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|  | **SACRED HEART DEGREE COLLEGE, NAIPALAPUR, SITAPUR (ST-08)** |

**DEPARTMENT OF BCA**

**SESSION 2021-2022**

**Computer Laboratory and Practical Work of**

**Java Programming and Dynamic Webpage Design**

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| --- | --- |
| Name: Sanjeev Kumar Pal | Stream : BCA |
| Roll No: 0205077 | Year : III |
|  | Semester: V |

Submitted to:- Submitted by:-

Mohd.Ali Asgar Niazi Sanjeev Kumar Pal

**SACRED HEART DEGREE COLLEGE, NAIPALAPUR SITAPUR**

**DEPARTMENT OF BCA**

**Session 2021-2022**

Practical Manual and Record

This is certify that Mr.Sanjeev Kumar Pal Roll no **0205077** has completed the practical file and work as per syllabus of CSJM university, Kanpur in the subject Computer Laboratory and Practical Work of Java Programming and Dynamic Webpage Design

and paper code **BCA-S302T**.

**Head of Department Subject Teacher**

**BCA**

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**Program : 01**

WAP in JAVA to add two matrices.

class Atm

{

public static void main(String args[])

{

int a[][]={{1,3,4},{2,4,3},{3,4,5}};

int b[][]={{1,3,4},{2,4,3},{1,2,4}};

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

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

{

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

{

c[i][j]=a[i][j]+b[i][j];

System.out.print(c[i][j]+" ");

}

System.out.println();

}

}

**Output :**

2 6 8

4 8 6

4 6 9

**Program : 02**

WAP in JAVA to convert Celsius to Fahrenheit.

class Celsius

{

public static void main (String args[])

{

float Fahrenheit, Celsius;

Celsius= 40;

Fahrenheit =((Celsius\*9)/5)+32;

System.out.println("Temperature in Fahrenheit is: "+Fahrenheit);

}

}

}

**Output :**

Temperature in Fahrenheit is : 104

**Program : 03**

WAP in JAVA to find CGPA and CGPA percentage.

class CGPA

{

public static void main(String args[])

{

double English, Hindi, Maths, Science, SocialStudy, CGPA, CGPAper ;

English = 9.1;

Hindi = 8.5;

Maths = 9.5;

Science =9.6;

SocialStudy = 8.6;

CGPA = (9.1+8.5+9.5+9.6+8.6)/(5.0);

CGPAper = (float)(9.5 \* (CGPA));

System.out.println(" CGPA Percentage is: "+CGPAper);

}

}

**Output :**

CGPA Percentage is : 86.06

**Program : 04**

WAP in JAVA to convert days to years.

class Dty

{

public static void main (String args[])

{

int days, years;

days = 799;

years = days / 365;

System.out.println("Number of years is:"+years);

}

}

**Output :**

Number of years is : 2

**Program : 05**

WAP in JAVA to find sum of digits without using modulus.

class Modulus

{

public static void main(String args[])

{

int sum=0;

char n[]={'1','4','6'};

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

{

sum = sum + ((int)n[i]);

sum = sum-48;

}

System.out.println("sum of digits: "+sum);

}

}

**Output :**

sum of digits: 11

**Program : 06**

WAP in JAVA to multiply two matrices.

class Mtm

{

public static void main(String args[])

{

int a[][]={{1,1,1},{2,2,2},{3,3,3}};

int b[][]={{1,1,1},{2,2,2},{3,3,3}};

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

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

{

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

{

c[i][j]=0;

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

{

c[i][j]+=a[i][k]\*b[k][j];

}

System.out.print(c[i][j]+" ");

}

System.out.println();

}

}

}

**Output :**

6 6 6

12 12 12

18 18 18

**Program : 07**

WAP in JAVA to find area of a rectangle.

class Rarea

{

public static void main(String args[])

{

int length=20,breadth=10;

int area=length\*breadth;

System.out.println("Area="+area);

}

}

**Output :**

Area=200

**Program : 08**

WAP in JAVA to find area of a square.

class Sarea

{

public static void main(String args[])

{

int side=10;

int area=side\*side;

System.out.println("Area="+area);

}

}

**Output :**

Area=100

**Program : 09**

WAP in JAVA to find Smallest element in array.

class Sea

{

public static void main(String[] args)

{

int arr[] = {25, 11, 7, 75, 56};

int min = arr[0];

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

{

if(arr[i] <min)

min = arr[i];

}

System.out.println("Smallest element present in given array: " + min);

}

}

**Output :**

Smallest element present in given array: 7

**Program : 10**

WAP in JAVA to find Simple Interest.

class SI

{

public static void main (String args[])

{

float p, r, t, si;

p = 13000;

r = 12;

t = 2;

si = (p\*r\*t)/100;

System.out.println("Simple Interest is: " +si);

}

}

**Output :**

Simple Interest is: 3120.0

**Program : 11**

Java program to find the frequency of each element in the array.

public class SP1

{

public static void main(String[] args)

{

int [] arr = new int [] {1, 2, 8, 3, 2, 2, 2, 5, 1};

int [] fr = new int [arr.length];

int visited = -1;

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

int count = 1;

for(int j = i+1; j <arr.length; j++){

if(arr[i] == arr[j]){

count++;

fr[j] = visited;

}

}

if(fr[i] != visited)

fr[i] = count;

}

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

System.out.println(" Element | Frequency");

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

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

if(fr[i] != visited)

System.out.println(" " + arr[i] + " | " + fr[i]);

}

}

}

**Output :**

---------------------

Element | Frequency

---------------------

1 | 2

2 | 4

8 | 1

3 | 1

5 | 1

**Program : 12**

Java program to find 3rd Largest Number in an array.

public class SP2

{

public static int getThirdLargest(int[] a, int total)

{

int temp;

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

{

for (int j = i + 1; j < total; j++)

{

if (a[i] > a[j])

{

temp = a[i];

a[i] = a[j];

a[j] = temp;

}

}

}

return a[total-3];

}

public static void main(String args[])

{

int a[]={1,2,5,6,3,2};

int b[]={44,66,99,77,33,22,55};

System.out.println("Third Largest: "+getThirdLargest(a,6));

System.out.println("Third Largest: "+getThirdLargest(b,7));

}

}

**Output :**

Third Largest: 3

Third Largest: 66

**Program : 13**

Java Program to Remove Duplicate Element in an array.

public class SP3

{

public static int removeduplicates(int a[], int n)

{

if (n == 0 || n == 1)

{

return n;

}

int[] temp = new int[n];

int j = 0;

for (int i = 0; i< n - 1; i++)

{

if (a[i] != a[i + 1])

{

temp[j++] = a[i];

}

}

temp[j++] = a[n - 1];

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

{

a[i] = temp[i];

}

return j;

}

public static void main(String[] args)

{

int a[] = { 1, 1, 2, 2, 2 };

int n = a.length;

n = removeduplicates(a, n);

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

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

}

}

**Output :**

1 2

**Program : 14**

Java Program to count the total number of characters in a string.

public class SP4

{

public static void main(String[] args)

{

String string = "The best of both worlds";

int count = 0;

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

{

if(string.charAt(i) != ' ')

count++;

}

System.out.println("Total number of characters in a string: " + count);

}

}

**Output :**

Total number of characters in a string: 19

**Program : 15**

Java Program to count the total number vowels and consonants in a string.

public class SP5

{

public static void main(String[] args)

{

int vCount = 0, cCount = 0;

String str = "This is a really simple sentence";

str = str.toLowerCase();

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

{

if(str.charAt(i) == 'a' || str.charAt(i) == 'e' || str.charAt(i) == 'i' || str.charAt(i) == 'o' || str.charAt(i) == 'u')

{

vCount++;

}

else if(str.charAt(i) >= 'a' &&str.charAt(i)<='z')

{

cCount++;

}

}

System.out.println("Number of vowels: " + vCount);

System.out.println("Number of consonants: " + cCount);

}

}

**Output :**

Number of vowels: 10

Number of consonants: 17

**Program : 16**

Java Program to remove all the white spaces from a string.

public class SP6

{

public static void main(String[] args)

{

String str = "India Is My Country";

String noSpaceStr = str.replaceAll("\\s", "");

System.out.println(noSpaceStr);

char[] strArray = str.toCharArray();

StringBufferstringBuffer = new StringBuffer();

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

{

if ((strArray[i] != ' ') && (strArray[i] != '\t'))

{

stringBuffer.append(strArray[i]);

}

}

String noSpaceStr2 = stringBuffer.toString();

System.out.println(noSpaceStr2);

}

}

**Output :**

IndiaIsMyCountry

IndiaIsMyCountry

**Program : 17**

Java Program to replace lower-case characters with upper-case and vice versa.

public class SP7

{

public static void main(String[] args)

{

String str1="Great Power";

StringBuffernewStr=new StringBuffer(str1);

for(int i = 0; i< str1.length(); i++)

{

if(Character.isLowerCase(str1.charAt(i)))

{

newStr.setCharAt(i, Character.toUpperCase(str1.charAt(i)));

}

else if(Character.isUpperCase(str1.charAt(i)))

{

newStr.setCharAt(i, Character.toLowerCase(str1.charAt(i)));

}

}

System.out.println("String after case conversion : " + newStr);

}

}

**Output :**

String after case conversion : gREATpOWER

**Program :. 18**

Java Program to Differentiate String == operator and equals() method.

class SP10

{

public static void main(String[] args)

{

String S1 = new String("Shubham");

String S2 = new String("Shubham");

System.out.println("Check if two strings are equal");

boolean result1 = (S1 == S2);

System.out.println("Using == operator: " + result1);

boolean result2 = S1.equals(S2);

System.out.println("Using equals(): " + result2);

}

}

**Output :**

Check if two strings are equal

Using == operator: false

Using equals(): true

**Program : 19**

Java Program for exeption handling (Airthmetic exception).

class SP12

{

public static void main(String args[])

{

int a,b,r;

a=20;

b=0;

r=a+b;

System.out.println("Sum="+r);

try

{

r=a/b;

System.out.println("Division="+r);

}

finally

{

r=a\*b;

System.out.println("Product="+r);

r=a-b;

System.out.println("Substraction="+r);

}

System.out.println("End of the program");

}

}

**Output :**

Sum=20

Product=0

Substraction=20

**Program : 20**

Java Program for exception handling(ArrayOutofBoundsexcception).

public class SP13

{

public static void main(String[] args)

{

String[] arr = {"Rohit","Shikar","Virat","Dhoni"};

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

{

System.out.println(arr[i]);

}

}

}

**Output :**

Rohit

Shikar

Virat

Dhoni

**Program : 21**

WAP in JAVA to swap 2 numbers.

class Swap

{

public static void main(String[] args)

{

int x=10, y=20, t;

System.out.println("before swapping numbers: "+x +" "+ y);

t = x;

x = y;

y = t;

System.out.println("After swapping: "+x +" " + y);

}

}

**Output :**

before swapping numbers: 10 20

After swapping: 20 10

**Program : 22**

WAP in JAVA to find volume of a Sphere.

class Volume

{

public static void main(String args[])

{

int r=7;

float volume=(4/3)\*(22/7)\*r\*r\*r;

System.out.println("Volume="+volume);

}

}

**Output :**

Volume=1029.0

**Program : 23**

WAP in JAVA to check if number is Disarium or not.

class Disarium

{

public static void main(String[] args)

{

int num = 175,sum = 0,rem = 0,n,n1,length = 0;

n = num;

n1 = num;

while(n != 0)

{

length = length + 1;

n = n/10;

}

while(num > 0)

{

rem = num%10;

sum = sum + (int)Math.pow(rem,length);

num = num/10;

length--;

}

if(sum == n1)

System.out.println(n1 + " is a disarium number");

else

System.out.println(n1 + " is not a disarium number");

}

}

**Output :**

175 is a disarium number

**Program : 24**

Binary Search in Java.

class SP9

{

int binarySearch(int arr[], int l, int r, int x)

{

if (r >= l)

{

int mid = l + (r - l) / 2;

if (arr[mid] == x)

return mid;

if (arr[mid] > x)

return binarySearch(arr, l, mid - 1, x);

return binarySearch(arr, mid + 1, r, x);

}

return -1;

}

public static void main(String args[])

{

BinarySearchob = new BinarySearch();

int arr[] = { 2, 3, 4, 10, 40 };

int n = arr.length;

int x = 10;

int result = ob.binarySearch(arr, 0, n - 1, x);

if (result == -1)

System.out.println("Element not present");

else

System.out.println("Element found at index "+ result);

}

}

**Output :**

Element is present at index 3

**Program : 25**

WAP in JAVA to sort array elements in ascending order.

class Saeao

{

public static void main(String[] args)

{

int [] arr = new int [] {5, 2, 8, 7, 1};

int temp = 0;

System.out.println("Elements of original array: ");

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

{

System.out.print(arr[i] + " ");

}

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

{

for (int j = i+1; j <arr.length; j++)

{

if(arr[i] >arr[j])

{

temp = arr[i];

arr[i] = arr[j];

arr[j] = temp;

}

}

}

System.out.println();

System.out.println("Elements of array sorted in ascending order: ");

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

{

System.out.print(arr[i] + " ");

}

}

}

**Output :**

Elements of original array:

5 2 8 7 1

Elements of array sorted in ascending order:

1 2 5 7 8