Part 1:

Q1:

import pytest

def checkbcd(inb):

    if inb >= 0 and inb < 1001:

        return True

    else:

        return False

try:

    num = int(input("Input binary value: "), 2)

    checkbcd(num)

except ValueError:

    print("Please input only binary value.")

#Test

a\_equal = 100

a\_ans = True

b\_1bigger = 1100

b\_ans = False

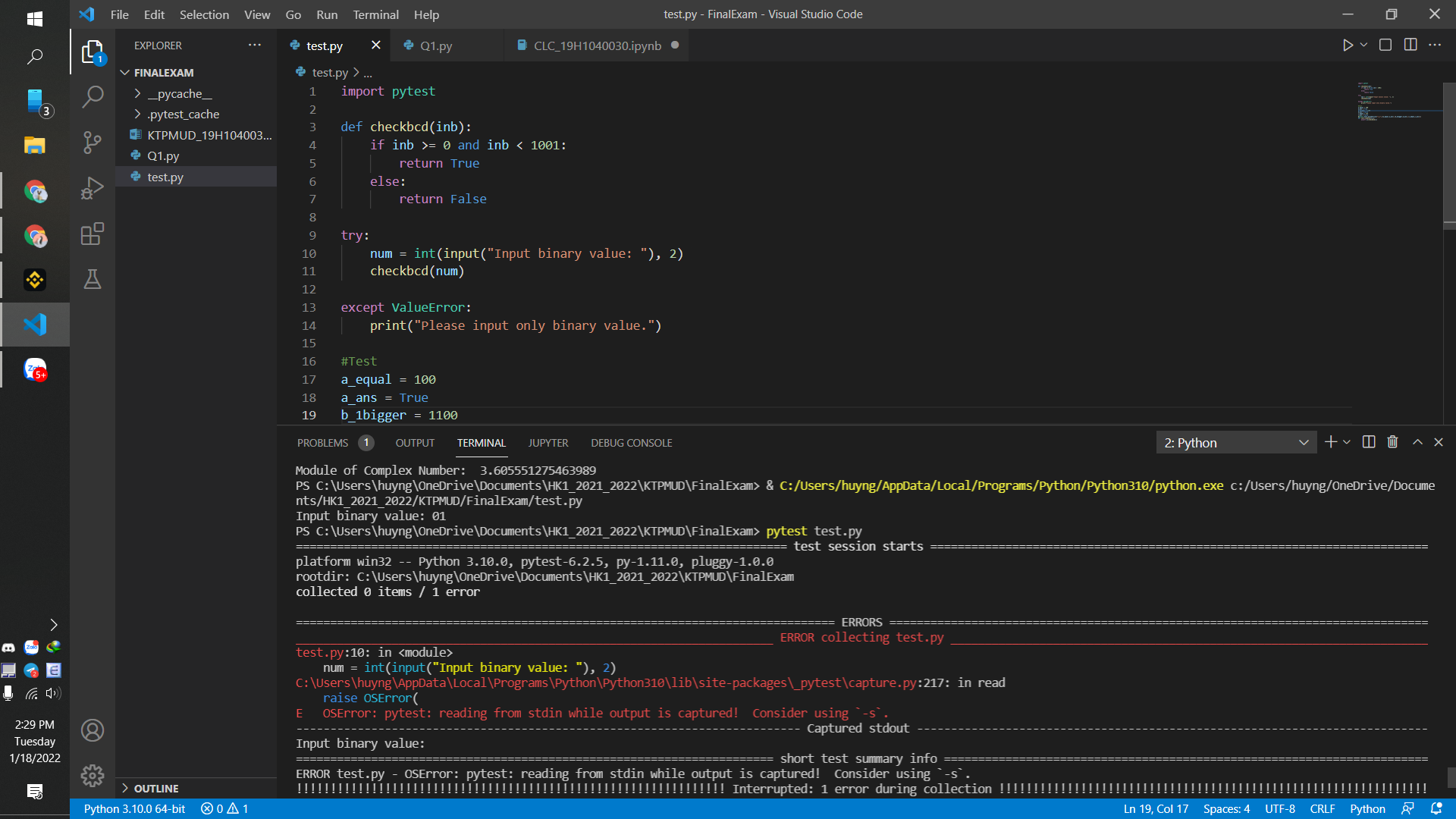
c\_empty = 123

c\_ans = False

@pytest.mark.parametrize("x,y",[(a\_equal,a\_ans),(b\_1bigger,b\_ans),(c\_empty,c\_ans)])

def test\_combine(x,y):

    assert y==checkbcd(x)



Part 2:

Q1:

class Real\_Number :

    def \_\_init\_\_(self,real\_number) :

        self.real\_number = real\_number

    def module(self) :

        return (self.real\_number \*\*2) \*\* 0.5

class Complex\_Number(Real\_Number) :

    def \_\_init\_\_(self,real\_number, image\_number) :

        super().\_\_init\_\_(real\_number)

        self.image\_number = image\_number

    def module(self) :

        return (self.real\_number\*\*2 + self.image\_number\*\*2) \*\* 0.5

a = float(input("Real number input: "))

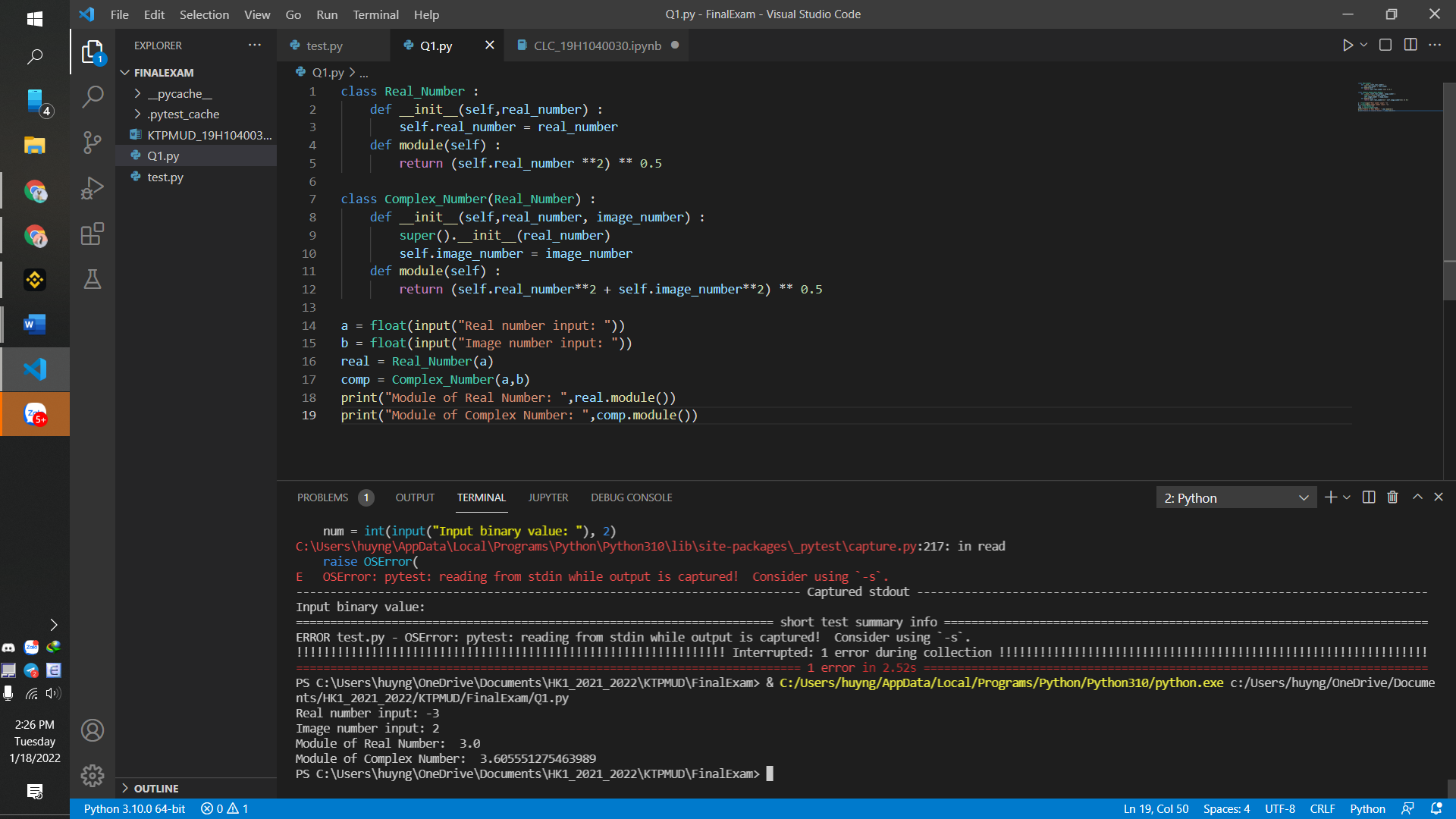
b = float(input("Image number input: "))

real = Real\_Number(a)

comp = Complex\_Number(a,b)

print("Module of Real Number: ",real.module())

print("Module of Complex Number: ",comp.module())



Q2:

a)

SELECT city, SUM(commission)

FROM salesman

GROUP BY city;

b)

SELECT c.customer\_id, c.cust\_name, s.salesman\_id, s.name

FROM salesman s

JOIN customer c ON s.salesman\_id = c.salesman\_id

WHERE s.commission > 0.12

ORDER BY s.commission;