

```
import java.util.Scanner;

public class DecToBin {

    public static void main(String[] args) {

        Scanner scanner = new Scanner(System.in);

        // This creates an infinite loop

        while (true) {

            System.out.print("Enter a decimal number (or type 'STOP' to exit): ");

            String input = scanner.nextLine().trim();

            // Incase user needs to STOP the program loop

            if (input.equalsIgnoreCase("STOP")) {

                System.out.println("Exiting the program. Goodbye!");

                break;

            }

            // Converting input into integers

            try {

                int decimalNumber = Integer.parseInt(input);

                String binaryNumber = Integer.toBinaryString(decimalNumber); // Convert to binary

                System.out.println("The binary representation of " + decimalNumber + " is " + binaryNumber + ".");

            } catch (NumberFormatException error) {

                System.out.println("Please enter a valid decimal number.");

            }

        }

        // Closing to prevent memory leaks

        scanner.close();

    }

}
```

Listening on 50674

User program running

Enter a decimal number (or type 'STOP' to exit):

→ 5

The binary representation of 5 is 101.

Enter a decimal number (or type 'STOP' to exit):

→ 10

The binary representation of 10 is 1010.

Enter a decimal number (or type 'STOP' to exit):

→ 20

The binary representation of 20 is 10100.

Enter a decimal number (or type 'STOP' to exit):

→ 48

The binary representation of 48 is 110000.

Enter a decimal number (or type 'STOP' to exit):

→ 91

The binary representation of 91 is 1011011.

Enter a decimal number (or type 'STOP' to exit):