Hyperion Development

# Task: Booleans

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# Introduction

**Welcome to the Introduction To Python Task!**

Please feel free to visit www.hyperiondev.com and to view the tools and methods that will help you throughout the course,.

For any queries regarding the course, need help understanding the task or general comments, please contact us at help@hyperiondev.com.

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**What are Booleans**

A boolean data type can only be one of two values, namely TRUE or FALSE. One byte is reserved for the Boolean data type.


*Many people complain about South Africa being behind the times technologically. In many senses, this is an accurate description; our average internet speed is over seven times slower than the average speed of our UK counterparts. Adding insult to injury, our leading ISPs shout about 10Mbps ADSL as if it's actually faster than that carrier pigeon with an SD card strapped to its leg.*
*Despite this perceived 'barrier to innovate', South Africans have done exactly the opposite: they've pioneered world-changing technologies from the bottom of Africa - and this article is about one such man. He was influential in building the first company outside of the US to offer SSL signing, amongst other noteworthy achievements. What's more, the OS which I'm currently writing this piece on, has become the world's 3rd-most used desktop operating system, and was founded by this South African visionary. I'm speaking of course about Ubuntu Linux, and Mark Shuttleworth.*

- **The Hyperion Team**

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Booleans were developed by an English Mathematician and computer pioneer named, George Boole (1815-1864). They are more of a specialist variable. They only store one of two values. Either **TRUE** or **FALSE**.

You use this when checking if one of two outcomes are true. Is a student in a class Male or Female? Is the car insured? Is the Password correct? Is the person lying? Do you love me?

Once the information is stored in a variable it is easy to use loops and if statements to check an extensive sample of items and base your calculations on the result of a Boolean value.

Assigning a Boolean variable is very simple. You declare the variable name and then choose it's starting value. This value can then be changed as the program runs

- PassWord = False
- PassWord = True

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Now that you have learnt about control statements, we will be able to use Booleans to their full potential. As of now we only know how to declare a boolean variable as either true or false, but how would this benefit us? How would we use it?

This is where the if statement comes into play. Let's look at a simple decision we make in our everyday lives. When you are about to leave your house do you always take an umbrella? No, you would only take an umbrella when it is raining outside. This is a very rudimental example of decision making where there are only two outcome. We can apply these basic principles to create more complex programs.

```
Umbrella = " Leave me at home"
Rain = False

If Rain == True:
  Umbrella = "Bring Me With"
```

## A note from Masood...

*Sorry for the interruption, have you ever wondered where the name for the Python programming language comes from? The obvious choice would be to assume that it comes from the Python of the Alethinophidia family. But, that would be wrong, because at the time when Guido van Rossum began implementing the Python language, he was also reading the published scripts from "Monty Python's Flying Circus" (a BBC comedy series from the seventies). It occurred to him that he needed a name that was short, unique, and slightly mysterious, so he decided to call the language Python.*

**Guido van Rossum**

- **Masood Gool**, Online Trainer

# Instructions

Before you get started we strongly suggest you start using Notepad++ to open all text files (.txt) and python files (.py). Do not use the normal Windows notepad as it will be much harder to read. Simply right click a file -> Edit with Notepad++ to be able to read it. If you cannot see 'Edit with Notepad++' then you do not have it installed.

First read example.py, open it using Notepad++ (Right click the file and select 'Edit with Notepad++').

- example.py should help you understand some simple Python. Every task will have example code to help you get started. Make sure you read all of example.py and try your best to understand.
- You may run example.py to see the output. The instructions on how to do this are inside the file. Feel free to write and run your own example code before doing the Task to become more comfortable with Python.
- You are not required to read the entirety of Additional Reading.pdf, it is purely for extra reference.

# Compulsory Task

One of the most important patterns in computers and on the internet is your password. For a password to be classified as "Strong" the password needs to be structured in a certain way.

Password Strength is determined by:

  - The length of the password (at least 6 characters) (haveLength)
  - Needs to contain uppercase letters (upCase)
  - Needs to contain lowercase letters (lowCase)
  - Needs to contain numbers (haveNum)

- Declare boolean variables for each one of these characteristics.
- You will find the name of the variable next to the condition above, they must all be initialised as false.
- Then ask the user a series of yes or no questions for each variable, change the boolean variable to True based on their answer.
- Once 3 of the characteristics are met (3 of the variables == True) then display a message saying this is a suitable password.

**Things to look out for:**

1. Make sure that you have installed and setup all programs correctly. You have set up **Dropbox** correctly if you are reading this, but **Python or Notepad++** may not be installed correctly.
2. If you are not using Windows, please ask your mentor for alternative instructions.

**Still need help?**

There are different ways to get assistance from your mentor and the Hyperion Team

- Login at https://www.hyperiondev.com/support' to see all the ways you can get support - including chatting to your mentor.
- Write your queries in your comments.txt file and your mentor will respond
- Visit Hyperion Help for frequently asked questions
- Lastly you can email us on help@hyperiondev.com.

# Task Statistics

Last update to task: 29/09/2016
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