

# Template Week 2 – Logic

Student number:564604

## Assignment 2.1: Parking lot

Which gates do you need?

An AND gate is needed only

Complete this table

Parking lot 1	Parking lot 2	Parking lot 3	Result (full)
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/iPhone

Which gates do you need?

The gate needed is exclusive OR (XOR)

Complete this table

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

### Assignment 2.3: Four NAND gates

Complete this table

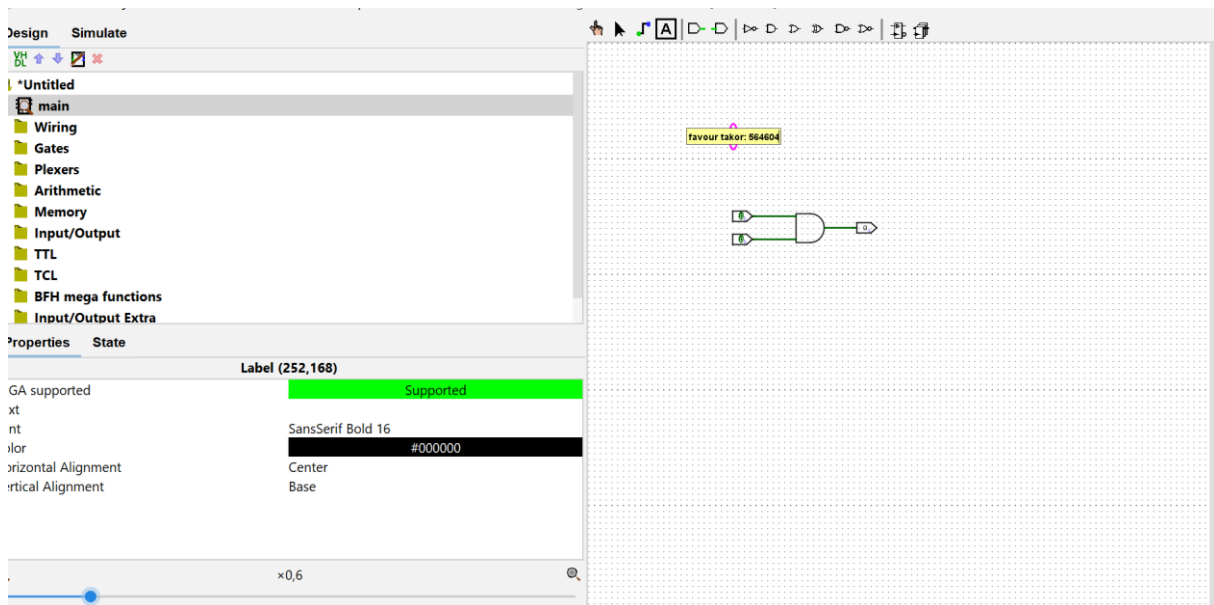
A	B	Q
0	0	0
0	1	0
1	0	0
1	1	1

How can the design be simplified?

The design can be simplified by directly using a single AND gate instead of four NAND gates, as the final output represents A . B this reduces how complexity and saves time

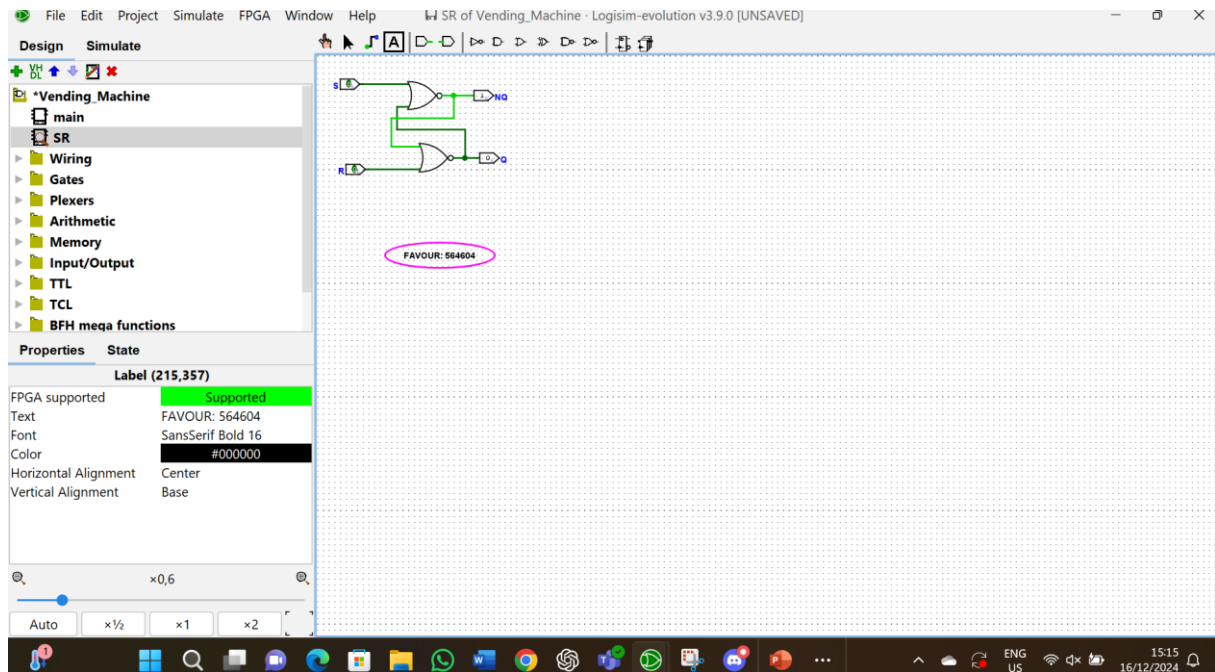
### Assignment 2.4: Getting to know Logisim evolution

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



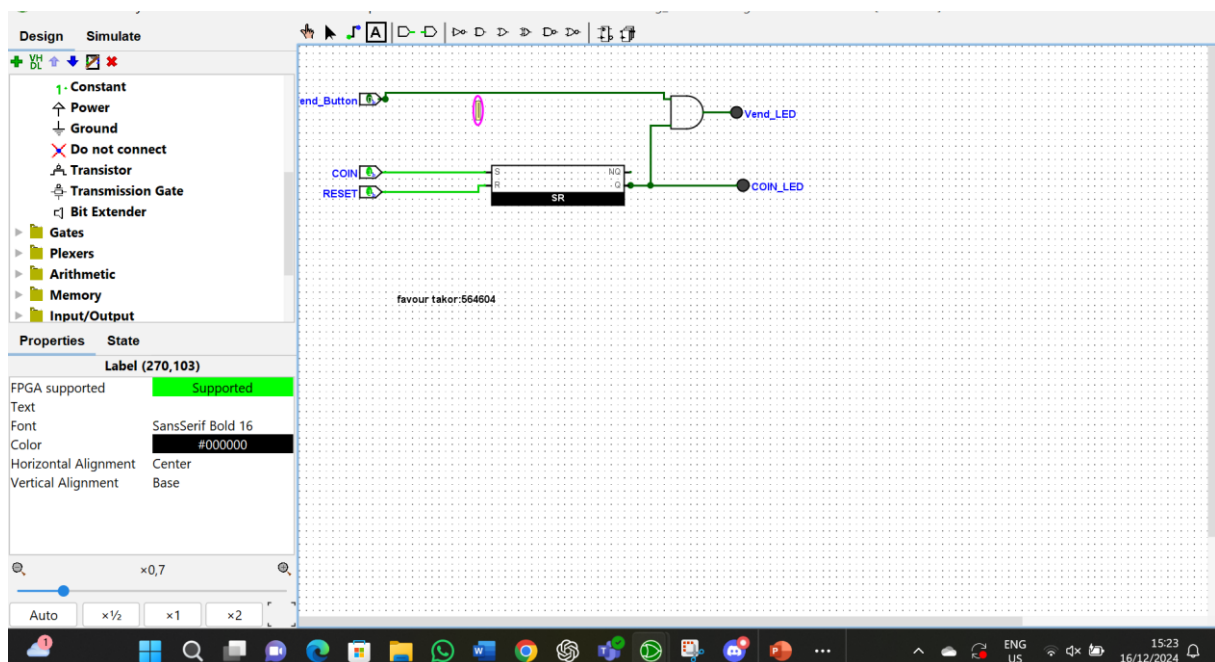
### Assignment 2.5: SR Latch

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:



## Bonus point assignment – week 2

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?

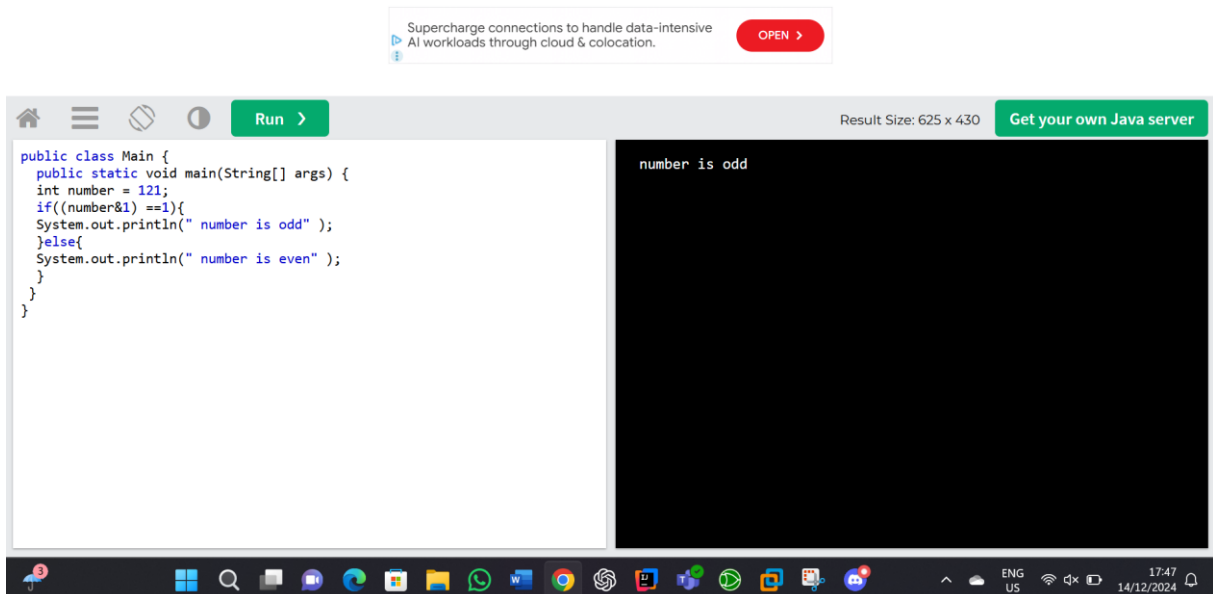
Implement the methods by using the bitwise operators you have just learned.

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

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

1)

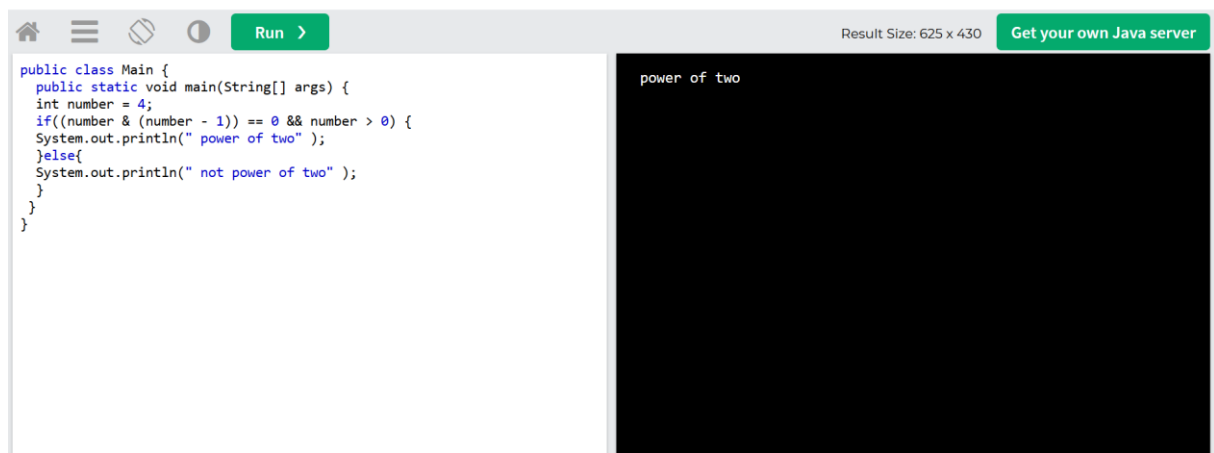
Supercharge connections to handle data-intensive AI workloads through cloud & colocation. [OPEN >](#)



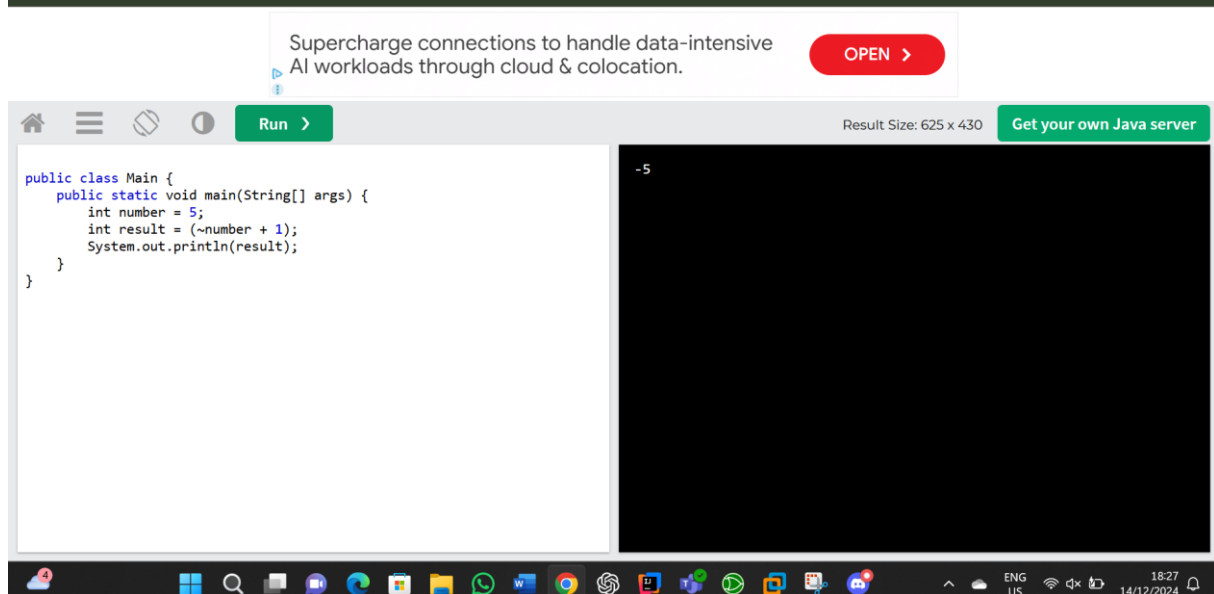
```
public class Main {  
    public static void main(String[] args) {  
        int number = 121;  
        if((number&1) ==1){  
            System.out.println(" number is odd" );  
        }else{  
            System.out.println(" number is even" );  
        }  
    }  
}
```

number is odd

2)



3)



Ready? Then save this file and export it as a pdf file with the name: [week2.pdf](#)