OOPs in JAVA

Experiment No.: 7

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Batch:RMCA S2B

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Aim

Matrix Multiplication

Sourcecode & Output Screenshot

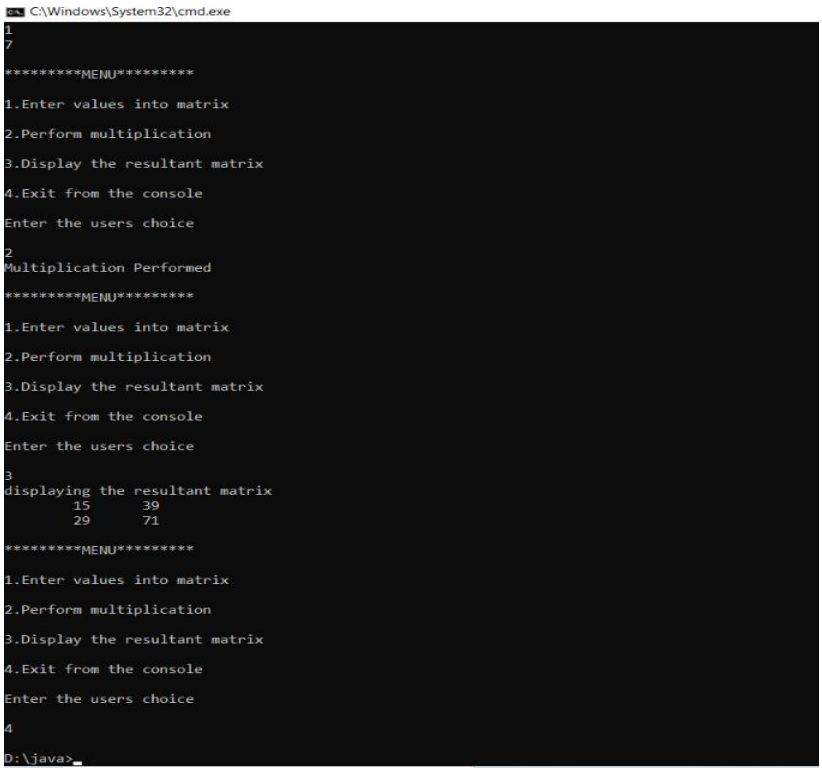
```
import java.util.*;
import java.lang.*;

class MatrixMul{
static Scanner s=new Scanner(System.in);
 public static void main(String args[])
  {
        int a,b,c,d;
        int [][] A =new int[5][5];
      int [][] B =new int[5][5];
      int [][] C =new int[5][5];

        int Choice;
        Scanner s=new Scanner(System.in);
        System.out.println("Enter the number of rows for matrix 1");
        a=s.nextInt();
        System.out.println("Enter the number of columns for matrix 2");
        b=s.nextInt();
      System.out.println("Enter the number of rows for matrix 1");
        c=s.nextInt();
        System.out.println("Enter the number of columns for matrix 2");
        d=s.nextInt();
        while(true)
        {
```

```
        System.out.println("\n*********MENU*********\n");
        System.out.println("1.Enter values into matrix \n");
        System.out.println("2.Perform multiplication \n");
        System.out.println("3.Display the resultant matrix \n");
        System.out.println("4.Exit from the console \n");
      System.out.println("Enter the users choice \n");
        Choice=s.nextInt();
        switch(Choice)
        {
                case 1:inputdata(a,b,c,d,A,B);
                        break;
           case 2:multiply(a,b,c,d,A,B,C);
                        break;
                case 3:display(a,b,c,d,A,B,C);
                        break;
                case 4:java.lang.System.exit(0);
                        break;
                default:System.out.println("invalid choice");
        }
 }
 }

 public static void inputdata(int a,int b,int c,int d,int [][] A,int [][] B)
 {
        System.out.println("enter values into the matrix1");
        for(int i=0;i<a;i++)
        {
                for(int j=0;j<b;j++)
                {
                        A[i][j]=s.nextInt();
                }
        }
    System.out.println("enter values into the matrix2");
```

```
            for(int i=0;i<a;i++)
            {
                    for(int j=0;j<b;j++)
                    {
                            B[i][j]=s.nextInt();
                    }
            }
  }
 public static void multiply(int a,int b,int c,int d,int [][] A,int [][] B,int [][] C)
 {

  if(a==d)
   {
    for(int i=0;i<a;i++)
          {
                    for(int j=0;j<b;j++)
                    {
                            C[i][j]=0;
                            for(int k=0;k<b;k++)
                        {
                             C[i][j]+=A[i][k]*B[k][j];
                        }
                    }
          }
System.out.println("Multiplication Performed");
   }
  else
   {
     System.out.println("Multiplication cannot be performed");
   }

  }
public static void display(int a,int b,int c,int d,int [][] A,int [][] B,int [][] C)
```

```
 {
   System.out.println("displaying the resultant matrix");
    for(int i=0;i<a;i++)
          {
                  for(int j=0;j<b;j++)
                   {
                     System.out.print("\t"+C[i][j]);
                   }
              System.out.print("\n");

          }
 }
}
```

```
D:\java>javac MatrixMul.java

D:\java>java MatrixMul
Enter the number of rows for matrix 1
2
Enter the number of columns for matrix 2
2
Enter the number of rows for matrix 1
2
Enter the number of columns for matrix 2
2

*********MENU*********

1.Enter values into matrix

2.Perform multiplication

3.Display the resultant matrix

4.Exit from the console

Enter the users choice

1
enter values into the matrix1
2
3
4
5
enter values into the matrix2
6
9
1
7

*********MENU*********

1.Enter values into matrix
```


C:\Windows\System32\cmd.exe
1
7
********MENU********
1.Enter values into matrix
2.Perform multiplication
3.Display the resultant matrix
4.Exit from the console
Enter the users choice
2
Multiplication Performed
********MENU********
1.Enter values into matrix
2.Perform multiplication
3.Display the resultant matrix
4.Exit from the console
Enter the users choice
3
displaying the resultant matrix
15 39
29 71
********MENU********
1.Enter values into matrix
2.Perform multiplication
3.Display the resultant matrix
4.Exit from the console
Enter the users choice
4
D:\java>