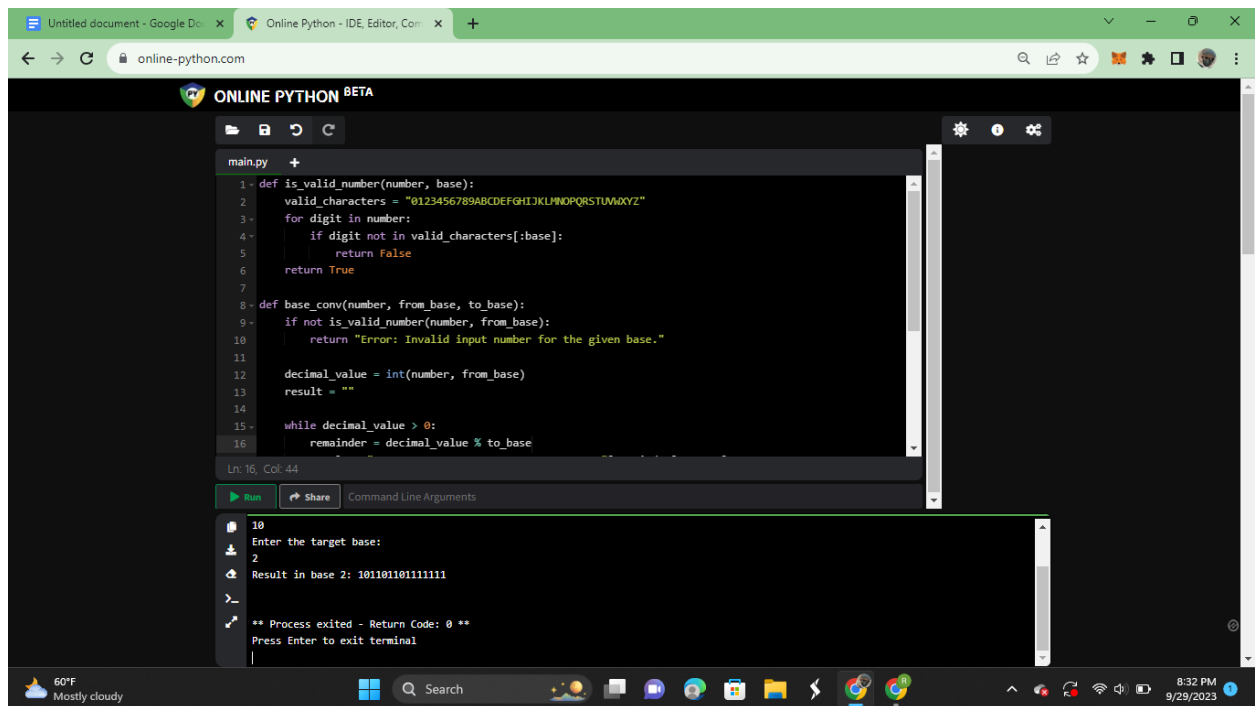


1. Write the program in any computer language to convert the given number from any base to a different base. The program needs to verify the validity of the given number first. If it is invalid, please prompt error information. Otherwise, print the correct result in the new base. For instance, as follows is the def function "base_conv" in Python.



The screenshot shows a web browser window with the URL "online-python.com". The page title is "ONLINE PYTHON BETA". The main content area displays a Python script in a dark-themed editor. The script defines two functions: `is_valid_number` and `base_conv`. The `is_valid_number` function checks if a number is valid for a given base by verifying that all digits are within the range of the base. The `base_conv` function converts a number from one base to another, handling invalid inputs with an error message. Below the editor, there is a "Run" button and a "Share" button. The output of the program is displayed in a terminal window, showing the input "10" and "2", and the result "Result in base 2: 10110110111111". The terminal also shows the process exit message: "** Process exited - Return Code: 0 **". The bottom of the browser window shows a Windows taskbar with the date and time "8:32 PM 9/29/2023".

```
main.py
1 def is_valid_number(number, base):
2     valid_characters = "0123456789ABCDEFGHIJKLMNOPQRSTUVWXYZ"
3     for digit in number:
4         if digit not in valid_characters[:base]:
5             return False
6     return True
7
8 def base_conv(number, from_base, to_base):
9     if not is_valid_number(number, from_base):
10        return "Error: Invalid input number for the given base."
11
12    decimal_value = int(number, from_base)
13    result = ""
14
15    while decimal_value > 0:
16        remainder = decimal_value % to_base
```

Ln: 16, Col: 44

Run Share Command Line Arguments

10
Enter the target base:
2
Result in base 2: 10110110111111

** Process exited - Return Code: 0 **
Press Enter to exit terminal

60°F Mostly cloudy 8:32 PM 9/29/2023

2.

The screenshot shows the Online Python IDE interface. The browser tabs include 'Untitled document - Google Do...', 'Online Python - IDE, Editor, Com...', and 'CE305_week1_que1&2_19856_r...'. The address bar shows 'online-python.com'. The main editor displays a file named 'main.py' with the following Python code:

```
1 #question no.2
2 def float_to_binary(number):
3     # Step 1: Convert the number to binary
4     if number < 0:
5         sign_bit = 1
6         number = abs(number)
7     else:
8         sign_bit = 0
9
10    integer_part = int(number)
11    fractional_part = number - integer_part
12
13    integer_binary = bin(integer_part)[2:]
14
15    fractional_binary = ""
16    while fractional_part > 0:
```

Below the editor, the 'Run' button is highlighted. The output terminal shows the result of the execution:

```
11010010101010
** Process exited - Return Code: 0 **
Press Enter to exit terminal
```

The Windows taskbar at the bottom shows the system clock as 8:54 PM on 9/29/2023, with a weather widget indicating 59°F and 'Mostly cloudy'.