

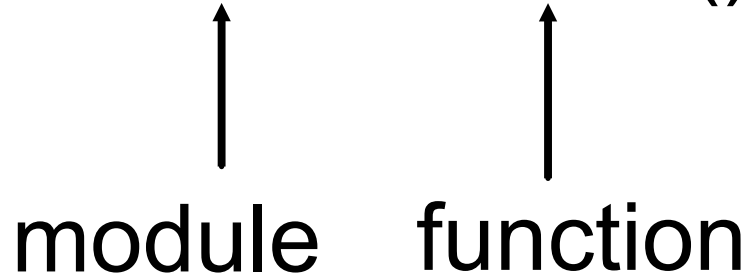
PyCharm

Random Numbers

`import random`

- always needed at the top of your program

`random.random()` - generates a random between 0.0 (inclusive) and 1.0 (exclusive)



module function

`random.randint(start,end)`

- generates a number between start and end (inclusive)

`random.randrange(start, end, step)`

- generates a number between start and end (exclusive) using step value

Debugger

- a program that is used to load other running programs in order to evaluate the status of the loaded program while it is running
- this includes viewing variables and their values, "stepping" through code while it is running, "breakpoints" allowing the program to run until a certain point is hit

Functions

- allows a block of code to be executed separately from the program flow
- can be executed any number of times
- can be executed from anywhere in your program

```
def func_name():
```

```
    # code to be executed goes here
```

```
func_name() # function is executed here
```

Local vs Global Variables

- a local variable is only inside a function, inside a loop or inside an if statement and is not referenced outside that area
- a global variable is declared at the "highest" point of a program and can be accessed inside/outside of a function, inside/outside of a loop, or anywhere in your program

Function Parameters

```
def func_name(a, b, c):
```

```
    # the body of the function
```

- variables "a", "b", and "c" are local variables that are only accessible in the function

```
func_name(1, 2, 3)
```

- passes the values (1, 2, 3) into the local variable (a, b, c)

Global Constants

MAX_COUNT = 10

- located at the top of the program
- aren't actually constants, just by convention
- usage makes the program easier to maintain
- removes "magic" numbers located throughout a program