Task : 1 – Number Game

```
import java.util.Scanner;

public class Task1 {

    // Main method that starts the game
    public static void main(String[] args) {
        System.out.println("Let's play a game. I'll pick a number between");
        System.out.println("1 and 100, and you try to guess it.");

        // Create a new Scanner object to read user input
        Scanner ob=new Scanner(System.in);

        boolean playAgain;

        // Loop to allow the user to play the game multiple times
        do {
            // Call the playGame() method to play one game
            playGame();

            // Ask the user if they want to play again
            System.out.println("Would you like to play again? Y/N");

            // Read the user's input as a string and convert it to a boolean value
            String playAgainStr = ob.next();
            playAgain = playAgainStr.equalsIgnoreCase("Y");
        } while (playAgain);

        // Exit message
        System.out.println("Thanks for playing. Goodbye.");
    }

    // Method to play one game of number guessing
    static void playGame() {
        int computersNumber; // The number the computer has chosen
        int usersGuess;      // The user's current guess
        int guessCount;      // The number of guesses the user has made

        // Choose a random number between 1 and 100
        computersNumber = (int)(100 * Math.random()) + 1;

        // Initialize the guess count to 0
        guessCount = 0;

        System.out.println();
        System.out.println("What is your first guess?");

        // Create a new Scanner object to read user input
        Scanner sc= new Scanner(System.in);

        // Loop until the user correctly guesses the number or reaches the maximum
number of guesses
        while (true) {
            usersGuess = sc.nextInt(); // Read the user's guess

            // Increment the guess count
            guessCount++;

            // If the user guesses correctly, print a message and exit the loop
            if (usersGuess == computersNumber) {
                System.out.println("You got it in " + guessCount + " guesses! My
number was " + computersNumber);
                break;
            }
```

```
            // If the user has made too many guesses, print a message and exit the
loop
            if (guessCount == 6) {
                System.out.println("You didn't get the number in 6 guesses.");
                System.out.println("You lose. My number was " + computersNumber);
                break;
            }

            // If the user's guess is too low, prompt them to guess again and
provide a hint
            if (usersGuess < computersNumber) {
                System.out.println("Your number is too low. Try again:");
            }

            // If the user's guess is too high, prompt them to guess again and
provide a hint
            else if (usersGuess > computersNumber) {
                System.out.println("Your number is too high. Try again:");
            }
        }

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

Output:

```
Let's play a game. I'll pick a number between
1 and 100, and you try to guess it.

What is your first guess?
1
Your number is too low. Try again:
34
Your number is too high. Try again:
2
Your number is too low. Try again:
56
Your number is too high. Try again:
5
Your number is too low. Try again:
76
You didn't get the number in 6 guesses.
You lose. My number was 7
```

Task : 2 – Students Grade Calculators