

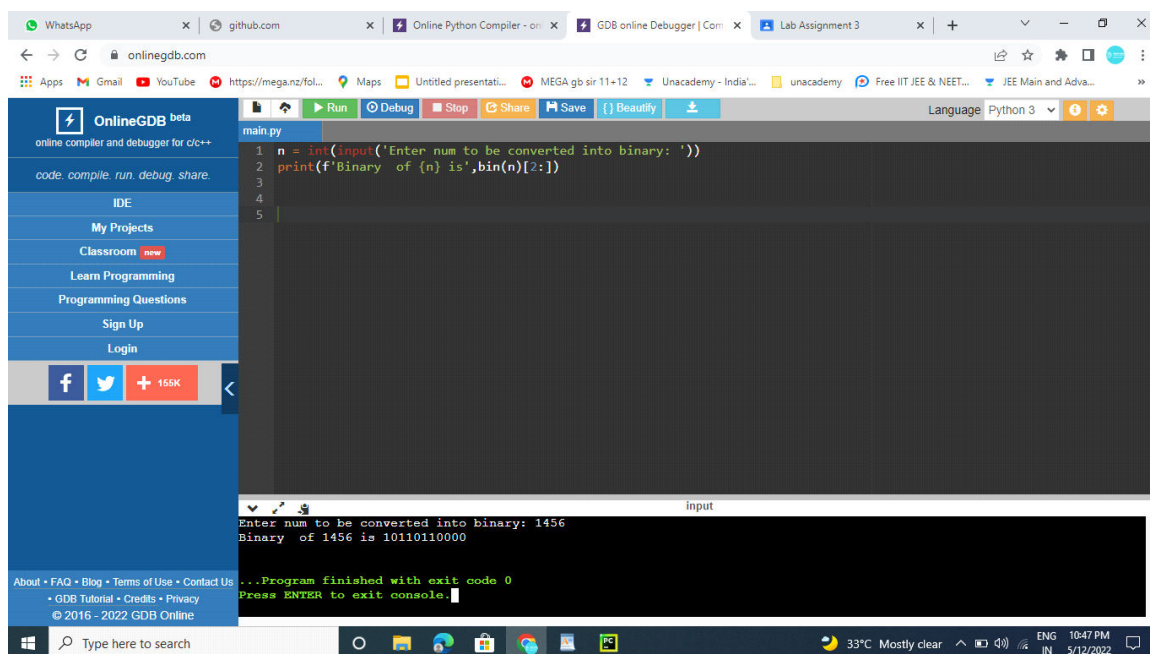
question 1

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

Answer

```
n = int(input('Enter num to be converted into binary: '))
```

```
print(f'Binary of {n} is',bin(n)[2:])
```



Question 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.

answer

```
# Python program for simple calculator
```

```
# Function to add two numbers
```

```
def add(num1, num2):
```

```
    return num1 + num2
```

```
# Function to subtract two numbers
```

```
def subtract(num1, num2):
```

```
    return num1 - num2
```

```
# Function to multiply two numbers
```

```
def multiply(num1, num2):
```

```
    return num1 * num2
```

```
# Function to divide two numbers
```

```
def divide(num1, num2):
```

```
    return num1 / num2
```

```
print("Please select operation -\n" \
```

```
      "1. Add\n" \
```

```
      "2. Subtract\n" \
```

```
      "3. Multiply\n" \
```

"4. Divide\n")

Take input from the user

select = int(input("Select operations form 1, 2, 3, 4 :"))

number_1 = int(input("Enter first number: "))

number_2 = int(input("Enter second number: "))

if select == 1:

print(number_1, "+", number_2, "=",
add(number_1, number_2))

elif select == 2:

print(number_1, "-", number_2, "=",
subtract(number_1, number_2))

elif select == 3:

print(number_1, "*", number_2, "=",
multiply(number_1, number_2))

elif select == 4:

```

print(number_1, "/", number_2, "=",
      divide(number_1, number_2))
else:
    print("Invalid input")

```

The screenshot shows the OnlineGDB web interface. The code editor contains a Python program for a simple calculator. The console output shows the program running with inputs 28 and 7, resulting in 4.0.

```

1 # Python program for simple calculator
2
3 # Function to add two numbers
4 def add(num1, num2):
5     return num1 + num2
6
7 # Function to subtract two numbers
8 def subtract(num1, num2):
9     return num1 - num2
10
11 # Function to multiply two numbers
12 def multiply(num1, num2):
13     return num1 * num2
14
15 # Function to divide two numbers
16 def divide(num1, num2):
17     return num1 / num2
18
19 print("Please select operation -\n" \
20       "1. Add\n" \
21       "2. Subtract\n" \
22       "3. Multiply\n" \
23       "4. Divide\n")
24
25 # Take user input
26 op = input("Enter operator (+, -, *, /): ")
27 num1 = float(input("Enter first number: "))
28 num2 = float(input("Enter second number: "))
29
30 if op == "+":
31     result = add(num1, num2)
32 elif op == "-":
33     result = subtract(num1, num2)
34 elif op == "*":
35     result = multiply(num1, num2)
36 elif op == "/":
37     result = divide(num1, num2)
38 else:
39     print("Invalid operator")
40
41 print("Result: ", result)
42
43 ...Program finished with exit code 0
44 Press ENTER to exit console.

```

Question 03

Answer

```

import math

n = int(input("Enter an num"))

print('a',(n+(n+1))*(n+2))

print('b'),n/2*(n-1))

r = int(input('enter radius'))

print('c'),4*math.pi*r*r)

a = int(input('Enter angle 1:'))

```

```

b = int(input('Enter angle 1:'))

print('d'),math.sqrt((r*math.cos(a)**2) + (r*math.sin(b)**2)))

x1 = float(input('Enter absicca of first point:'))
y1 = float(input('Enter ordinate of first point:'))
x2 = float(input('Enter absicca of second point:'))
y2 = float(input('Enter ordinate of second point:'))
print('e'),(y2-y1)/(x2-x1))

```

The screenshot shows the OnlineGDB web IDE interface. The code editor contains a Python script with the following lines:

```

1 import math
2 n = int(input("Enter an num"))
3 print('a'),(n*(n+1))*(n+2)
4 print('b'),n/2*(n-1)
5 r = int(input('enter radius'))
6 print('c'),4*math.pi*r*r
7 a = int(input('Enter angle 1:'))
8 b = int(input('Enter angle 1:'))
9 print('d'),math.sqrt((r*math.cos(a)**2) + (r*math.sin(b)**2)))
10
11 x1 = float(input('Enter absicca of first point:'))
12 y1 = float(input('Enter ordinate of first point:'))
13 x2 = float(input('Enter absicca of second point:'))
14 y2 = float(input('Enter ordinate of second point:'))
15 print('e'),(y2-y1)/(x2-x1))

```

The output window shows the following execution results:

```

Enter an num154
a) 48204
b) 11781.0
enter radius54
c) 36643.536711471344
Enter angle 1:56
Enter angle 1:5652
d) 6.579347785130528
Enter absicca of first point:65
Enter ordinate of first point:65
Enter absicca of second point:84
Enter ordinate of second point:846
e) 41.10526315789474

```

Question 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)

Answer

```
print('4) a.',end = ' ')
```

```
for i in range(5):
```

```
    print(i,end = ' ')
```

```
print('\n4) b.',end = ' ')
```

```
for i in range(3,10):
```

```
    print(i,end = ' ')
```

```
print('\n4) c.',end = ' ')
```

```
for i in range(4,13,3):
```

```
    print(i,end = ' ')
```

```
print('\n4) d.',end = ' ')
```

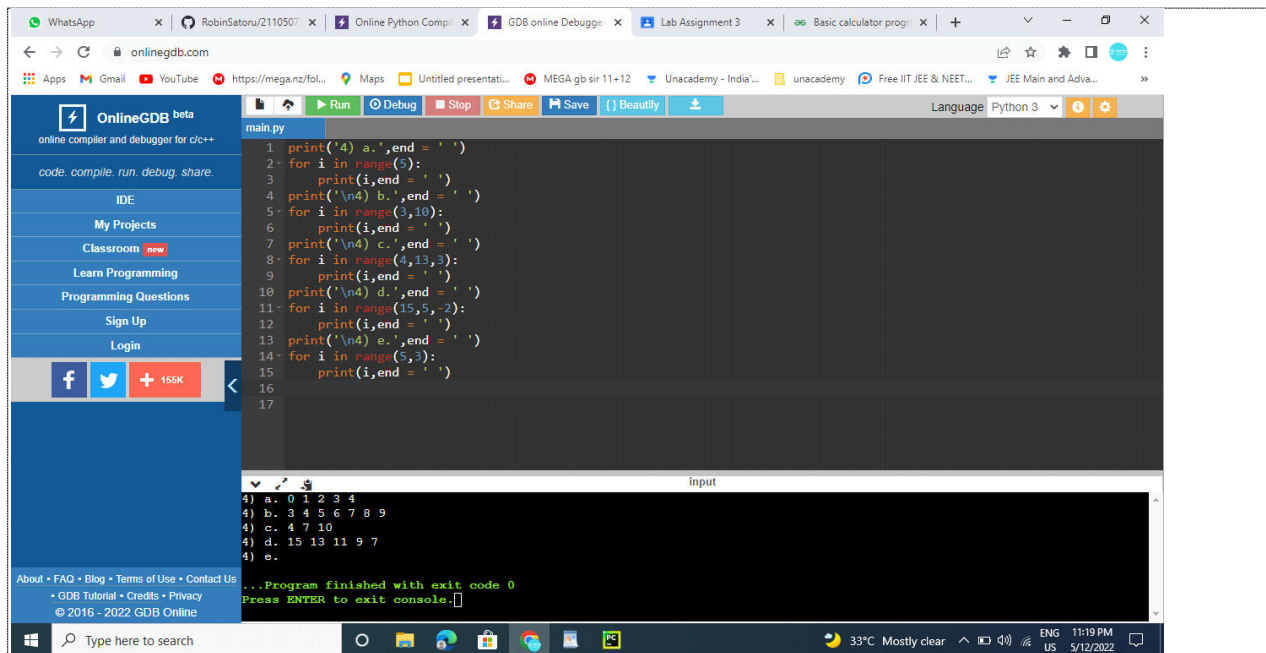
```
for i in range(15,5,-2):
```

```
    print(i,end = ' ')
```

```
print('\n4) e.',end = ' ')
```

```
for i in range(5,3):
```

```
    print(i,end = ' ')
```



Question 5

C = int(input('Enter number of carbon atoms in molecule:'))

H = int(input('Enter number of hydrogen atoms in molecule:'))

O = int(input('Enter number of oxygen atoms in molecule:'))

print('The molecular weight of the compound is',H*1.00794 +
C*12.0107 + O*15.9994)

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main.py

```
1 C = int(input('Enter number of carbon atoms in molecule:'))
2 H = int(input('Enter number of hydrogen atoms in molecule:'))
3 O = int(input('Enter number of oxygen atoms in molecule:'))
4 print('The molecular weight of the compound is',H*1.00794 + C*12.0107 + O*15.9994)
5
6
```

input

```
Enter number of carbon atoms in molecule:456
Enter number of hydrogen atoms in molecule:5465
Enter number of oxygen atoms in molecule:6565
The molecular weight of the compound is 116021.332300000001

...Program finished with exit code 0
Press ENTER to exit console.
```

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