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Introduction to python

Education and Training Solutions 2023

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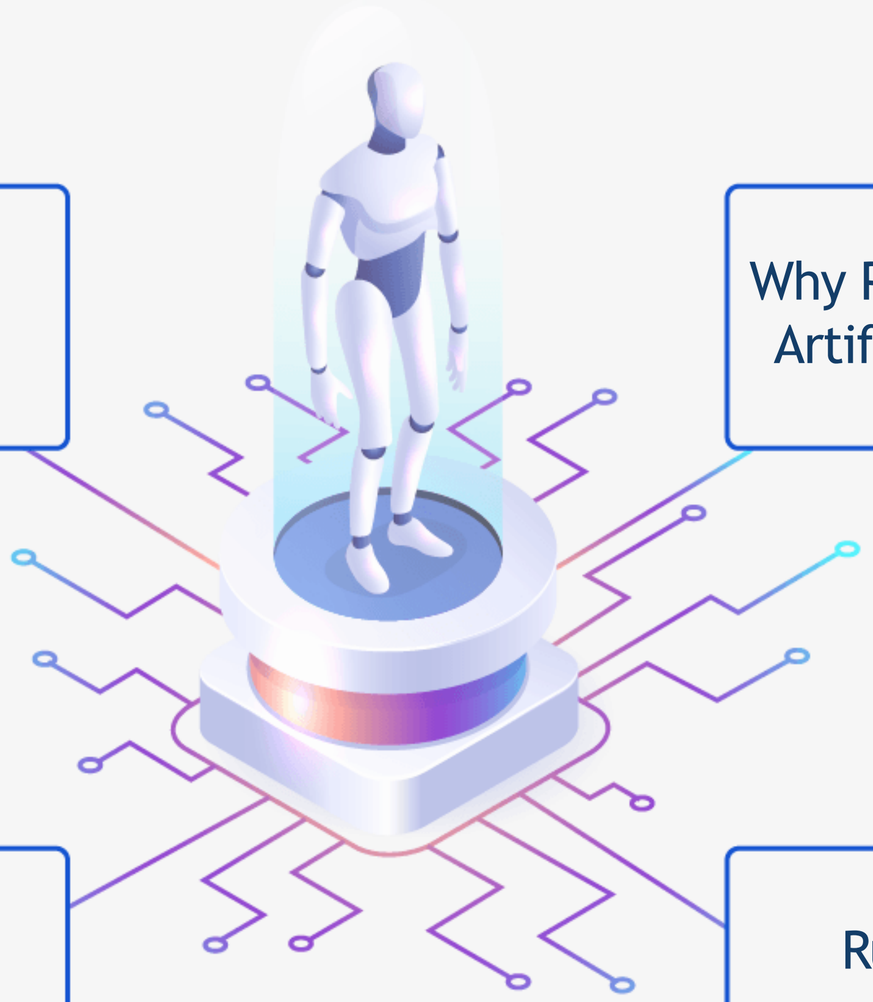
Introduction to python

Why Python language in Artificial Intelligence?



Installing Python

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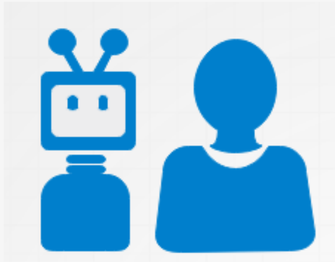
Introduction to python

Definition of Python

What is Python Programming Language?

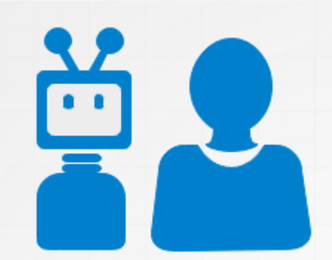
- Python is a High-Level object-oriented programming language created by Guido Rossum in 1989.
- It is a popular language among C++, Java, and General Objective which means Python is not specific to a particular area.
- Python can work with different operating systems like: Unix, Mac OS, Windows 10 and 11 where it has interfaces to multiple OS system calls and libraries.



Definition of Python

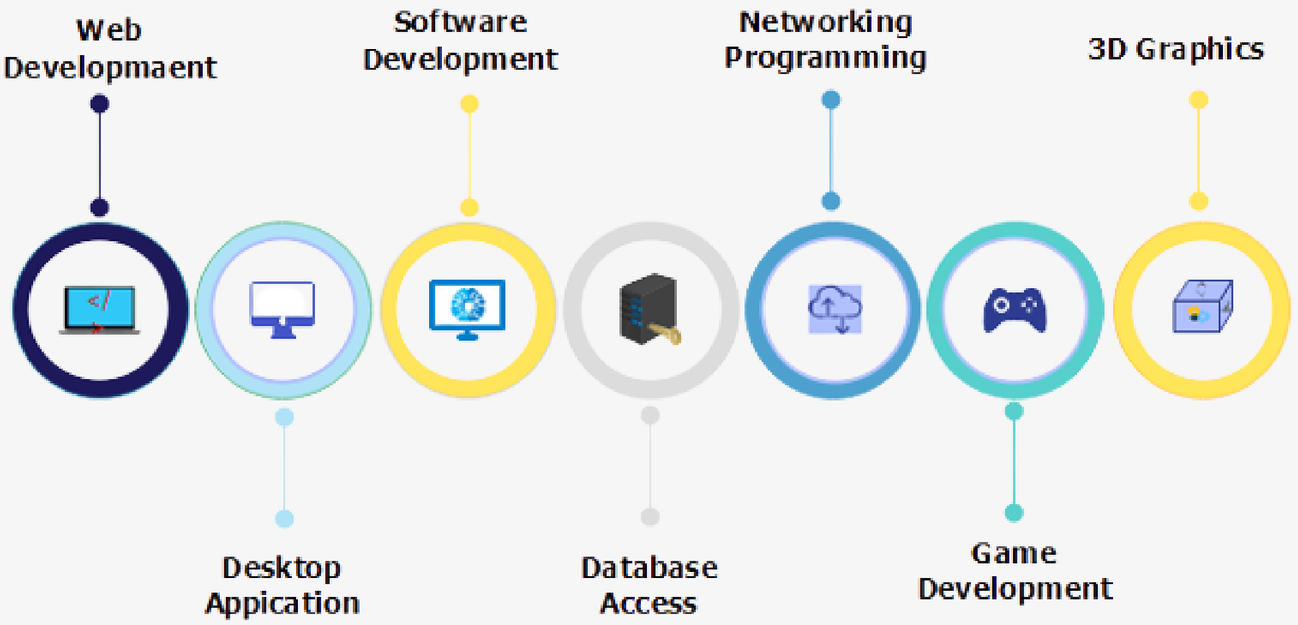
What is Python Programming Language?

- Many strong companies utilize the Python programming language, including NASA, YouTube, Google, etc.
- Python is a programming language that allows you to perform fast and integrate systems more efficiently.
- There are two primary Python versions which are Python 2.0 which was released with many new features and Python 3.0 was released with more testing and includes new features.



Python Applications

- We can use Python for any type of application area. For example, Desktop Applications, Web Applications, Data Science Applications, Machine learning applications, and so on.



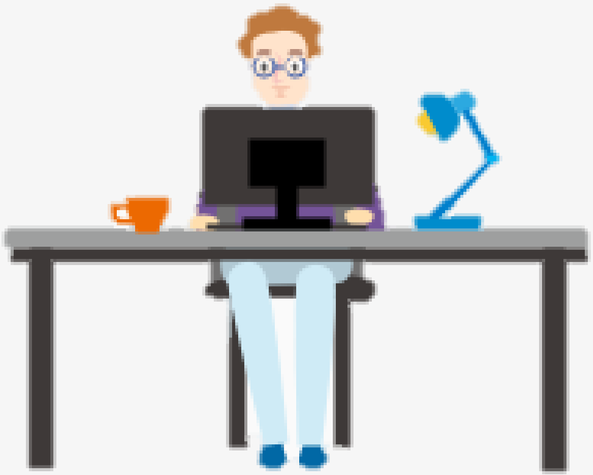
Features of Python

Python has a big list of powerful features. A few are listed below:

- Simple and easy to learn: Python has few keywords, a simple structure, and a clearly defined syntax.
- It's free (open source)
- It's Powerful has Dynamic typing

Features of Python

- Built-in types and tools
- Library utilities
- Third party utilities (e.g. Numeric, NumPy, SciPy)
- No intermediate compile
- Easy-to-maintain
- Interactive Language: which allows you interact with the interpreter directly to write your programs.



Features of Python

The Source code of Python is open to everyone so we can customize it based on our requirements, where there are multiple versions of python Eg:

1. Jython is a customized version of Python to work with Java Applications.
2. Iron Python is a customized version of Python to work with C## & .Net Applications.

Features of Python

3. Anaconda Python is customized version of Python to work with Bigdata Applications.

- One main advantage of Python is for every requirement specific version is available in the market.
- We can use our specific version of python and fulfill our requirement.

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Why Python language in Artificial Intelligence?

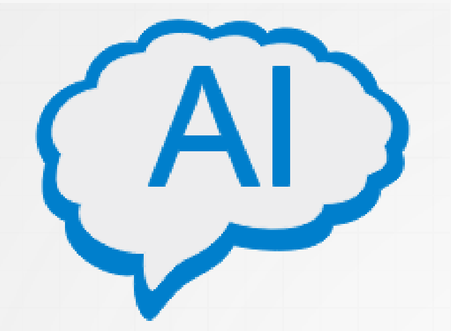
Why Python language in Artificial Intelligence?

Why Python??

- Python is one of the most straightforward languages to learn and use, while at the same time being very strong and used by many of the most very productive professional programmers.
- Also, Python is a freeware language! any person can use it freely, even for business sake also, where you can download it from the Internet on your own computer.

What is Artificial Intelligence?

- Artificial intelligence refers to the simulation of human intelligence processes by machines, especially computer systems to think like humans by learning from experience.
- So computers can be trained to perform specific tasks by processing big data and identifying patterns in the data.



Why Python language in Artificial Intelligence?

Why Python language in Artificial Intelligence?

- Beginner friendly
- Packages for AI
- Good visualization tools
- Community support (Stack overflow, GitHub)
- Growing popularity
- Lots of existing libraries and frameworks written in python allowing users to apply python to a wide verity of tasks

Why Python language in Artificial Intelligence?

Why did Python suddenly become Popular?

- Its Simple Language and Easy to understandable, I have to write very less (or) concise code to fulfill my requirement and is a great language for beginner-level programmers and supports the development of a wide range of applications.

Why Python language in Artificial Intelligence?

Why did Python suddenly become Popular?

- In these days, everyone talks about AI, Machine Learning, Deep Learning, Neural networks, Data Science, and IoT. For these trending requirements, the best suitable programming language is Python.

That's why these days, Python becomes a more popular programming language.

Why Python language in Artificial Intelligence?

Regards to the easiness of Python compared to other programming languages, Is python language required prerequisite knowledge to learn it?

There is no prerequisite for learning Python programming. If you are in a position to read English statements, that is enough to learn Python programming. So, Python is recommended as the first programming language for beginners.

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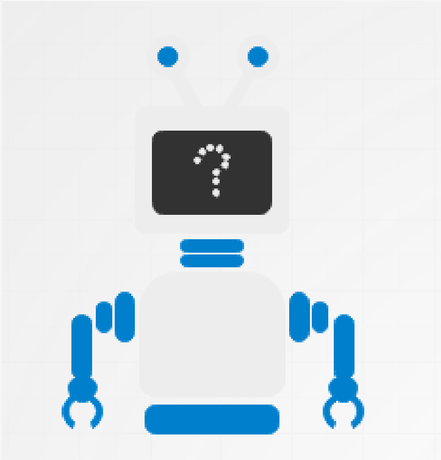
Installing Python

Installing Python

- To install python, we will use the free individual Anaconda distribution, which includes python with many useful libraries, In addition to the Jupyter Notebook environment.
- Anaconda can also easily be installed on any major OS, windows or Linux, or MacOS.



What is Anaconda?

Anaconda is an open-source Python data discovery and analytics platform, that has a collection of all the packages required to do the machine learning tasks with built-in great Python packages such as Pandas, NumPy, Matplotlib, Sklearn, and many more.

Why Anaconda?

❖**Why should you use Anaconda for your project?**

✓User-friendly-The user interface is simple, easy to use, and has all the tools required to write code.

✓ free and open-source.

✓Almost all required libraries are available in it and preinstall the most useful libraries and packages.

Why Anaconda?

❖**Why should you use Anaconda for your project?**

✓Easy and flexible to create a notebook for a data science project and work on multiple Python environments based on your requirements.

✓Making the Jupyter notebook is great because that is a very great tool to run python scripts line by line for learning purposes.

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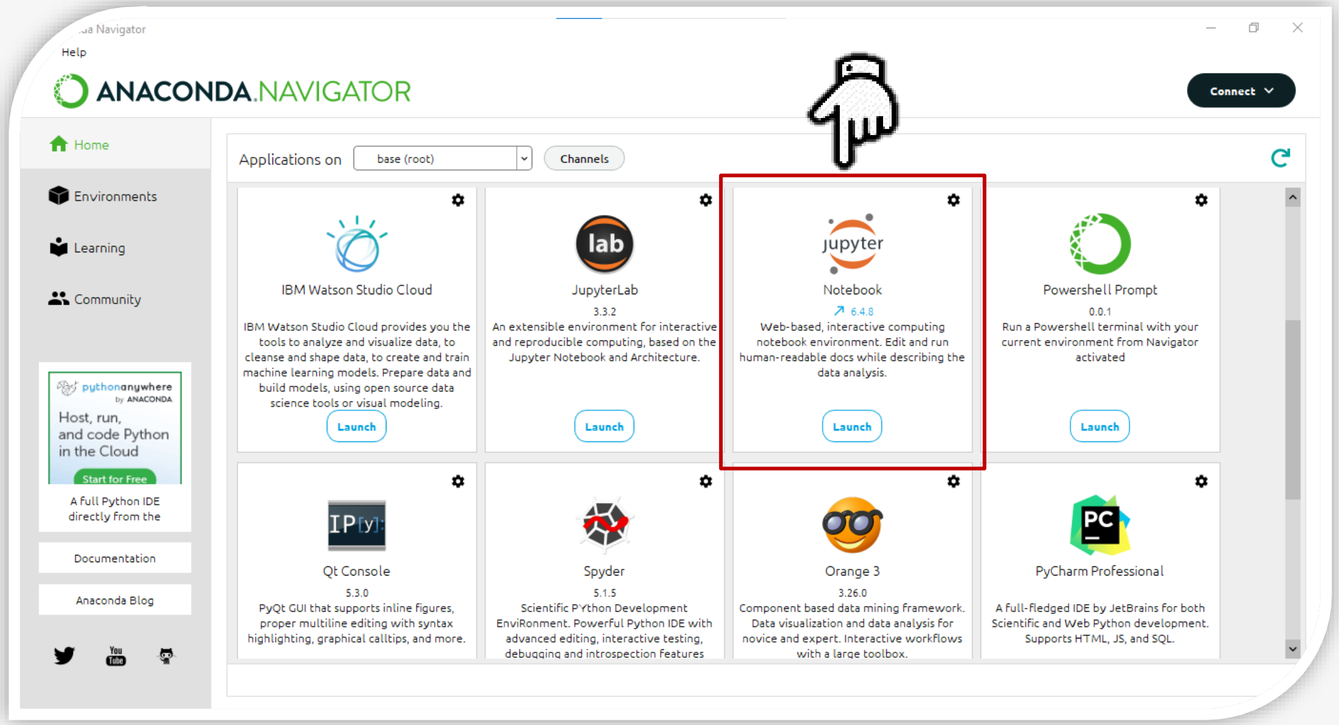
Running Python Code

Create your First Python Program

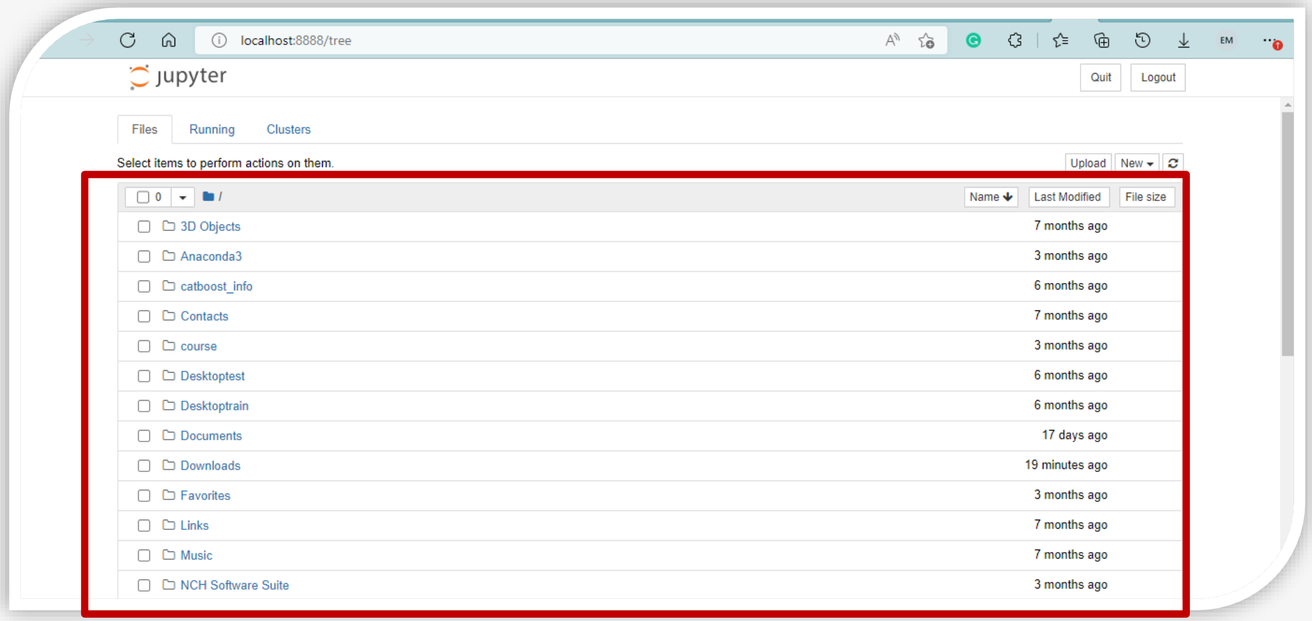
It's time to create your first program.

- Open the anaconda navigator and Lunch Jupyter Notebook Editor and the system will automatically open the web page of Jupyter Notebook



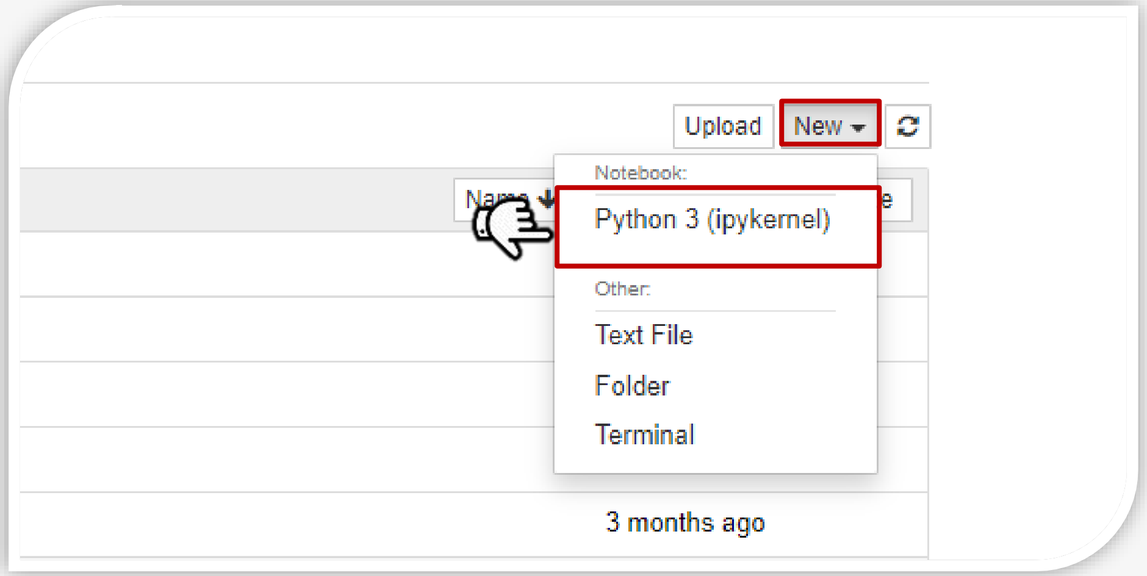
Create your First Python Program

- Once lunched it, you can view all the files in your computer.



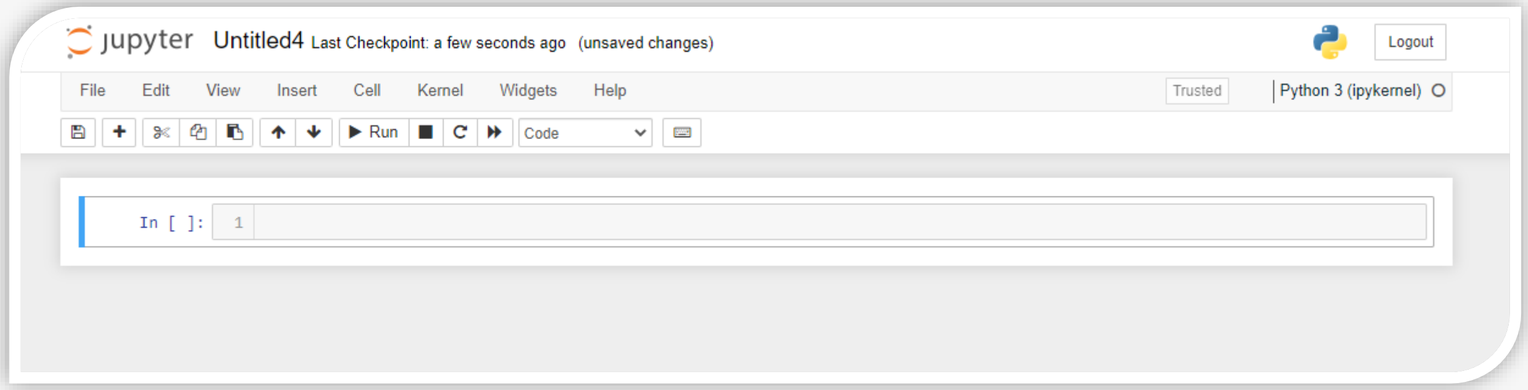
Create your First Python Program

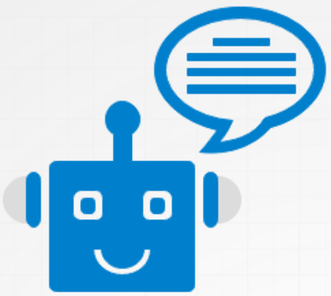
- To create new notebook, select the destination location then click on “New” button then click on “Python 3 ”.



Create your First Python Program

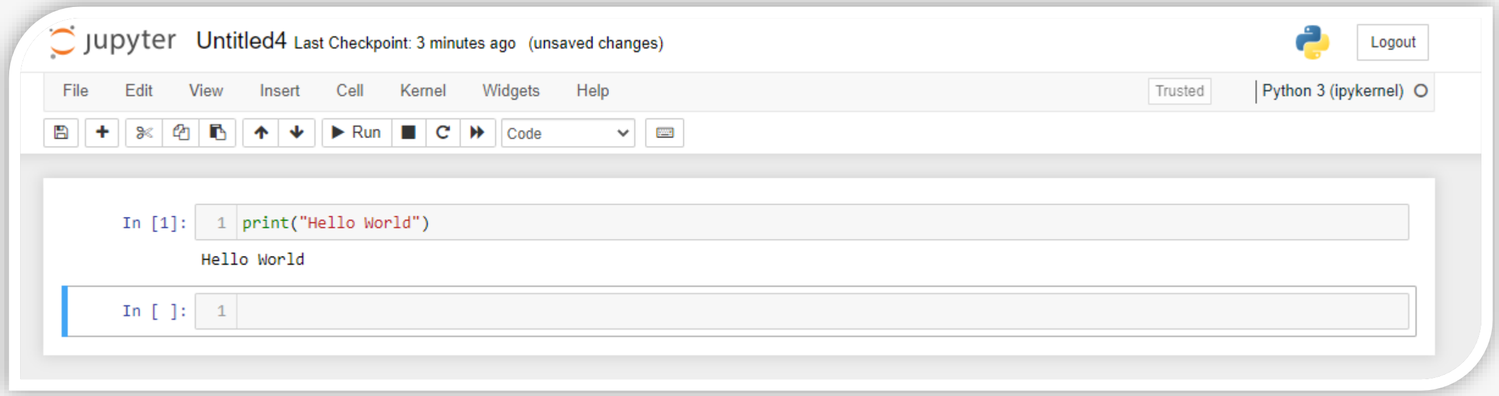
- Now start new notebook, change the name and start write your code in the cell.
- Write a statement then run a cell by enter “Enter +shift” on keyboard.

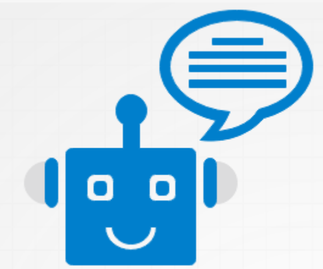




Create your First Python Program

- The print() function in Python is used to print a certain message on the screen.
- To print the "Hello World " statement , use the Python print statement as follows:





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THANK YOU