Activity 1:

cd directory\path\where\program\is\stored

python file.py

Activity 2:

Python is an interpreted language and its byte code is implicit and happens at runtime. While C# is compiled language and its byte code is explicit and is done before execution

Activity 3:

Python is a dynamically typed language the datatype is assigned at the runtime by the type of value. It also performs type checking at runtime

Activity 4:

Mutable datatypes are the ones which value can be changed and modified **examples**: list, dictionary, sets. Immutable datatypes are those which value can't be changed once created **examples**: tuples, string, int

Activity 5:

When a function calls itself, it's called recursion.

- Pros:

- Recursion can simply the code make it more readable for problems that have natural hierarchy such as divide and conqueror

- Reduction of code size

- Cons:

- Risk of stack overflow error if the recursion depth is too high
- Difficulty in debugging as it can be challenging to trace the function calls

Activity 6:

It uses a call stack where each call adds a new frame with its own set of data. The stack gets bigger with each new call and gets smaller as each call returns. This process repeats until the function hits its base case then it starts to return removing the frames one by one.