

## Week4q2

Chatgpt python code

```
def mySqrt(x):
    left = 0
    right = x

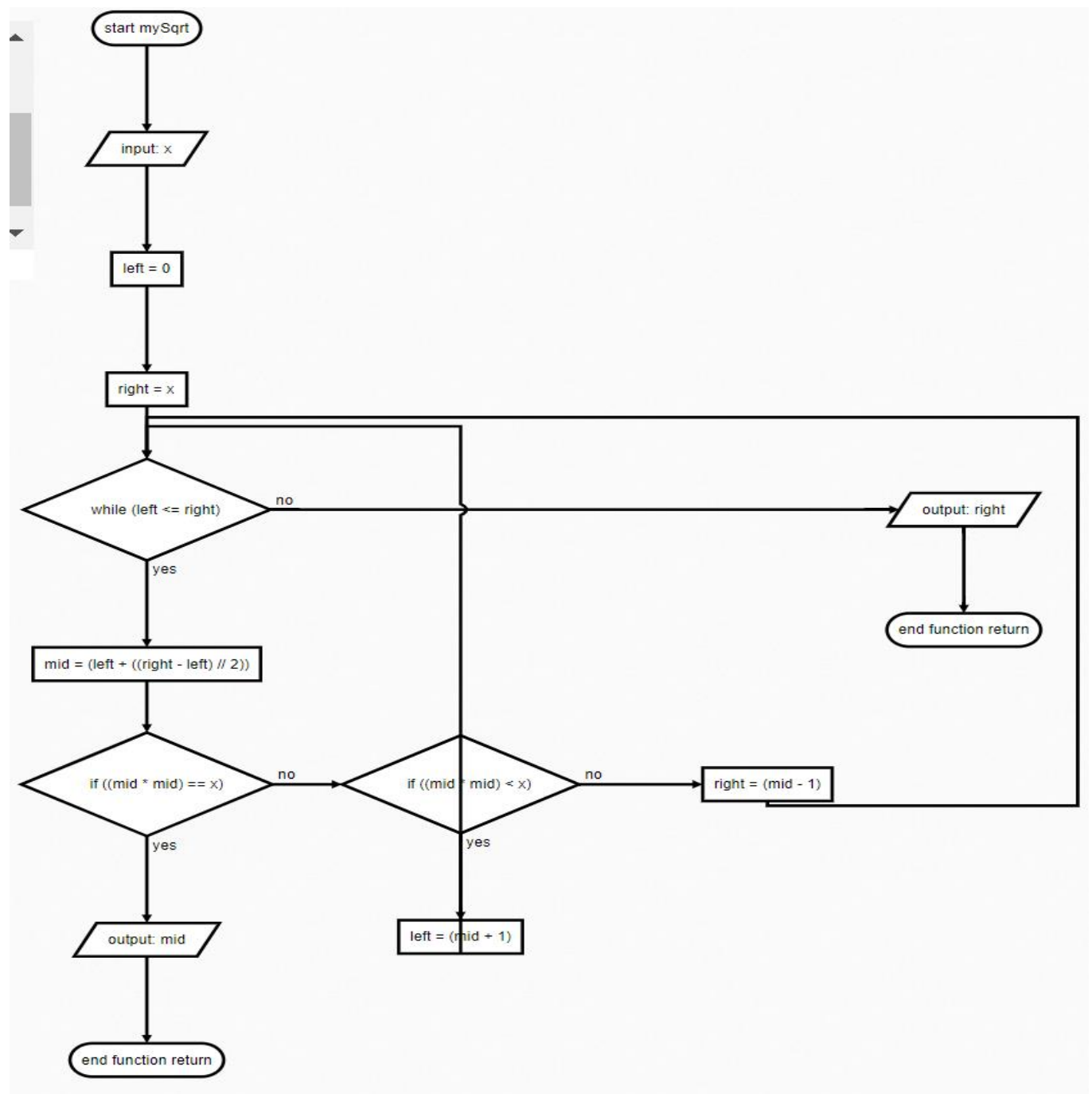
    while left <= right:
        mid = left + (right - left) // 2

        if mid * mid == x:
            return mid
        elif mid * mid < x:
            left = mid + 1
        else:
            right = mid - 1

    return right

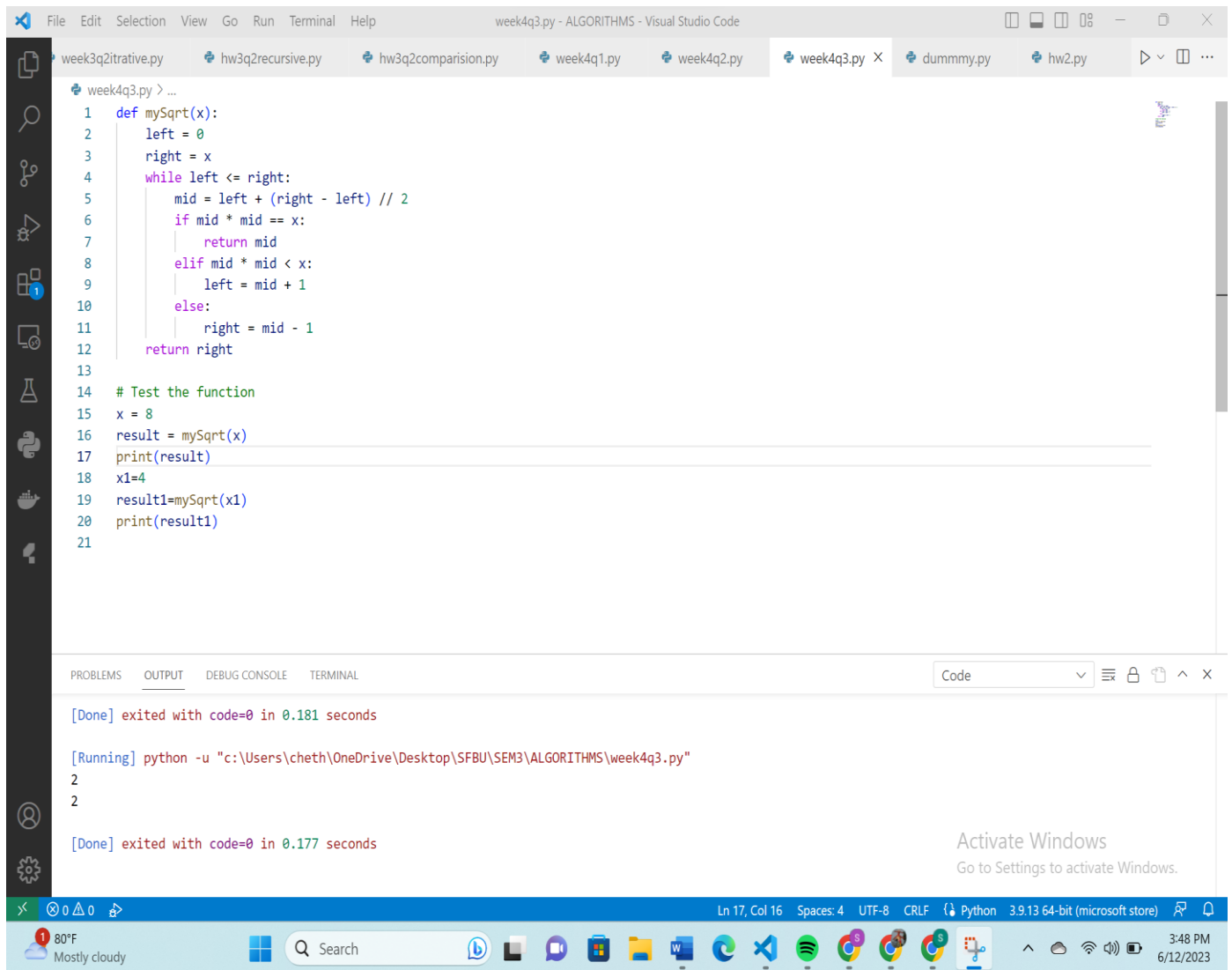
# Test the function
x = 8
result = mySqrt(x)
print(result)
```

## Flowchart



line	x	left	right	Left<=right	mid	mid*mid=x	mid*mid<x	return
1	8							
2		0						
3			8					
4				true				
5					$0 + ((8 - 0) // 2) = 4$			
6						false		
7								
8							false	
9								
10								
11			4-1=3					
4				true				
5					$0 + ((3 - 0) // 2) = 1$			
6						false		
7								
8							true	
9		1+1=2						
4				true				
5					$2 + ((3 - 2) // 2) = 3$			
6						false		
7								
8							false	
9								
10								
11			3-1=2					
4				true				
5					$2 + ((2 - 2) // 2) = 2$			
6						false		
7								
8							true	
9		2+1=3						
5				false				
12								2

## Test cases



```
File Edit Selection View Go Run Terminal Help
week4q3.py - ALGORITHMS - Visual Studio Code

week3q2itrative.py hw3q2recursive.py hw3q2comparision.py week4q1.py week4q2.py week4q3.py x dummmy.py hw2.py

week4q3.py > ...
1 def mySqrt(x):
2     left = 0
3     right = x
4     while left <= right:
5         mid = left + (right - left) // 2
6         if mid * mid == x:
7             return mid
8         elif mid * mid < x:
9             left = mid + 1
10        else:
11            right = mid - 1
12        return right
13
14 # Test the function
15 x = 8
16 result = mySqrt(x)
17 print(result)
18 x1=4
19 result1=mySqrt(x1)
20 print(result1)
21
```

PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL

[Done] exited with code=0 in 0.181 seconds

[Running] python -u "c:\Users\cheth\OneDrive\Desktop\SFBU\SEM3\ALGORITHMS\week4q3.py"

2

2

[Done] exited with code=0 in 0.177 seconds

Activate Windows  
Go to Settings to activate Windows.

Ln 17, Col 16 Spaces: 4 UTF-8 CRLF Python 3.9.13 64-bit (microsoft store)

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