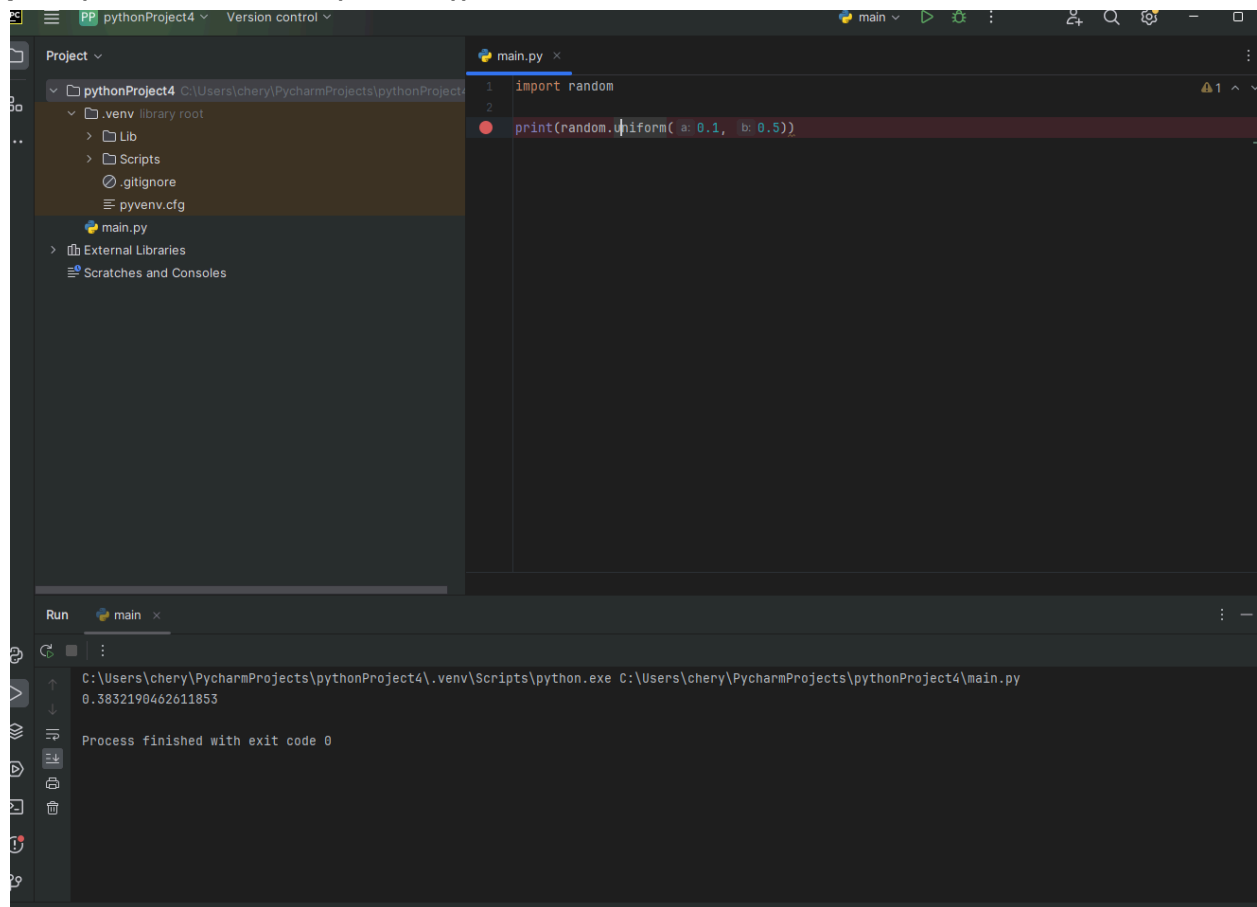**Question (1) (Total: 20 points)**
a. (5 points) What is the significance of using function in python programming?

- Functions allow for you to define a given function which can be used throughout a whole program. This prevents you from having to rewrite code or the potential for errors to occur in syntax.

-

b. (5 points) What does the following statement do? You may execute this in Python IDE and submit the screenshot for the output.
print(random.uniform(0.1, 0.5))

Generates a random number between the given floats 0.1-0.5

c. (5 points) List five built-in functions in python.
print():
len():
any()
sum()
input():

d. (5 points) What is meant by scope of a variable in python (function)? Explain with an Example.
Scope is the region in which a variable is able to be gathered or accessed. There are two regions Global and local. A variable created outside of a function would be considered a global. A variable that is defined within a given function is considered a local variable.
global

```
x = 300

def myfunc():
  print(x)

myfunc()

print(x)
```

local

```
def myfunc():
  x = 300
  print(x)

myfunc()
```

Question (2) (15 points)
a. (5 points) What is the difference between a list, Tuple, and Dictionary in Python?
Lists are mutable and therefore are used when you want to make a list that can be changed.
Tuples are immutable and therefore used when you want to have a list that can't be altered.
Dictionaries are mutable but typically used to store key-value pairs

b. (5 points) What is a tuple in Python? Explain with an example.
A tuple is similar to a list but a tuple is immutable
 x = ('Networking', 'Programming', 'Cyber').
This is used when you want to store items but don't want them to be changed.

c. (5 points) What is a module in Python? How would you access a module in Python? Explain with an example.
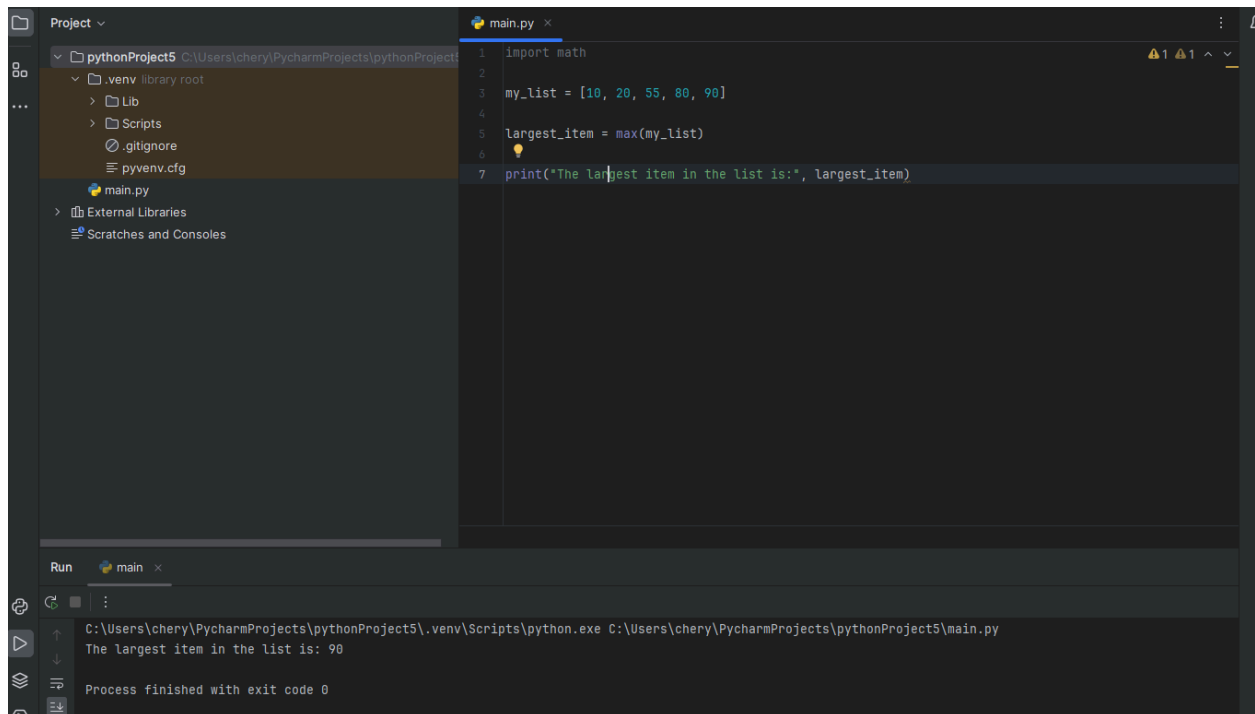
A module is a file that already has prewritten or saved code that can be imported into a IDE. This makes it easier to reuse code or import code into other projects. It also makes it easier to sort code.

import math
print("The value of pi is", math.pi)

Question (3) (Total: 15 points)
a. (5 points) Using/importing "math" library/module, use the built-in function (You need to explore the function online) to find the largest item from a given list. Please submit the screenshot for your code and its output.

b. (10 points) Write a function in python, that should do the following:
i) add(num1, num2): Returns the sum of two numbers num1 and num2.
ii) subtract(num1, num2): Returns the result of subtracting num2 from num1.
iii) multiply(num1, num2): Returns the product of two numbers num1 and num2.
Please submit the screenshot for your code and its output.

Project ∨   🐍 main.py ×

```
v □ pythonProject5 C:\Users\chery\PycharmProjects\pythonProject5
    v □ .venv library root                        3    num1 = 12
        > □ Lib                                    4    num2 = 6
          □ Scripts                                5
          ⊘ .gitignore                                  1 usage
          ≡ pyvenv.cfg                             6    def add(num1, num2):
      🐍 main.py                                   7        return num1 + num2
    > 🏛 External Libraries                         8
      ≡ Scratches and Consoles                          1 usage
                                                   9    def subtract(num1, num2):
                                                   10       return num1 - num2
                                                   11
                                                        1 usage
                                                   12   def multiply(num1, num2):
                                                   13       return num1 * num2
                                                   14
                                                   15   print("sum:", add(num1, num2))
                                                   16   print("Difference:", subtract(num1, num2))
                                                   17   print("Product:", multiply(num1, num2))
```

Run   🐍 main ×

```
C:\Users\chery\PycharmProjects\pythonProject5\.venv\Scripts\python.exe C:\Users\chery\PycharmProjects\pythonProject5\main.py
sum: 18
Difference: 6
Product: 72
```