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Your First Computer Programme and using Variables

SKILLS FOR LIFE

SKILLS BOOTCAMPS

Department for Education

Data Science Lecture Housekeeping

- The use of disrespectful language is prohibited in the questions, this is a supportive, learning environment for all - please engage accordingly. **(FBV: Mutual Respect.)**
- No question is daft or silly - **ask them!**
- There are **Q&A sessions** midway and at the end of the session, should you wish to ask any follow-up questions. Moderators are going to be answering questions as the session progresses as well.
- If you have any questions outside of this lecture, or that are not answered during this lecture, please do submit these for upcoming Open Classes. You can submit these questions here: **Open Class Questions**

Data Science Lecture Housekeeping cont.

- For all **non-academic questions**, please submit a query: **www.hyperiondev.com/support**
- Report a **safeguarding** incident: **www.hyperiondev.com/safeguardreporting**
- We would love your **feedback** on lectures: **Feedback on Lectures**

Lecture Objectives

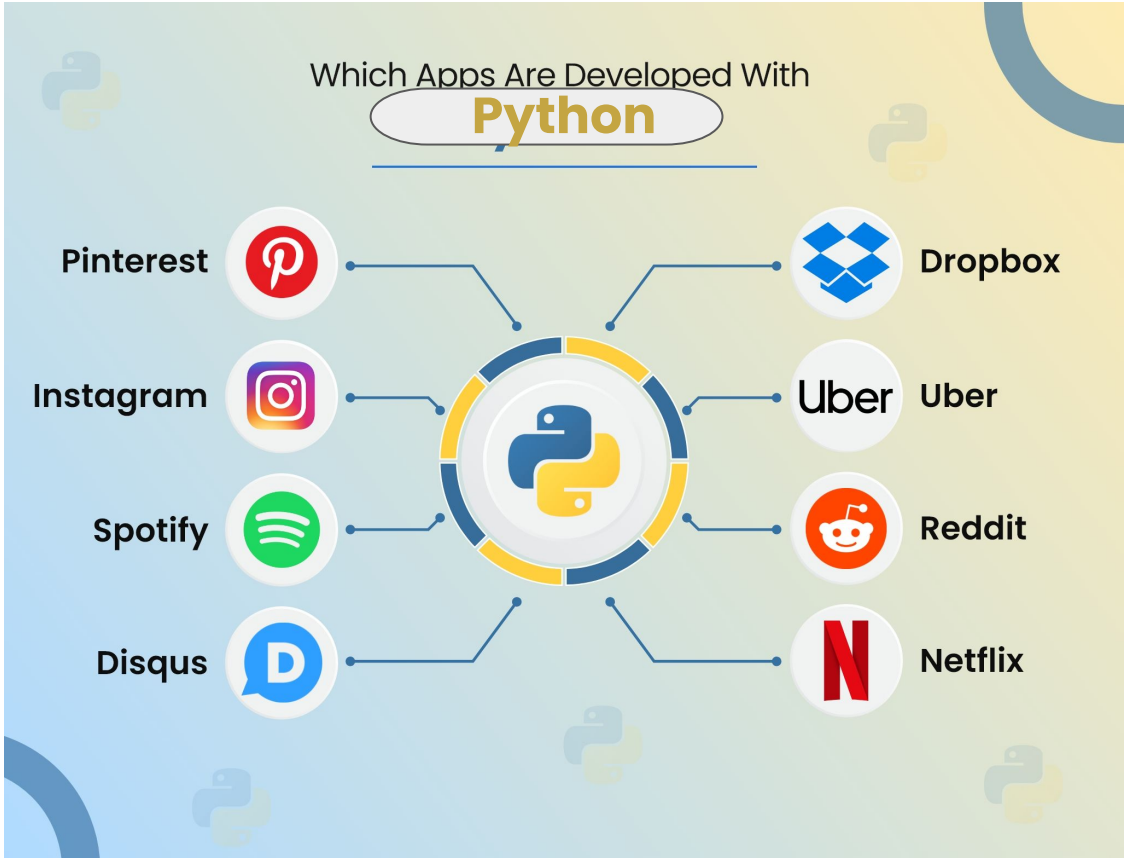
- **Getting acquainted with Python, the powerful, easy to learn and popular programming language.**
- **Understanding basic functions within Python.**

What is Python?

Python is a widely used, high level programming language, mainly utilised for general purpose programming.

Although Python is old (around 32 years old), it is still being improved on a regular basis. It is well embedded into the market, making it a good learning investment.

Python was originally created by Guido van Rossum and first released on the 20th of February 1991. These days, Python is maintained by the Python Software Foundation.


Which Apps Are Developed With
Python
Pinterest
Instagram
Spotify
Disqus
Dropbox
Uber
Uber
Reddit
Netflix

Python Basics

★ **We will be covering the following to become more familiar with the basics of Python :**

- **The print() function and the input() function.**
- **Creating variables and variable naming conventions.**

The Print Function

- ★ The print() function is used when the output of the program needs to be displayed.
- ★ This is achieved by entering the print command with an argument, which creates a statement
  - command + argument = statement
- ★ Example:

```
print("Hello World")
```

The Input Function

- ★ The input() function is a means to receive user input, should it be required.
- ★ To achieve this, we enter the input command along with the instructions for the user.
- ★ What happens then is that the program will be halted, until it receives input from the user.
- ★ Example :

```
name = input("Please enter your name : ")
```

Variables

- ★ Variables are a named storage location in memory for values to be stored, e.g. name = “Jimmy”.
- ★ All variables need a descriptive name.
- ★ The value is what the variable stores.
- ★ To create a variable, we first type the name, then an equals to sign (=), then the value. This is known as variable assignment.

More on Variables

- ★ **Variables can be assigned to other variables.**
- ★ **In Python, the variable's value can be updated as the program runs.**
- ★ **Several variables can be assigned at the same time in one line.**

More on Variables

★ **Example :**

```
python_is_cool = 100

another_variable = python_is_cool

python_is_cool = 1000

multiple, variables, assigned = 5, 10, 15
```

Variable Naming

- ★ **Selecting a good name for your variables is key to making your programmes easier to understand.**
- ★ **For example, a variable tracking a player's health points in a game could be effectively named health_points, instead of something ambiguous or difficult to understand such as hp or points.**

Variable Naming Rules

- ★ It is vital that variables are given descriptive names that reference the value stored.
- ★ Here are a few rules to follow when naming variables :
  - Variables must start with a letter or underscore.
  - The remainder of the name can consist of letters, numbers and underscores.
  - Variables are case sensitive, meaning that name and Name are treated as two different variables.

Variable Naming Rules

- ★ Keep in mind that Python keywords should not be used as a variable name.
- ★ Python keywords are reserved and has a fixed meaning which cannot be redefined by the programmer.
- ★ For instance, you should not name a variable print, since Python already recognises this as a keyword.

Variable Data Types

- **What is a Data Type :**
  - **It is the type of value within a variable**
- **Python has several data types, however we will look into the most common ones, which are:**
  - **Integers**
  - **Floats**
  - **Strings**
  - **Booleans**

Python Syntax Rules

- ★ All programming languages have syntax rules.
- ★ Syntax meaning the “spelling and grammar rules” of a programming language.
- ★ Common syntax errors consist of:
  - Not closing quotation marks (“”)
  - Not closing parenthesis
  - Case sensitivity : remember that Python will read print() and Print() differently.
- ★ Syntax errors will prevent your program from running and will also display an error.

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Q & A SECTION

Please use this time to ask any questions relating to the topic, should you have any.

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Thank you for joining!