Template Week 2 – Logic

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```java
import nl.saxion.app.SaxionApp;


public class Application implements Runnable {

    public static void main(String[] args) {
        SaxionApp.start(new Application(), 800, 600);
    }

    public void run() {
        SaxionApp.printLine("enter a number");
        int input = SaxionApp.readInt();

        while (true) {
            SaxionApp.printLine("1 - Is the number odd?");
            SaxionApp.printLine("2 - Is the number a power of 2");
            SaxionApp.printLine("3 - What is the numbers two's
complement");
            SaxionApp.printLine("4 - Quit");
            SaxionApp.printLine("Choose an option 1-4");
            int choice = SaxionApp.readInt();

            if (choice == 1) {
                SaxionApp.clear();
                if (isTheNumberOdd(input)) {
                    SaxionApp.printLine(input + " is odd");
                } else {
                    SaxionApp.printLine(input + " is even");
                }
            } else if (choice == 2) {
                SaxionApp.clear();
                if (isTheNumberAPowerOfTwo(input)) {
                    SaxionApp.printLine(input + " is a power of 2");
                } else {
                    SaxionApp.printLine(input + " isnt a power of 2");
                }
            } else if (choice == 3) {
                SaxionApp.clear();
                SaxionApp.printLine("Two's complement of " + input + "
is: " + numbersTwosComplement(input));
            } else if (choice == 4) {
                SaxionApp.quit();
                return; // Exit the program
            }
        }
    }

    public boolean isTheNumberOdd(int input)
    {
        return (input & 1 ) == 1;
    }
```
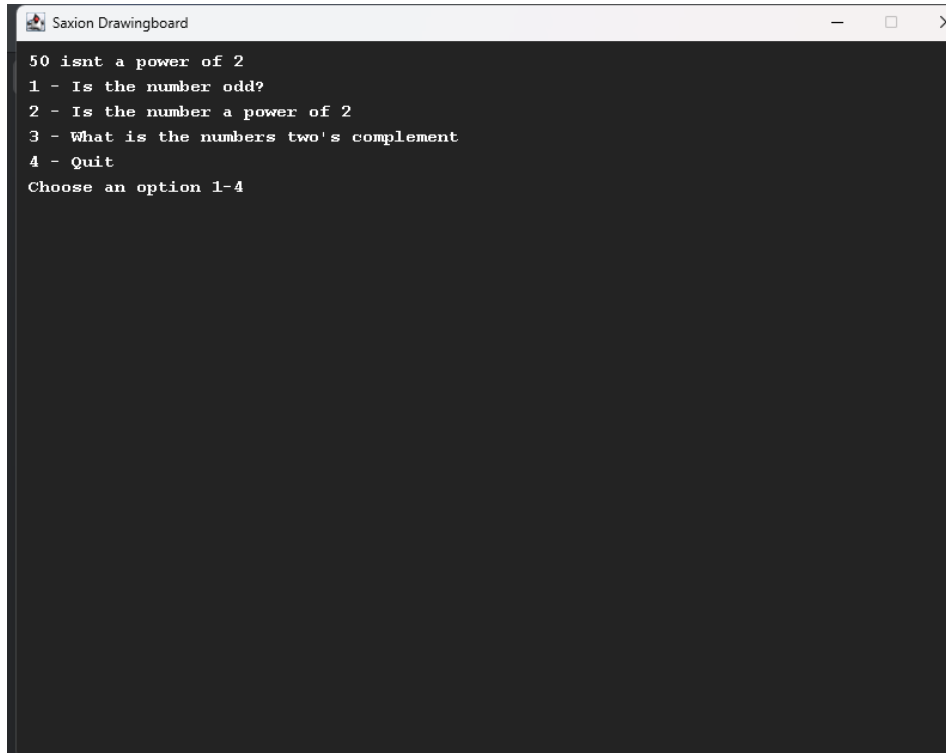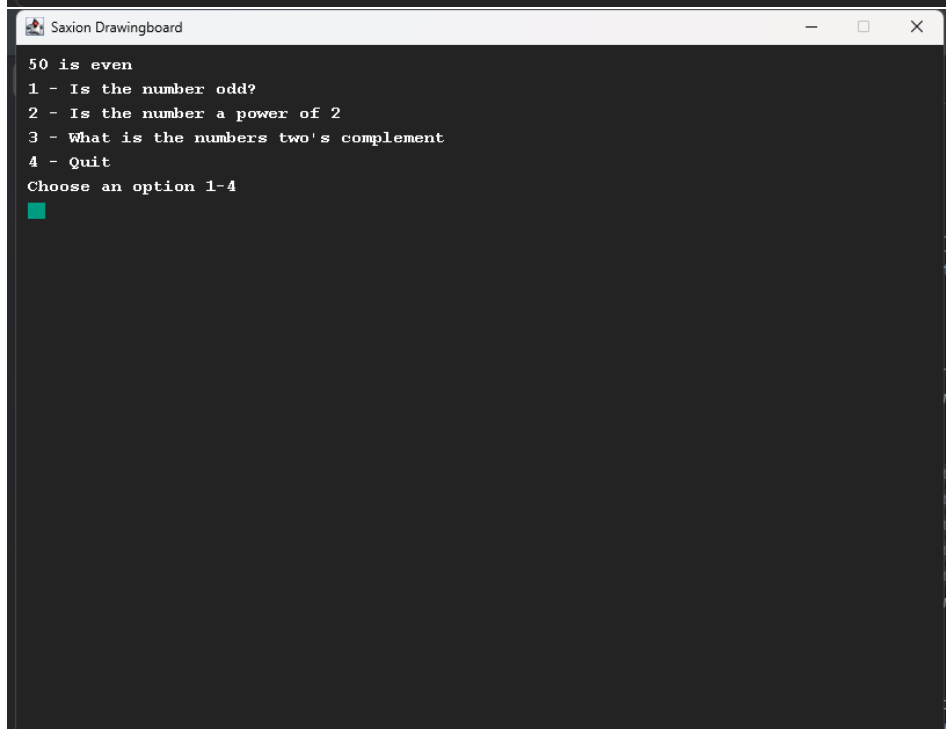
```java
    public boolean isTheNumberAPowerOfTwo(int input) {

        return input > 0 && (input & (input - 1)) == 0;
    }

    public int numbersTwosComplement(int input){
        return ~input + 1;
    }
}
```

```
Saxion Drawingboard                                    —    □    ✕

Two's complement of 50 is: -50
1 - Is the number odd?
2 - Is the number a power of 2
3 - What is the numbers two's complement
4 - Quit
Choose an option 1-4
```

```
Saxion Drawingboard                                    —    □    ✕

64 is a power of 2
1 - Is the number odd?
2 - Is the number a power of 2
3 - What is the numbers two's complement
4 - Quit
Choose an option 1-4
```