



PYTHON!!

TOPIC

- ▶ **installation**
- ▶ **indentation**
- ▶ **Comments**
- ▶ **Variables**
- ▶ **Data types**
- ▶ **Quotes**
- ▶ **Case-sensitive**
- ▶ **Variable names**
- ▶ **Global variables**
- ▶ **Keyword**
- ▶ **Concatenate**
- ▶ **Built-in data types(numeric,random,string)**
- ▶ **Strings are array**

INDENTATION

- ▶ **Indentation refers to the spaces at the beginning of a code line .**
- ▶ **Where in other programming languages the indentation in code is for readability only, the indentation in Python is very important .**
- ▶ **Python uses indentation to indicate a block of code .**

#Comments

- ▶ **Python has commenting capability for the purpose of in-code documentation.**
- ▶ **Comments start with a #, and Python will render the rest of the line as a comment**
- ▶ **Comments can be used to explain Python code.**
- ▶ **Comments can be used to make the code more readable.**
- ▶ **Comments can be used to prevent execution when testing code.**

Variables

- ▶ **In Python, variables are created when you assign a value to it.**
- ▶ ****Python has no command for declaring a variable.**
- ▶ **A variable is created the moment you first assign a value to it .**
- ▶ **Variables do not need to be declared with any particular type, and can even change type after they have been set.**

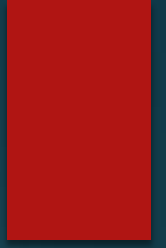
DATA TYPES

- ▶ **As example we are using mostly three types**
 - ▶ **INTEGER**
 - ▶ **FLOAT**
 - ▶ **STRING**

Single or Double Quotes?

- ▶ **String variables can be declared either by using single or double quotes .**

Case-Sensitive



Variable names

- ▶ **A variable can have a short name (like x and y) or a more descriptive name (age, carname, total_volume). Rules for Python variables:**
 - ▶ **A variable name must start with a letter or the underscore character**
 - ▶ **A variable name cannot start with a number**
 - ▶ **A variable name can only contain alpha-numeric characters and underscores (A-z, 0-9, and _)**
 - ▶ **Variable names are case-sensitive (age, Age and AGE are three different variables)**
- ▶ **Example**
 - ▶ **Legal variable names:**

```
myvar = "John"  
my_var = "John"  
_my_var = "John"  
myVar = "John"  
MYVAR = "John"  
myvar2 = "John"
```

► Example

Illegal variable names:

- `2myvar = "John"`
- `my-var = "John"`
- `my var = "John"`

Several Techniques:

- **Camel Case**

Each word, except the first, starts with a capital letter:

`myVariableName = "John"`

- **Pascal Case**

Each word starts with a capital letter:

`MyVariableName = "John"`

- **Snake Case**

Each word is separated by an underscore character:

`my_variable_name = "John"`

Many Values to Multiple Variables

- ▶ **Python allows you to assign values to multiple variables in one line**

Output Variables

- **The Python print statement is often used to output variables .**
- **To combine both text and a variable, Python uses the + character .**

Global Variables

- ▶ **Variables that are created outside of a function (as in all of the examples above) are known as global variables.**
- ▶ **Global variables can be used by everyone, both inside of functions and outside.**

Keyword

- ▶ **Keywords are the reserved words in Python. We cannot use a keyword as a variable name, function name or any other identifier .**

Concatenate

- ▶ **In formal language theory and computer programming, string concatenation is the operation of joining character strings end-to-end .**

Built-in Data Types

- ▶ **In programming, data type is an important concept.**
- ▶ **Variables can store data of different types, and different types can do different things.**
- ▶ **Python has the following data types built-in by default, in these categories .**

Text Type:	str
Numeric Types:	int, float, complex
Sequence Types:	list, tuple, range
Mapping Type:	dict
Set Types:	set, frozenset
Boolean Type:	bool
Binary Types:	bytes, bytearray, memoryview

Numbers

- ▶ **There are three numeric types in Python:**
 - ▶ **Int**
 - ▶ **Float**
 - ▶ **Complex**

Type Conversion

we can convert from one type to another with the `int()`, `float()`, and `complex()` methods .

Random

Python does not have a `random()` function to make a random number, but Python has a built-in module called `random` that can be used to make random numbers .

Strings

- ▶ **Strings in python are surrounded by either single quotation marks, or double quotation marks .**
- ▶ **Multiline Strings .**

Strings are Arrays

- ▶ **Like many other popular programming languages, strings in Python are arrays of bytes representing unicode characters.**
- ▶ **However, Python does not have a character data type, a single character is simply a string with a length of 1.**
- ▶ **Square brackets can be used to access elements of the string.**

Extraction:

- ▶ **Strings extraction .**