```
import java.util.Scanner;

public class day_8_NumberGuessing {
    public static void main(String[] args) {
        Scanner sc = new Scanner(System.in);
//1
import java.util.Random;
import java.util.Scanner;

public class NumberGuessingGame {

    // Method to generate a random guess within range
    public static int generateGuess(int low, int high) {
        Random rand = new Random();
        return rand.nextInt(high - low + 1) + low;
    }

    // Method to get feedback from user
    public static String getFeedback(Scanner sc, int guess) {
        System.out.print("Is your number " + guess + "? (Enter high / low / correct): ");
        return sc.next().toLowerCase();
    }

    // Method to play the game
    public static void playGame() {
        Scanner sc = new Scanner(System.in);
        int low = 1, high = 100;
        boolean guessed = false;

        System.out.println("Think of a number between 1 and 100...");
        System.out.println("I will try to guess it!");
```

```
        while (!guessed && low <= high) {
            int guess = generateGuess(low, high);
            String feedback = getFeedback(sc, guess);

            if (feedback.equals("correct")) {
                System.out.println("Yay! I guessed your number: " + guess);
                guessed = true;
            } else if (feedback.equals("high")) {
                high = guess - 1; // Narrow range down
            } else if (feedback.equals("low")) {
                low = guess + 1; // Narrow range up
            } else {
                System.out.println("Invalid input! Please type high, low, or correct.");
            }
        }

        if (!guessed) {
            System.out.println("Hmm... something went wrong. Did you give correct hints?");
        }
    }

    public static void main(String[] args) {
        playGame();
    }
}
        // 2. Maximum of Three Numbers

            /*int a, b, c;
            System.out.print("Enter first number: ");
            a = sc.nextInt();
```

```
    System.out.print("Enter second number: ");
    b = sc.nextInt();
    System.out.print("Enter third number: ");
    c = sc.nextInt();
    int max;
    if(a >= b && a >= c) {
        max = a;
    } else if(b >= a && b >= c) {
        max = b;
    } else {
        max = c;
    }
    System.out.println("Maximum number is: " + max);
}*/

// 3. Prime Number Checker

   /* int n;
    System.out.print("Enter a number: ");
    n = sc.nextInt();
    boolean prime = true;
    if(n <= 1) {
        prime = false;
    } else {
        for(int i = 2; i <= n/2; i++) {
            if(n % i == 0) {
                prime = false;
                break;
            }
        }
    }
```

```
    if(prime) {
        System.out.println(n + " is a prime number.");
    } else {
        System.out.println(n + " is not a prime number.");
    }
}*/

// 4. Fibonacci Sequence Generator

  /* int terms;
    System.out.print("Enter number of terms: ");
    terms = sc.nextInt();
    int f = 0, g = 1;
    System.out.print("Fibonacci sequence: ");
    for(int i = 1; i <= terms; i++) {
        System.out.print(f + " ");
        int next = f + g;
        f = g;
        g = next;
    }
    System.out.println();
}*/

// 5. Palindrome Checker

    /*System.out.print("Enter a string: ");
    String str = sc.next();
    String rev = "";
    for(int i = str.length() - 1; i >= 0; i--) {
        rev = rev + str.charAt(i);
    }
```

```
    if(str.equals(rev)) {
        System.out.println(str + " is a palindrome.");
    } else {
        System.out.println(str + " is not a palindrome.");
    }
}*/

// 6. Factorial Using Recursion (but here without recursion, inside main only)

    /*int n;
    System.out.print("Enter a number: ");
    n = sc.nextInt();
    int fact = 1;
    for(int i = 1; i <= n; i++) {
        fact = fact * i;
    }
    System.out.println("Factorial of " + n + " is " + fact);
}*/

// 7. GCD and LCM Calculator

    /*int x, y;
    System.out.print("Enter first number: ");
    x = sc.nextInt();
    System.out.print("Enter second number: ");
    y = sc.nextInt();
    int a = x, b = y;
    while(b != 0) {
        int temp = b;
        b = a % b;
        a = temp;
```

```
    }
    int gcd = a;
    int lcm = (x * y) / gcd;
    System.out.println("GCD: " + gcd);
    System.out.println("LCM: " + lcm);
}*/

// 8. Temperature Converter
    /*System.out.print("Enter 1 for Celsius to Fahrenheit or 2 for Fahrenheit to Celsius: ");
    int choice = sc.nextInt();
    if(choice == 1) {
        System.out.print("Enter Celsius: ");
        double c = sc.nextDouble();
        double f = (c * 9/5) + 32;
        System.out.println("Fahrenheit: " + f);
    } else if(choice == 2) {
        System.out.print("Enter Fahrenheit: ");
        double f = sc.nextDouble();
        double c = (f - 32) * 5/9;
        System.out.println("Celsius: " + c);
    } else {
        System.out.println("Invalid choice.");
    }
}*/

// 9. Basic Calculator
    /*System.out.print("Enter first number: ");
    double num1 = sc.nextDouble();
    System.out.print("Enter second number: ");
    double num2 = sc.nextDouble();
    System.out.print("Choose operation (+ - * /): ");
```

```
        char op = sc.next().charAt(0);
        double result = 0;
        if(op == '+') {
            result = num1 + num2;
        } else if(op == '-') {
            result = num1 - num2;
        } else if(op == '*') {
            result = num1 * num2;
        } else if(op == '/') {
            if(num2 != 0) {
                result = num1 / num2;
            } else {
                System.out.println("Division by zero not allowed.");
            }
        } else {
            System.out.println("Invalid operator.");
        }
        System.out.println("Result: " + result);
    }

    sc.close();
  }
}*/



  }}
```