);

System.out.print("Enter a binary number: ");

int b=sc.nextInt();

int n=0,m=b,i=0;

while(b>0)

{

n=(int)(n+((b%10)\*(Math.pow(2,i))));

i++;

b/=10;11

}

System.out.print("("+m+")2 = ("+n+")10");

}

}

**23. Write a Java program to convert a binary number to hexadecimal number.**

Input Data:

Input a Binary Number: 1101

Expected Output

HexaDecimal value: D

import java.util.Scanner;

class Asg

{

public static void main(String args[])

{

Scanner sc=new Scanner(System.in);

System.out.print("Enter a Binary number: ");

int b=sc.nextInt();

int n=0, t=b, c,i=0;

while(t>0)

{

n=(int)(n+((t%10)\*Math.pow(2,i)));

t/=10;

i++;

}

System.out.print("("+b+")2 = (");

if(n<=9)

System.out.print(n+")16");

else

System.out.print((char)(n+65-10)+")16");

}

}

import java.util.Scanner;

class Asg

{

public static void main(String args[])

{

Scanner sc=new Scanner(System.in);

System.out.print("Enter a Binary number: ");

int b=sc.nextInt();

int a[];

a=new int[5];

int n=0, t, t1=b, c,i=0,j=0;

while(t1>0)

{

t=t1%10000;

i=0;

n=0;

while(t>0)

{

n=(int)(n+((t%10)\*Math.pow(2,i)));

t/=10;

i++;

}

t1/=10000;

a[j]=n;

j++;

}

System.out.print("("+b+")2 = (");

for(i=j-1;i>=0;i--)

{

if(a[i]<=9)

System.out.print(a[i]);

else

System.out.print((char)(a[i]+65-10));

}

System.out.print(")16");

}

}

**24. Write a Java program to convert a binary number to a Octal number.**

Input Data:

Input a Binary Number: 111

Expected Output

Octal number: 7

import java.util.Scanner;

class Asg

{

public static void main(String args[])

{

Scanner sc=new Scanner(System.in);

System.out.print("Enter a binary number: ");

int b=sc.nextInt();

int n=0,m=b,i=0, o=0,j=0;

while(b>0)

{

int x=b%1000;

i=0;

n=0;

while(x>0)

{

n=(int)(n+((x%10)\*(Math.pow(2,i))));

i++;

x/=10;

}

o=(int)(o+(n\*Math.pow(10,j)));

j++;

b/=1000;

}

System.out.print("("+m+")2 = ("+o+")8");

}

}

**25. Write a Java program to convert a octal number to a decimal number.**

Input Data:

Input any octal number: 10

Expected Output

Equivalent decimal number: 8

import java.util.Scanner;

class Asg

{

public static void main(String args[])

{

Scanner sc=new Scanner(System.in);

System.out.print("Enter a octal number: ");

int o=sc.nextInt();

int n=0,m=o,i=0;

while(o>0)

{

n=(int)(n+((o%10)\*(Math.pow(8,i))));

i++;

o/=10;

}

System.out.print("("+m+")8 = ("+n+")10");

}

}