Task: Beginner Control Structures –
if Statements

Introduction

Welcome to The Beginner Control Structures - if Statement Task!

In this task you will learn about a program's flow control. A control structure is a block of code that analyses variables and chooses a direction in which to go based on given parameters. In essence, it is a decision-making process in computing that determines how a computer responds when given certain conditions and/or parameters.

Connect with your mentor

Remember that with our courses - you're not alone! You can contact your mentor to get support on any aspect of your course.

The best way to get help is to login to **www.hyperiondev.com/support** to start a chat with your mentor. You can also schedule a call or get support via email.

CONNECT

Your mentor is happy to offer you support that is tailored to your individual career or education needs. Do not hesitate to ask a question or for additional support!

Hyperion
Development

Let's consider how we make decisions in real life? First you are faced with a problem, then you have to see what the problem entails. Once you figure out the crux of the problem you then follow through with a way to solve this problem based on what you were presented with. Teaching a computer how to solve problems works in a similar way. We tell the computer to look out for a certain problem and tell it how to solve the problem when faced with it.

What is Computational Thinking?

Computational Thinking is the process of solving a problem using a certain manner of thinking. Computational Thinking is used in the development of computer applications but it can also be used to solve problems across a wide variety of categories, including maths, science, geography and art. After learning about computational thinking you will be able to apply this to your school work as well as real life problems outside of school.

Simple Daily Examples of Computational Thinking

- *Looking up a name in your contact list*
- *Standing in lines at the bank, mall or home affairs*
- *Packing your bag for school*
- *Cooking a gourmet meal*

-The Hyperion Team

If Statements:

We are now going to learn about a vital concept when it comes to programming. We will be teaching the computer how to make decisions for itself. This concept is called an **If Statement**. As the name suggests it is essentially a question. It is able to compare two or more variables or scenarios and perform a certain action based on the outcome of that comparison.

In Python an if statement looks like the following:

```python
num = 10

if (num < 12):
        print("the variable num is lower than 12")
```

This if statement checks if the variable number is less than 12. If it is, then it will print the sentence letting us know. If num was greater than 12 then it would not print out that sentence.
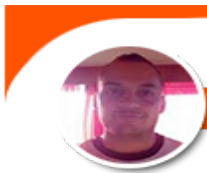
A note from Masood...

Sorry to interrupt but I found this fantastic blog written by MARC CHERNOFF that showed me 10 If Statements in "Real Life" that are worth learning. It just shows you how important making decisions are to our lives. It also shows you that if you don't follow the desired path based on your decision the outcome could be detrimental to you .

1. *If you don't understand the product or service, don't buy it until you do.*
2. *If you do not take ownership of your actions, your actions will eventually own you.*
3. *If you are not saving at least 10% of your salary, you are not saving enough.*
4. *If you talk too much, people will stop listening. If you don't talk enough, people will never hear your point of view.*
5. *If you are lazy, you will fail. Laziness will always overshadow your true potential.*
6. *If you hate your job, you also hate half of the time you spend on this planet.*
7. *If you are not investing (120 minus your age) percent of your savings in the stock market, you are giving up thousands of dollars over the course of your lifetime.*
8. *If you don't finish what you start, your success rate will always be zero.*
9. *If you don't consume enough liquids, you will never be healthy.*
10. *If your monthly debt payments exceed 40% of your total income, you will go broke if you don't fix your spending habits promptly.*

-   **Masood Gool**

As you can see the if statement is pretty limited as is. You can only really make decisions based if there are two outcomes. What happens if we have more options? What if one decision will have further ramifications and we will need to make more decisions to fully solve the problem at hand?

Control structures are not limited to If statements You will soon learn on how to expand on an if statement by adding an else statement or an elif statement (else if).

Instructions

Before you get started we strongly suggest you start using Notepad++ or IDLE 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.

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

- 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. 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

Follow these steps:

- Create a Python file called "baby.py" in this folder.
- This program will be used to test if the user is over 18 and allowed entry into a party.
- Ask the user to enter the year they were born and calculate if they are older than 18.
- If they are older then display a message saying "Congrats you are old enough"

Things to look out for:

1. Make sure that you have installed and setup all programs correctly. You have setup **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.

Give your thoughts..