**MIDTERM SUBMISSION**

SOC:41

Facial recognition

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# **BASICS**

## **Input and Output**

Python[**input() function**](https://www.geeksforgeeks.org/python-3-input-function/) is used to take user input. By default, it returns the user input in form of a string

name = input("Enter your name: ")

or

name = input(‘Enter your name: ‘)

Python takes input **both in single and double quotes**

The output: print("Hello, World!")

## **Variables in Python**

variables are used to store data that can be referenced and manipulated during program execution. Python variables do not require explicit declaration of type. The type of the variable is inferred based on the value assigned.

# Variable 'x' stores the integer value 10  
x = 5  
# Variable 'name' stores the string "blah"  
name = "blah"

# Define variables with different data types  
n = 42 //int

f = 3.14 //float

s = "Hello, World!" //string

li = [1, 2, 3] //list

d = {'key': 'value'} //dict

bool = True //bool

## **Rules for Naming variables**

To use variables effectively, we must follow Python’s naming rules:

* Variable names can only contain letters, digits and underscores (\_).
* A variable name cannot start with a digit.
* Variable names are case-sensitive (myVar and myvar are different).
* Avoid using [Python keywords](https://www.geeksforgeeks.org/python-keywords/) (e.g., if, else, for) as variable names.

## **Type Casting a Variable**

**Basic Casting Functions**

* [**int()**](https://www.geeksforgeeks.org/python-int-function/)- Converts compatible values to an integer.
* [**float()**](https://www.geeksforgeeks.org/float-in-python/)- Transforms values into floating-point numbers.
* [**str()**](https://www.geeksforgeeks.org/python-str-function/)- Converts any data type into a string.

**Casting variables**

s = "10" # Initially a string  
n = int(s) # Cast string to integer  
cnt = 5  
f = float(cnt) # Cast integer to float  
age = 25  
s2 = str(age) # Cast integer to string

## **Scope of Variable**

There are two methods how we define scope of a variable in python which are [local and global](https://www.geeksforgeeks.org/global-local-variables-python/).

Local Variable: Variables defined inside a function are local to that function.

Global Variable: Variables defined outside any function are global and can be accessed inside functions using the [global keyword](https://www.geeksforgeeks.org/global-keyword-in-python/).

## **Operators**