Fundamentals of Computer Programming

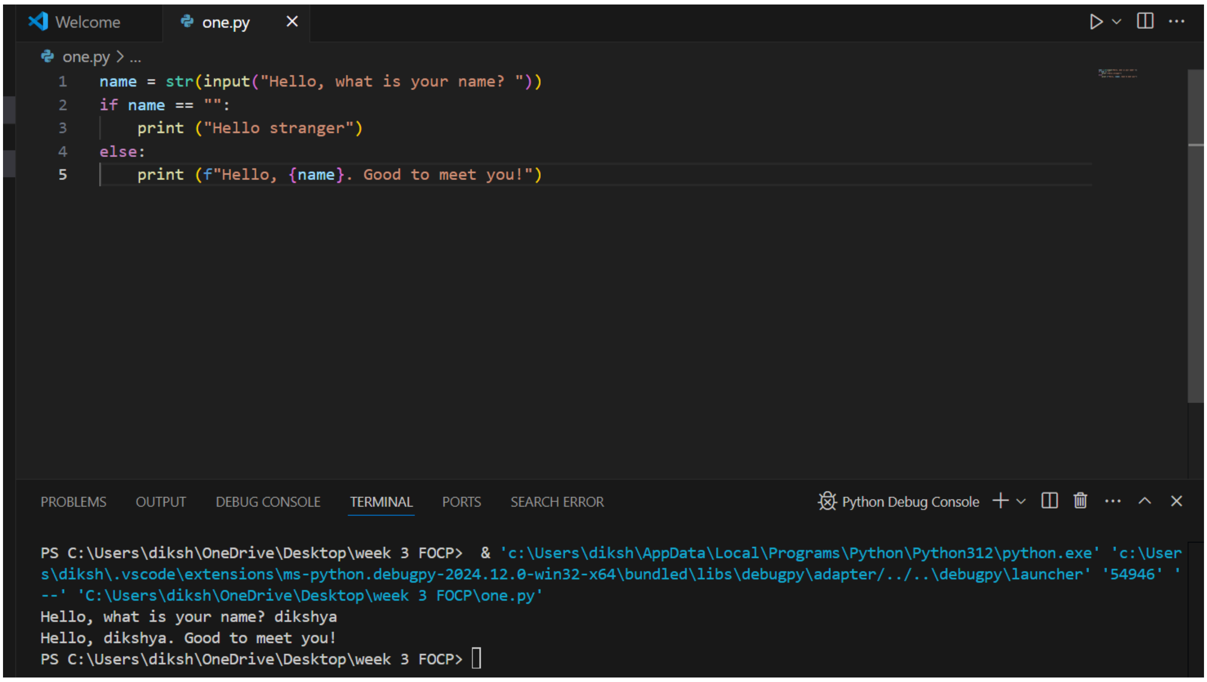
Building a Programming Portfolio

Week3

You should be able to complete the following programs by the end of the week. You should keep the code somewhere safe, in an organized way. GitHub is ideal. Wherever you choose, you should ensure that the work is safe and backed up.

Possible solutions will be uploaded to the main module GitHub repository every week. If you follow that repo you should be able to receive notifications.

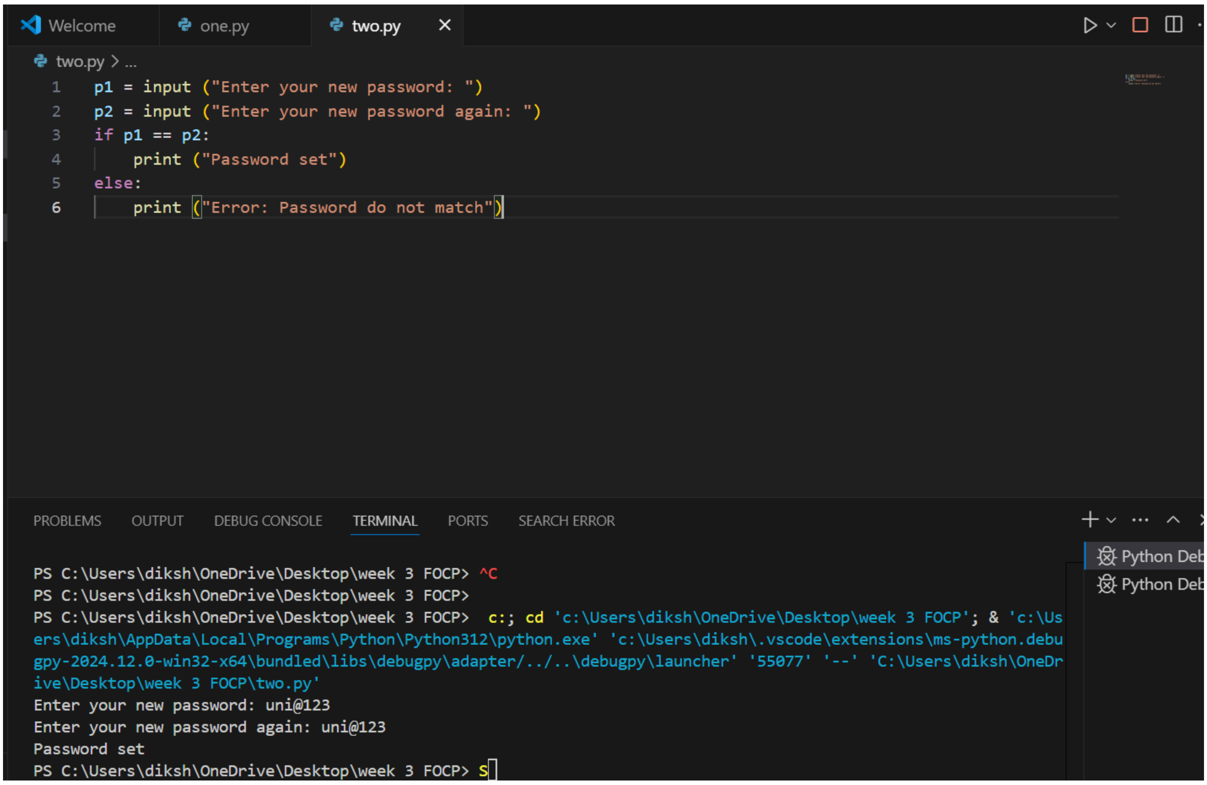
1. Modify your greeting program so that if the user does not enter a name (i.e. they just press enter), the program responds "Hello, Stranger!". Otherwise it should print a greeting with their name as before.



```python
name = str(input("Hello, what is your name? "))
if name == "":
    print ("Hello stranger")
else:
    print (f"Hello, {name}. Good to meet you!")
```

```
PS C:\Users\diksh\OneDrive\Desktop\week 3 FOCP>  & 'c:\Users\diksh\AppData\Local\Programs\Python\Python312\python.exe' 'c:\User
s\diksh\.vscode\extensions\ms-python.debugpy-2024.12.0-win32-x64\bundled\libs\debugpy\adapter/../..\debugpy\launcher' '54946' '
--' 'C:\Users\diksh\OneDrive\Desktop\week 3 FOCP\one.py'
Hello, what is your name? dikshya
Hello, dikshya. Good to meet you!
PS C:\Users\diksh\OneDrive\Desktop\week 3 FOCP> 
```

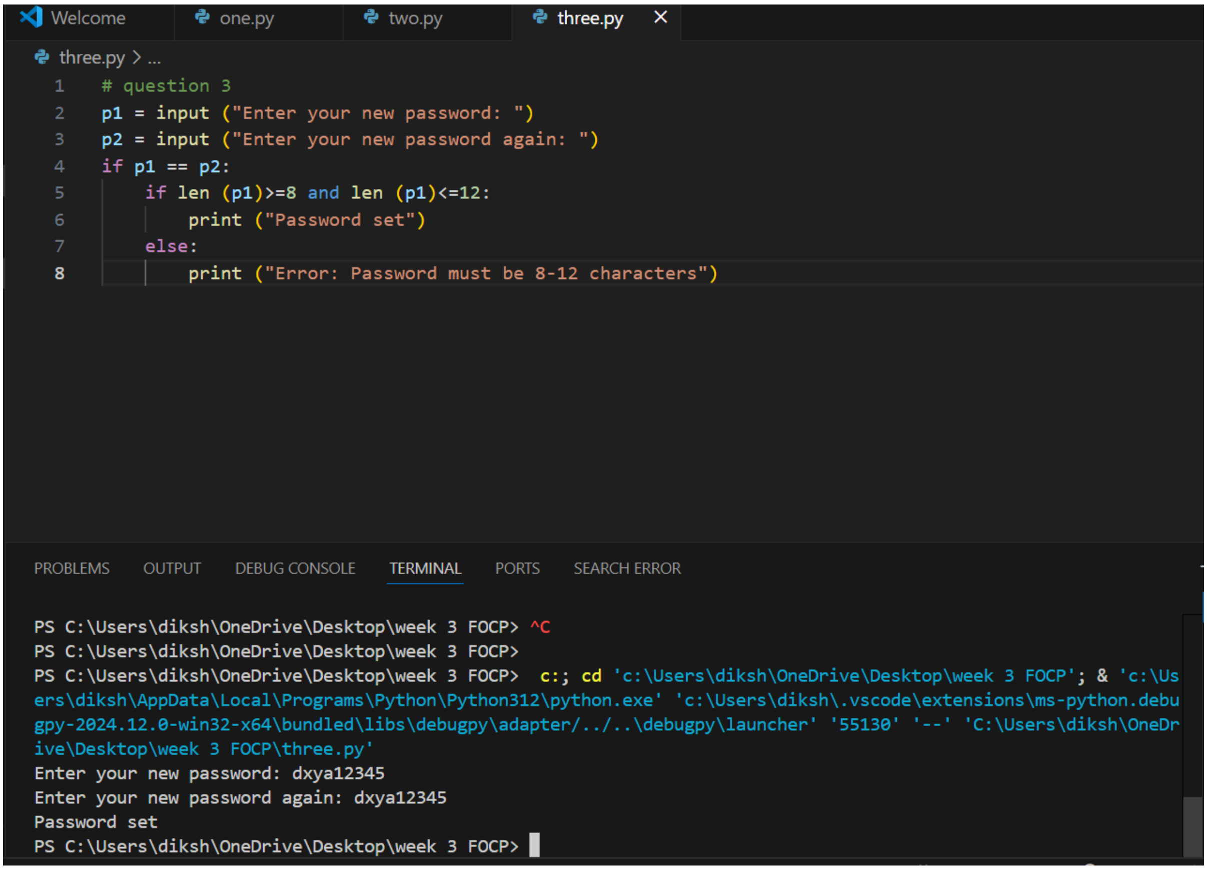
2. Write a program that simulates the way in which a user might choose a password. The program should prompt for a new password, and then prompt again. If the two passwords entered are the same the program should say "`Password Set`" or similar, otherwise it should report an error.



```python
p1 = input ("Enter your new password: ")
p2 = input ("Enter your new password again: ")
if p1 == p2:
    print ("Password set")
else:
    print ("Error: Password do not match")
```

```
PS C:\Users\diksh\OneDrive\Desktop\week 3 FOCP> ^C
PS C:\Users\diksh\OneDrive\Desktop\week 3 FOCP>
PS C:\Users\diksh\OneDrive\Desktop\week 3 FOCP>  c:; cd 'c:\Users\diksh\OneDrive\Desktop\week 3 FOCP'; & 'c:\Us
ers\diksh\AppData\Local\Programs\Python\Python312\python.exe' 'c:\Users\diksh\.vscode\extensions\ms-python.debu
gpy-2024.12.0-win32-x64\bundled\libs\debugpy\adapter/../..\debugpy\launcher' '55077' '--' 'C:\Users\diksh\OneDr
ive\Desktop\week 3 FOCP\two.py'
Enter your new password: uni@123
Enter your new password again: uni@123
Password set
PS C:\Users\diksh\OneDrive\Desktop\week 3 FOCP> s
```

3. Modify your previous program so that the password must be between 8 and 12 characters (inclusive) long.

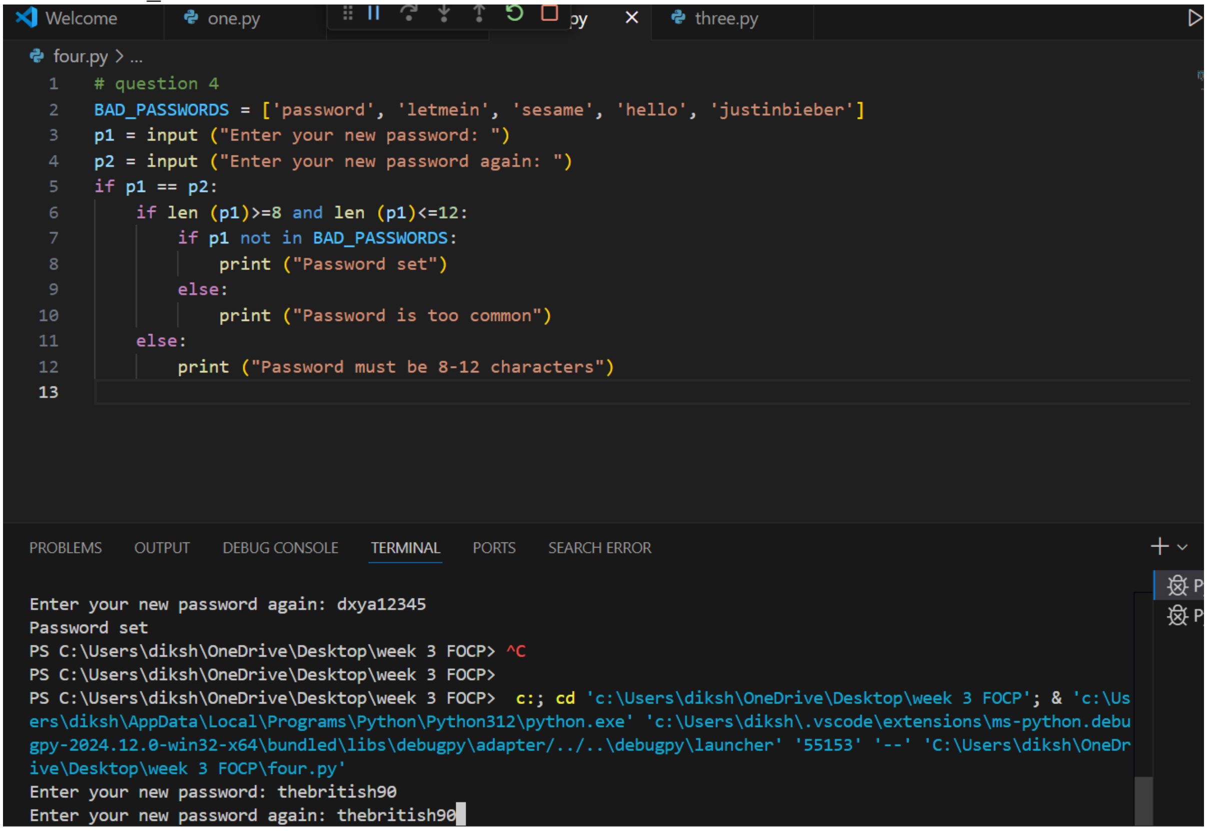


```python
# question 3
p1 = input ("Enter your new password: ")
p2 = input ("Enter your new password again: ")
if p1 == p2:
    if len (p1)>=8 and len (p1)<=12:
        print ("Password set")
    else:
        print ("Error: Password must be 8-12 characters")
```

```
PS C:\Users\diksh\OneDrive\Desktop\week 3 FOCP> ^C
PS C:\Users\diksh\OneDrive\Desktop\week 3 FOCP>
PS C:\Users\diksh\OneDrive\Desktop\week 3 FOCP>  c:; cd 'c:\Users\diksh\OneDrive\Desktop\week 3 FOCP'; & 'c:\Us
ers\diksh\AppData\Local\Programs\Python\Python312\python.exe' 'c:\Users\diksh\.vscode\extensions\ms-python.debu
gpy-2024.12.0-win32-x64\bundled\libs\debugpy\adapter/../..\debugpy\launcher' '55130' '--' 'C:\Users\diksh\OneDr
ive\Desktop\week 3 FOCP\three.py'
Enter your new password: dxya12345
Enter your new password again: dxya12345
Password set
PS C:\Users\diksh\OneDrive\Desktop\week 3 FOCP>
```

4. Modify your program again so that the chosen password cannot be one of a list of common passwords, defined thus:

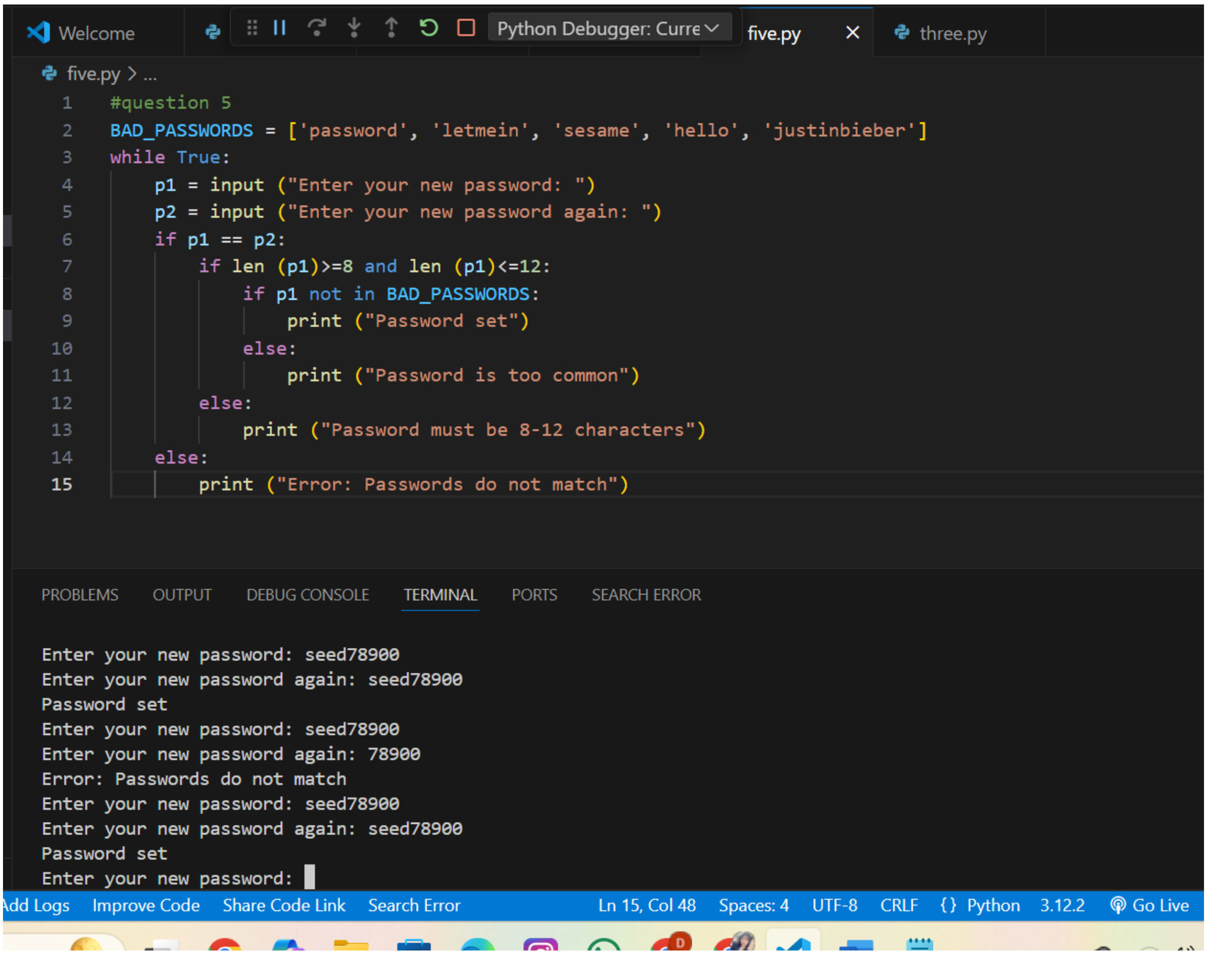
```
    BAD_PASSWORDS = ['password', 'letmein', 'sesame', 'hello', 'justinbieber']
```



```
# question 4
BAD_PASSWORDS = ['password', 'letmein', 'sesame', 'hello', 'justinbieber']
p1 = input ("Enter your new password: ")
p2 = input ("Enter your new password again: ")
if p1 == p2:
    if len (p1)>=8 and len (p1)<=12:
        if p1 not in BAD_PASSWORDS:
            print ("Password set")
        else:
            print ("Password is too common")
    else:
        print ("Password must be 8-12 characters")
```

```
Enter your new password again: dxya12345
Password set
PS C:\Users\diksh\OneDrive\Desktop\week 3 FOCP> ^C
PS C:\Users\diksh\OneDrive\Desktop\week 3 FOCP>
PS C:\Users\diksh\OneDrive\Desktop\week 3 FOCP>  c:; cd 'c:\Users\diksh\OneDrive\Desktop\week 3 FOCP'; & 'c:\Us
ers\diksh\AppData\Local\Programs\Python\Python312\python.exe' 'c:\Users\diksh\.vscode\extensions\ms-python.debu
gpy-2024.12.0-win32-x64\bundled\libs\debugpy\adapter/../..\debugpy\launcher' '55153' '--' 'C:\Users\diksh\OneDr
ive\Desktop\week 3 FOCP\four.py'
Enter your new password: thebritish90
Enter your new password again: thebritish90
```

5. Modify your program a final time so that it executes until the user successfully chooses a password. That is, if the password chosen fails any of the checks, the program should return to asking for the password the first time.



```python
#question 5
BAD_PASSWORDS = ['password', 'letmein', 'sesame', 'hello', 'justinbieber']
while True:
    p1 = input ("Enter your new password: ")
    p2 = input ("Enter your new password again: ")
    if p1 == p2:
        if len (p1)>=8 and len (p1)<=12:
            if p1 not in BAD_PASSWORDS:
                print ("Password set")
            else:
                print ("Password is too common")
        else:
            print ("Password must be 8-12 characters")
    else:
        print ("Error: Passwords do not match")
```

```
Enter your new password: seed78900
Enter your new password again: seed78900
Password set
Enter your new password: seed78900
Enter your new password again: 78900
Error: Passwords do not match
Enter your new password: seed78900
Enter your new password again: seed78900
Password set
Enter your new password: 
```

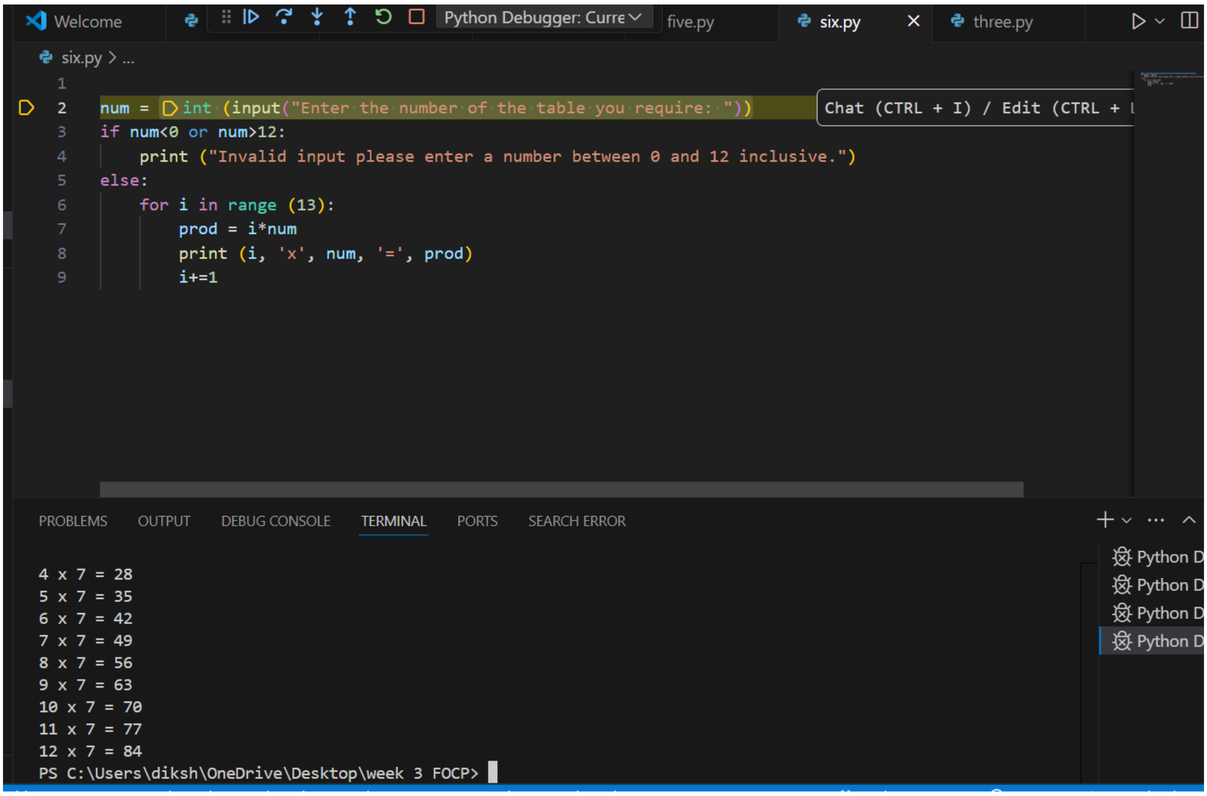
6. Write a program that displays the "Seven Times Table". That is, the result of multiplying 7 by every number from 0 to 12 inclusive. The output might

   start: `0 x 7 = 0`

   `1 x 7 = 7`

   `2 x 7 = 14`

   and so on.

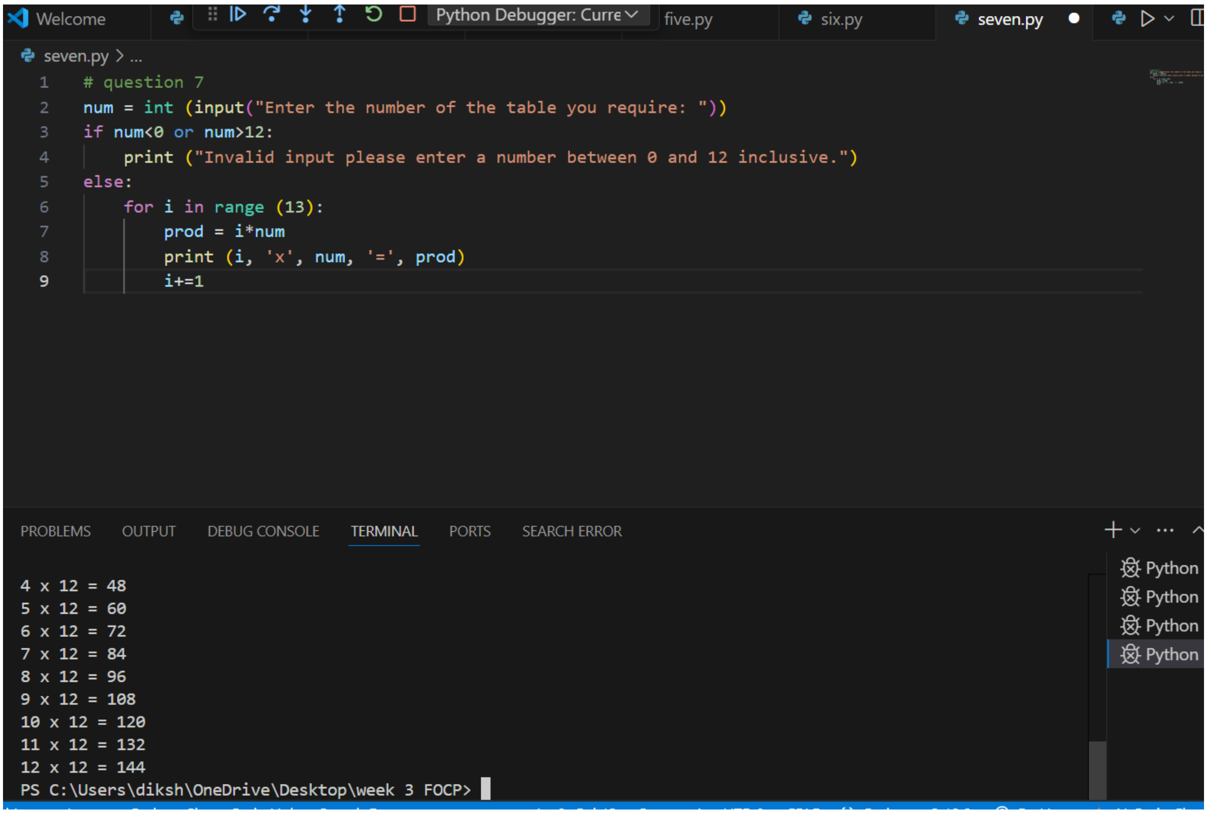


```python

num = int (input("Enter the number of the table you require: "))
if num<0 or num>12:
    print ("Invalid input please enter a number between 0 and 12 inclusive.")
else:
    for i in range (13):
        prod = i*num
        print (i, 'x', num, '=', prod)
        i+=1
```

```
4 x 7 = 28
5 x 7 = 35
6 x 7 = 42
7 x 7 = 49
8 x 7 = 56
9 x 7 = 63
10 x 7 = 70
11 x 7 = 77
12 x 7 = 84
PS C:\Users\diksh\OneDrive\Desktop\week 3 FOCP>
```

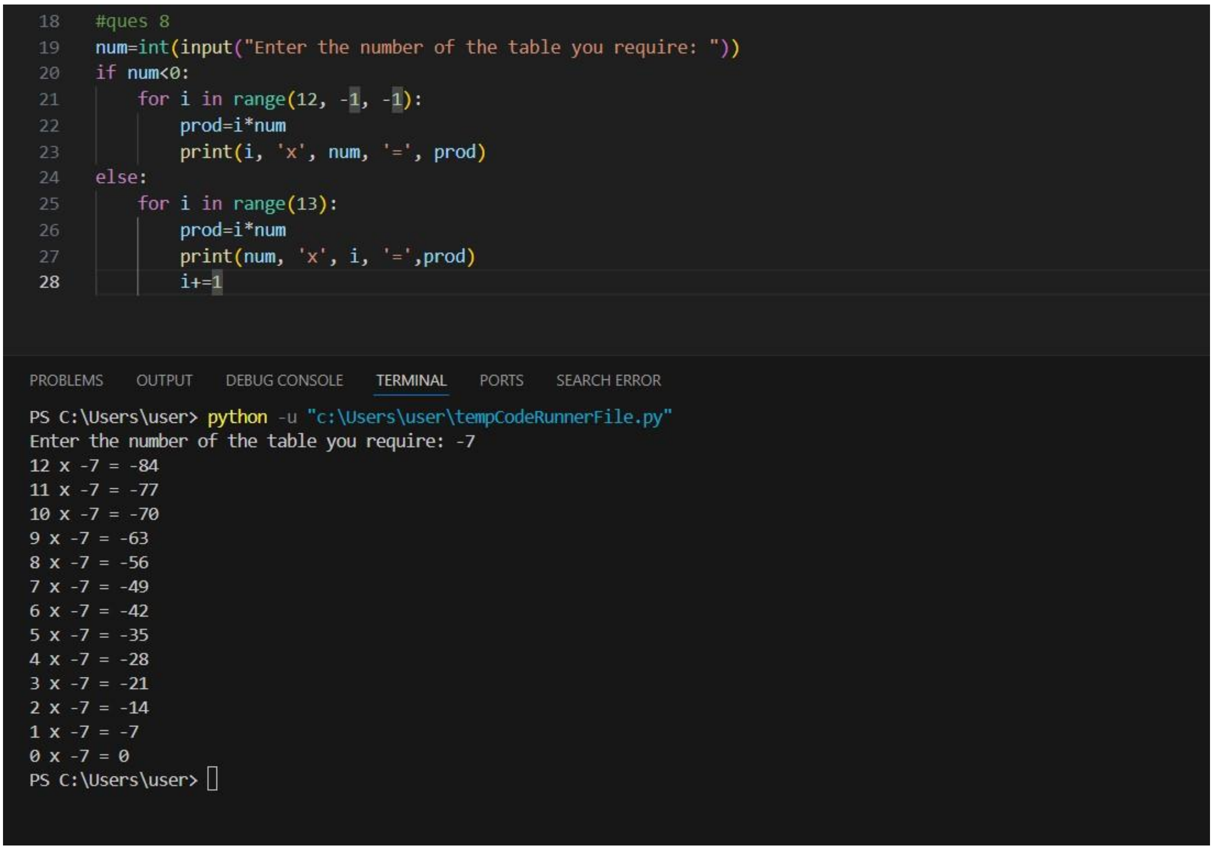
7. Modify your "Times Table" program so that the user enters the number of the table they require. This number should be between 0 and 12 inclusive.



```python
# question 7
num = int (input("Enter the number of the table you require: "))
if num<0 or num>12:
    print ("Invalid input please enter a number between 0 and 12 inclusive.")
else:
    for i in range (13):
        prod = i*num
        print (i, 'x', num, '=', prod)
        i+=1
```

```
4 x 12 = 48
5 x 12 = 60
6 x 12 = 72
7 x 12 = 84
8 x 12 = 96
9 x 12 = 108
10 x 12 = 120
11 x 12 = 132
12 x 12 = 144
PS C:\Users\diksh\OneDrive\Desktop\week 3 FOCP>
```

8. Modify the "Times Table" again so that the user still enters the number of the table, but if this number is negative the table is printed *backwards*. So entering "-7" would produce the Seven Times Table starting at "12 times" down to "0 times".



```python
#ques 8
num=int(input("Enter the number of the table you require: "))
if num<0:
    for i in range(12, -1, -1):
        prod=i*num
        print(i, 'x', num, '=', prod)
else:
    for i in range(13):
        prod=i*num
        print(num, 'x', i, '=',prod)
        i+=1
```

```
PS C:\Users\user> python -u "c:\Users\user\tempCodeRunnerFile.py"
Enter the number of the table you require: -7
12 x -7 = -84
11 x -7 = -77
10 x -7 = -70
9 x -7 = -63
8 x -7 = -56
7 x -7 = -49
6 x -7 = -42
5 x -7 = -35
4 x -7 = -28
3 x -7 = -21
2 x -7 = -14
1 x -7 = -7
0 x -7 = 0
PS C:\Users\user> 
```

Github Repository

https://dikshya-rai.github.io/week-3-python/