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Course:- Java programming
Course code:- CSA0154

Class Test-2

① Write a program to the right triangle Stone pattern sample input n=5

Program:-

```
Public class RightTriangle Pattern
{
Public Static void main(string args[])
{
int i, j, row=5;
for(i=0; i<row; i++)
{
for(j=0; j<=i; j++)
{
System.out.print("* ");
}
System.out.println();
}
}
}
```

Input:-

n=5

Output:-

```
*
* *
* * *
* * * *
* * * * *
```

② Write a program for Matrix multiplication.

Program:-

```
import java.util.Scanner;
Class MULMatrix
{
Public Static void main(string args[]
{
int r1, r2, c1, c2, i, j, k, sum;
Scanner in= new
Scanner(System.in);
System.out.println("Enter the number of rows of matrix1");
r1 = in.nextInt();
System.out.println("Enter the number of columns of matrix1");
c1 = in.next Int();
System.out.println("Enter the number of rows of matrix2);
r2 = in.next Int();
System.out.println("Enter the number of columns of matrix2)
c2 = in.nextInt();
if(c1==r2)
{
int mat1[][]=new int[r1][c1];
int mat2[][]=new int[r2][c2];
int res[][]=new int[r1][c2];
System.out.println("Enter the elements of matrix1");
for(i=0; i<r1; i++)
```

```
{
for(j=0; j<c1; j++)
mat1[i][j]=in.nextInt();
}
System.out.println("Enter the elements of matrix 2");
for(i=0; i<r2; i++)
{
for(j=0; j<c2; j++)
mat2[i][j]= in.nextInt();
}
System.out.println("\n\n output matrix:-");
for(i=0; i<r1; i++)
{
for(j=0; j<c2; j++)
{
sum=0;
for(k=0; k<r2; k++)
{
sum+=mat1[i][k]*mat2[k][j];
}
res[i][j]=sum;
}
for(i=0; i<r1; i++)
{
for(j=0; j<c2; j++)
{
System.out.print(res[i][j]+" ");
System.out.println();
```

```
}
}
else
System.out.print("multiplication does
not exist");
}
}
```

Output:-

```
Enter the number of rows of matrix1
2
Enter the number of columns of matrix1
2
Enter the number of rows of matrix 2
2
Enter the number of columns of matrix2
2
Enter the elements of matrix 1
1 2
5 3
Enter the elements of matrix 2
2 3
4 1
Output matrix:-
10 5
22 13
```

(3) Java program for the Sum of n digit number sum should be single digit

Program:-

```
import java.util.Scanner;
Public class Sum of Digits
{
public static void main(String args[])
{
int number, digit, sum=0;
Scanner sc=new
Scanner(System.in);
System.out.print("Enter the number:");
number = sc.nextInt();
while(number>0)
{
digit=number%10;
sum=sum+digit;
number=number/10;
}
System.out.println("Sum of Digits:"
}
}
```

Output:-

```
Enter the number: 143
Sum of Digits: 8
```

Main.java

Run

Output

```
1  public class RightTrianglePattern
2  {
3  public static void main(String args[])
4  {
5  int i, j, row=5;
6  for(i=0; i<row; i++)
7  {
8  for(j=0; j<=i; j++)
9  {
10 System.out.print("* ");
11 }
12 System.out.println();
13 }
14 }
15 }
```

```
java -cp /tmp/bk2fb0Ptj9 RightTrianglePattern
*
* *
* * *
* * * *
* * * * *
```

Main.java

Run

Output

```
System.out.println("\n\noutput matrix:-");
for ( i= 0 ; i < r1 ; i++ )

for ( j= 0 ; j <c2;j++)
{
sum=0;
for ( k= 0 ; k <r2;k++ )
{
sum +=mat1[i][k]*mat2[k][j] ;

}
res[i][j]=sum;
}
for ( i= 0 ; i < r1; i++ )
{
for ( j=0 ; j < c2;j++ )
System.out.print(res[i][j]+" ");

System.out.println();
}
}
else
System.out.print("multipiration does not exist ");
}

}
```

```
java -cp /tmp/U8/KWBYfEx MULMatrix
Enter the number of rows of matrix1
2
Enter the number columns of matrix 1
2
Enter the number of rows of matrix2
2
Enter the number of columns of matrix 2
2
Enter the elements of matrix1
1 2
5 3
Enter the elements of matrix2
2 3
4 1
output matrix:-
10 5 22 18
```

Main.java

Run

Output

```java
import java.util.Scanner;
public class SumOfDigits
{
public static void main(String args[])
{
int number, digit, sum = 0;
Scanner sc = new Scanner(System.in);
System.out.print("Enter the number: ");
number = sc.nextInt();
while(number > 0)
{
digit = number % 10;
sum = sum + digit;
number = number / 10;
}
System.out.println("Sum of Digits: "+sum);
}
}
```

```
java -cp /tmp/U8/KWBYtex SumOfDigits
Enter the number: 143
Sum of Digits: 8
```