10/7/24 **ASSIGNMENT-3**

1.Write a program to print the following pattern

Sample Input:

Enter the Character to be printed: %

Max Number of time printed: 3

```
%
% %
% % %
```

CODE

```
import java.util.Scanner;
public class PrintPattern {
public static void main(String[] args) {
Scanner scanner = new Scanner(System.in);
System.out.print("Enter the Character to be printed: ");
char character = scanner.next().charAt(0);
System.out.print("Max Number of times printed: ");
int maxTimes = scanner.nextInt();

for (int i = 1; i <= maxTimes; i++) {
for (int j = 1; j <= i; j++) {
System.out.print(character + " ");
}
System.out.println();
}
}
}
```

2.Write a program to print hollow square symbol pattern?

```
public class HollowSquarePattern {
public static void main(String[] args) {
int rows = 5;
for (int i = 1; i <= rows; i++) {
for (int j = 1; j <= rows; j++) {
if (i == 1 || i == rows || j == 1 || j == rows) {
System.out.print("* ");
} else {
System.out.print("  ");
}
}
System.out.println();
```

```
}
}

}
```

```
java -cp /tmp/QQtTZDKteU/HollowSquarePattern
* * * * *
*       *
*       *
*       *
* * * * *

=== Code Execution Successful ===
```

3.Write a program to print the below pattern

```
1
2 2
3 3 3
4 4 4 4
```

```
public class NumberPattern {
public static void main(String[] args) {
int rows = 4;

for (int i = 1; i <= rows; i++) {
for (int j = 1; j <= i; j++) {
System.out.print(i + " ");
}
System.out.println();
}
}
}
```

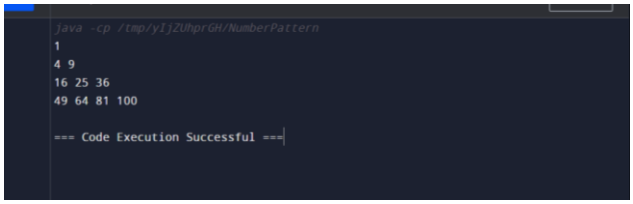
```
java -cp /tmp/9FjiGQH8g2/NumberPattern
1
2 2
3 3 3
4 4 4 4

=== Code Execution Successful ===
```

4.Write a program to print the below pattern

```
1
4   9
16  25  36
49  64  81  100
```

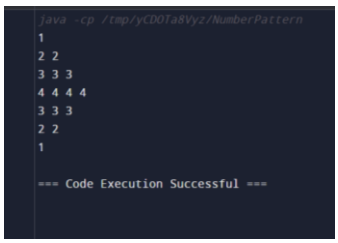
```
public class NumberPattern {
public static void main(String[] args) {
int rows = 4;
int num = 1;
for (int i = 1; i <= rows; i++) {
for (int j = 1; j <= i; j++) {
System.out.print(num * num + " ");
```

```
num++;
}
System.out.println();
}
}
}
```



5.Write a program to print the below pattern

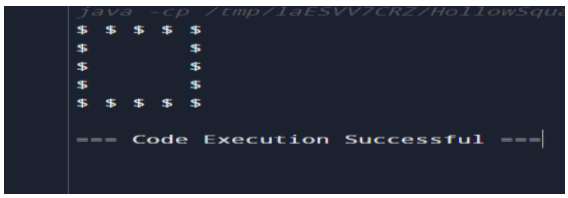
```
        1
        2 2
        3  3  3
        4  4   4   4
        3  3  3
        2  2
        1
public class NumberPattern {
public static void main(String[] args) {
int n = 4;
 for (int i = 1; i <= n; i++) {
for (int j = 1; j <= i; j++) {
System.out.print(i + " ");
        }
System.out.println();
        }
for (int i = n - 1; i >= 1; i--) {
for (int j = 1; j <= i; j++) {
System.out.print(i + " ");
        }
System.out.println();
        }
        }
        }
```



6.Write a program to print hollow Square Dollar pattern?

```
public class HollowSquareDollarPattern {
public static void main(String[] args) {
int rows = 5;
```

```
for (int i = 1; i <= rows; i++) {
for (int j = 1; j <= rows; j++) {
if (i == 1 || i == rows || j == 1 || j == rows) {
System.out.print("$ ");
} else {
System.out.print("  ");
}
}
System.out.println();
}
}
}
```



7.Write a program to print inverted pyramid pattern.

Input: no of rows: 3

Output

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

```
public class InvertedPyramidPattern {
public static void main(String[] args) {
int rows = 3;
for (int i = 0; i < rows; i++) {
for (int j = 0; j < i; j++) {
System.out.print(" ");
}
for (int k = 0; k < 2 * (rows - i) - 1; k++) {
System.out.print("*");
}
System.out.println();
}
}
}
```

8.Write a program to reverse a number using loop?(Get the input from user)

Sample Input:

Number: 14567

Sample Output:

Reverse Number: 76541

Test cases:

1. -45721
2. 000
3. AD1947
4. !@#$%
5. 145*999=144855

```
class Main {
public static void main(String[] args) {
int num = 1234, reversed = 0;
System.out.println("Original Number: " + num);
while(num != 0) {
int digit = num % 10;
reversed = reversed * 10 + digit;
num /= 10;
}
System.out.println("Reversed Number: " + reversed);
}
}
```

9. Write a program to convert the given decimal to binary and print the reverse of the binary decimal.

Input: 11

Output: 13

Explanation: (11)10 = (1011)2.

After reversing the bits we get:

(1101)2 = (13)10.

Test cases:

1. 25
2. Eighteen
3. 12
4. -18
5. 34.5

```
import java.util.Scanner;
public class DecimalToBinary {
public static void main(String[] args) {
Scanner input = new Scanner(System.in);
System.out.print("Enter a decimal number: ");
int decimal = input.nextInt();
```

```
String binary = Integer.toBinaryString(decimal);
StringBuilder reverseBinary = new StringBuilder(binary).reverse();
int reversedDecimal = Integer.parseInt(reverseBinary.toString(), 2);
System.out.println("Decimal: " + decimal);
System.out.println("Binary: " + binary);
System.out.println("Reversed Binary: " + reverseBinary);
System.out.println("Reversed Decimal: " + reversedDecimal);
}
}
```

10.Write a program to find whether the person is eligible for vote or not. And if that particular person is not eligible, then print how many years are left to be eligible.

Sample Input:

Enter your age: 7

Sample output:

You are allowed to vote after 11 years

Test cases:

6. 25
7. Eighteen
8. 12
9. -18

34.5

```
import java.util.Scanner;
public class VoterEligibility {
public static void main(String[] args) {
Scanner scanner = new Scanner(System.in);
System.out.print("Enter your age: ");
int age = scanner.nextInt();
if (age < 0) {
System.out.println("Invalid age entered.");
} else if (age < 18) {
System.out.println("You are allowed to vote after " + (18 - age) + " years.");
} else {
System.out.println("You are eligible to vote.");
}
}
}
```