

Installing Python

<https://www.python.org/downloads/>



The screenshot shows the Python.org website with a dark blue header. The top navigation bar includes links for Python, PSF, Docs, PyPI, Jobs, and Community. Below this is the Python logo, a yellow 'Donate' button, a search bar with a 'GO' button, and a 'Socialize' button. A secondary navigation bar contains links for About, Downloads, Documentation, Community, Success Stories, News, and Events. The main content area features a large yellow button labeled 'Download Python 3.11.4' under the heading 'Download the latest version for Windows'. Below the button, there are links for other operating systems: 'Looking for Python with a different OS? Python for [Windows](#), [Linux/UNIX](#), [macOS](#), [Other](#)'. Further down, there are links for development versions: 'Want to help test development versions of Python 3.12? [Prereleases](#), [Docker images](#)'. The background of the main content area features an illustration of two parachutes carrying boxes.

Python

PSF

Docs

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Installing Python

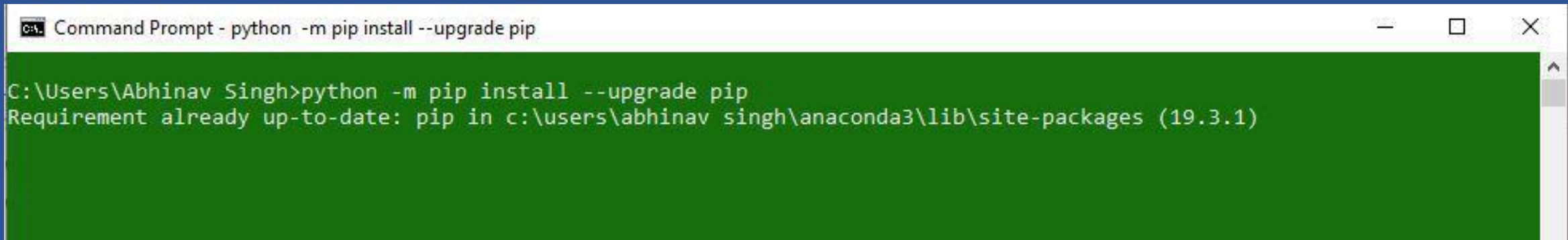
<https://www.python.org/downloads/>



Installing PIP

PIP(Preferred Installer Program) is a package management system used to install and manage software packages/libraries written in Python

```
python -m pip install --upgrade pip
```



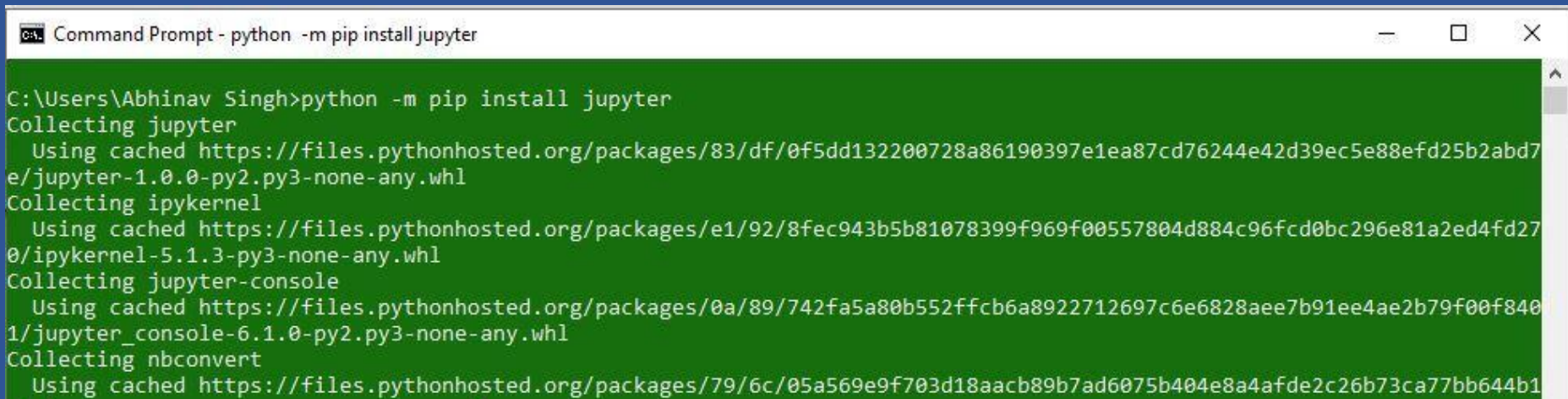
```
Command Prompt - python -m pip install --upgrade pip

C:\Users\Abhinav Singh>python -m pip install --upgrade pip
Requirement already up-to-date: pip in c:\users\abhinav singh\anaconda3\lib\site-packages (19.3.1)
```

Installing Jupyter

Jupyter Notebook is an open-source web application that allows you to create & share documents that contain live code, equations, visualizations, and narrative text

```
python -m pip install jupyter
```



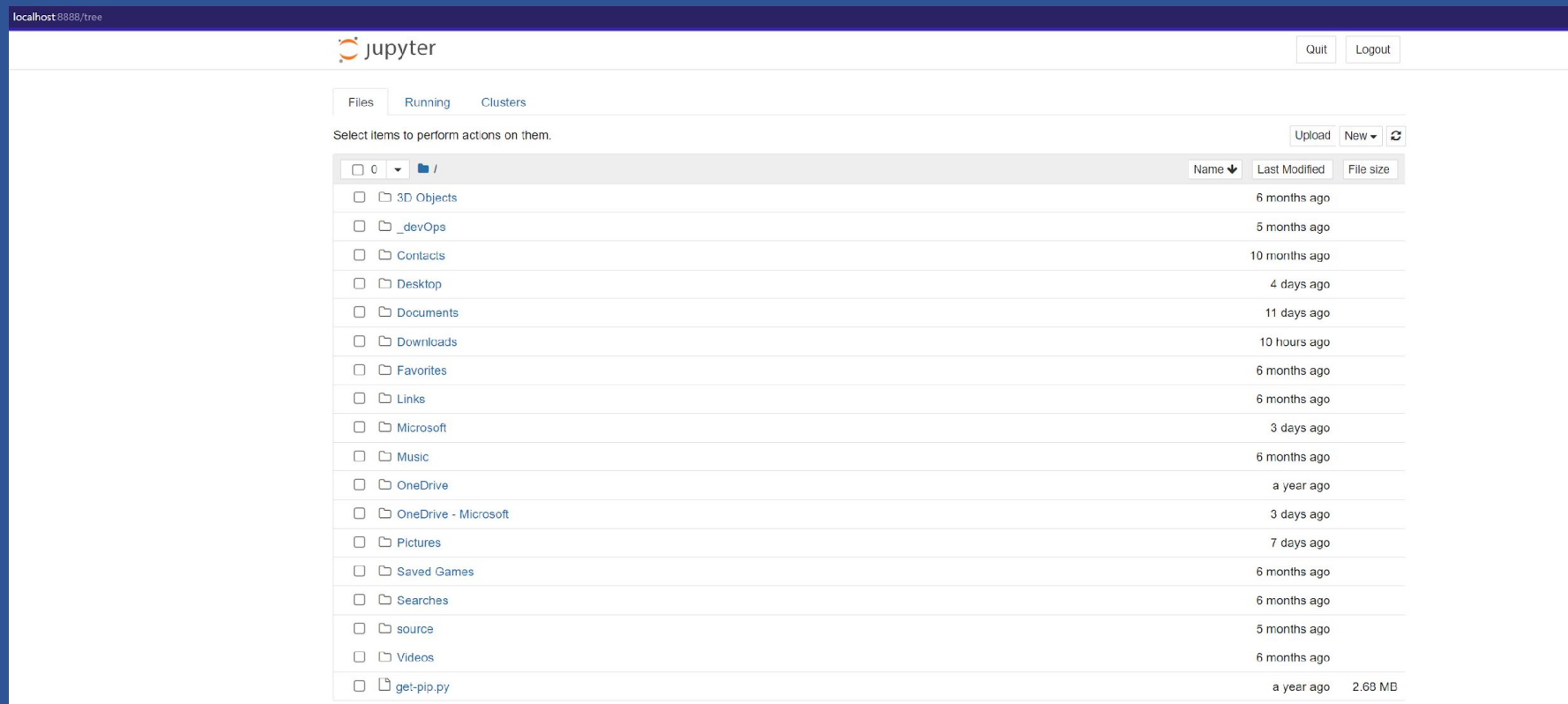
```

C:\Users\Abhinav Singh>python -m pip install jupyter
Collecting jupyter
  Using cached https://files.pythonhosted.org/packages/83/df/0f5dd132200728a86190397e1ea87cd76244e42d39ec5e88efd25b2abd7e/jupyter-1.0.0-py2.py3-none-any.whl
Collecting ipykernel
  Using cached https://files.pythonhosted.org/packages/e1/92/8fec943b5b81078399f969f00557804d884c96fcd0bc296e81a2ed4fd270/ipykernel-5.1.3-py3-none-any.whl
Collecting jupyter-console
  Using cached https://files.pythonhosted.org/packages/0a/89/742fa5a80b552ffcb6a8922712697c6e6828aee7b91ee4ae2b79f00f8401/jupyter_console-6.1.0-py2.py3-none-any.whl
Collecting nbconvert
  Using cached https://files.pythonhosted.org/packages/79/6c/05a569e9f703d18aacb89b7ad6075b404e8a4afde2c26b73ca77bb644b1

```

Intro to Jupyter Notebook

Jupyter notebook is a browser-based interpreter that allows us to interactively work with Python



The screenshot shows the Jupyter Notebook interface at localhost:8888/tree. The top bar includes the Jupyter logo and 'Quit' and 'Logout' buttons. Below the top bar are tabs for 'Files', 'Running', and 'Clusters'. A message says 'Select items to perform actions on them.' with 'Upload', 'New', and a refresh icon. The main area displays a file tree with columns for 'Name', 'Last Modified', and 'File size'.

Name	Last Modified	File size
0		
/		
3D Objects	6 months ago	
_devOps	5 months ago	
Contacts	10 months ago	
Desktop	4 days ago	
Documents	11 days ago	
Downloads	10 hours ago	
Favorites	6 months ago	
Links	6 months ago	
Microsoft	3 days ago	
Music	6 months ago	
OneDrive	a year ago	
OneDrive - Microsoft	3 days ago	
Pictures	7 days ago	
Saved Games	6 months ago	
Searches	6 months ago	
source	5 months ago	
Videos	6 months ago	
get-pip.py	a year ago	2.68 MB

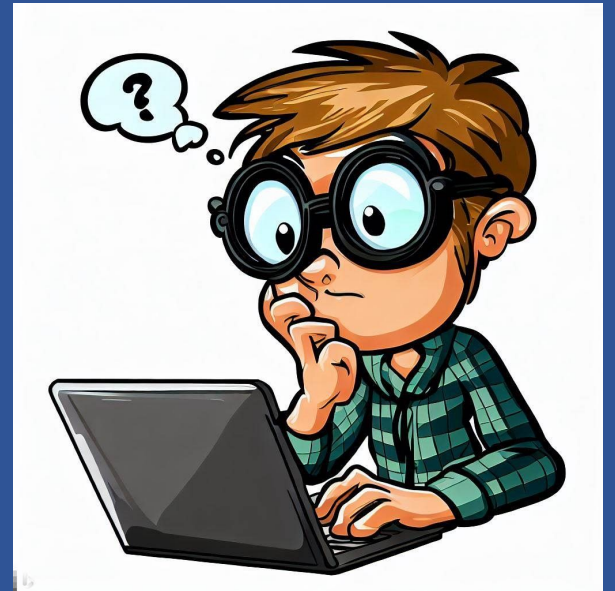
Variables in Python

Blue

Green

Yellow

Where to store data?



Variables in Python

Data/Value can be stored in temporary storage spaces called Variables

Color



0x1289ab

Blue

Data Types in Python

Each variable is associated with a data type

5,300

Int

3.14, 6.92

Float

TRUE,FALSE

Boolean

"Blue","Green"

String

3+4i

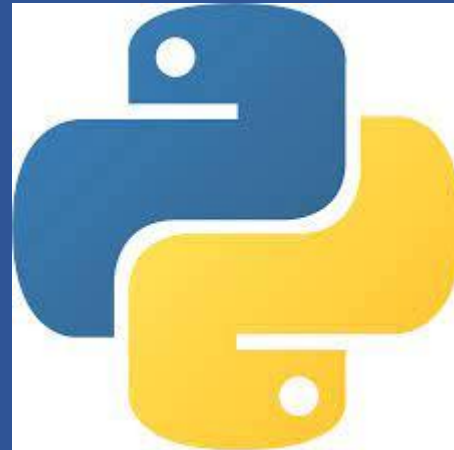
Complex

Operators in Python

Python operators are special symbols or keywords that allow us to perform different operations on variables or values

Arithmetic Operators

Relational Operators

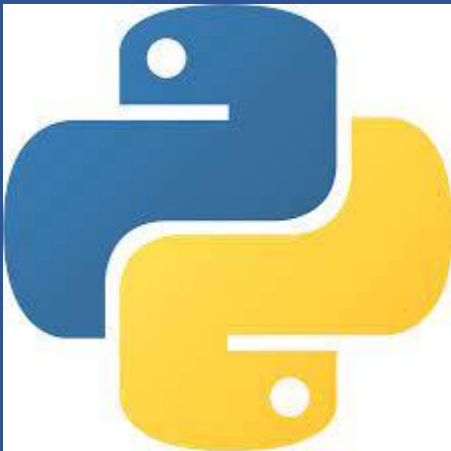


Logical Operators

Assignment Operators

Python Tokens

Tokens are the smallest meaningful component in a Program



Keywords

Identifiers

Literals

Operators

Python Keywords

Keywords are reserved words in Python, having a specific meaning in the language.

False	class	Finally	Is	Return
None	continue	For	Lambda	Try
True	def	From	Nonlocal	While
and	del	Global	Not	With
as	elif	If	Or	Yield

Python Identifiers

Identifiers are names used for variables, functions or objects.

No special character except _(underscore)

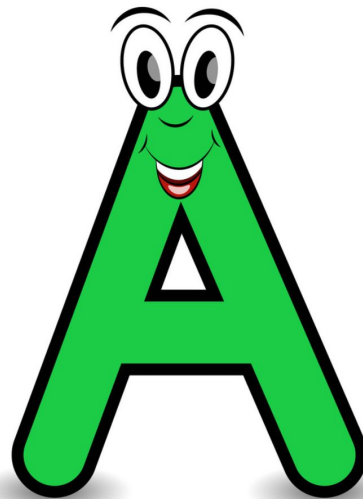
Identifiers are case sensitive

First letter cannot be a digit

Python Literals

Literals are constants in Python

I am constant
I don't change



Python String

String are sequence of characters, such as letters, numbers, or symbols, enclosed within single quotes (' '), double quotes (" "), or triple quotes ("'"'"' or '"'"').

'Hello World'

"Hello, how are
you?"

"""This is a multi-line
string in Python.
It can span across
multiple lines."""

Extracting Individual Characters

G	R	O	W	D	A	T	A	S	K	I	L	L	S
0	1	2	3	4	5	6	7	8	9	10	11	12	13
-14	-13	-12	-11	-10	-9	-8	-7	-6	-5	-4	-3	-2	-1

```
my_string="My name is Shailja"
```

```
my_string[0]
```

```
'M'
```

```
my_string="My name is Shailja"
```

```
my_string[-1]
```

```
'a'
```

String Functions

Finding length of a String

```
my_string="We are GrowDataSkills"
```

```
len(my_string)
```

```
21
```

Converting string to uppercase

```
my_string="We are GrowDataSkills"
```

```
my_string.upper()
```

```
'WE ARE GROWDATASKILLS'
```

Converting string to lowercase

```
my_string="We are GrowDataSkills"
```

```
my_string.lower()
```

```
'we are growdataskills'
```


String Functions

Replacing a substring

```
my_string="We are GrowDataSkills"
```

```
my_string.replace('D','z')
```

```
'We are GrowzataSkills'
```

Number of occurrences of substring

```
my_string="We are GrowDataSkills"
```

```
my_string.count("a")
```

```
3
```

Finding the index of substring

```
my_string="We are GrowDataSkills"
```

```
my_string.find("are")
```

```
3
```

Splitting a String

```
my_string="We are GrowDataSkills"
```

```
my_string.split(" ")
```

```
['We', 'are', 'GrowDataSkills']
```