Programming Assignment 3-2

1. Problem Definition

The primary purpose of this program is to display the minimum value, the median value and the maximum value. The program should be able to differentiate between any imputed number which would be the lowest in value, the highest, and the inbetween value.

2. Input and Output.

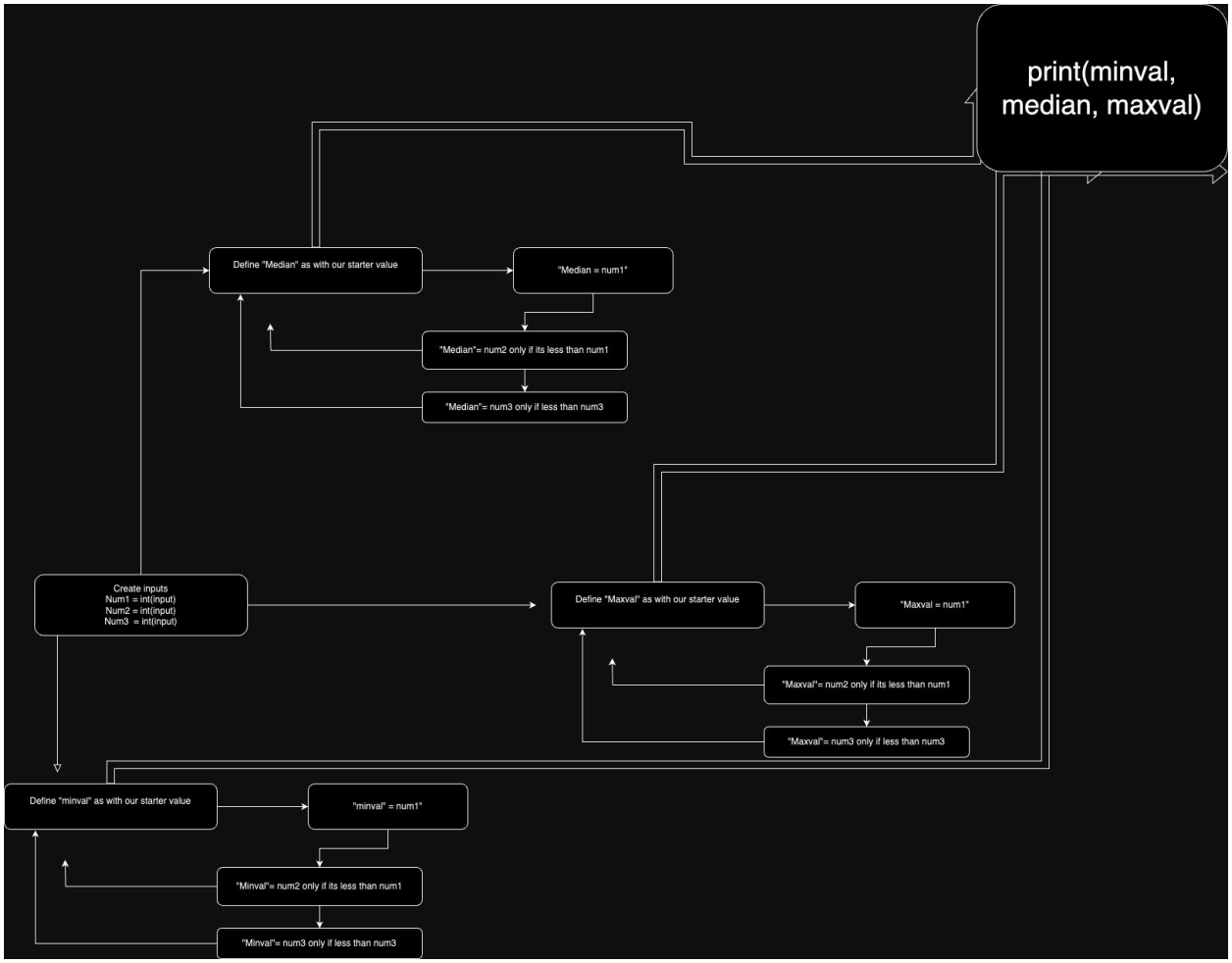
- Input:
  - input(Enter the first number)
  - input(Enter the second number)
  - input(Enter the third number)
- Output:
  - print(minmum, median, maximum)

3. Variables

- int(input('enter the first number:'))
- int (input('enter the second number:'))
- int (input('enter the third number:'))
- If num2>=max
- If num2>=min
- If num2>=median

4. Flow Chart

**** Flow chart Tips. In your VS code, install **drawio** Extension. And then create a file "hello.drawio". You can edit the flowchart in VS Code. Once you complete the flow chart, **export** it as a **PNG** file. And commit/push to GitHub Repository together.
This is the same interface as the website https://draw.io



5. Elaboration on Algorithms

Algorithm Steps:

MinVal Algorithm

1. Consider the three integer values as inputs: num1, num2, and num3.
2. Set a variable, let's call it "***minval***," to store the minimum value.
3. Initially, assign the value of ***num1*** to ***minValue***.
    - minvalue = num1
4. Compare the value of num2 with ***minval***. If num2 is less than minVal, update minVal to be number2. If not keep it as num1

5. Compare the value of num3 with ***minVal***. If Num3 is less than minValue, update minValue to be Number3. If not, keep it to either number1, or number2 depending on which one is less.
6. At this point, ***minVal*** will hold the smallest value among the three integers.

Maxval Algothrithm

7. Consider the three integer values as inputs: num1, num2, and num3.
8. Set a variable, let's call it "***maxval***," to store the minimum value.
9. Initially, assign the value of ***num1*** to ***maxval***.
    - maxvalue = num1
10. Compare the value of num2 with ***maxval***. If num2 is less than maxVal, update maxVal to be number2. If not keep it as num1
11. Compare the value of num3 with ***maxval***. If Num3 is less than maxValue, update maxValue to be Number3. If not, keep it to either number1, or number2 depending on which one is less.
12. At this point, ***maxval*** will hold the largest value among the three integers.

Median Algothrithm

13. Consider the three integer values as inputs: num1, num2, and num3.
14. Set a variable, let's call it "***median***," to store the median value.
15. Initially, assign the value of ***num1*** to ***maxval***.
    - maxvalue = num1
16. Compare the value of num1 with ***minval***, and **maxval.** num1 is greater than minVal, and less than **maxval** update median to be number1.
17. Compare the value of num2 with ***minval***, and **maxval.** num2 is greater than minVal, and less than **maxval** update median to be number2.
18. Compare the value of num3 with ***minval***, and **maxval.** num3 is greater than minVal, and less than **maxval** update median to be number1.
19. At this point, ***maxval*** will hold the largest value among the three integers.

Explanation:

The algorithm starts by assigning the value of the first integer, 'number1,' to the variable 'minValue.'

Next, the algorithm compares the value of 'number1' with 'minValue.' If 'number2' is smaller than 'minValue,' the algorithm updates 'minValue' to hold the value of 'number2.'. If ‘number2’ had a bigger value, then the program would result back to ‘number1’.

The algorithm then compares the value of 'Number2' with 'minValue.' If 'number3' is smaller than 'minValue,' the algorithm updates 'minValue' to hold the value of 'Number3'. If ‘number. If ‘number3’ had a bigger value, then it would result back to ‘number2’ then that would result back to ‘number1’.

This step ensures that the smallest value encountered so far is stored in 'minValue.'

By doing so, the algorithm ensures that 'minValue' contains the smallest value among 'number1,' 'number2,' and 'number3.'

These same steps are repeated to the maximum value and the median value.

Conclusion:

In conclusion, the algorithm to find the minimum value among three integer values involves comparing the values and updating a variable, 'minValue’, ‘maxval’, ‘median’ accordingly.

The algorithm efficiently determines the smallest, biggest, and median value by sequentially comparing the integers and updating 'minValue', ‘maxval’, ‘median’ when the value is encountered.

6. Errors and Lessons

- Indentation error
  - “If”
  - “elif”
- Missing “;”
  - A common error of missing ;
- Unmatched brace
  - {, } are unmatched
- Lessons:
  - I learned to reuse the assets of assignment 1 to be able to more effectively make this program. As the code was almost the same, but instead we flip the less than or greater than symbols to gain a different type of value.