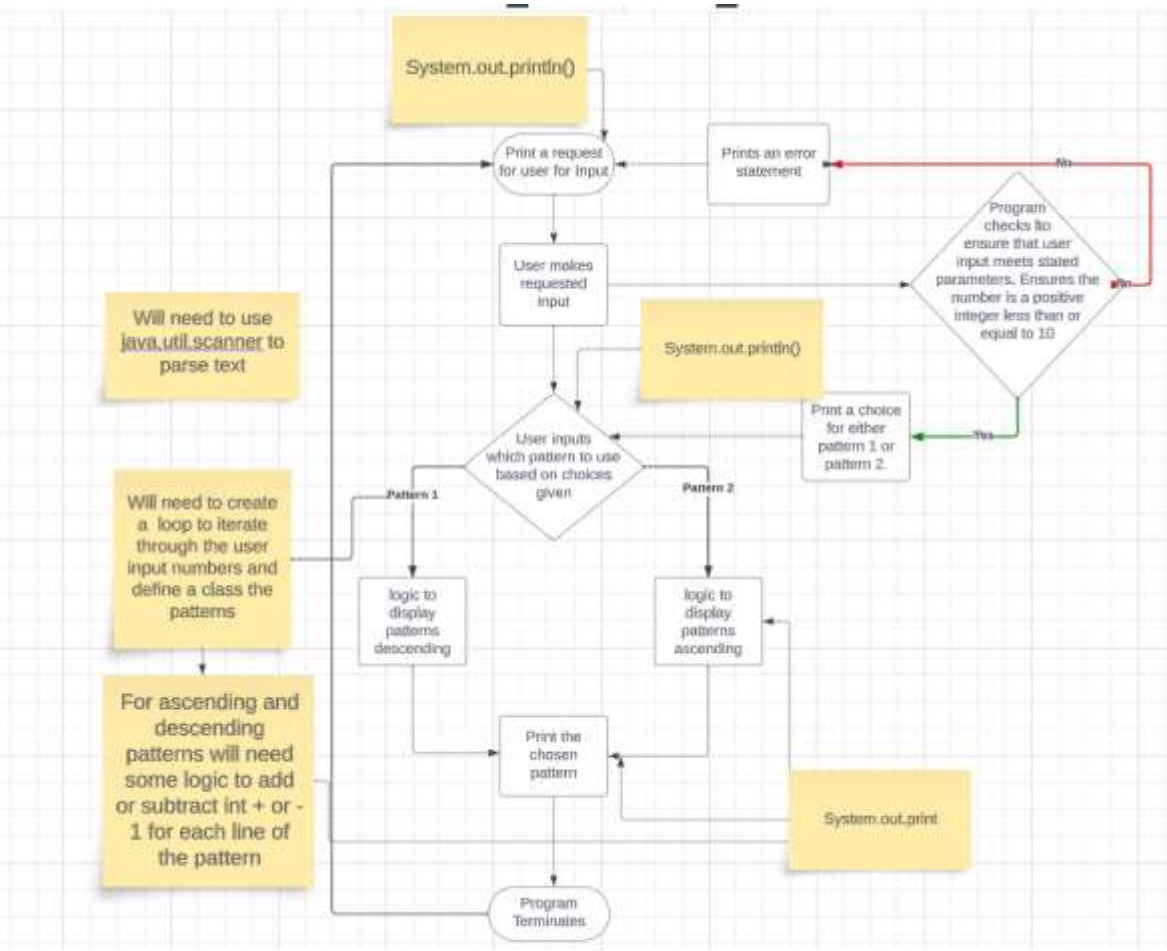
1. //Design



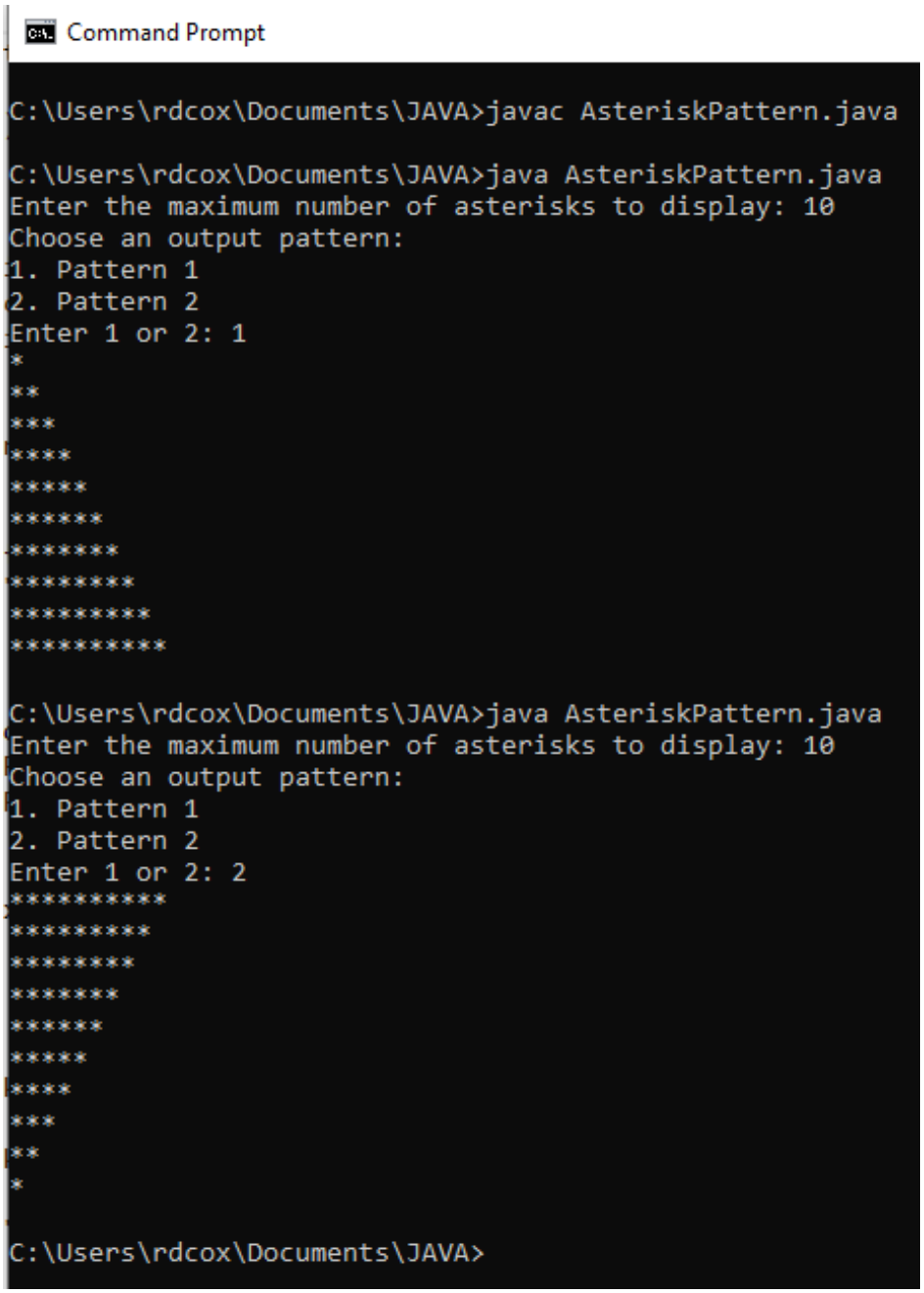
//Code

```
package Asterisk;

import java.util.Scanner; //Using util scanner to parse text

//Pattern 1 Outer loop to iterate the pattern until the user input reached
public class AsteriskPattern {
    public static void pattern1(int maxAsterisks) {
        for (int i = 1; i <= maxAsterisks; i++) {
            for (int j = 0; j < i; j++) {
                System.out.print("*");
```

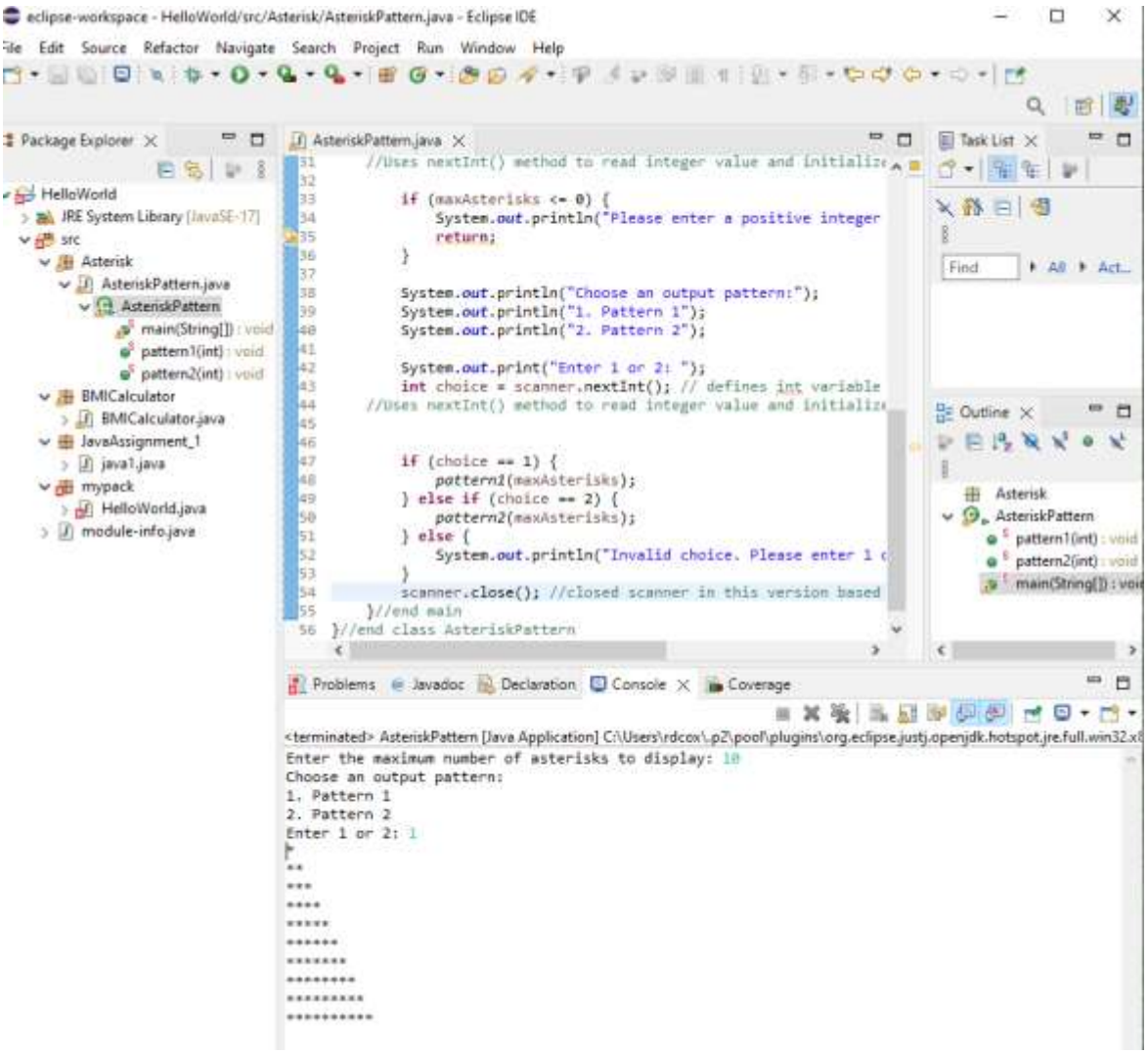
```
            }
            System.out.println();
        }
    }
//Pattern 2 - Inner loop to do same as outer loop in opposite order achieved by i--
    public static void pattern2(int maxAsterisks) {
        for (int i = maxAsterisks; i > 0; i--) {
            for (int j = 0; j < i; j++) {
                System.out.print("*");
            }
            System.out.println();
        }
    }

    public static void main(String[] args) {
        Scanner scanner = new Scanner(System.in); // Declare the object and initialize with
        // predefined standard input object

        System.out.print("Enter the maximum number of asterisks to display: ");
        int maxAsterisks = scanner.nextInt(); // defines int variable
      //Uses nextInt() method to read integer value and initialize

        if (maxAsterisks <= 0) {
            System.out.println("Please enter a positive integer for the maximum number of asterisks.");
            return;
        }
```

```
        System.out.println("Choose an output pattern:");
        System.out.println("1. Pattern 1");
        System.out.println("2. Pattern 2");

        System.out.print("Enter 1 or 2: ");
        int choice = scanner.nextInt(); // defines int variable
      //Uses nextInt() method to read integer value and initialize


        if (choice == 1) {
            pattern1(maxAsterisks);
        } else if (choice == 2) {
            pattern2(maxAsterisks);
        } else {
            System.out.println("Invalid choice. Please enter 1 or 2.");
        }
        scanner.closed()//received an error from IDE so closed scanner
    }//end main
}//end class AsteriskPattern
```

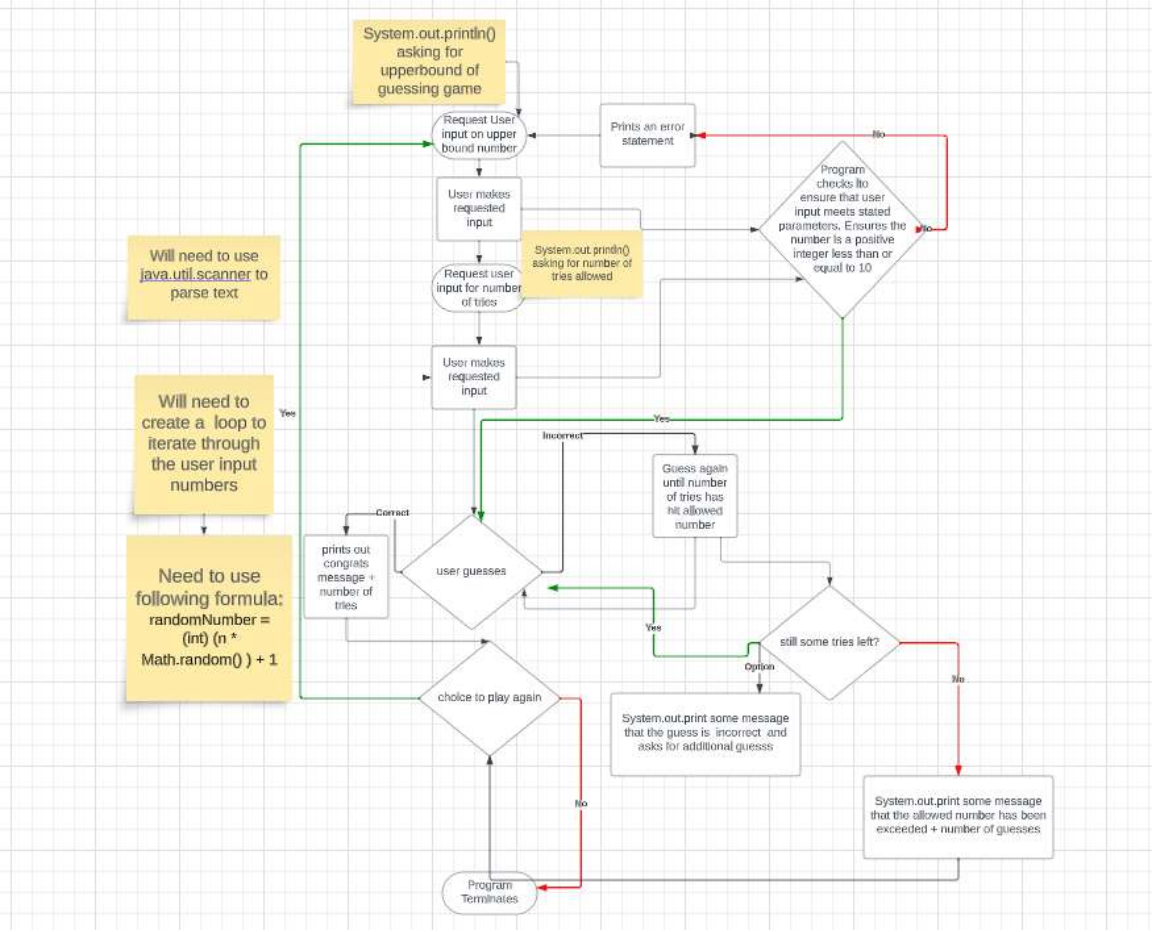
//output from command line



//ouput from IDE


eclipse-workspace - HelloWorld/src/Asterisk/AsteriskPattern.java - Eclipse IDE
File Edit Source Refactor Navigate Search Project Run Window Help
Package Explorer
HelloWorld
JRE System Library [JavaSE-17]
src
Asterisk
AsteriskPattern.java
AsteriskPattern
main(String[]) : void
pattern1(int) : void
pattern2(int) : void
BMICalculator
BMICalculator.java
JavaAssignment_1
java1.java
mypack
HelloWorld.java
module-info.java
AsteriskPattern.java
//Uses nextInt() method to read integer value and initializ
if (maxAsterisks <= 0) {
System.out.println("Please enter a positive integer
return;
}
System.out.println("Choose an output pattern:");
System.out.println("1. Pattern 1");
System.out.println("2. Pattern 2");
System.out.print("Enter 1 or 2: ");
int choice = scanner.nextInt(); // defines int variable
//Uses nextInt() method to read integer value and initializ
if (choice == 1) {
pattern1(maxAsterisks);
} else if (choice == 2) {
pattern2(maxAsterisks);
} else {
System.out.println("Invalid choice. Please enter 1 c
}
scanner.close(); //closed scanner in this version based
}//end main
}//end class AsteriskPattern
Task List
Find
All
Act...
Outline
Asterisk
AsteriskPattern
pattern1(int) : void
pattern2(int) : void
main(String[]) : voi
Problems
Javadoc
Declaration
Console
Coverage
<terminated> AsteriskPattern [Java Application] C:\Users\rdcox\.p2\pool\plugins\org.eclipse.justj.openjdk.hotspot.jre.full.win32.x8
Enter the maximum number of asterisks to display: 10
Choose an output pattern:
1. Pattern 1
2. Pattern 2
Enter 1 or 2: 1
**
***
****
*****
******
****
****
****
****

2. //Design



//Code

```
import java.util.Scanner;


public class GuessTheNumberGame {


    public static void main(String[] args) {
        Scanner scanner = new Scanner(System.in);


        do {
            playGame(scanner);
            System.out.print("Do you want to play again? (yes/no): ");
```

```
    } while (scanner.next().equalsIgnoreCase("yes"));

    System.out.println("Thanks for playing!");
  }

  public static void playGame(Scanner scanner) {
    System.out.print("Enter the maximum number (N) for the secret number (1 to N): ");
    int maxNumber = scanner.nextInt();
    int secretNumber = generateSecretNumber(maxNumber);

    System.out.print("Enter the maximum number of guesses: ");
    int maxGuesses = scanner.nextInt();

    int numberOfGuesses = 0;
    boolean hasGuessedCorrectly = false;

    while (numberOfGuesses < maxGuesses) {
      System.out.print("Guess the secret number: ");
      int userGuess = scanner.nextInt();
      numberOfGuesses++;

      if (userGuess == secretNumber) {
        System.out.println("Correct! You guessed the secret number in " + numberOfGuesses + " guesses.");
        hasGuessedCorrectly = true;
        break;
      } else if (userGuess < secretNumber) {
        System.out.println("Too low. Try again.");
```

```
            } else {
                System.out.println("Too high. Try again.");
            }
        }

        if (!hasGuessedCorrectly) {
            System.out.println("You've exceeded the maximum number of guesses. The secret number was "
+ secretNumber + ".");
        }
    }

    public static int generateSecretNumber(int maxNumber) {
        return (int) (Math.random() * maxNumber) + 1;
    }//end main
}//end class GuessTheNumberGame
```

// output

```
C:\Users\rdcox\Documents\JAVA>java GuessTheNumberGame.java
Enter the maximum number (N) for the secret number (1 to N): 50
Enter the maximum number of guesses: 5
Guess the secret number: 40
Too high. Try again.
Guess the secret number: 25
Too low. Try again.
Guess the secret number: 35
Too low. Try again.
Guess the secret number: 40
Too high. Try again.
Guess the secret number: 38
Too high. Try again.
You've exceeded the maximum number of guesses. The secret number was 37.
Do you want to play again? (yes/no): yes
Enter the maximum number (N) for the secret number (1 to N):
```