

JAVA PROGRAMMING LAB

BASIC PROGRAMS

Date: 15.07.2020

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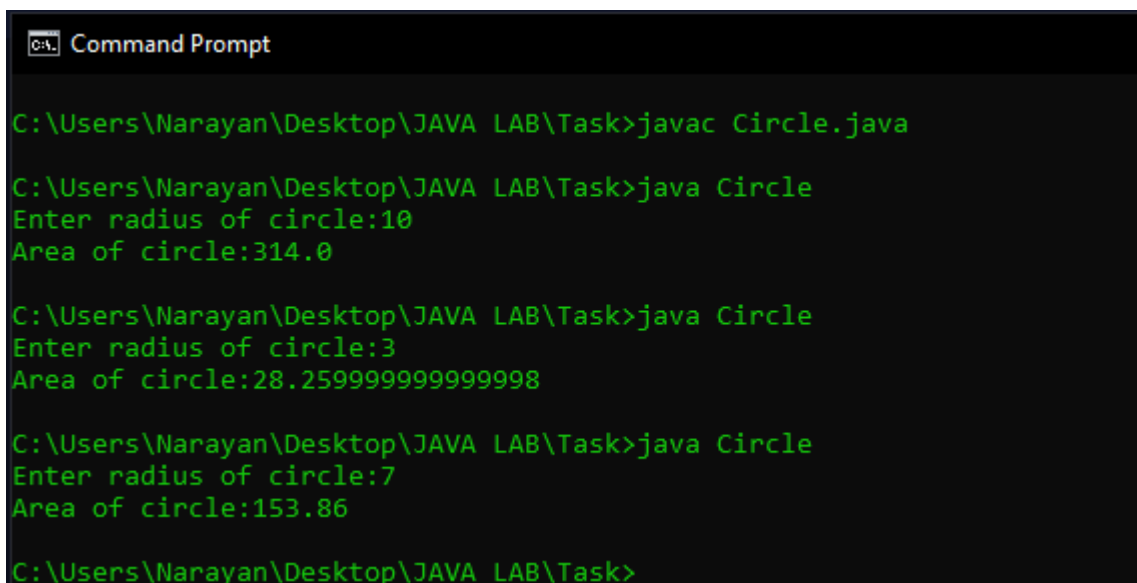
1. Read the radius and print the area of a circle

Ans:

Code:

```
import java.util.Scanner;
public class Circle
{
    public static void main(String[] args)
    {
        int r;
        double pi = 3.14, area;
        Scanner s = new Scanner(System.in);
        System.out.print("Enter radius of circle:");
        r = s.nextInt();
        area = pi * r * r;
        System.out.println("Area of circle:"+area);
    }
}
```

Output:



```
C:\Users\Narayan\Desktop\JAVA LAB\Task>javac Circle.java

C:\Users\Narayan\Desktop\JAVA LAB\Task>java Circle
Enter radius of circle:10
Area of circle:314.0

C:\Users\Narayan\Desktop\JAVA LAB\Task>java Circle
Enter radius of circle:3
Area of circle:28.259999999999998

C:\Users\Narayan\Desktop\JAVA LAB\Task>java Circle
Enter radius of circle:7
Area of circle:153.86

C:\Users\Narayan\Desktop\JAVA LAB\Task>
```

2. Read the number and check whether it is divisible by 3 and 5.

Ans:

Code:

```
import java.util.Scanner;

class Divisibility{

    public static void main(String [] args)

    {

        System.out.println("Enter a number");

        Scanner s = new Scanner(System.in);

        int a;

        a = s.nextInt();

        if(a%15 == 0){

            System.out.println("yes divisible by 3 and 5\n");

        }

        else{

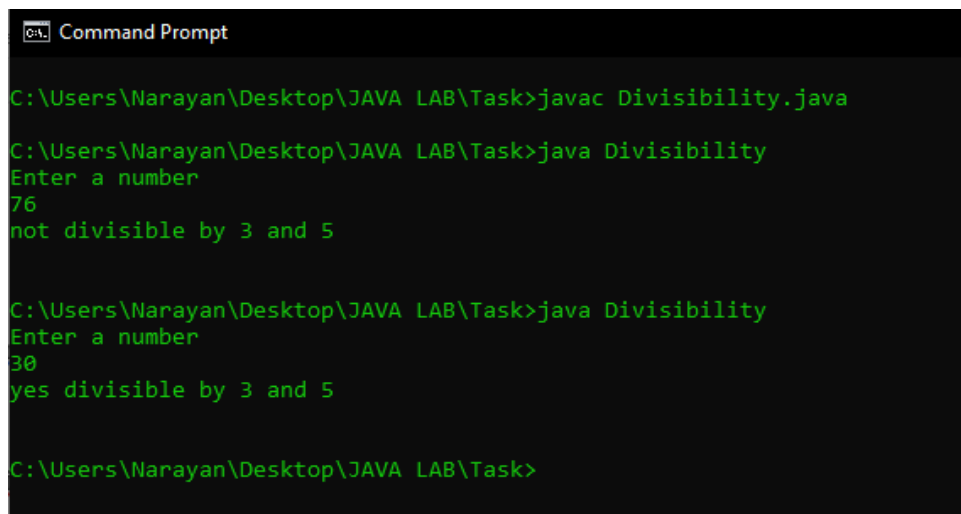
            System.out.println("not divisible by 3 and 5\n");

        }

    }

}
```

Output:



```
C:\Users\Narayan\Desktop\JAVA LAB\Task>javac Divisibility.java

C:\Users\Narayan\Desktop\JAVA LAB\Task>java Divisibility
Enter a number
76
not divisible by 3 and 5

C:\Users\Narayan\Desktop\JAVA LAB\Task>java Divisibility
Enter a number
30
yes divisible by 3 and 5

C:\Users\Narayan\Desktop\JAVA LAB\Task>
```

3. Display Subject Name based on room number. If the user enters 604 then display Java Programming , If the user enters 605 then display Python programming for any other input display Invalid input to the user

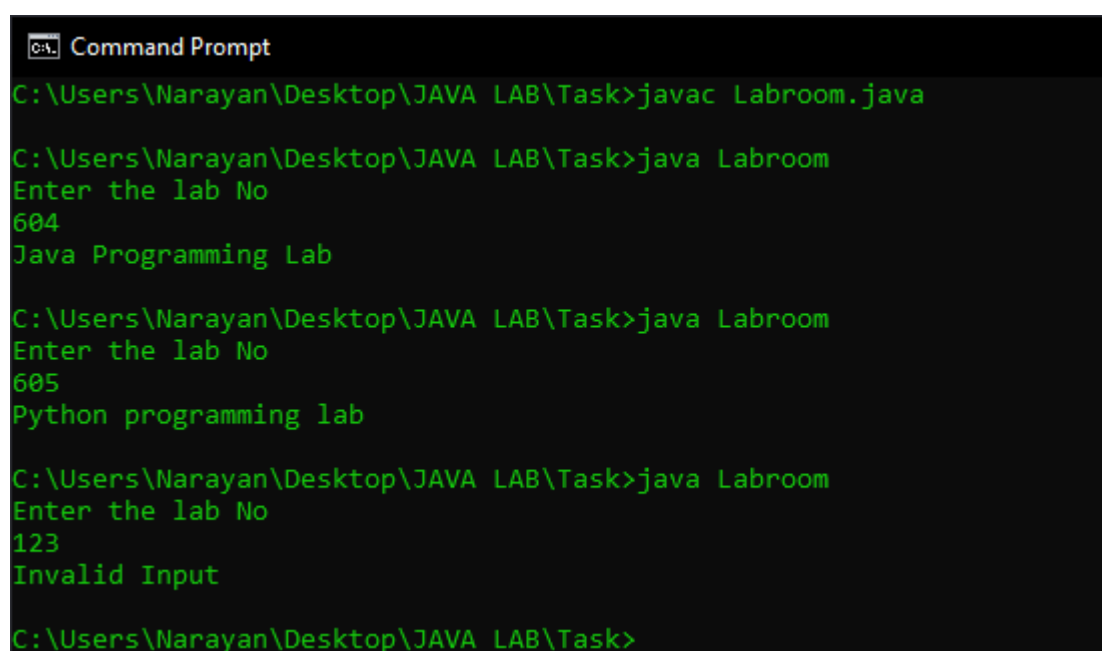
Ans:

Code:

```
import java.util.Scanner;

class Labroom{
    public static void main(String [] args){
        System.out.println("Enter the lab No");
        Scanner s = new Scanner(System.in);
        int a;
        a = s.nextInt();
        if(a == 604){
            System.out.println("Java Programming Lab");
        }
        else if(a == 605){
            System.out.println("Python programming lab");
        }
        else{
            System.out.println("Invalid Input");
        }
    }
}
```

Output:



```
Command Prompt
C:\Users\Narayan\Desktop\JAVA LAB\Task>javac Labroom.java
C:\Users\Narayan\Desktop\JAVA LAB\Task>java Labroom
Enter the lab No
604
Java Programming Lab
C:\Users\Narayan\Desktop\JAVA LAB\Task>java Labroom
Enter the lab No
605
Python programming lab
C:\Users\Narayan\Desktop\JAVA LAB\Task>java Labroom
Enter the lab No
123
Invalid Input
C:\Users\Narayan\Desktop\JAVA LAB\Task>
```

4. Print the sum of first n numbers. If n is 3 then print the sum of 1+2+3 to the user.
Get n from the user

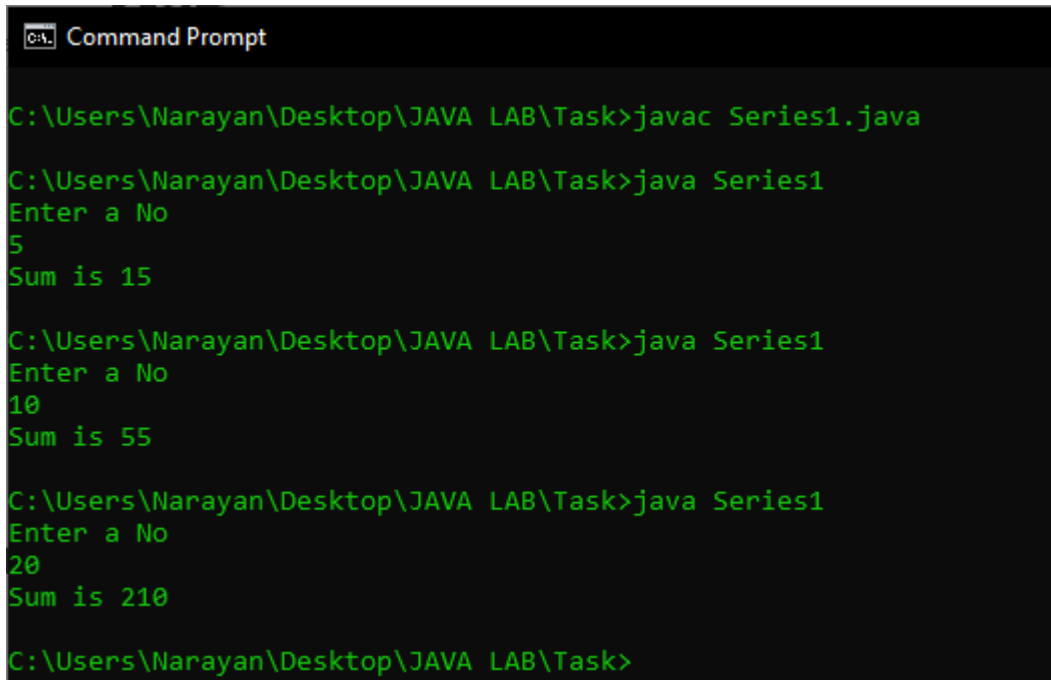
Ans:

Code:

```
import java.util.Scanner;

class Series1{
    public static void main(String [] args){
        System.out.println("Enter a No");
        Scanner s = new Scanner(System.in);
        int a,sum=0;
        a = s.nextInt();
        for(int i = 1; i<a+1;i++){
            sum = sum + i;
        }
        System.out.print("Sum is ");
        System.out.println(sum);
    }
}
```

Output:



```
C:\Users\Narayan\Desktop\JAVA LAB\Task>javac Series1.java

C:\Users\Narayan\Desktop\JAVA LAB\Task>java Series1
Enter a No
5
Sum is 15

C:\Users\Narayan\Desktop\JAVA LAB\Task>java Series1
Enter a No
10
Sum is 55

C:\Users\Narayan\Desktop\JAVA LAB\Task>java Series1
Enter a No
20
Sum is 210

C:\Users\Narayan\Desktop\JAVA LAB\Task>
```

5. Print the sum of the series $1^2 + 2^2 + 3^2$ up to n terms

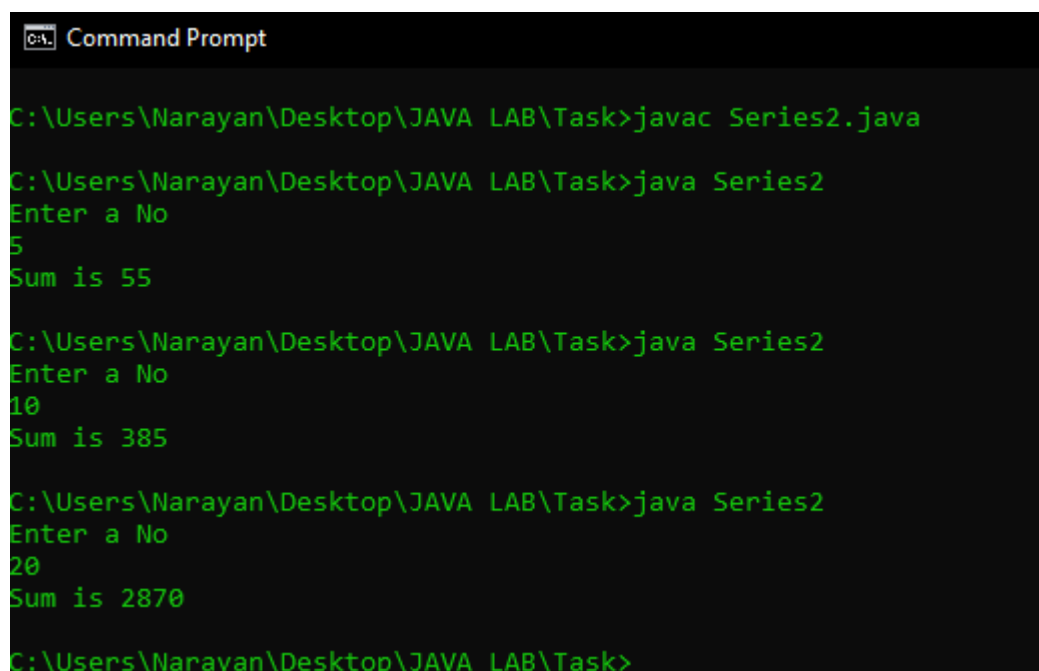
Ans:

Code:

```
import java.util.Scanner;

class Series2{
    public static void main(String [] args){
        System.out.println("Enter a No");
        Scanner s = new Scanner(System.in);
        int a,sum=0;
        a = s.nextInt();
        for(int i = 1; i<a+1;i++){
            sum = sum + i*i;
        }
        System.out.print("Sum is ");
        System.out.println(sum);
    }
}
```

Output:



```
C:\ Command Prompt

C:\Users\Narayan\Desktop\JAVA LAB\Task>javac Series2.java

C:\Users\Narayan\Desktop\JAVA LAB\Task>java Series2
Enter a No
5
Sum is 55

C:\Users\Narayan\Desktop\JAVA LAB\Task>java Series2
Enter a No
10
Sum is 385

C:\Users\Narayan\Desktop\JAVA LAB\Task>java Series2
Enter a No
20
Sum is 2870

C:\Users\Narayan\Desktop\JAVA LAB\Task>
```

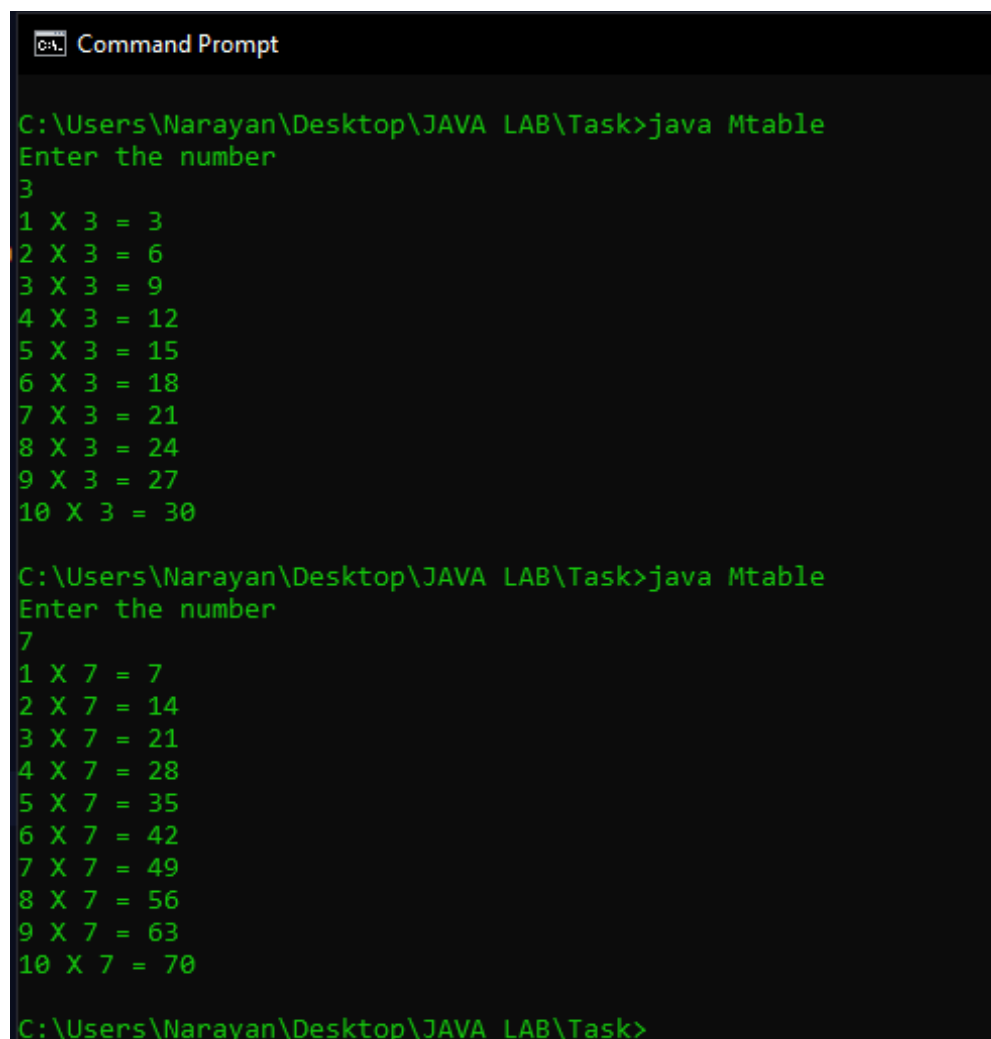
6. Print the multiplication table by getting the n from the user.

Ans:

Code:

```
import java.util.Scanner;
class Mtable{
    public static void main(String [] args)
    {
        System.out.println("Enter the number");
        Scanner s = new Scanner(System.in);
        int a;
        a = s.nextInt();
        for(int i = 1; i<11; i++){
            System.out.print(i);
            System.out.print(" X ");
            System.out.print(a);
            System.out.print(" = ");
            System.out.println(a*i);
        }
    }
}
```

Output:



The screenshot shows a Windows Command Prompt window with the title "C:\> Command Prompt". The user has entered the command `java Mtable` at the prompt `C:\Users\Narayan\Desktop\JAVA LAB\Task>`. The program prompts "Enter the number" and the user has entered "3". The output displays the multiplication table for 3, from 1 to 10. The user then enters "7", and the program displays the multiplication table for 7, from 1 to 10. The prompt `C:\Users\Narayan\Desktop\JAVA LAB\Task>` is visible at the bottom.

```
C:\Users\Narayan\Desktop\JAVA LAB\Task>java Mtable
Enter the number
3
1 X 3 = 3
2 X 3 = 6
3 X 3 = 9
4 X 3 = 12
5 X 3 = 15
6 X 3 = 18
7 X 3 = 21
8 X 3 = 24
9 X 3 = 27
10 X 3 = 30

C:\Users\Narayan\Desktop\JAVA LAB\Task>java Mtable
Enter the number
7
1 X 7 = 7
2 X 7 = 14
3 X 7 = 21
4 X 7 = 28
5 X 7 = 35
6 X 7 = 42
7 X 7 = 49
8 X 7 = 56
9 X 7 = 63
10 X 7 = 70

C:\Users\Narayan\Desktop\JAVA LAB\Task>
```

7. Provide the option of adding two numbers to the user until the user wants to exit.

Ans:

Code:

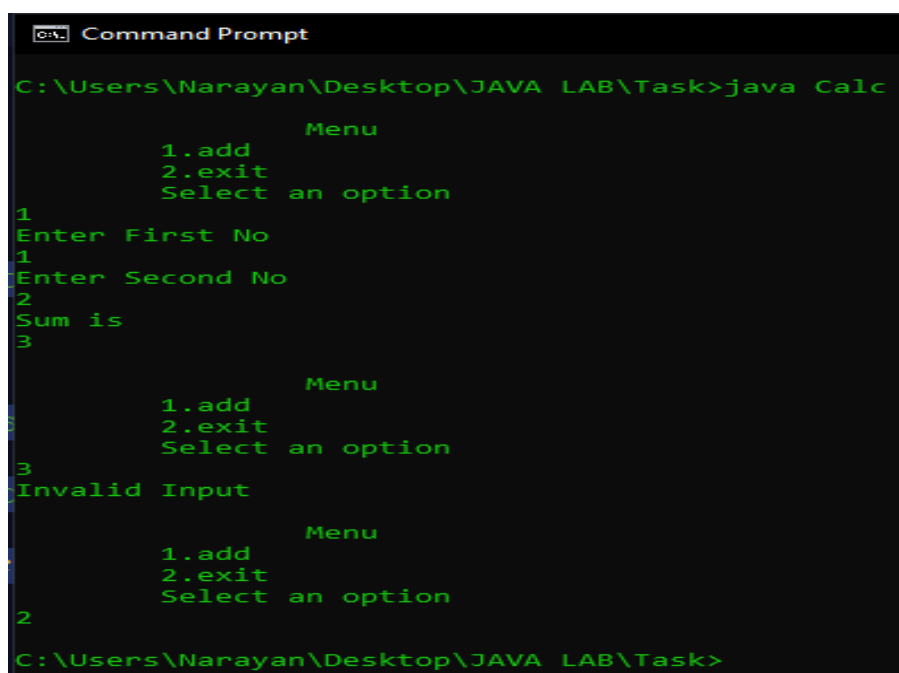
```
import java.util.Scanner;

class Calc{
    public static void main(String [] args){
        Scanner s = new Scanner(System.in);
        int a = 0;
        do{

            System.out.println("\n\t\tMenu\n\t1.add\n\t2.exit\n\tSelect an option");

            a = s.nextInt();
            if(a == 1){
                int n1,n2;
                System.out.println("Enter First No");
                n1 = s.nextInt();
                System.out.println("Enter Second No");
                n2 = s.nextInt();
                System.out.println("Sum is ");
                System.out.println(n1+n2);
            }
            else if(a != 2){
                System.out.println("Invalid Input");
            }
        }while(a != 2);
    }
}
```

Output:



```
Command Prompt
C:\Users\Narayan\Desktop\JAVA LAB\Task>java Calc

          Menu
      1.add
      2.exit
Select an option
1
Enter First No
1
Enter Second No
2
Sum is
3

          Menu
      1.add
      2.exit
Select an option
3
Invalid Input

          Menu
      1.add
      2.exit
Select an option
2
C:\Users\Narayan\Desktop\JAVA LAB\Task>
```

8. Print this pattern for n lines

(a)

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

(b)

```
1234  
123  
12  
1
```

(c) 1

```
12  
123  
1234  
1234  
123  
12  
1
```

Ans:

Code:

```
import java.util.Scanner;  
  
class Patterns{  
    public static void main(String [] args){  
        Scanner s = new Scanner(System.in);  
        int a = 0;  
        do{  
            System.out.println("\n\t\tMenu\n1.Pattern a\n2.Pattern  
b\n3.Pattern c\n4.Exit\nSelect an option\n");  
            a = s.nextInt();  
            if(a == 1){
```



```

        int n;
        System.out.println("Enter n");
        n = s.nextInt();
        for(int i = 1; i < n+1; i++){
            for(int j = 0; j < i; j++){
                System.out.print("*");
            }
            System.out.print('\n');
        }
    }
    else if(a == 2){
        System.out.println("Enter n");
        int n;
        n = s.nextInt();
        for(int i = n; i > 0; i--){
            for(int j = 1; j < i+1; j++){
                System.out.print(j);
            }
            System.out.print('\n');
        }
    }
    else if(a == 3){
        System.out.println("Enter n");
        int n;
        n = s.nextInt();
        for(int i = 1; i < n+1; i++){
            for(int j = 1; j < i+1; j++){
                System.out.print(j);
            }
            System.out.print('\n');
        }
        for(int i = n; i > 0; i--){

```

```

        for(int j = 1; j<i+1; j++){
            System.out.print(j);

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

    }

}

else if(a != 4){
    System.out.println("Invalid Choice");
}

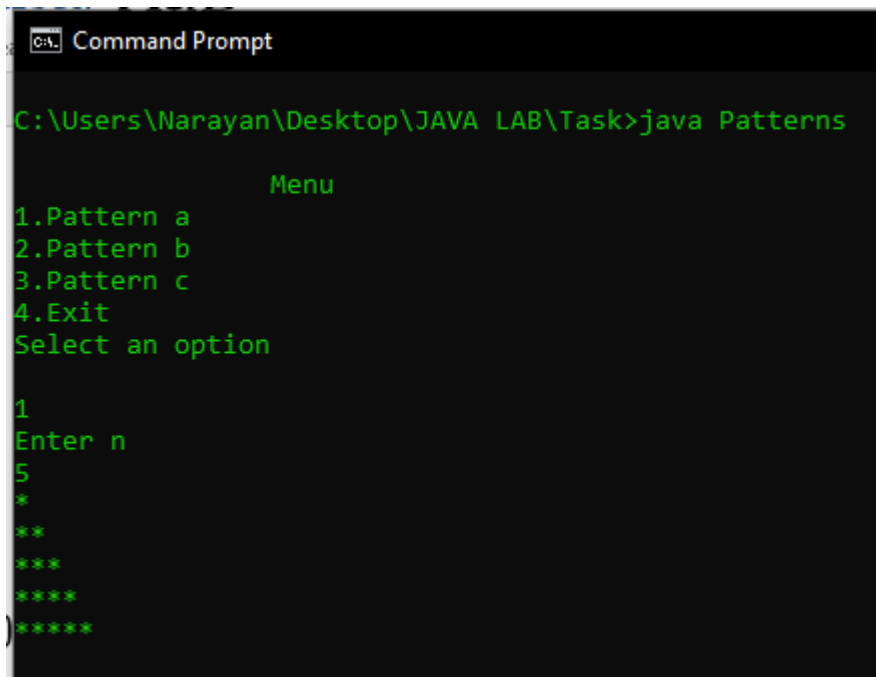
}while(a != 4);

}

}

```

Output:



```

C:\Users\Narayan\Desktop\JAVA LAB\Task>java Patterns

Menu
1.Pattern a
2.Pattern b
3.Pattern c
4.Exit
Select an option

1
Enter n
5
*
**
***
****
)*****

```

```
C:\> Command Prompt

Menu

1.Pattern a
2.Pattern b
3.Pattern c
4.Exit
Select an option

2
Enter n
5
12345
1234
123
12
1
```

```
C:\> Command Prompt

1

Menu

1.Pattern a
2.Pattern b
3.Pattern c
4.Exit
Select an option

3
Enter n
5
1
12
123
1234
12345
12345
1234
123
12
1
```

```
CA Command Prompt
1
Menu
1.Pattern a
2.Pattern b
3.Pattern c
4.Exit
Select an option
5
Invalid Choice
Menu
1.Pattern a
2.Pattern b
3.Pattern c
4.Exit
Select an option
4
C:\Users\Narayan\Desktop\JAVA LAB\Task>
```