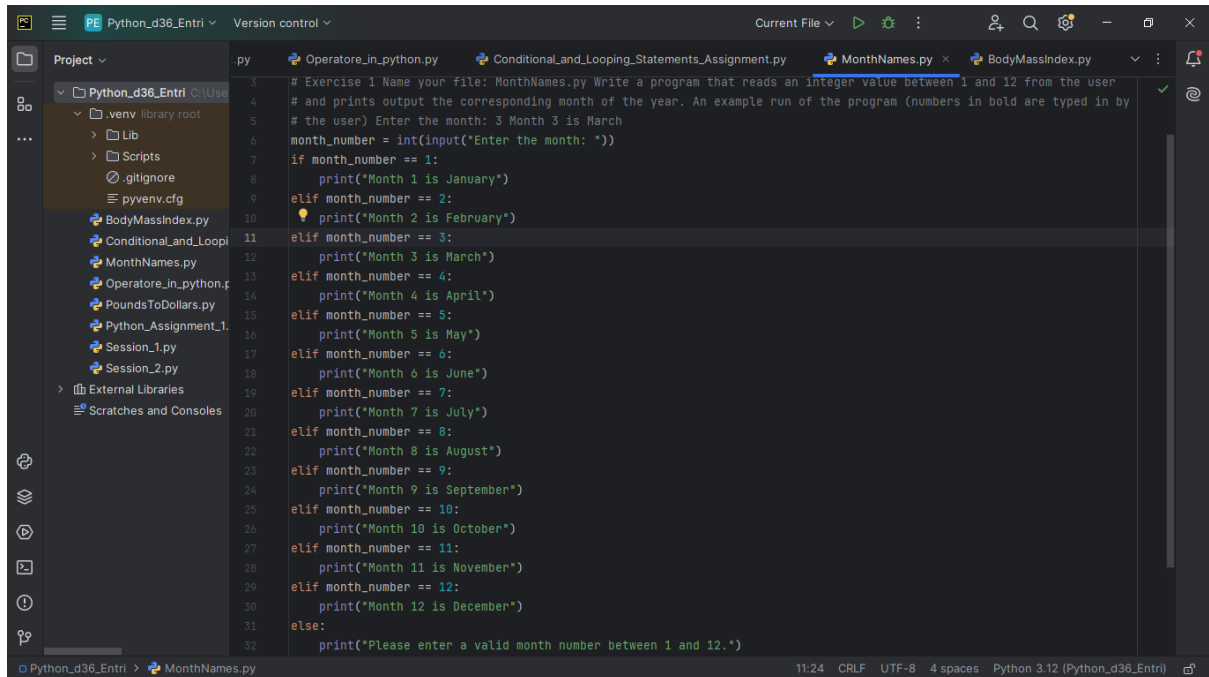


PYTHON ASSIGNMENT - 2: CONDITIONAL & LOOPING STATEMENTS

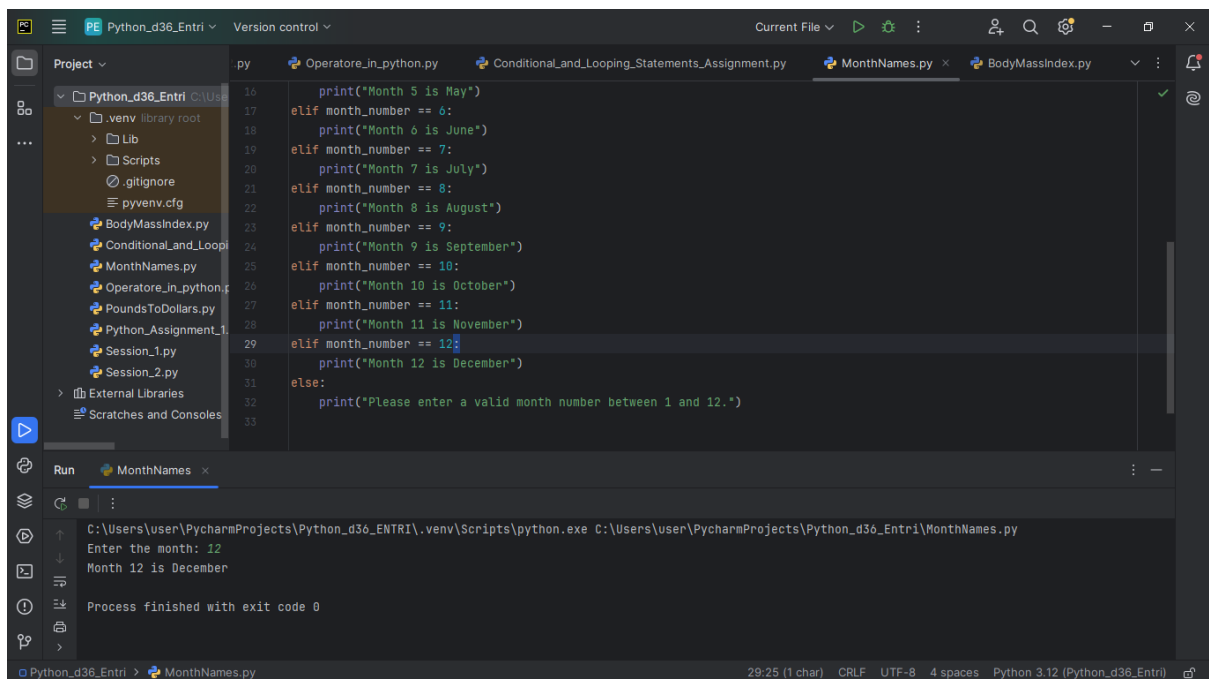
Exercise 1: Name your file: MonthNames.py Write a program that reads an integer value between 1 and 12 from the user and prints output the corresponding month of the year. An example run of the program (numbers in bold are typed in by the user) Enter the month: 3 Month 3 is March.

Code:



```
1 # Exercise 1 Name your file: MonthNames.py Write a program that reads an integer value between 1 and 12 from the user
2 # and prints output the corresponding month of the year. An example run of the program (numbers in bold are typed in by
3 # the user) Enter the month: 3 Month 3 is March
4 month_number = int(input("Enter the month: "))
5
6 if month_number == 1:
7     print("Month 1 is January")
8
9 elif month_number == 2:
10    print("Month 2 is February")
11
12 elif month_number == 3:
13    print("Month 3 is March")
14
15 elif month_number == 4:
16    print("Month 4 is April")
17
18 elif month_number == 5:
19    print("Month 5 is May")
20
21 elif month_number == 6:
22    print("Month 6 is June")
23
24 elif month_number == 7:
25    print("Month 7 is July")
26
27 elif month_number == 8:
28    print("Month 8 is August")
29
30 elif month_number == 9:
31    print("Month 9 is September")
32
33 elif month_number == 10:
34    print("Month 10 is October")
35
36 elif month_number == 11:
37    print("Month 11 is November")
38
39 elif month_number == 12:
40    print("Month 12 is December")
41
42 else:
43    print("Please enter a valid month number between 1 and 12.")
```

Result:



```
16    print("Month 5 is May")
17    elif month_number == 6:
18        print("Month 6 is June")
19    elif month_number == 7:
20        print("Month 7 is July")
21    elif month_number == 8:
22        print("Month 8 is August")
23    elif month_number == 9:
24        print("Month 9 is September")
25    elif month_number == 10:
26        print("Month 10 is October")
27    elif month_number == 11:
28        print("Month 11 is November")
29    elif month_number == 12:
30        print("Month 12 is December")
31    else:
32        print("Please enter a valid month number between 1 and 12.")
33
```

Run MonthNames

```
C:\Users\user\PycharmProjects\Python_d36_ENTRI\venv\Scripts\python.exe C:\Users\user\PycharmProjects\Python_d36_ENTRI\MonthNames.py
Enter the month: 12
Month 12 is December
Process finished with exit code 0
```

Exercise 2: A certain cinema currently sells tickets for a full price of 6 pounds, but always sells tickets for half price to people who are less than 16 years old, and for a third of the price for people who are 60 years old or more. An example run of the program (numbers in bold are typed in by the user)

Enter your age: **63** Your ticket costs £2.00.

```

1 # Conditional and Looping Statements Assignment
2
3 # Exercise 2 A certain cinema currently sells tickets for a full price of 6 pounds, but always sells tickets for half
4 # price to people who are less than 16 years old, and for a third of the price for people who are 60 years old or more.
5 # An example run of the program (numbers in bold are typed in by the user) Enter your age: 63 Your ticket costs £2.00.
6 age = int(input("Enter your age: "))
7 full_price = 6.00
8 if age < 16:
9     ticket_price = full_price / 2
10 elif age >= 60:
11     ticket_price = full_price / 3
12 else:
13     ticket_price = full_price
14 print(f"Your ticket costs £{ticket_price:.2f}")
15
16
17
18
19

```

Run Conditional_and_Looping_Statements_Assignment

```

C:\Users\user\PycharmProjects\Python_d36_ENTRI\.venv\Scripts\python.exe C:\Users\user\PycharmProjects\Python_d36_ENTRI\Conditional_and_Looping_Statements_Assignment.py
Enter your age: 66
Your ticket costs £2.0
Process finished with exit code 0

```

Exercise 3: Name your file: BodyMassIndex.py Write a program to calculate your BMI and give weight status. Body Mass Index (BMI) is an internationally used measurement to check if you are a healthy weight for your height. The metric BMI formula accepts weight in kilograms and height in meters: $BMI = \text{weight}(\text{kg}) / \text{height}^2(\text{m}^2)$ BMI Weight Status Categories table BMI range - kg/m² Category Below 18.5 Underweight 18.5 -24.9 Normal 25 - 29.9 Overweight 30 & Above Obese An example run of the program (numbers in bold are typed in by the user) Enter your weight in (kg): **75** Enter your height in (m): **1.70** Your BMI is: 25.95 You are in the “overweight” range.

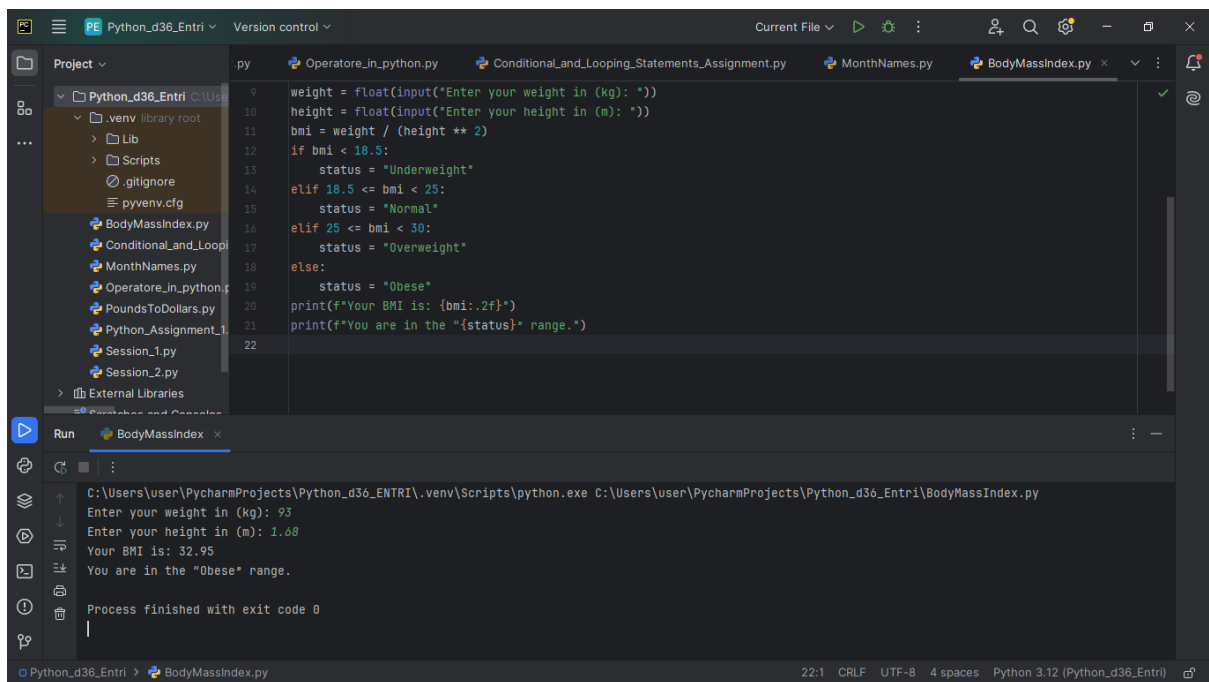
Code:

```

1 ## Conditional and Looping Statements Assignment
2
3 ## Exercise 3 Name your file: BodyMassIndex.py Write a program to calculate your BMI and give weight status. Body Mass
4 ## Index (BMI) is an internationally used measurement to check if you are a healthy weight for your height. The metric
5 ## BMI formula accepts weight in kilograms and height in meters: BMI= weight(kg)/height2(m2) BMI Weight Status Categories
6 ## table BMI range - kg/m2 Category Below 18.5 Underweight 18.5 -24.9 Normal 25 - 29.9 Overweight 30 & Above Obese An
7 ## example run of the program (numbers in bold are typed in by the user) Enter your weight in (kg): 75 Enter your height
8 ## in (m): 1.70 Your BMI is: 25.95 You are in the "overweight" range.
9 weight = float(input("Enter your weight in (kg): "))
10 height = float(input("Enter your height in (m): "))
11 bmi = weight / (height ** 2)
12 if bmi < 18.5:
13     status = "Underweight"
14 elif 18.5 <= bmi < 25:
15     status = "Normal"
16 elif 25 <= bmi < 30:
17     status = "Overweight"
18 else:
19     status = "Obese"
20 print(f"Your BMI is: {bmi:.2f}")
21 print(f"You are in the \"{status}\" range.")
22

```

Result:



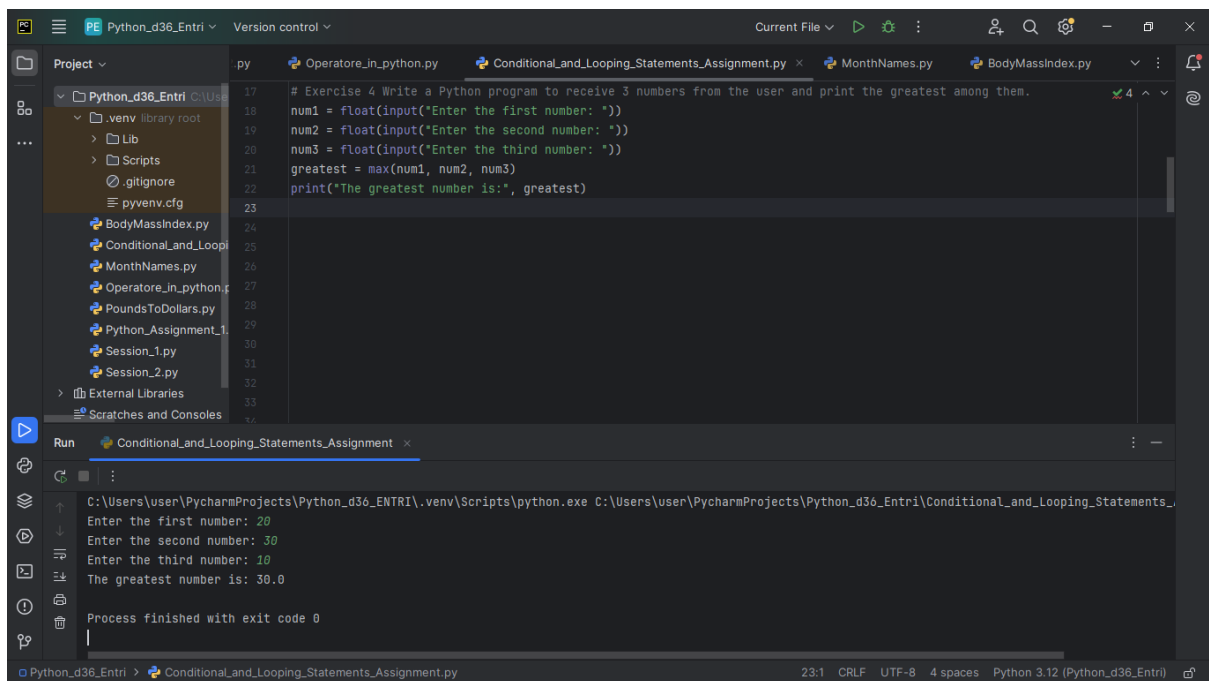
```
9 weight = float(input("Enter your weight in (kg): "))
10 height = float(input("Enter your height in (m): "))
11 bmi = weight / (height ** 2)
12 if bmi < 18.5:
13     status = "Underweight"
14 elif 18.5 <= bmi < 25:
15     status = "Normal"
16 elif 25 <= bmi < 30:
17     status = "Overweight"
18 else:
19     status = "Obese"
20 print(f"Your BMI is: {bmi:.2f}")
21 print(f"You are in the \"{status}\" range.")
22
```

Run BodyMassIndex

```
C:\Users\user\PycharmProjects\Python_d36_ENTRI\.venv\Scripts\python.exe C:\Users\user\PycharmProjects\Python_d36_ENTRI\BodyMassIndex.py
Enter your weight in (kg): 93
Enter your height in (m): 1.68
Your BMI is: 32.95
You are in the "Obese" range.

Process finished with exit code 0
```

Exercise 4: Write a Python program to receive 3 numbers from the user and print the greatest among them.



```
17 # Exercise 4 Write a Python program to receive 3 numbers from the user and print the greatest among them.
18 num1 = float(input("Enter the first number: "))
19 num2 = float(input("Enter the second number: "))
20 num3 = float(input("Enter the third number: "))
21 greatest = max(num1, num2, num3)
22 print("The greatest number is:", greatest)
23
```

Run Conditional_and_Looping_Statements_Assignment

```
C:\Users\user\PycharmProjects\Python_d36_ENTRI\.venv\Scripts\python.exe C:\Users\user\PycharmProjects\Python_d36_ENTRI\Conditional_and_Looping_Statements_Assignment.py
Enter the first number: 20
Enter the second number: 30
Enter the third number: 10
The greatest number is: 30.0

Process finished with exit code 0
```

Exercise 5: Find the factorial of a given number using loops(note the number is received from the user).

The screenshot shows the PyCharm IDE with a project named 'Python_d36_Entri'. The file explorer on the left shows a directory structure with files like 'BodyMassIndex.py', 'Conditional_and_Loop...', 'MonthNames.py', 'Operator_in_python.py', 'PoundsToDollars.py', 'Python_Assignment_1...', 'Session_1.py', and 'Session_2.py'. The main editor window displays the code for 'Conditional_and_Loop...'. The code is as follows:

```
36 # Exercise 5 Find the factorial of a given number using loops(note the number is received from the user).
37 number = int(input("Enter a number: "))
38 factorial = 1
39 for i in range(1, number + 1):
40     factorial = factorial * i
41 print(f"The factorial of {number} is: {factorial}")
42
```

The Run window at the bottom shows the execution of the code. The command prompt displays the following output:

```
C:\Users\user\PycharmProjects\Python_d36_ENTRI\.venv\Scripts\python.exe C:\Users\user\PycharmProjects\Python_d36_Entri\Conditional_and_Loop...
Enter a number: 5
The factorial of 5 is: 120
Process finished with exit code 0
```

Exercise 6: Reverse a number using while loop.

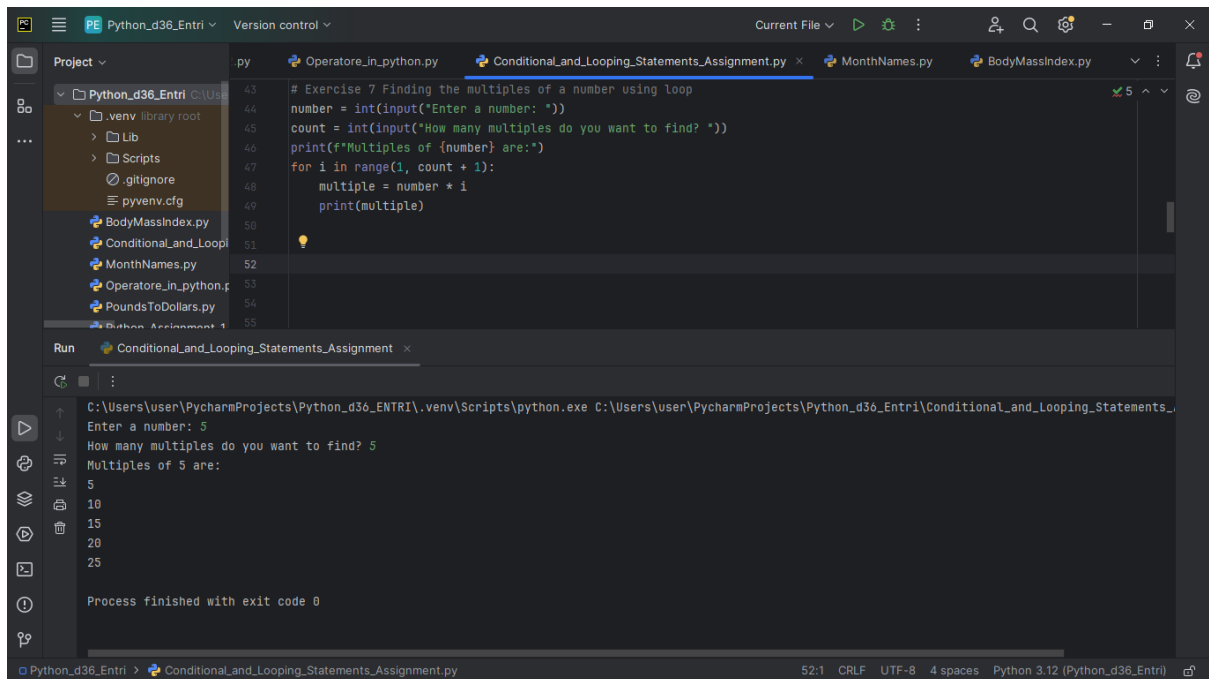
The screenshot shows the PyCharm IDE with the same project and file structure as the previous image. The main editor window displays the code for 'Conditional_and_Loop...'. The code is as follows:

```
33 # Exercise 6 Reverse a number using while loop.
34 number = int(input("Enter a number: "))
35 reversed_number = 0
36 while number > 0:
37     digit = number % 10
38     reversed_number = reversed_number * 10 + digit
39     number //= 10
40 print("The reversed number is:", reversed_number)
41
```

The Run window at the bottom shows the execution of the code. The command prompt displays the following output:

```
C:\Users\user\PycharmProjects\Python_d36_ENTRI\.venv\Scripts\python.exe C:\Users\user\PycharmProjects\Python_d36_Entri\Conditional_and_Loop...
Enter a number: 2024
The reversed number is: 4202
Process finished with exit code 0
```

Exercise 7: Finding the multiples of a number using loop.



The screenshot shows the PyCharm IDE with the file `Conditional_Looping_Statements_Assignment.py` open. The code implements a loop to find multiples of a user-input number. The Run window shows the program's execution, where the user enters 5, and the program prints the multiples 5, 10, 15, 20, and 25.

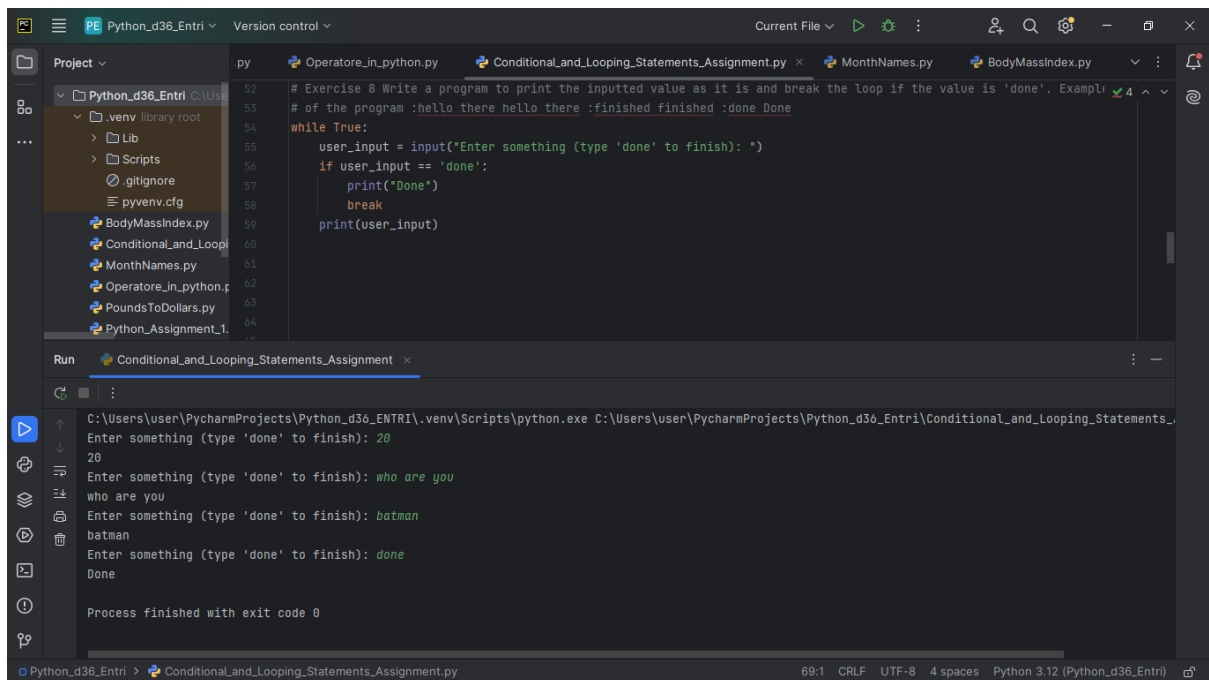
```
# Exercise 7 Finding the multiples of a number using loop
number = int(input("Enter a number: "))
count = int(input("How many multiples do you want to find? "))
print(f"Multiples of {number} are:")
for i in range(1, count + 1):
    multiple = number * i
    print(multiple)
```

Run: Conditional_Looping_Statements_Assignment

C:\Users\user\PycharmProjects\Python_d36_ENTRI\.venv\Scripts\python.exe C:\Users\user\PycharmProjects\Python_d36_ENTRI\Conditional_and_Looping_Statements_Assignment.py

Enter a number: 5
How many multiples do you want to find? 5
Multiples of 5 are:
5
10
15
20
25
Process finished with exit code 0

Exercise 8: Write a program to print the inputted value as it is and break the loop if the value is 'done'. Example run of the program :hello there hello there :finished finished :done Done.



The screenshot shows the PyCharm IDE with the file `Conditional_Looping_Statements_Assignment.py` open. The code implements a loop that prints user input until the user enters 'done'. The Run window shows the program's execution, where the user enters '20', 'who are you', and 'batman' before entering 'done' to break the loop.

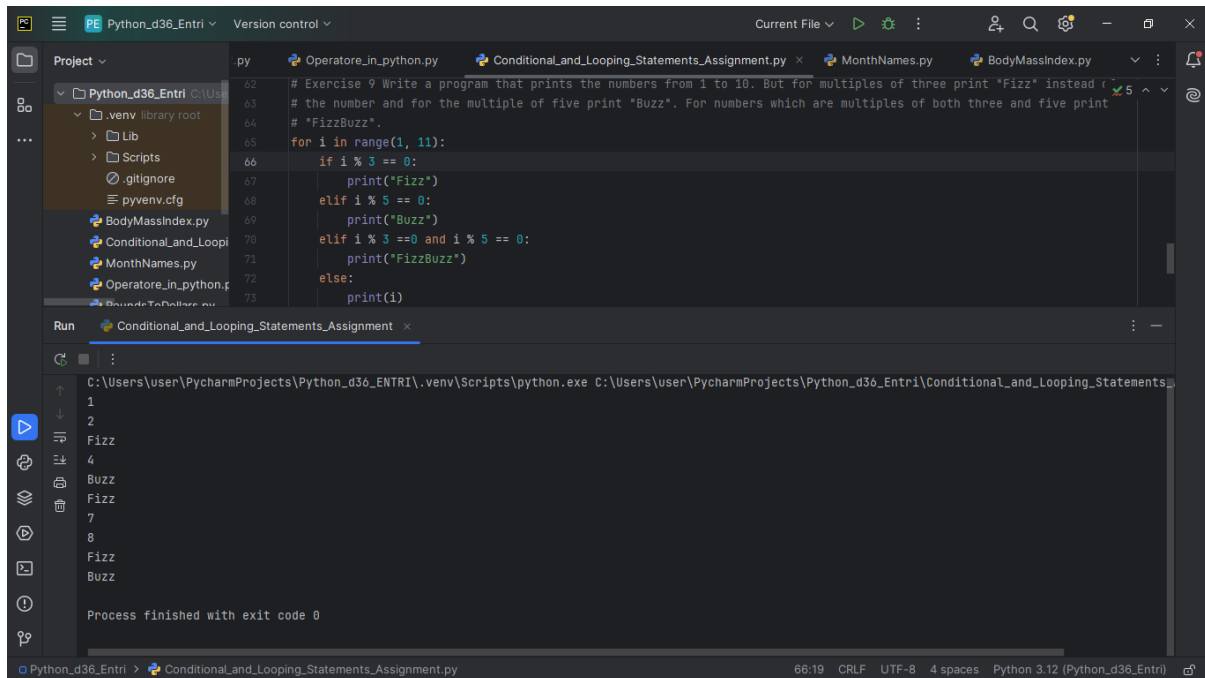
```
# Exercise 8 Write a program to print the inputted value as it is and break the loop if the value is 'done'. Example run of the program :hello there hello there :finished finished :done Done
while True:
    user_input = input("Enter something (type 'done' to finish): ")
    if user_input == 'done':
        print("Done")
        break
    print(user_input)
```

Run: Conditional_Looping_Statements_Assignment

C:\Users\user\PycharmProjects\Python_d36_ENTRI\.venv\Scripts\python.exe C:\Users\user\PycharmProjects\Python_d36_ENTRI\Conditional_and_Looping_Statements_Assignment.py

Enter something (type 'done' to finish): 20
20
Enter something (type 'done' to finish): who are you
who are you
Enter something (type 'done' to finish): batman
batman
Enter something (type 'done' to finish): done
Done
Process finished with exit code 0

Exercise 9: Write a program that prints the numbers from 1 to 10. But for multiples of three print "Fizz" instead of the number and for the multiple of five print "Buzz". For numbers which are multiples of both three and five print "FizzBuzz".



```
# Exercise 9 Write a program that prints the numbers from 1 to 10. But for multiples of three print "Fizz" instead of the number and for the multiple of five print "Buzz". For numbers which are multiples of both three and five print "FizzBuzz".
for i in range(1, 11):
    if i % 3 == 0:
        print("Fizz")
    elif i % 5 == 0:
        print("Buzz")
    elif i % 3 == 0 and i % 5 == 0:
        print("FizzBuzz")
    else:
        print(i)
```

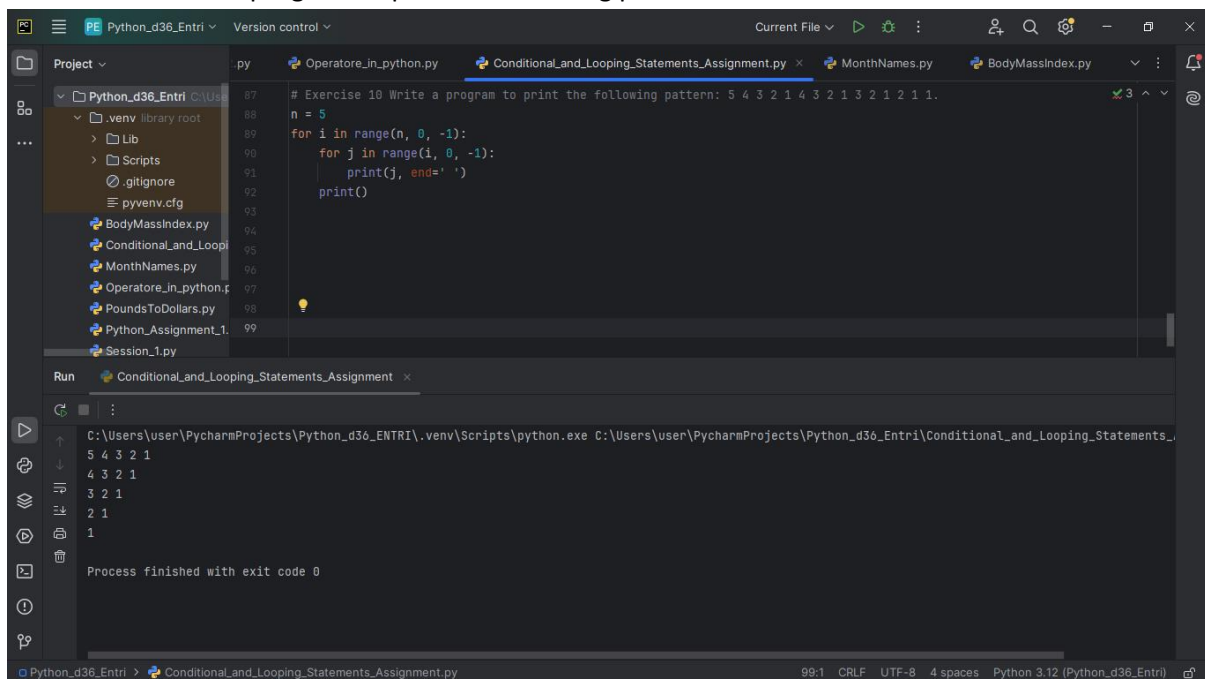
Run Conditional_and_Looping_Statements_Assignment

C:\Users\user\PycharmProjects\Python_d36_ENTRI\.venv\Scripts\python.exe C:\Users\user\PycharmProjects\Python_d36_ENTRI\Conditional_and_Looping_Statements_Assignment.py

1
2
Fizz
4
Buzz
Fizz
7
8
Fizz
Buzz

Process finished with exit code 0

Exercise 10: Write a program to print the following pattern: 5 4 3 2 1 4 3 2 1 3 2 1 2 1 1.



```
# Exercise 10 Write a program to print the following pattern: 5 4 3 2 1 4 3 2 1 3 2 1 2 1 1.
n = 5
for i in range(n, 0, -1):
    for j in range(i, 0, -1):
        print(j, end=' ')
    print()
```

Run Conditional_and_Looping_Statements_Assignment

C:\Users\user\PycharmProjects\Python_d36_ENTRI\.venv\Scripts\python.exe C:\Users\user\PycharmProjects\Python_d36_ENTRI\Conditional_and_Looping_Statements_Assignment.py

5 4 3 2 1
4 3 2 1
3 2 1
2 1
1

Process finished with exit code 0