

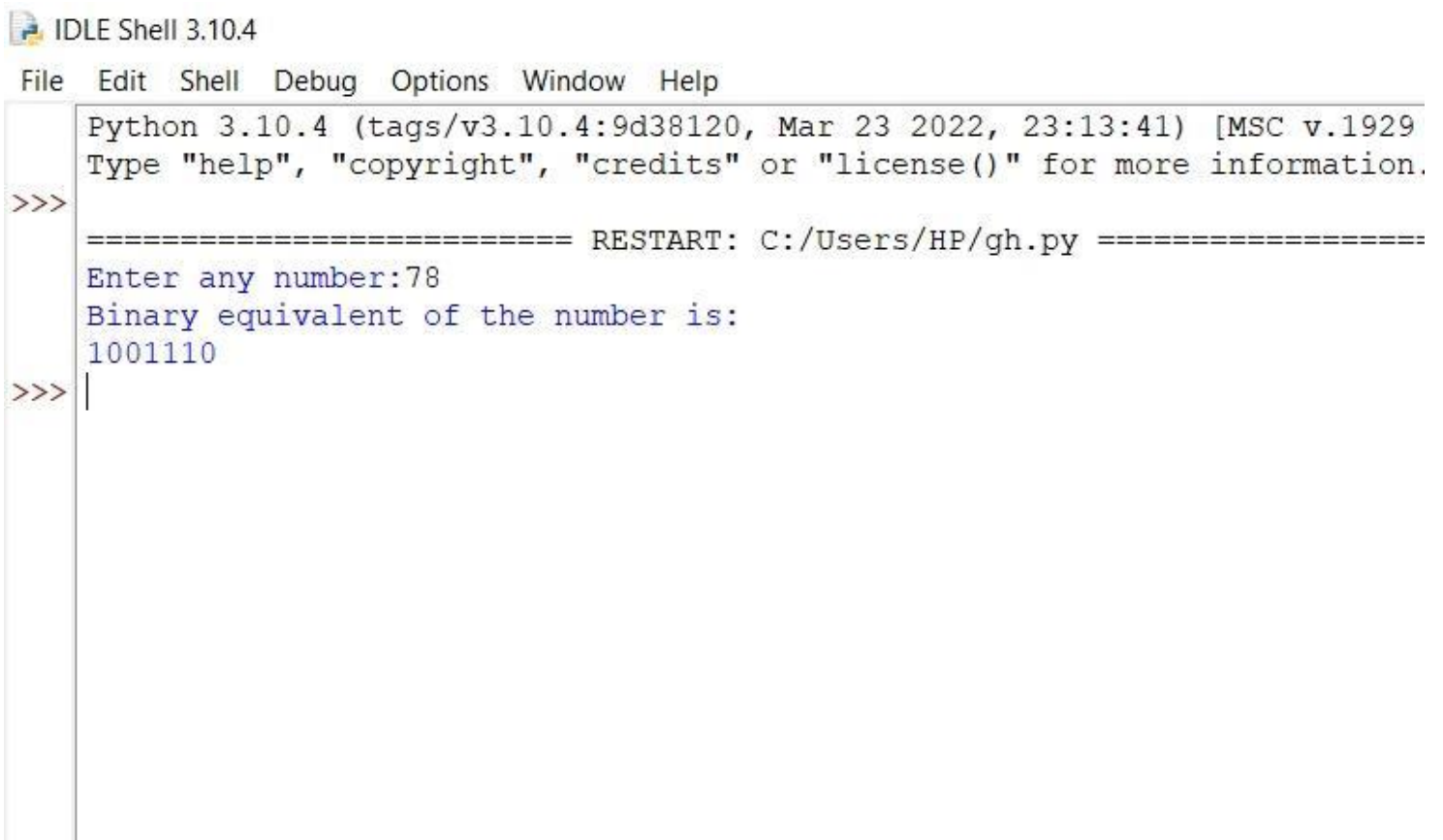
ASSIGNMENT-3

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1. Write a program to take a number as input and convert it into its binary equivalent.

OUTPUT:



```
IDLE Shell 3.10.4
File Edit Shell Debug Options Window Help
Python 3.10.4 (tags/v3.10.4:9d38120, Mar 23 2022, 23:13:41) [MSC v.1929
Type "help", "copyright", "credits" or "license()" for more information.
>>>
===== RESTART: C:/Users/HP/gh.py =====
Enter any number:78
Binary equivalent of the number is:
1001110
>>> |
```

2. Write an interactive Python calculator program. The program should allow the user to type a mathematical expression, and then print the value of the expression.

OUTPUT:



```
IDLE Shell 3.10.4
File Edit Shell Debug Options Window Help
Python 3.10.4 (tags/v3.10.4:9d38120, Mar 23 2022, 23:13:41) [MSC v.1929 64
Type "help", "copyright", "credits" or "license()" for more information.
>>>
===== RESTART: C:/Users/HP/question 2.py =====
Enter any Expression:22**3+40/5-667%3
Answer: 10655.0
>>> |
```

**Q3 Translate each of the following mathematical expressions into an equivalent python expression.
You may assume that the math library has been imported (via import math)**

OUTPUT:

```
IDLE Shell 3.10.4
File Edit Shell Debug Options Window Help
Python 3.10.4 (tags/v3.10.4:9d38120, Mar 23 2022, 23:13:41) [MSC v.1929 64 bit (AMD64)] on win32
Type "help", "copyright", "credits" or "license()" for more information.
>>>
===== RESTART: C:\Users\HP\question 3.py =====
3(a)
(3+4)*5= 35
3(b)
Enter any number:82.5
n*(n-1)/2= 3361.875
3(c)
Enter the value of radius:45.2
4*(math.pi)*r**2= 25673.597819960367
3(d)
Enter any value for r:40.5
Enter any value for a:20.8
Enter any value for b:36.4
Answer: 6.568536622067433
3(e)
Enter any value of y1:4.2
Enter any value of y2:7
Enter any value of x1:5
Enter any value of x2:9
y2-y1/x2-x1= 1.5333333333333332
>>> |
```

4. Show the sequence of numbers that would be generated by each of the following range expressions.

a)range (5)

b)range (3, 10)

c)range (4, 13, 3)

d)range (15, 5, -2)

e)range (5, 3)

OUTPUT:

IDLE Shell 3.10.4

File Edit Shell Debug Options Window Help

Python 3.10.4 (tags/v3.10.4:9d38120, Mar 23 2022, 23:13:41) [MSC v.1929 64 bit (AMD64)] on win32
Type "help", "copyright", "credits" or "license()" for more information.

>>>

4 (a)

0

1

2

3

4

4 (b)

3

4

5

6

7

8

9

4 (c)

4

7

10

4 (d)

15

13

11

9

7

4 (e)

>>>

Write a program that computes the molecular weight of a carbohydrate (in grams per mole) based on the number of hydrogen, carbon, and oxygen atoms in the molecule. The program should prompt the user to enter the number of hydrogen atoms, the number of carbon atoms, and the number of oxygen atoms. The program then prints the total combined molecular weight of all the atoms based on these individual atom weights:

**Atom Weight
(grams I mole)**

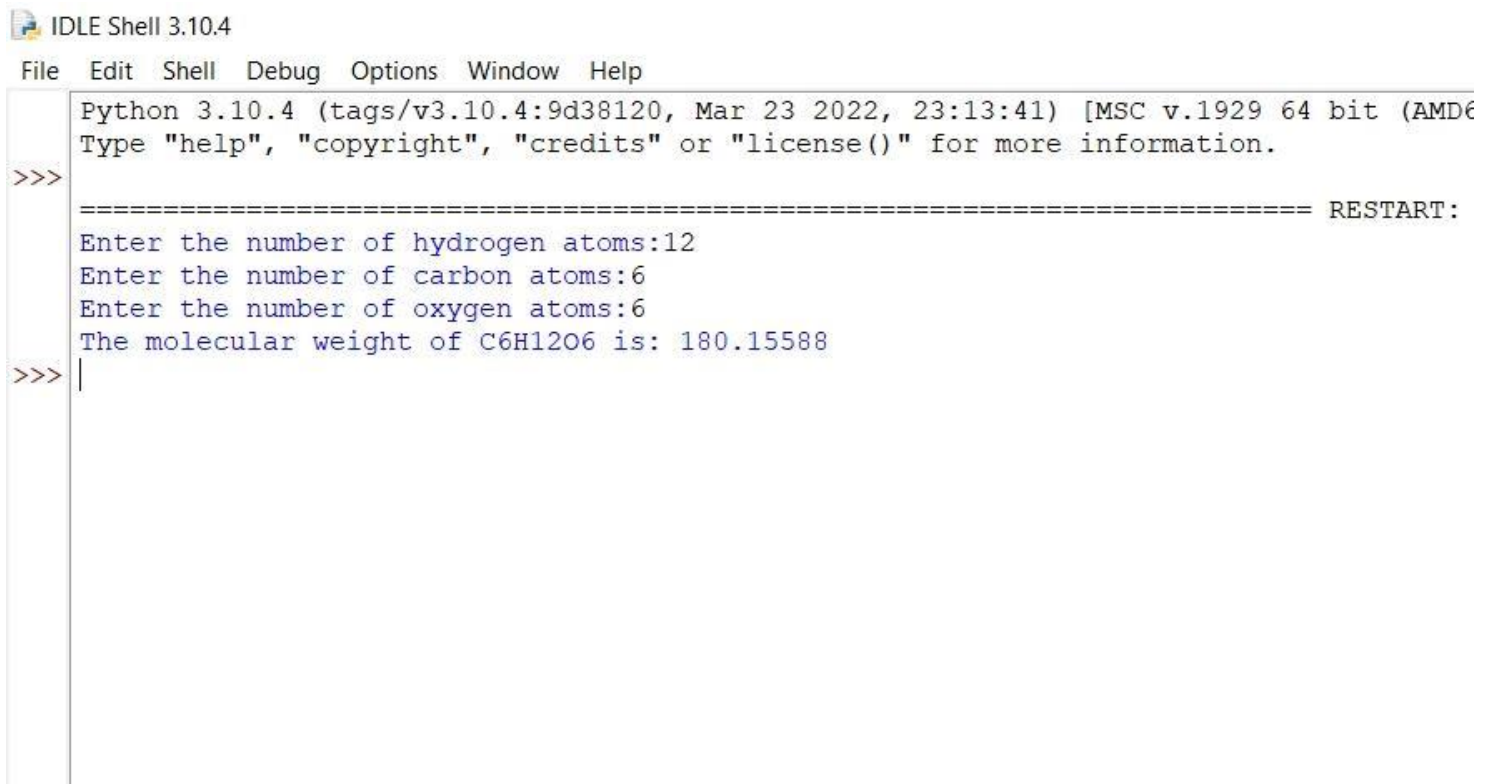
H 1.00794

c 12.0107

O 15.9994

For example, the molecular weight of water (H₂O) is: $2(1.00794) + 15.9994 = 18.01528$.

OUTPUT:



```
IDLE Shell 3.10.4
File Edit Shell Debug Options Window Help
Python 3.10.4 (tags/v3.10.4:9d38120, Mar 23 2022, 23:13:41) [MSC v.1929 64 bit (AMD64)]
Type "help", "copyright", "credits" or "license()" for more information.
>>>
===== RESTART:
Enter the number of hydrogen atoms:12
Enter the number of carbon atoms:6
Enter the number of oxygen atoms:6
The molecular weight of C6H12O6 is: 180.15588
>>> |
```