

FINAL ASSIGNMENT

# Introduction to Programming

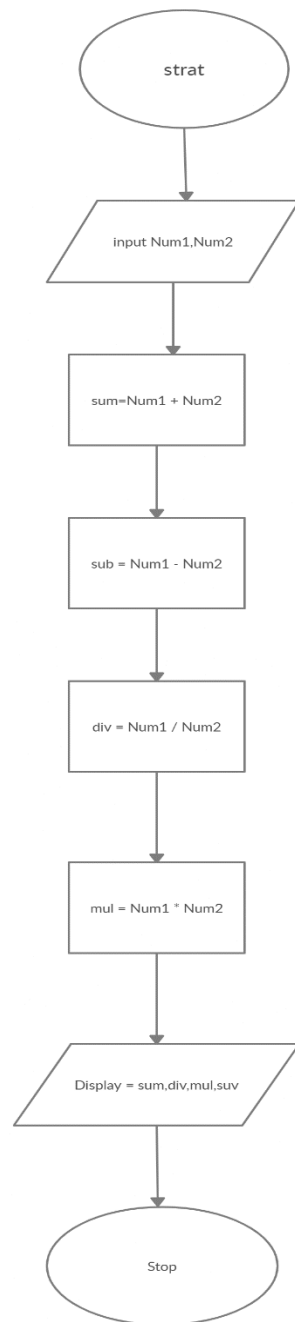


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(Q1)

1.



2.

Start

input Num 1

input Num 2

sum = Num 1 + Num 2

sub = Num 1 - Num 2

div = Num 1 / Num 2

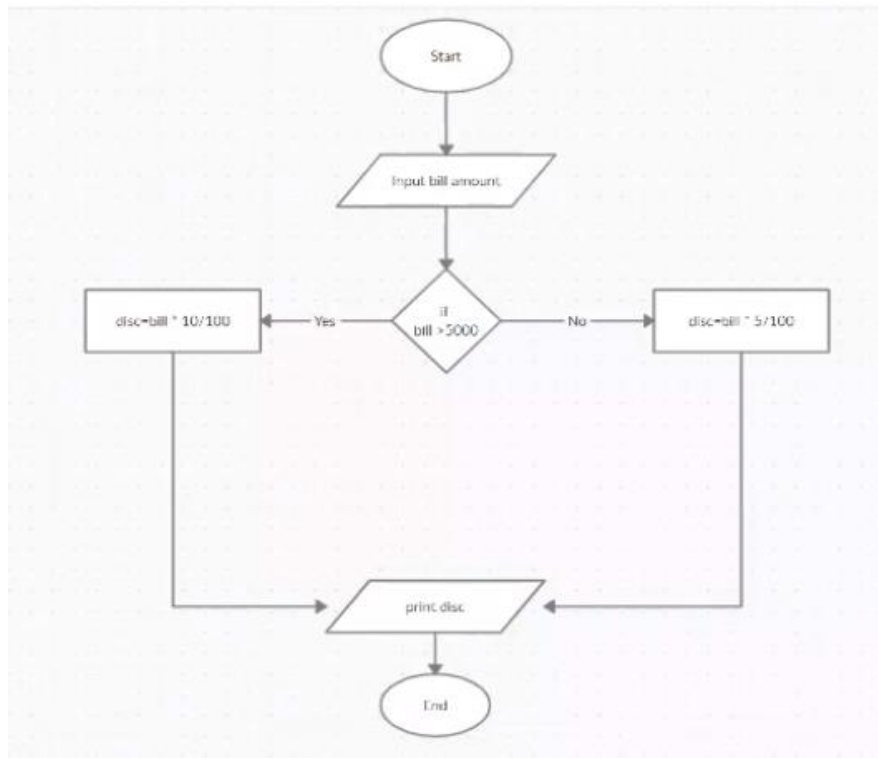
mul = Num 1 \* Num 2

Print Sum sub div mul

End

(Q2)

1.



2.

start

input bill

if bill\_amount > 500

disc = bill \* 10/100

else

disc = bill \* 5/100

end if

print disc

end

3.

The image shows a screenshot of a Python IDE window titled "5.1.py - C:/Users/asus/Desktop/Python/5/1/5.1.py (3.9.0)". The script in the editor is as follows:

```
print("Input the amount of the bill: ")
Bill_amount = int(input())

if Bill_amount >= 5000:
    Discount = Bill_amount * 10/100
else:
    Discount = Bill_amount * 5/100
print("The Discount is : ",Discount)
```

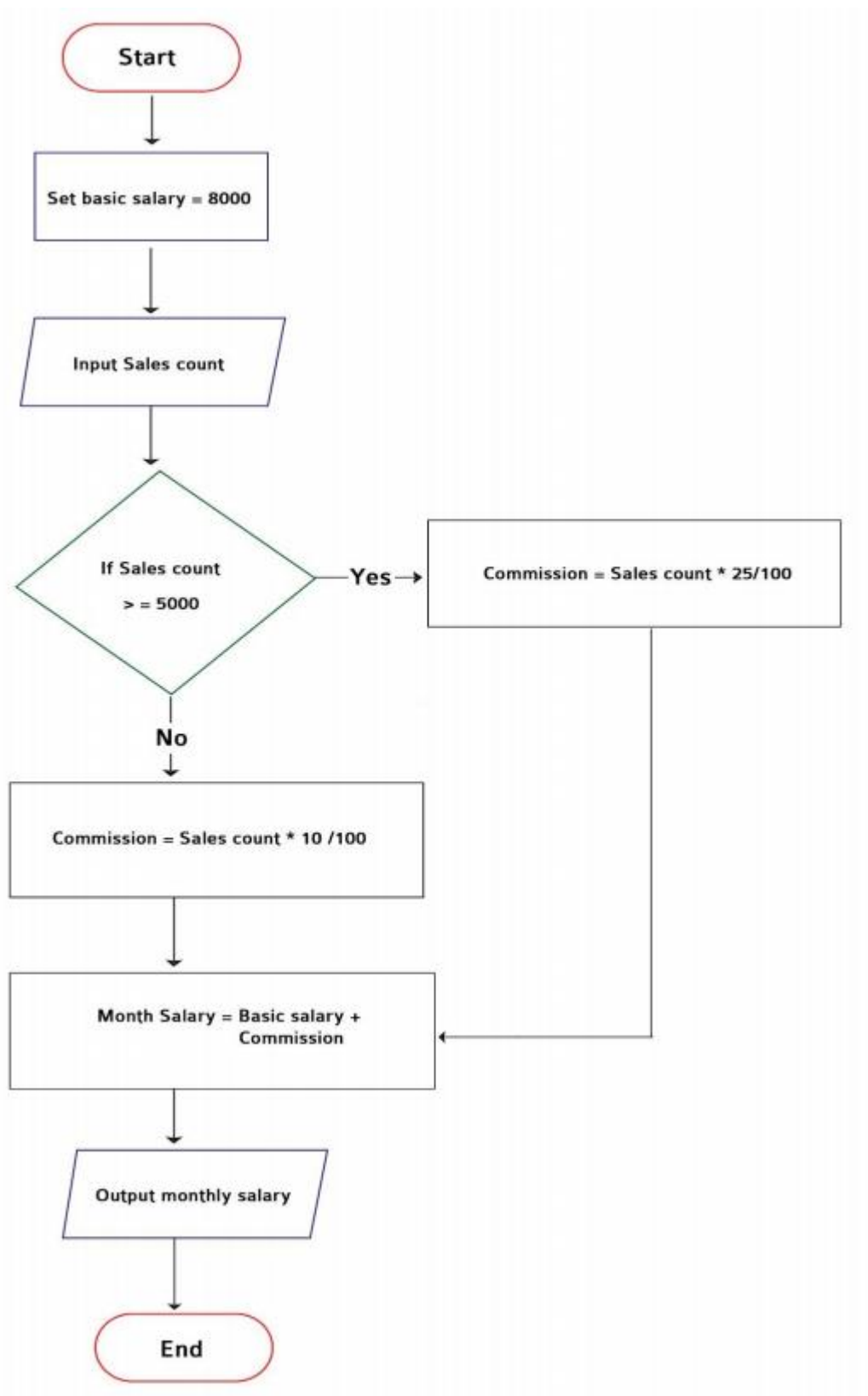
Below the editor, a "Python 3.9.0 Shell" window displays the execution output:

```
Python 3.9.0 (tags/v3.9.0:9cf6752, Oct 5 2020, 15:34:40) [MSC v.1927 64 bit (AMD64)] on win32
Type "help", "copyright", "credits" or "license()" for more information.
>>>
===== RESTART: C:/Users/asus/Desktop/Python/5/1/5.1.py =====
Input the amount of the bill:
1000
The Discount is :  50.0
>>> |
```

The Windows taskbar at the bottom shows the search bar, taskbar icons, and system clock (12:08 AM, 2020-12-11).

(Q3)

1.



2.

Start

declare basic salary = 8000

input the sales count

if sales count  $\geq$  50000

commission = sales count \* 25/100

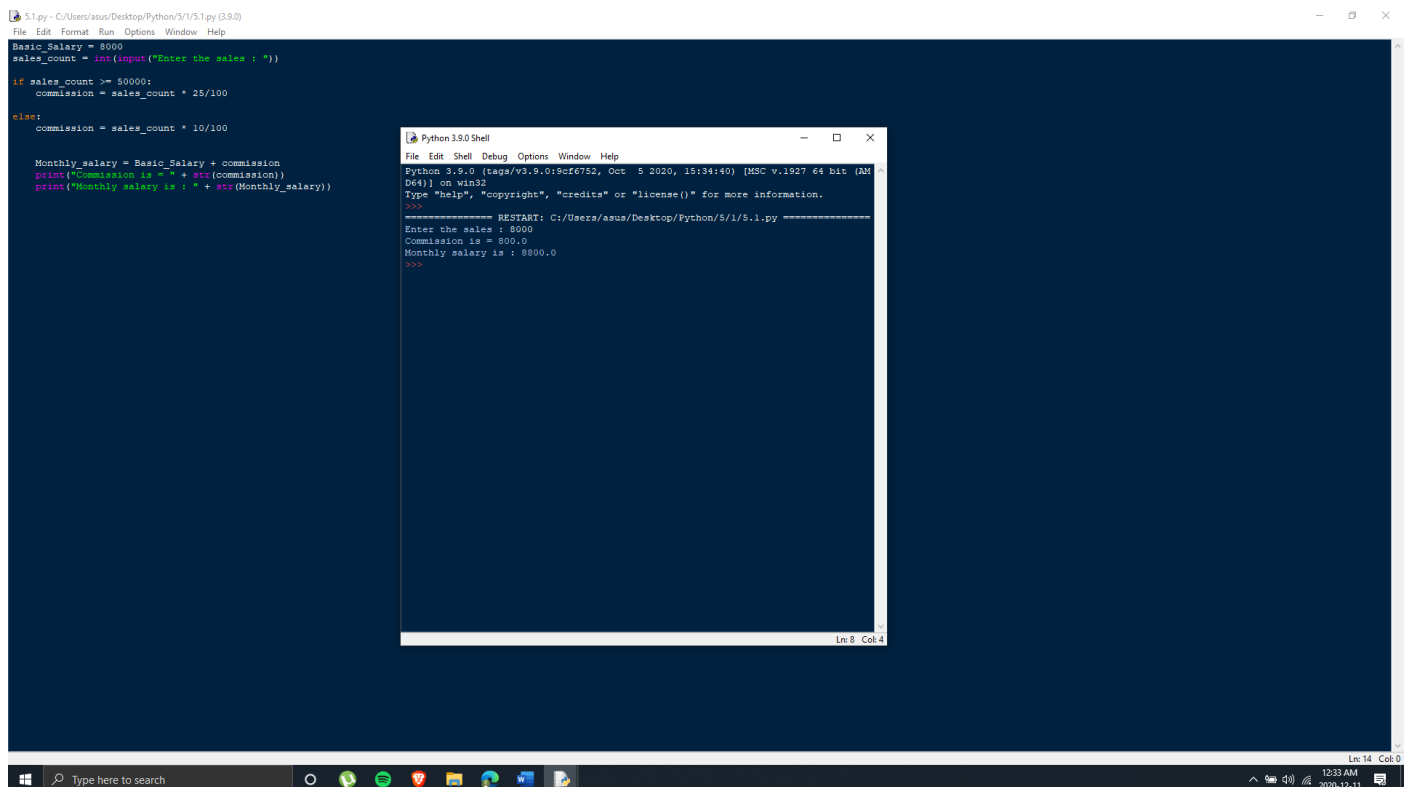
else

commission = sales count \* 10/100

Monthly salary = basic salary + commission

end

3.



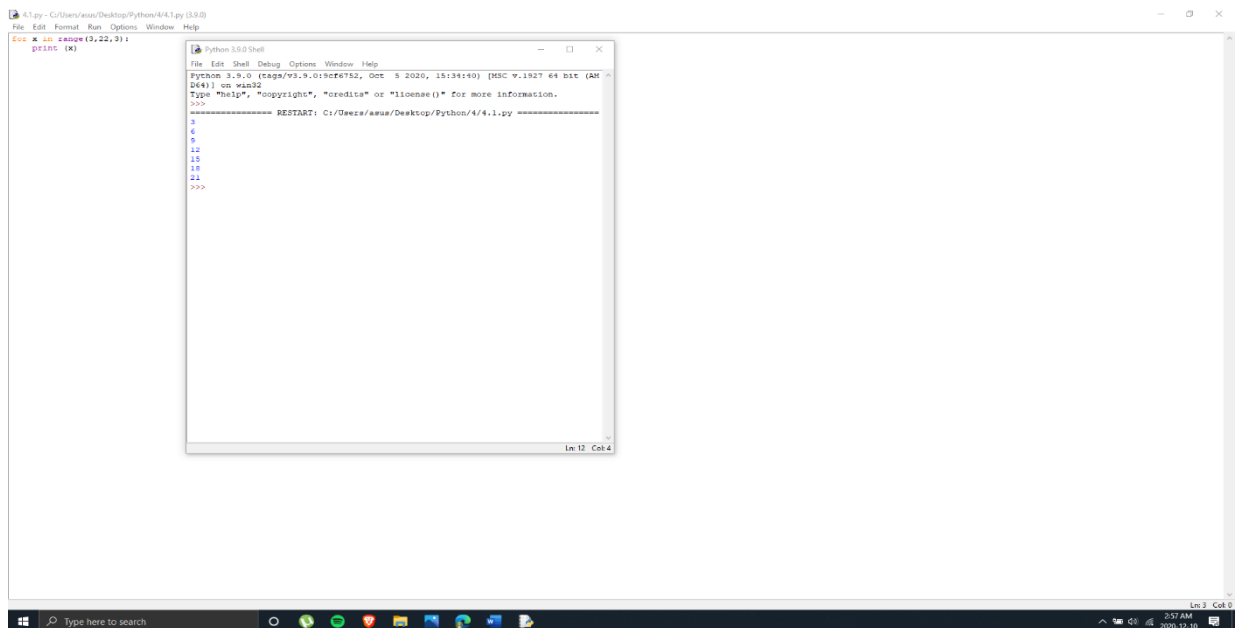
```
5.1.py - C:/Users/asus/Desktop/Python/5/1/5.1.py (3.9.0)
File Edit Format Run Options Window Help
Basic_Salary = 8000
sales_count = int(input("Enter the sales : "))
if sales_count >= 50000:
    commission = sales_count * 25/100
else:
    commission = sales_count * 10/100

Monthly_salary = Basic_Salary + commission
print("Commission is =" + str(commission))
print("Monthly salary is : " + str(Monthly_salary))

Python 3.9.0 Shell
File Edit Shell Debug Options Window Help
Python 3.9.0 [tags/v3.9.0:9cf6752, Oct 5 2020, 15:34:40] (MSC v.1927 64 bit (AMD64)) on win32
Type "help", "copyright", "credits" or "license()" for more information.
>>>
===== RESTART: C:/Users/asus/Desktop/Python/5/1/5.1.py =====
Enter the sales : 8000
Commission is = 800.0
Monthly salary is : 8800.0
>>>
```

# (Q4)

1.



The screenshot shows a Python IDE window titled "4.1.py - C:/Users/asus/Desktop/Python/4/4.1.py (3.9.0)". The main editor contains the following code:

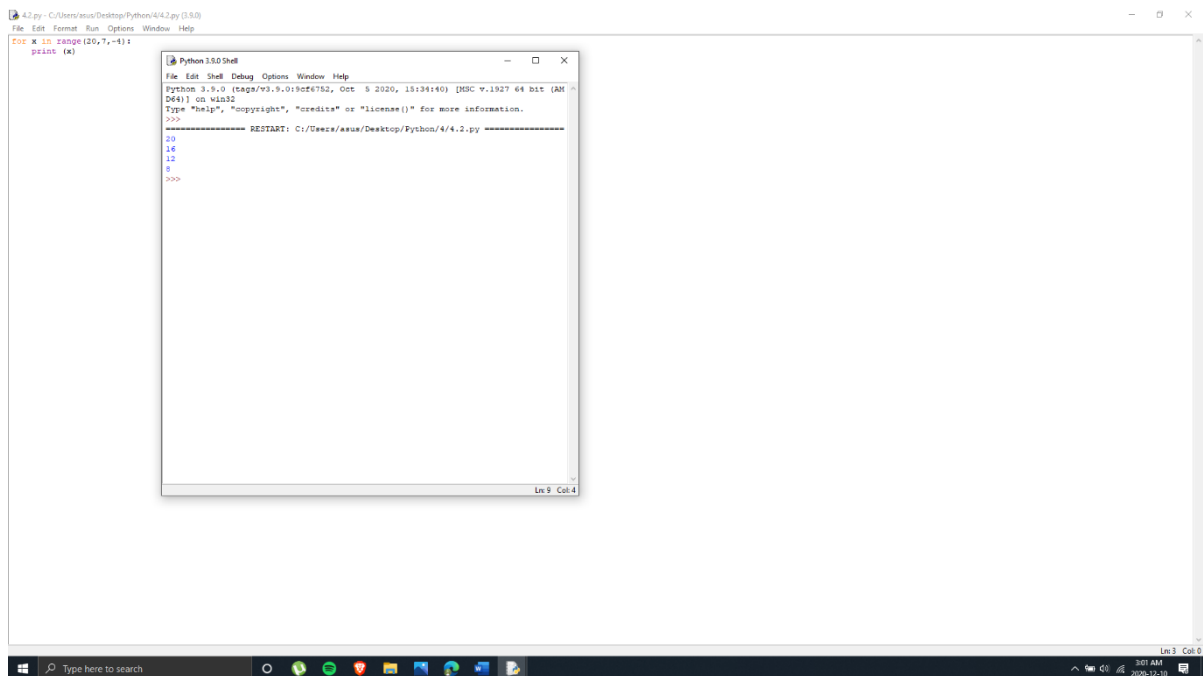
```
for x in range(2,22,3):  
    print(x)
```

A console window titled "Python 3.9.0 Shell" is open, displaying the output of the script:

```
Python 3.9.0 (tags/v3.9.0:9cf6752, Oct 5 2020, 15:34:40) [MSC v.1927 64 bit (AMD64)] on win32  
Type "help", "copyright", "credits" or "license()" for more information.  
>>>  
===== RESTART: C:/Users/asus/Desktop/Python/4/4.1.py =====  
3  
6  
9  
12  
15  
18  
21  
>>>
```

The console window status bar shows "Ln 12 Col 4". The Windows taskbar at the bottom shows the time as 2:57 AM on 2020-12-10.

2.



The screenshot shows a Python IDE window titled "4.2.py - C:/Users/asus/Desktop/Python/4/4.2.py (3.9.0)". The main editor contains the following code:

```
for x in range(20,7,-4):  
    print(x)
```

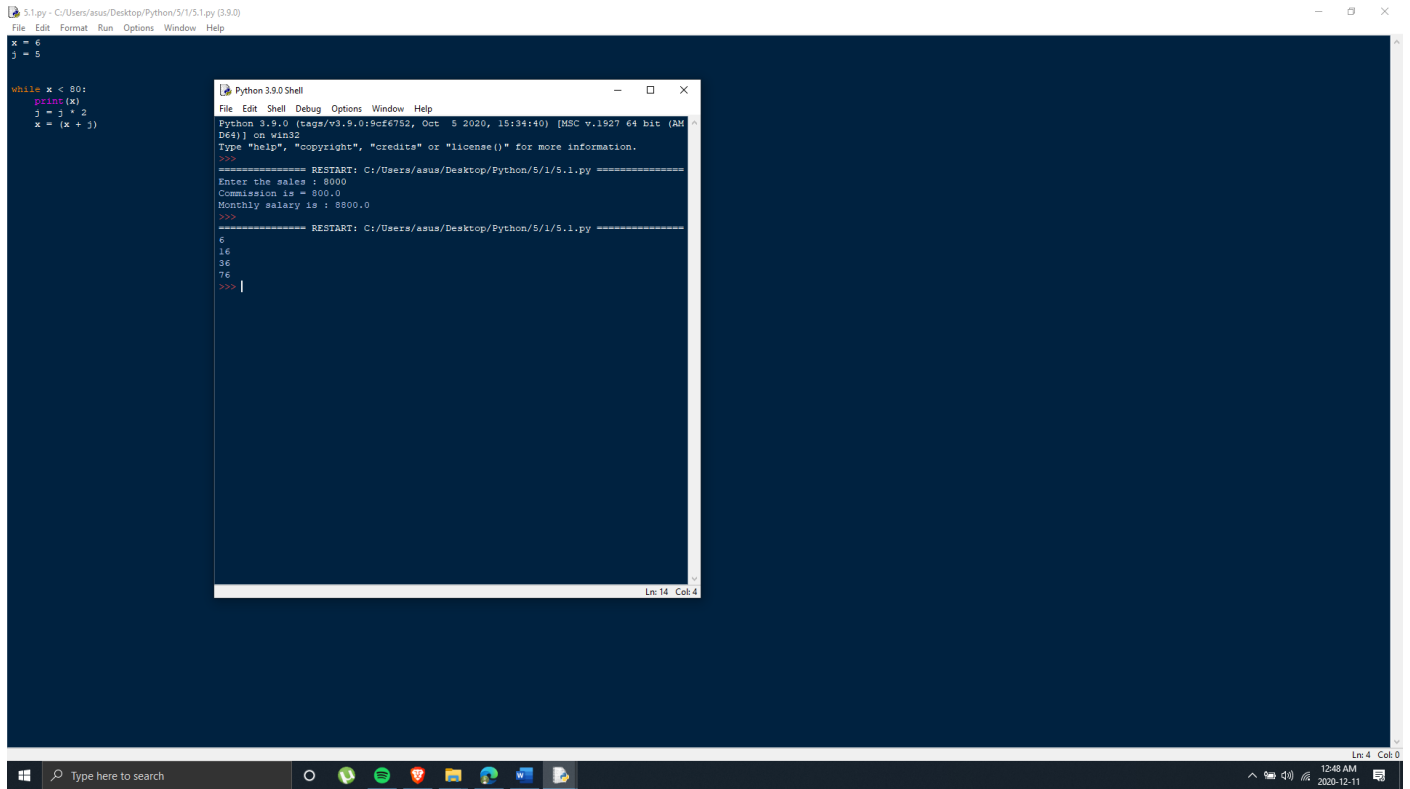
A console window titled "Python 3.9.0 Shell" is open, displaying the output of the script:

```
Python 3.9.0 (tags/v3.9.0:9cf6752, Oct 5 2020, 15:34:40) [MSC v.1927 64 bit (AMD64)] on win32  
Type "help", "copyright", "credits" or "license()" for more information.  
>>>  
===== RESTART: C:/Users/asus/Desktop/Python/4/4.2.py =====  
20  
16  
12  
8  
>>>
```

The console window status bar shows "Ln 9 Col 4". The Windows taskbar at the bottom shows the time as 3:01 AM on 2020-12-10.



3.



The screenshot shows a Windows desktop environment. In the foreground, a dark-themed Python script editor window titled "5.1.py - C:/Users/asus/Desktop/Python/5/1/5.1.py (3.9.0)" is open. The script contains the following code:

```
x = 6
j = 5

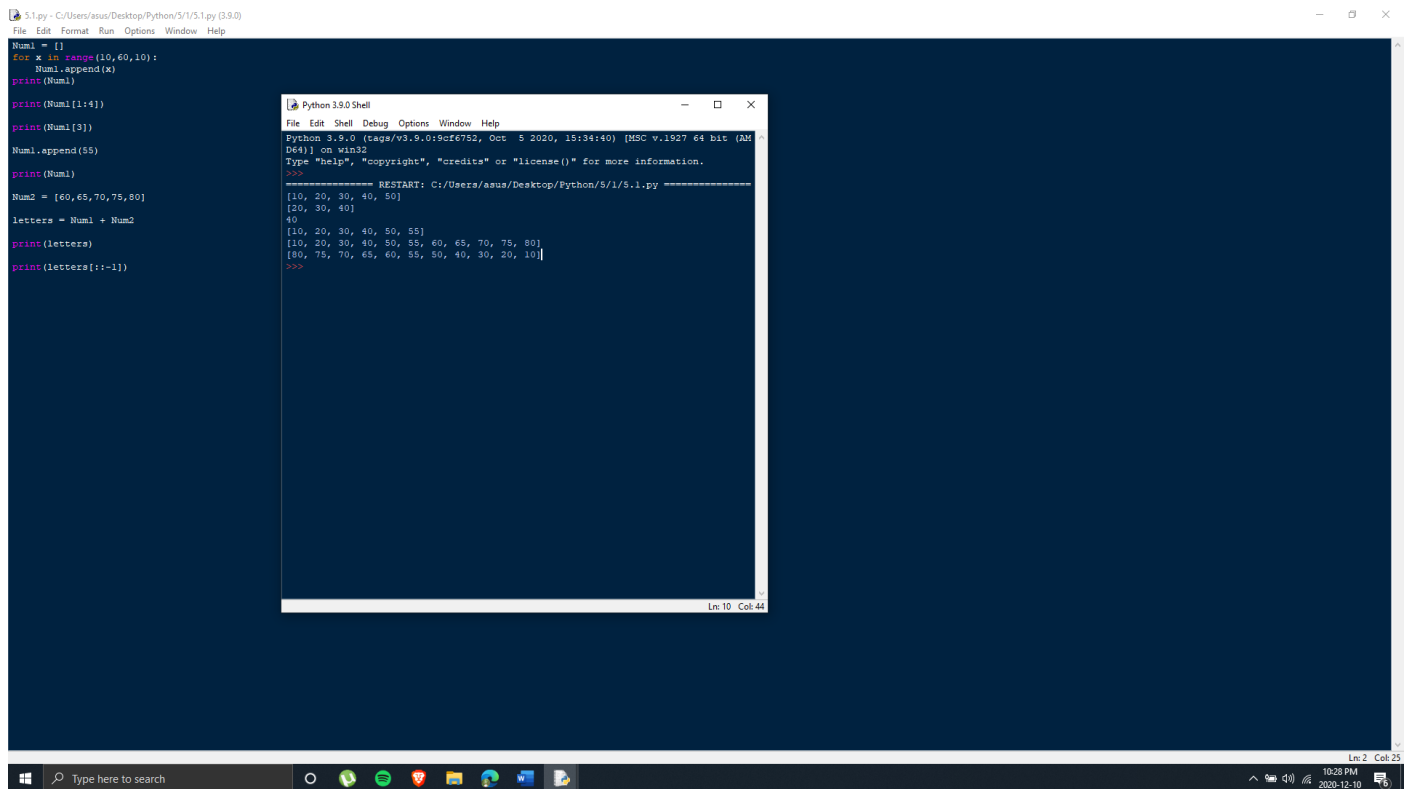
while x < 801:
    print(x)
    j = j * 2
    x = (x + j)
```

Overlaid on top of the script editor is a "Python 3.9.0 Shell" window. It displays the Python 3.9.0 startup banner and a prompt for help. The user has entered the command `restart`, which has restarted the shell. The output of the restart command shows the current values of `x` and `j` from the script:

```
Python 3.9.0 (tags/v3.9.0:9cf6752, Oct 5 2020, 15:34:40) [MSC v.1927 64 bit (AMD64)] on win32
Type "help", "copyright", "credits" or "license()" for more information.
>>>
===== RESTART: C:/Users/asus/Desktop/Python/5/1/5.1.py =====
Enter the sales : 8000
Commission is = 800.0
Monthly salary is : 8800.0
>>>
===== RESTART: C:/Users/asus/Desktop/Python/5/1/5.1.py =====
6
16
36
76
>>> |
```

The Windows taskbar at the bottom shows the Start button, a search bar, and several pinned application icons. The system tray on the right indicates the time is 12:48 AM on 2020-12-11.

# (Q5)



The image shows a Python IDE window titled "5.1.py - C:/Users/asus/Desktop/Python/5/1/5.1.py (3.9.0)". The script contains the following code:

```
Num1 = []
for x in range(10,60,10):
    Num1.append(x)
print(Num1)

print(Num1[1:4])

print(Num1[3])

Num1.append(55)

print(Num1)

Num2 = [60,65,70,75,80]

letters = Num1 + Num2

print(letters)

print(letters[::-1])
```

An embedded "Python 3.9.0 Shell" window shows the execution output:

```
Python 3.9.0 Shell
File Edit Shell Debug Options Window Help
Python 3.9.0 (tags/v3.9.0:9cf6752, Oct 5 2020, 15:34:40) [MSC v.1927 64 bit (AMD64)] on win32
Type "help", "copyright", "credits" or "license()" for more information.
>>>
===== RESTART: C:/Users/asus/Desktop/Python/5/1/5.1.py =====
[10, 20, 30, 40, 50]
[20, 30, 40]
40
[10, 20, 30, 40, 50, 55]
[10, 20, 30, 40, 50, 55, 60, 65, 70, 75, 80]
[80, 75, 70, 65, 60, 55, 50, 40, 30, 20, 10]
>>>
```

The IDE status bar at the bottom right shows "Ln: 2 Col: 25". The Windows taskbar at the very bottom shows the time as 10:38 PM on 2020-12-10.

# (Q6)

```
5.1.py - C:/Users/asus/Desktop/Python/5/1/5.1.py (3.9.0)
File Edit Format Run Options Window Help

print("----- Current Day -----")

CDay = int(input("Enter current date : "))
CMonth = int(input("Enter current Month : "))
CYear = int(input("Enter current Year : "))

print("-----")

print("----- Birth Day -----")

BDay = int(input("Enter Birth date : "))
BMonth = int(input("Enter Birth Month : "))
BYear = int(input("Enter Birth Year : "))

print("-----")

if CMonth > BMonth:
    Months = (CMonth - BMonth)
    Years = CYear - BYear
else:
    '''Years'''
    Years = CYear - BYear - 1
    '''Months'''
    CMonth = 1
    Months = (12 - BMonth) + CMonth

Dates = (30 - BDay) + CDay

print("Years: ", Years, "Months: ", Months, "Days: ", Dates)
```

```
Python 3.9.0 Shell
File Edit Shell Debug Options Window Help

Python 3.9.0 [tags/v3.9.0:9cf6752, Oct 5 2020, 15:34:40] [MSC v.1927 64 bit (AMD64)] on win32
Type "help", "copyright", "credits" or "license()" for more information.
>>>
===== RESTART: C:/Users/asus/Desktop/Python/5/1/5.1.py =====
----- Current Day -----
Enter current date : 17
Enter current Month : 8
Enter current Year : 2020
----- Birth Day -----
Enter Birth date : 20
Enter Birth Month : 12
Enter Birth Year : 1999
-----
Years: 20 Months: 7 Days: 27
>>>
```

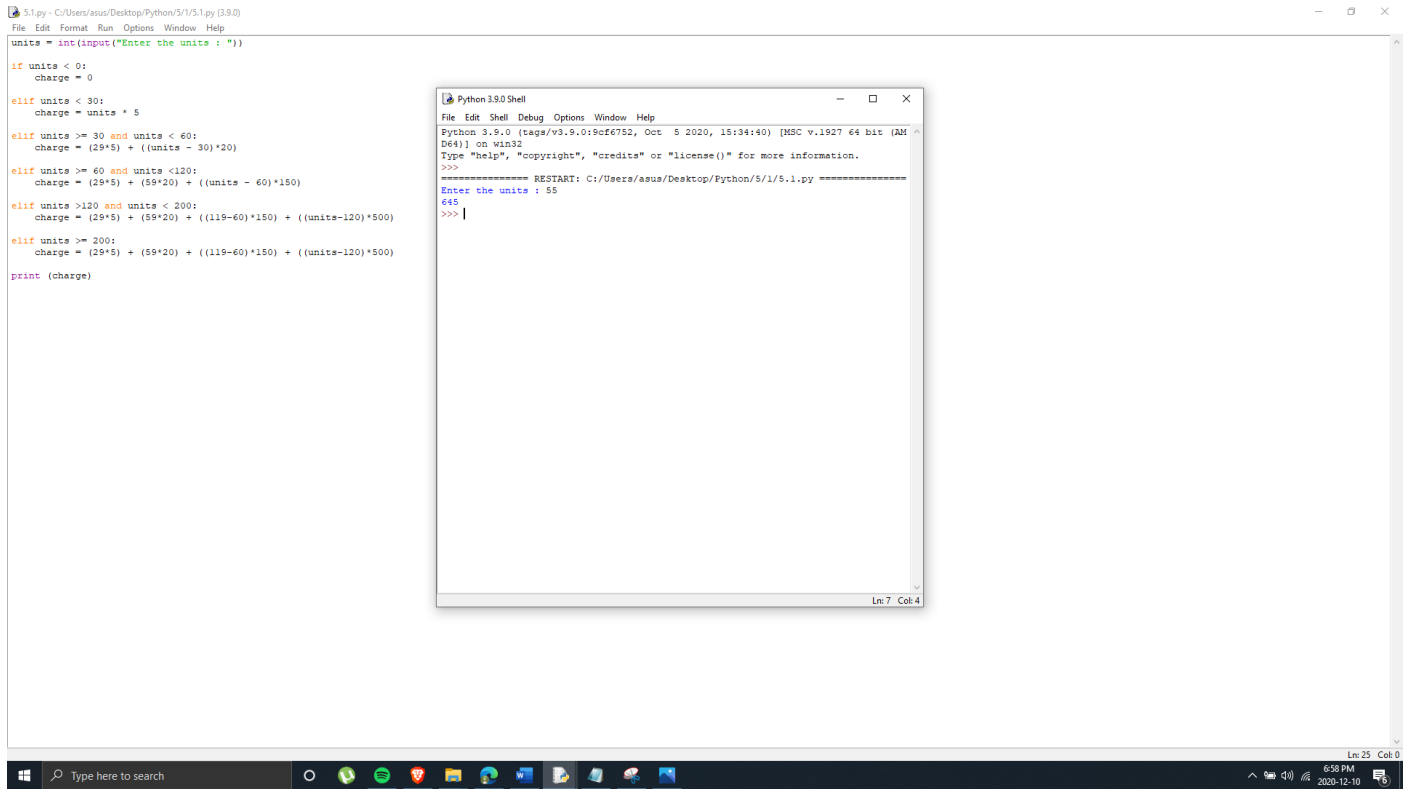
Ln 16 Col 4

Ln 3 Col 0

Type here to search

6:26 PM 2020-12-10

# (Q7)



The image shows a Python IDE window with a script and a separate Python 3.9.0 Shell window.

**Main Script (5.1.py):**

```
units = int(input("Enter the units : "))

if units < 0:
    charge = 0
elif units < 30:
    charge = units * 5
elif units >= 30 and units < 60:
    charge = (25*5) + ((units - 30)*20)
elif units >= 60 and units < 120:
    charge = (25*5) + (59*20) + ((units - 60)*150)
elif units >= 120 and units < 200:
    charge = (25*5) + (59*20) + ((119-60)*150) + ((units-120)*500)
elif units >= 200:
    charge = (25*5) + (59*20) + ((119-60)*150) + ((units-120)*500)
print (charge)
```

**Python 3.9.0 Shell:**

```
Python 3.9.0 Shell
File Edit Shell Debug Options Window Help
Python 3.9.0 [tags/v3.9.0:9cf6752, Oct 5 2020, 15:34:40] [MSC v.1927 64 bit (AMD64)] on win32
Type "help", "copyright", "credits" or "license()" for more information.
>>>
===== RESTART: C:/Users/asus/Desktop/Python/5.1/5.1.py =====
Enter the units : 55
645
>>>
```

The shell window shows the execution of the script with the input '55' and the output '645'.

# (Q8)

The image shows a Python IDE window titled "5.1.py - C:/Users/asus/Desktop/Python/5/1/5.1.py (3.9.0)". The code is a calculator program that uses a while loop to repeatedly prompt the user for an operator and two numbers. It supports addition (+), subtraction (-), multiplication (\*), division (/), and an exit command. The program also handles invalid operators by displaying a message and prompting the user to enter a valid operator.

```
while True:
    operator = input("Enter the operator = ")
    print ("-----")
    Num1 = int(input("Enter number 01 : "))
    print ("-----")
    Num2 = int(input("Enter number 02 : "))
    print ("-----")

    if operator == "+":
        print("Summation = ", Num1 + Num2)
    elif operator == "-":
        print("Subtraction = ", Num1 - Num2)
    elif operator == "*":
        print("Multiplication = ", Num1 * Num2)
    elif operator == "/":
        print("Division = ", Num1 / Num2)
    elif operator == "Exit":
        break
    else:
        print("Invalid operator","\n","--- Enter + , - , * , / ---")
    print("-----")
```

The output window, titled "Python 3.9.0 Shell", shows the execution of the program. It displays the prompts for the operator and numbers, the results of the calculations, and the program's response to invalid input. The execution ends with the prompt "Enter the operator = |".

```
Python 3.9.0 (tags/v3.9.0:9cf6752, Oct 5 2020, 15:34:40) [MSC v.1927 64 bit (AMD64)] on win32
Type "help", "copyright", "credits" or "license()" for more information.
>>>
===== RESTART: C:/Users/asus/Desktop/Python/5/1/5.1.py =====
Enter the operator = +
-----
Enter number 01 : 4
-----
Enter number 02 : 5
-----
Summation = 9
-----
Enter the operator = -
-----
Enter number 01 : 6
-----
Enter number 02 : 9
-----
Subtraction = -3
-----
Enter the operator = *
-----
Enter number 01 : 7
-----
Enter number 02 : 7
-----
Multiplication = 49
-----
Enter the operator = /
-----
Enter number 01 : 8
-----
Enter number 02 : 4
-----
Division = 2.0
-----
Enter the operator = |
```

# (Q9)

5.1.py - C:/Users/asus/Desktop/Python/5/1/5.1.py (3.9.0)

```
File Edit Format Run Options Window Help

trigo_table={
    "sin('0')": "Value is 0",
    "sin('45')": "Value is 0.5",
    "sin('60')": "Value is 1",
    "sin('90')": "Value is 0.866",
    "sin('30')": "Value is 1",
    "cos('0')": "Value is 1",
    "cos('45')": "Value is 0.5",
    "cos('60')": "Value is 0",
    "cos('90')": "Value is 0",
    "tan('0')": "Value is 0",
    "tan('45')": "Value is 0.577",
    "tan('60')": "Value is 1",
    "tan('90')": "Value is 1.732",
    "tan('30')": "Value is Not defined"
}

print("*****")
print("Enter the values in following format: sin('30')**cos('30')**tan('30')")
print("*****")
A=input("Enter the angle in degrees:- ")
if A=="sin('0')":
    print(trigo_table["sin('0')"])
elif A=="sin('30')":
    print(trigo_table["sin('30')"])
elif A=="sin('45')":
    print(trigo_table["sin('45')"])
elif A=="sin('60')":
    print(trigo_table["sin('60')"])
elif A=="sin('90')":
    print(trigo_table["sin('90')"])
elif A=="cos('0')":
    print(trigo_table["cos('0')"])
elif A=="cos('45')":
    print(trigo_table["cos('45')"])
elif A=="cos('60')":
    print(trigo_table["cos('60')"])
elif A=="cos('90')":
    print(trigo_table["cos('90')"])
elif A=="tan('0')":
    print(trigo_table["tan('0')"])
elif A=="tan('45')":
    print(trigo_table["tan('45')"])
elif A=="tan('60')":
    print(trigo_table["tan('60')"])
elif A=="tan('90')":
    print(trigo_table["tan('90')"])
else: print("Invalid input...")
```

```
Python 3.9.0 Shell
File Edit Shell Debug Options Window Help

Python 3.9.0 (tags/v3.9.0:9cf6752, Oct 5 2020, 16:34:40) [MSC v.1927 64 bit
(AMD64)] on win32
Type "help", "copyright", "credits" or "license()" for more information.
>>>
===== RESTART: C:/Users/asus/Desktop/Python/5/1/5.1.py =====
>>>
Enter the values in following format: sin('30')**cos('30')**tan('30')
>>>
Enter the angle in degrees:- sin('30')
Value is 0.5
>>>
===== RESTART: C:/Users/asus/Desktop/Python/5/1/5.1.py =====
>>>
Enter the values in following format: sin('30')**cos('30')**tan('30')
>>>
Enter the angle in degrees:- cos('30')
Value is 0.866
>>>
===== RESTART: C:/Users/asus/Desktop/Python/5/1/5.1.py =====
>>>
Enter the values in following format: sin('30')**cos('30')**tan('30')
>>>
Enter the angle in degrees:- tan('30')
Value is 0.577
>>>
```

Ln 24 Col 4

Ln 9 Col 26

9:39 PM  
2020-12-10

# (Q10)

```
5.1.py - C:/Users/asus/Desktop/Python/5/1/5.1.py (3.9.0)
File Edit Format Run Options Window Help

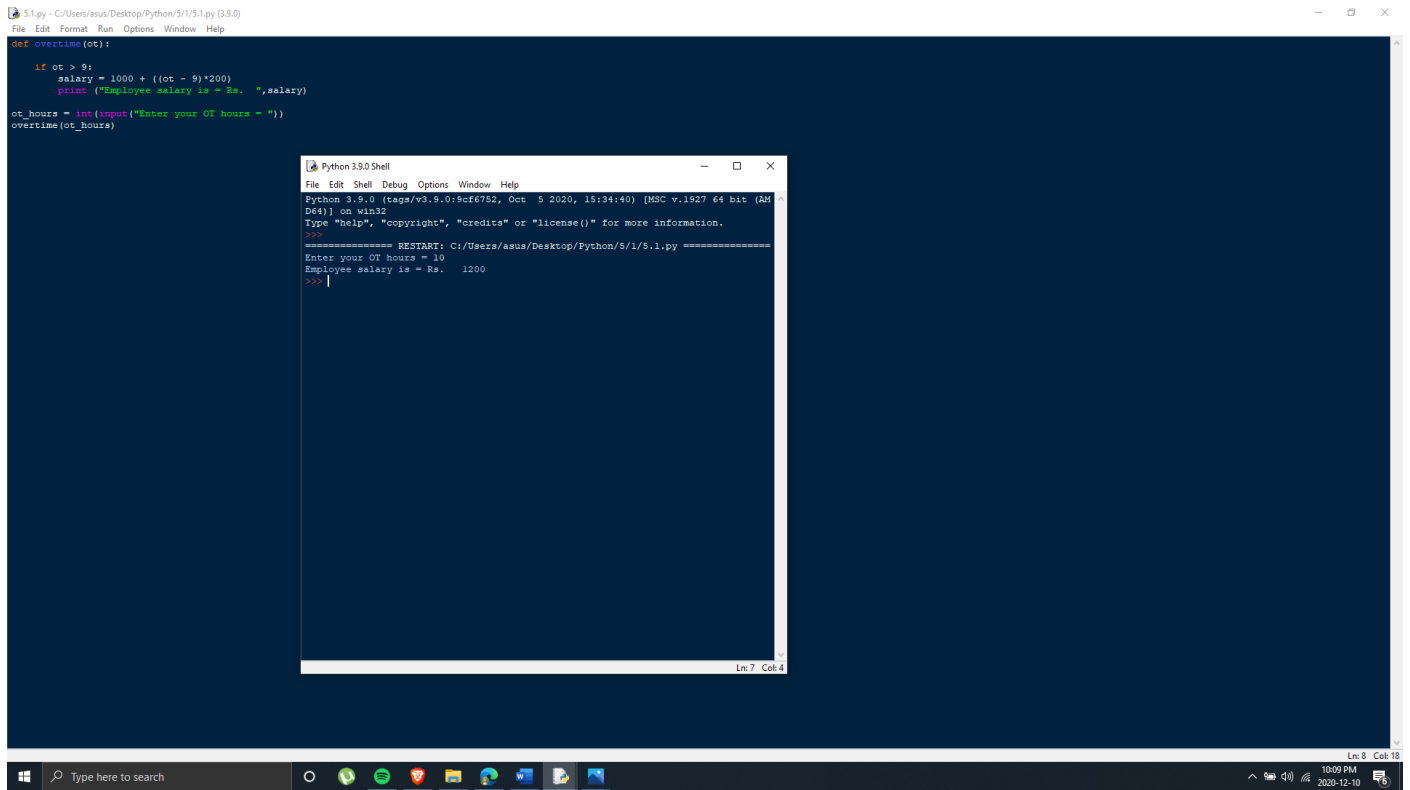
def fizz_buzz (Num):
    if (Num % 3 == 0) and (Num % 5 == 0):
        return "FizzBuzz"
    elif (Num % 3 == 0):
        return "Fizz"
    elif (Num % 5 == 0):
        return "Buzz"
    else:
        return (Number)

Number = int(input("Enter a number : "))
print(fizz_buzz (Number))

Python 3.9.0 Shell
File Edit Shell Debug Options Window Help
Python 3.9.0 (tags/v3.9.0:9cf6752, Oct 5 2020, 15:34:40) [MSC v.1927 64 bit (AMD64)] on win32
Type "help", "copyright", "credits" or "license()" for more information.
>>>
===== RESTART: C:/Users/asus/Desktop/Python/5/1/5.1.py =====
Enter a number : 15
FizzBuzz
>>>
===== RESTART: C:/Users/asus/Desktop/Python/5/1/5.1.py =====
Enter a number : 3
Fizz
>>>
===== RESTART: C:/Users/asus/Desktop/Python/5/1/5.1.py =====
Enter a number : 5
Buzz
>>>

Ln: 15 Col: 4
```

# (Q11)



```
5.1.py - C:/Users/asus/Desktop/Python/5/1/5.1.py (3.9.0)
File Edit Format Run Options Window Help

def overtime(ot):
    if ot > 5:
        salary = 1000 + ((ot - 5)*200)
        print ("Employee salary is = Rs. ",salary)
ot_hours = int(input("Enter your OT hours = "))
overtime(ot_hours)
```

```
Python 3.9.0 Shell
File Edit Shell Debug Options Window Help
Python 3.9.0 (tags/v3.9.0:9cf6752, Oct 5 2020, 15:34:40) [MSC v.1927 64 bit (AMD64)] on win32
Type "help", "copyright", "credits" or "license()" for more information.
>>>
===== RESTART: C:/Users/asus/Desktop/Python/5/1/5.1.py =====
Enter your OT hours = 10
Employee salary is = Rs. 1200
>>>
```

Ln: 7 Col: 4

Ln: 8 Col: 18

Type here to search

10:09 PM  
2020-12-10



# (Q12)

```
5.1.py - C:/Users/asus/Desktop/Python/5/1/5.1.py (3.9.0)
File Edit Format Run Options Window Help

def checkspeed(speed):
    if speed <= 70:
        print("Your speed limit is ok")
    else:
        demerit_point = int((speed - 70)/5)
        if demerit_point < 12:
            print("Demerit points : ",demerit_point)
        else:
            print("Demerit points : ",demerit_point)
            print("Your License Suspended : ")
limit = int(input("Enter your speed limit : "))
checkspeed(limit)
```

```
Python 3.9.0 Shell
File Edit Shell Debug Options Window Help
Python 3.9.0 (tags/v3.9.0:19cf6782, Oct 5 2020, 15:34:40) [MSC v.1927 64 bit (AMD64)] on win32
Type "help", "copyright", "credits" or "license()" for more information.
>>>
===== RESTART: C:/Users/asus/Desktop/Python/5/1/5.1.py =====
Enter your speed limit : 70
Your speed limit is ok
>>>
===== RESTART: C:/Users/asus/Desktop/Python/5/1/5.1.py =====
Enter your speed limit : 120
Demerit points : 10
>>>
===== RESTART: C:/Users/asus/Desktop/Python/5/1/5.1.py =====
Enter your speed limit : 180
Demerit points : 22
Your License Suspended !
>>> |
```

Ln: 20 Col: 0

10:17 PM  
2020-12-10