An Engineer's Beginners Guide To Python (from a students perspective)

Muhie Al Haimus

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1   Introduction

This document could be thought as the one stop shop to succeed in EMS412U python side of the module.

2   Week 0: The laying the foundation

Let's start with the most basic python program and explain some key concepts. Below is a "code block", this contains the actual raw python code.

```python
# Author: Muhie
# Date: 21/05/24
# Explaination of the program: Outputs a Hello World! to the screen
"""I can
write a comment
on multiple lines"""
print("Hello World!")

```

Lines 1-3: In every program you write you MUST always start with:

- Your name

- Today's date

- A brief explanation of the program

As you can see in the example above before writing my name, date and explanation I use a hashtag (#) symbol, this denotes a comment. A comment is completely separate to the main program, comments do not effect the functionality of the program. One more thing to note is that if you need a comment over multiple lines you can use three quotation marks: three before the start of the comment and then three after the comment, as seen above with *lines 4-6. Line 7*: This is where the actual python code

starts the keyword
Syntax - these are mainly keywords (and symbols like a hashtag #).

3 KEY CONCEPTS YOU'LL NEED FOR WEEKS 1-12

3.1 Week 1: Variables

A variable is simply a value that can change.

```python
# Author: Muhie
# Date: 22/05/24
"""Explaination of the program: A simple program showing how
 variables can be assigned in python"""

a = 5 # integer
b = "hello" # string
c = True # boolean
d = 3.14 # float
```

3.2 Week 2: Selection and Iteration

```python
# Author: Muhie
# Date: 22/05/24
"""Explaination of the program: A simple program showing what a for
 loop does and what an if statement is"""

a = 5
if a > 5:
  print("a is greater than 5!")
elif a == 5:
  print("a is equal to 5!")
else:
  print("a is not equal to 5 or greater than 5")


```

3.3 Week 3:

4 I NEED HELP WHAT DO I DO!

A good reference guide to python syntax and concepts