Template Week 2 – Logic

Student number: 591905

Assignment 2.1: Parking lot

Which gates do you need?

2 AND poorten. Als al de inputs 1 zijn, zal het resultaat ook 1 zijn. Alle andere inputs geven 0.

Complete this table

Parking lot 1 (P1)	Parking lot 2 (P2)	Parking lot 3 (P3)	Result (full) (F)
0	0	0	0
0	0	1	0
0	1	0	0
0	1	1	0
1	0	0	0
1	0	1	0
1	1	0	0
1	1	1	1

Assignment 2.2: Android or iPhone

Which gates do you need?

Een XOR gate

Complete this table

Android phone	iPhone	Result (Phone in possession)
0	0	0
1	0	1

0	1	1
1	1	0

Assignment 2.3: Four NAND gates

Complete this table

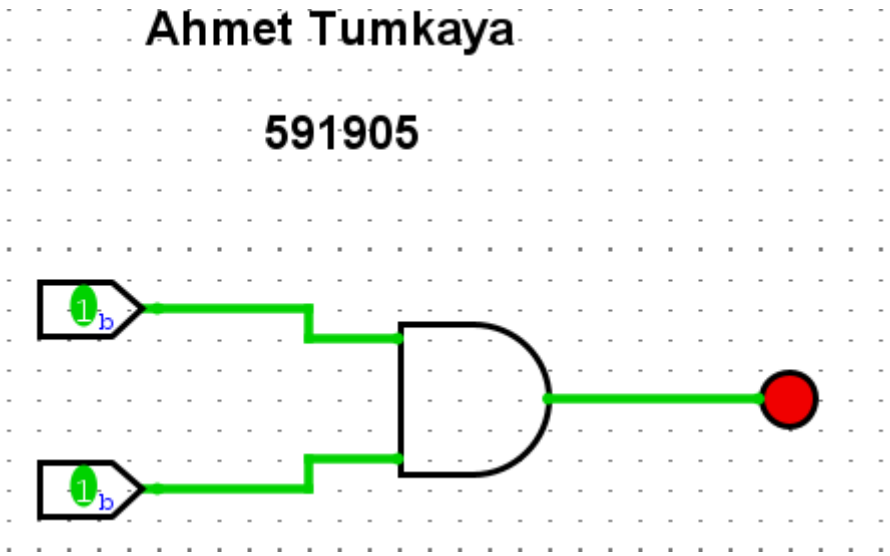
A	B	Q
0	0	0
1	0	1
0	1	1
1	1	0

How can the design be simplified?

Door 1 XOR gate te implementeren

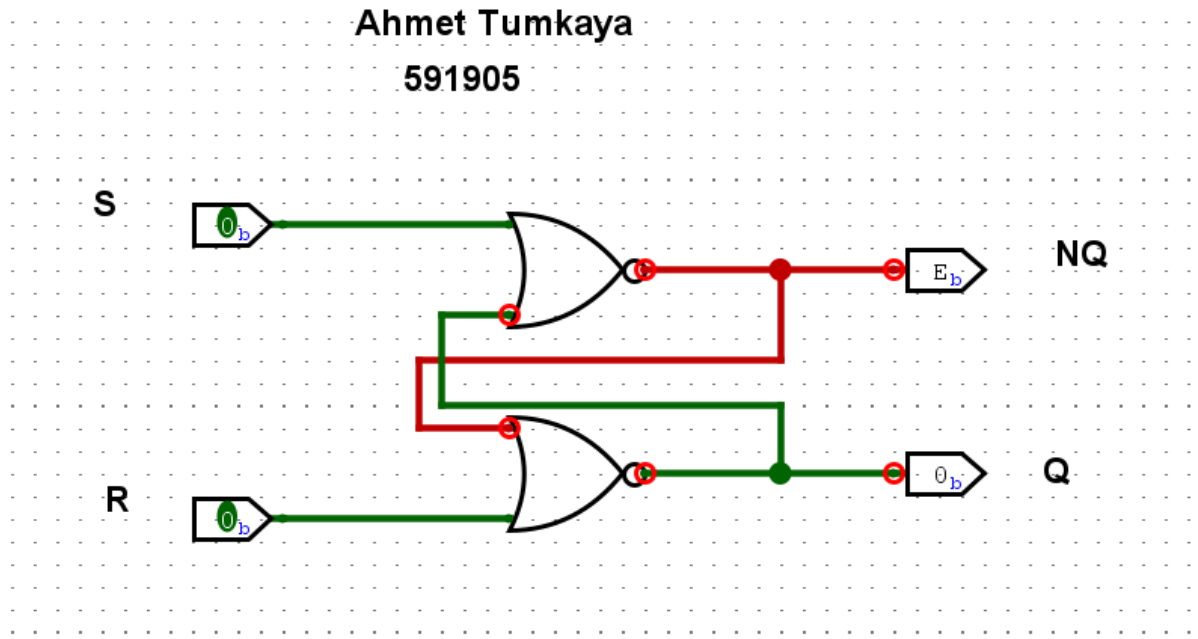
Assignment 2.4: Getting to know Logisim evolution

Screenshot of the design with your name and student number in it:



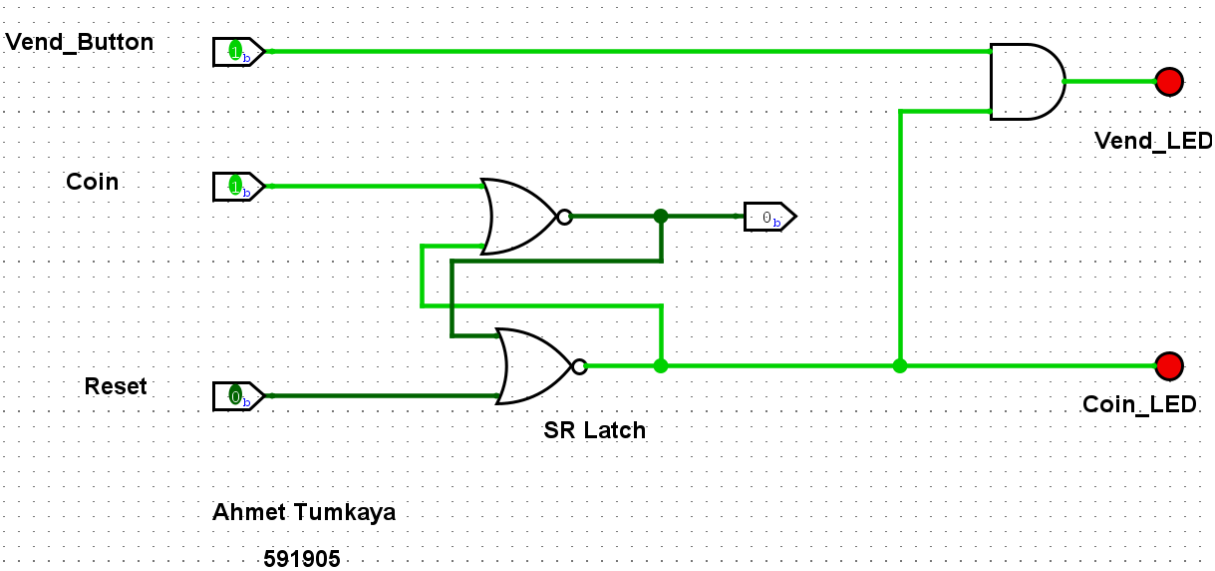
Assignment 2.5: SR Latch

Screenshot SR Latch in Logisim with your name and student number:



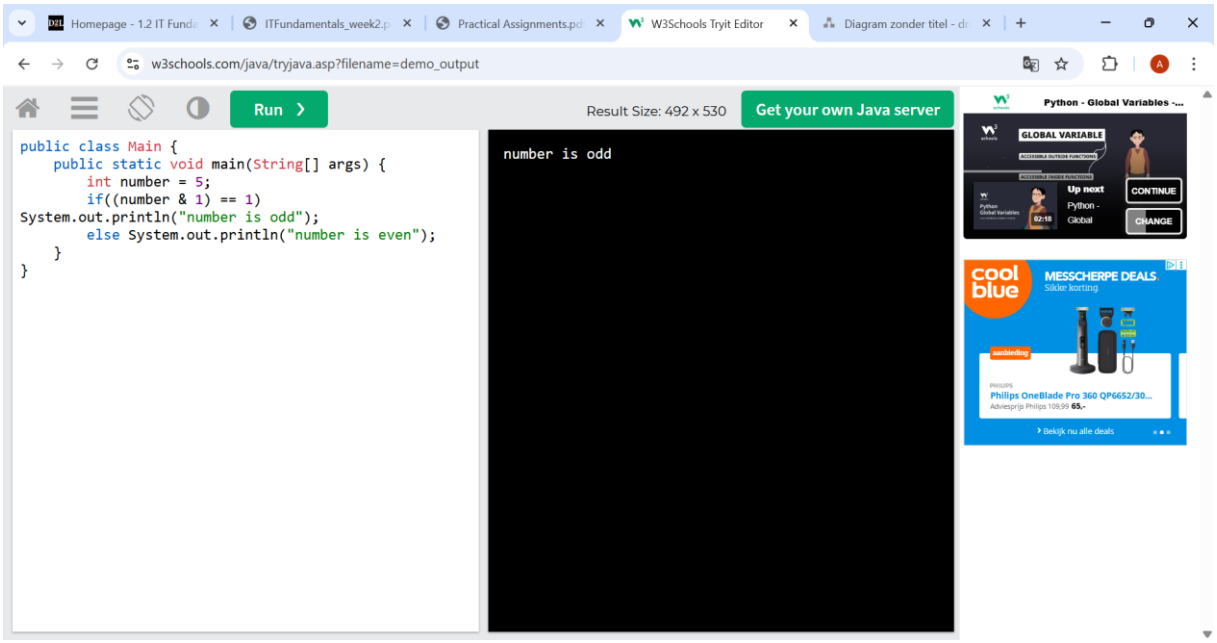
Assignment 2.6: Vending Machine

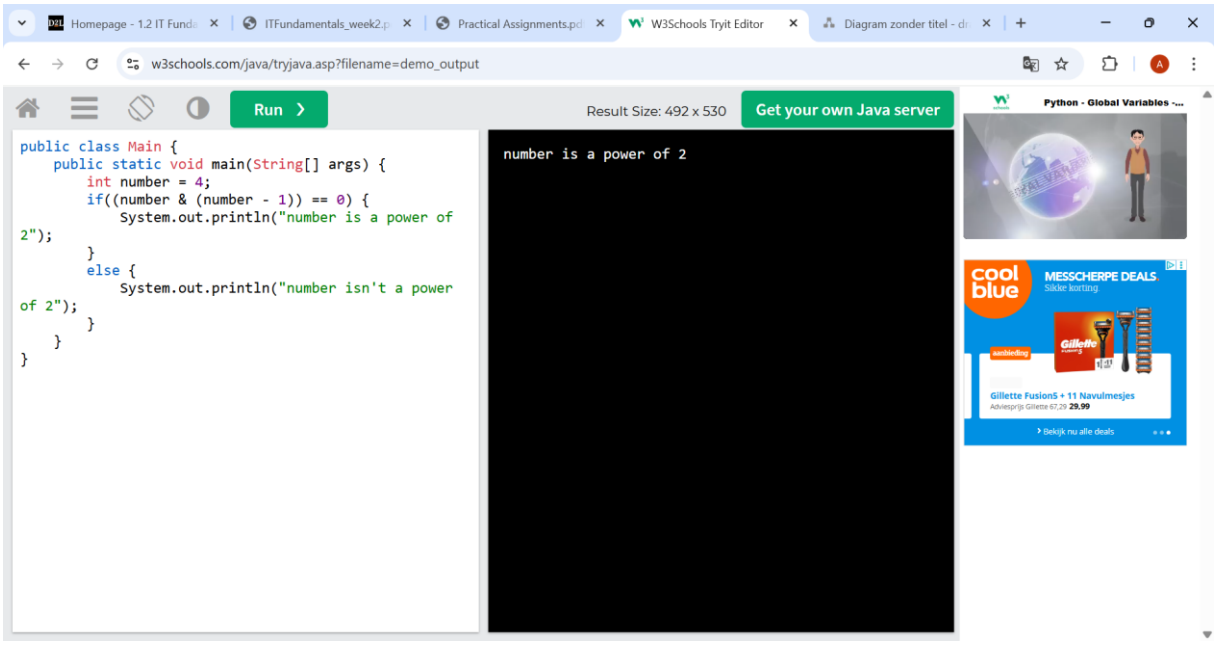
Screenshot Vending Machine in Logisim with your name and student number:

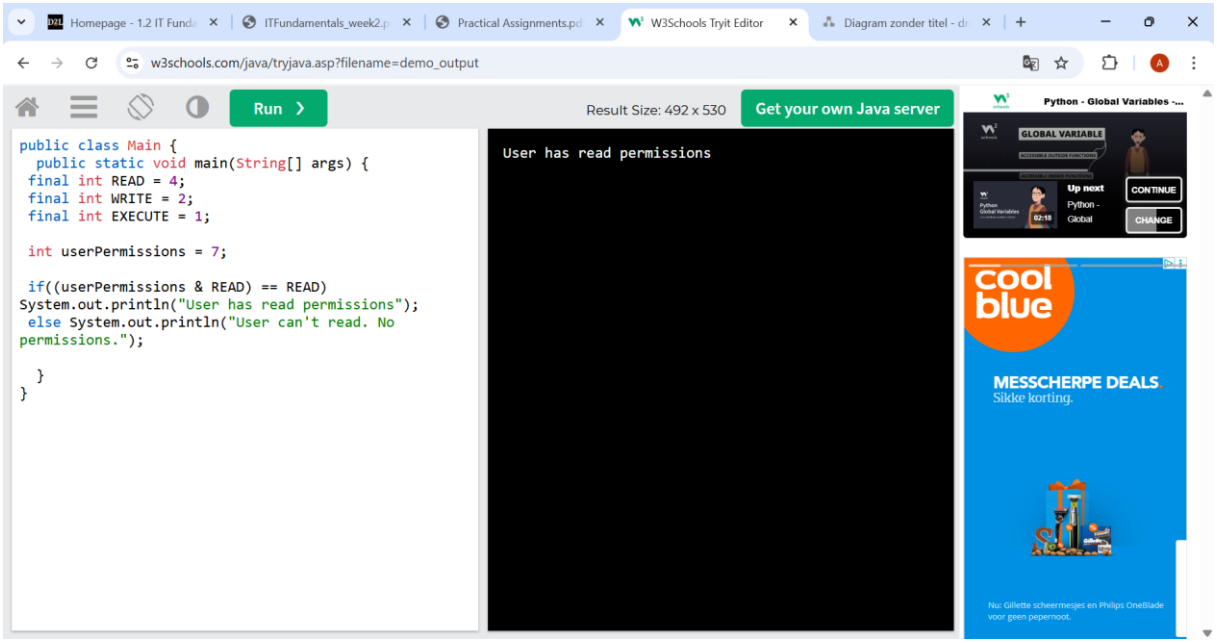


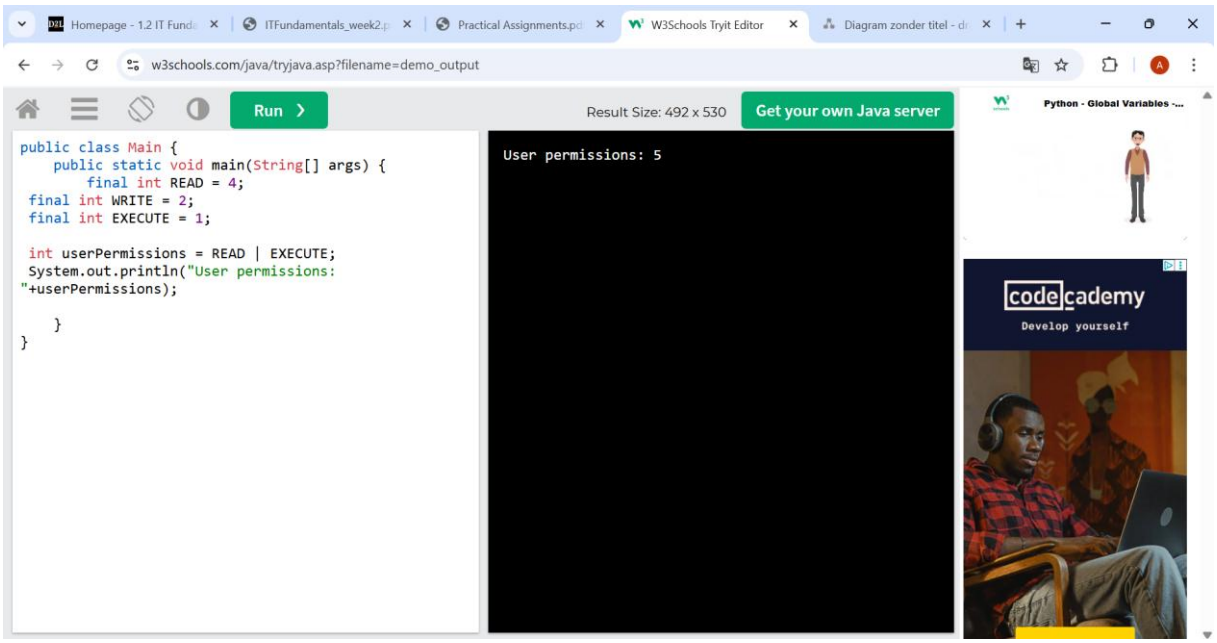
Assignment 2.7: Bitwise operators

Complete the java source code for bitwise operators. Put the source code here.






Homepage - 1.2 IT Fund
ITFundamentals_week2.p
Practical Assignments.pd
W3Schools Tryit Editor
Diagram zonder titel - dr
w3schools.com/java/tryjava.asp?filename=demo_output
Run
Result Size: 492 x 530
Get your own Java server
public class Main {
public static void main(String[] args) {
final int READ = 4;
final int WRITE = 2;
final int EXECUTE = 1;
int userPermissions = 7;
if((userPermissions & READ) == READ)
System.out.println("User has read permissions");
else System.out.println("User can't read. No
permissions.");
}
}
User has read permissions
Python - Global Variables -...
GLOBAL VARIABLE
Up next
Python - Global
CONTINUE
CHANGE
cool blue
MESSCHERPE DEALS.
Sikke korting.
Nu: Gillette scheermesjes en Philips OneBlade voor geen pepernoot.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W3Schools Tryit Editor
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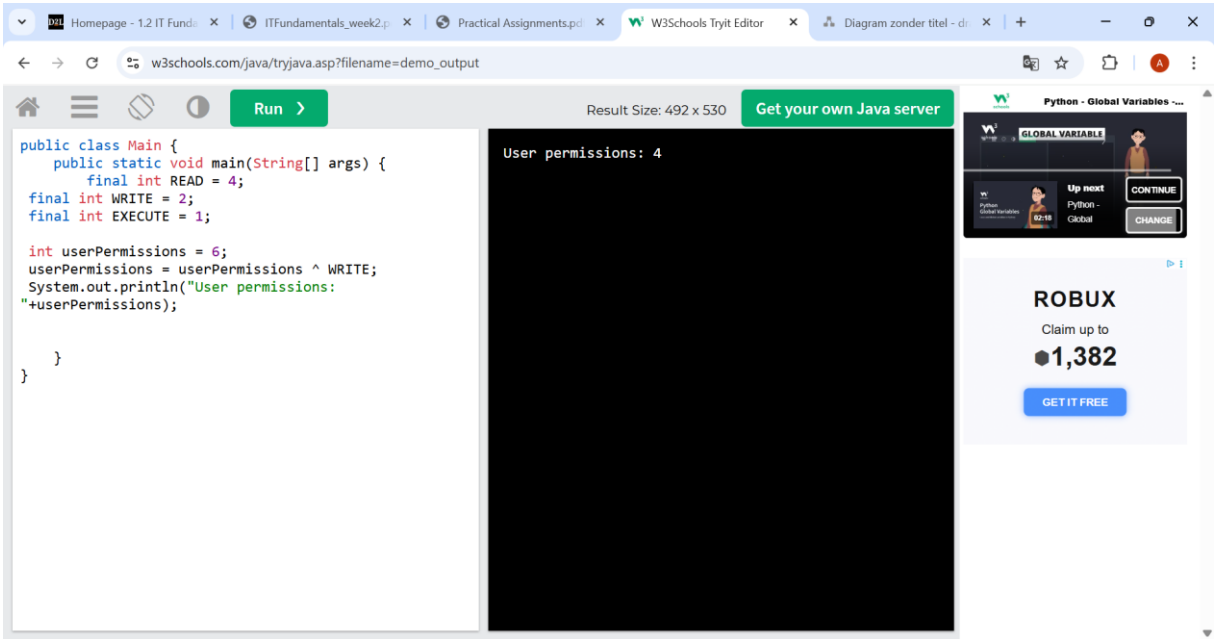
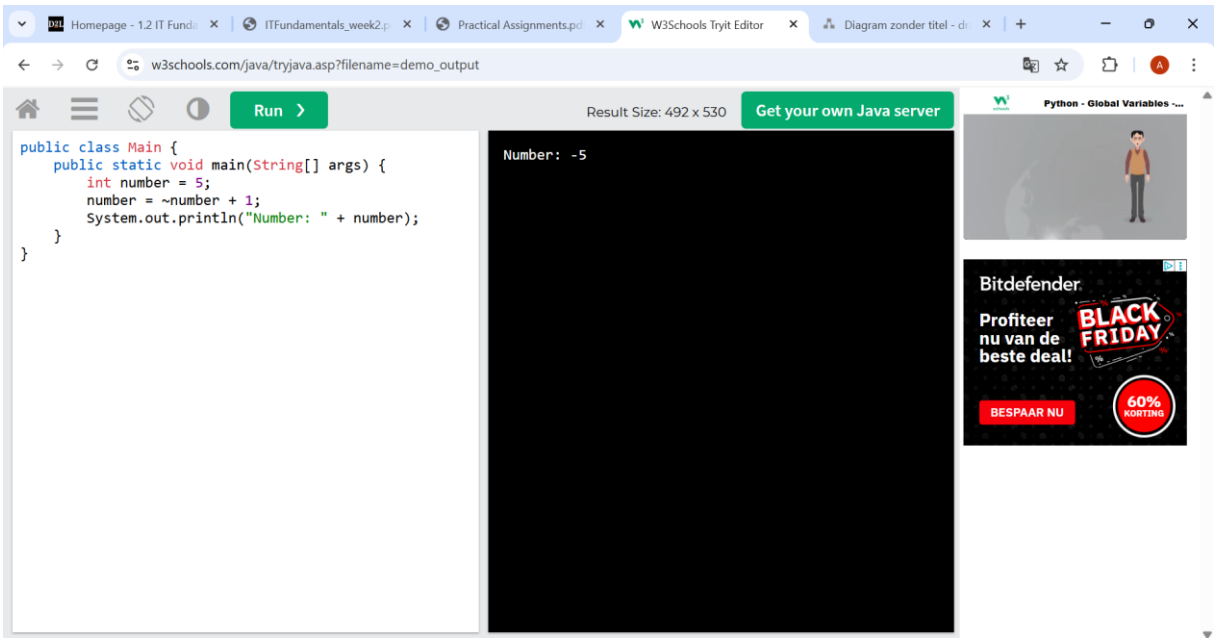
w3schools.com/java/tryjava.asp?filename=demo_output
Run
Result Size: 492 x 530
Get your own Java server
public class Main {
public static void main(String[] args) {
final int READ = 4;
final int WRITE = 2;
final int EXECUTE = 1;
int userPermissions = READ | EXECUTE;
System.out.println("User permissions:
"+userPermissions);
}
}
User permissions: 5
Python - Global Variables -...
codecademy
Develop yourself





Assignment 2.8: Java Application Bit Calculations

Create a java program that accepts user input and presents a menu with options.

1. Is number odd?
2. Is number a power of 2?
3. Two's complement of number?

Implement the methods by using the bitwise operators you have just learned.

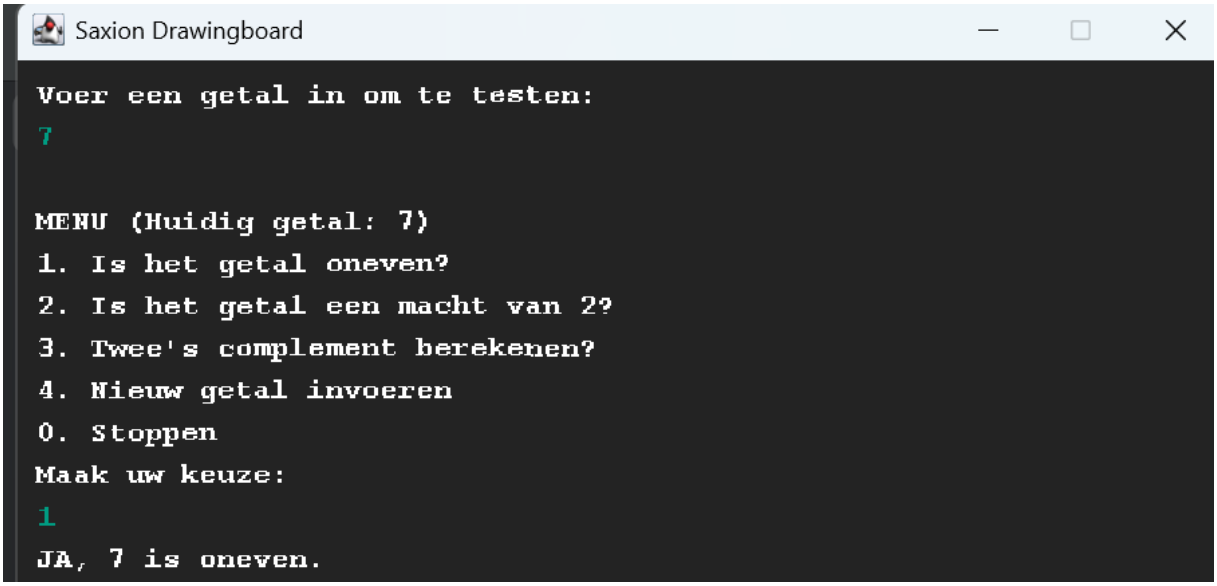
Organize your source code in a readable manner with the use of control flow and methods.

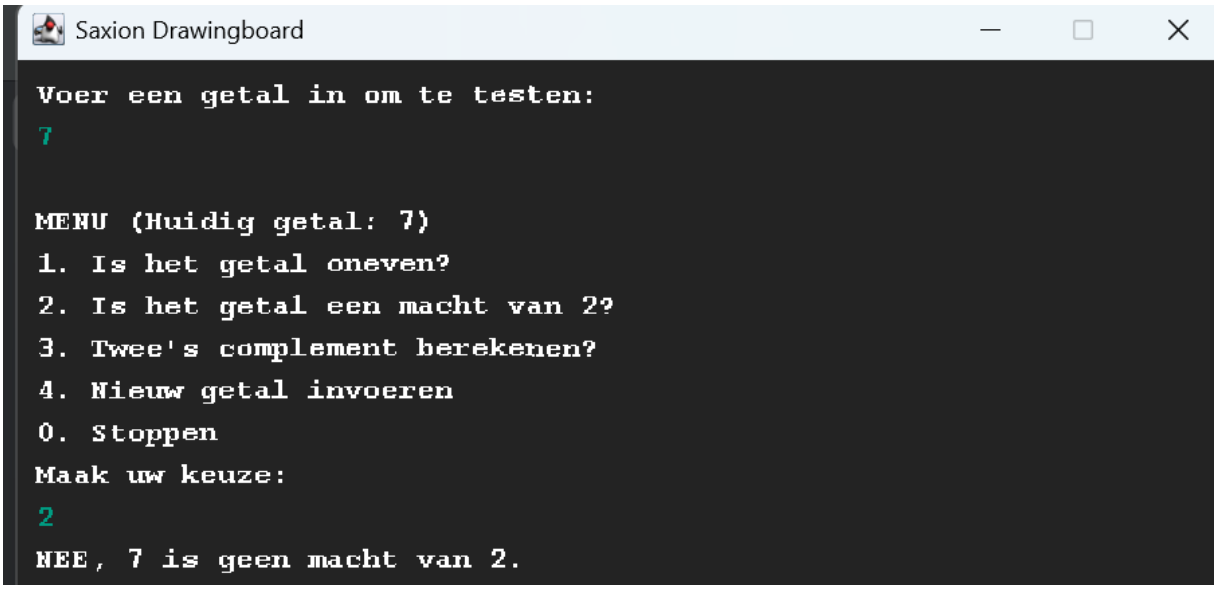
Keep this application because you need to expand it in week 6 for calculating network segments.

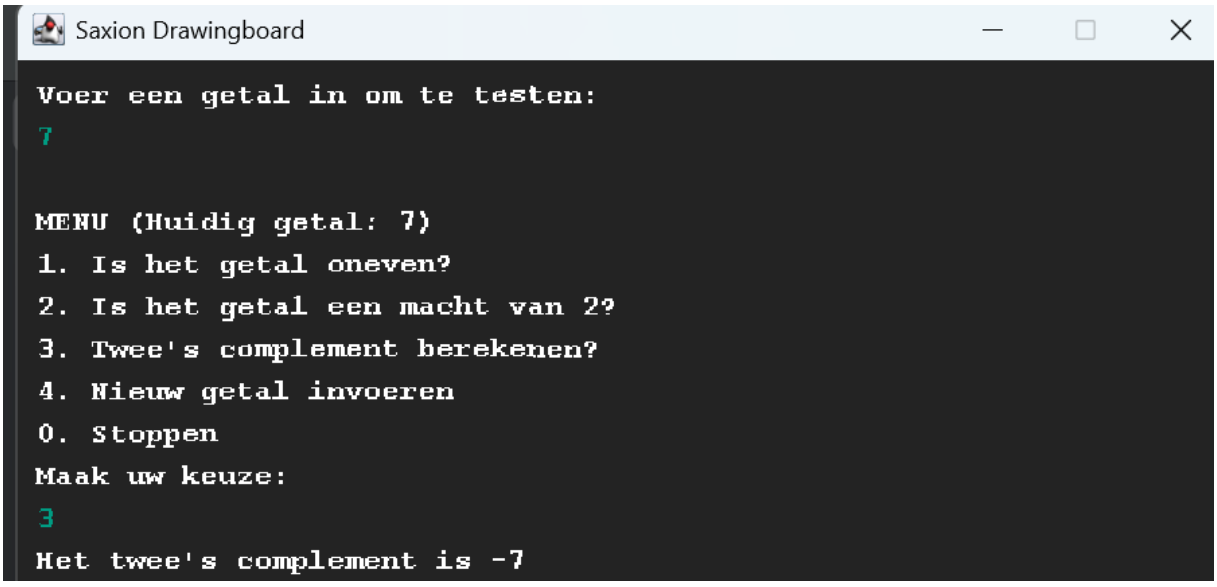
Paste source code here, with a screenshot of a working application:

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

public class Application implements Runnable {

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

    public void run() {
        SaxionApp.printLine("Voer een getal in om te testen:");
        int number = SaxionApp.readInt();
        boolean running = true;

        while (running) {
            SaxionApp.printLine("");
            SaxionApp.printLine("MENU (Huidig getal: " + number + ")");
            SaxionApp.printLine("1. Is het getal oneven?");
            SaxionApp.printLine("2. Is het getal een macht van 2?");
            SaxionApp.printLine("3. Twee's complement berekenen?");
            SaxionApp.printLine("4. Nieuw getal invoeren");
            SaxionApp.printLine("0. Stoppen");

            SaxionApp.printLine("Maak uw keuze:");
            int choice = SaxionApp.readInt();

            if (choice == 1) {
                checkIfOdd(number);
            } else if (choice == 2) {
                checkPowerOfTwo(number);
            } else if (choice == 3) {
                calculateTwosComplement(number);
            } else if (choice == 4) {
                SaxionApp.printLine("Voer een nieuw getal in:");
                number = SaxionApp.readInt();
            } else if (choice == 0) {
                running = false; // Dit stopt de loop
                SaxionApp.printLine("Programma gestopt.");
            } else {
                SaxionApp.printLine("Ongeldige keuze, probeer opnieuw.");
            }
```

```
        }
    }

    public void checkIfOdd(int number) {
        if ((number & 1) == 1) {
            SaxionApp.printLine("JA, " + number + " is oneven.");
        } else {
            SaxionApp.printLine("NEE, " + number + " is even.");
        }
    }

    public void checkPowerOfTwo(int number) {
        if ((number & (number - 1)) == 0) {
            SaxionApp.printLine("JA, " + number + " is een macht van 2.");
        } else {
            SaxionApp.printLine("NEE, " + number + " is geen macht van 2.");
        }
    }

    public void calculateTwosComplement(int number) {
        int result = ~number + 1;
        SaxionApp.printLine("Het twee's complement is " + result);
    }

}
```







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