

## Training Report Day-2

7 June 2024

### ❖ What is a Variable?

**VARIABLES are entities which help us store information and retrieve it later.**

- A variable with a fixed name can store information of nature like numeric, textual, boolean etc.
- A Python variable is a reserved memory location to store values. In other words, a variable in a python program gives data to the computer for processing.
- The type of data contained in a variable can be changed at user's will.

```
# You can store numbers in variables.  
# The standard rule is you write the variable name followed by = sign and the value it will  
take  
x=5  
# variable_name = 'Ashu'
```

### ➤ Example of Variable in Python-

An Example of a Variable in Python is a representational name that serves as a pointer to an object. Once an object is assigned to a variable, it can be referred to by that name. In layman's terms, we can say that Variable in Python is containers that store values.

### ➤ Rules for Python variables:-

- A Python variable name must start with a letter or the underscore character.
- A Python variable name cannot start with a number.
- A Python variable name can only contain alpha-numeric characters and underscores (A-z, 0-9, and \_).
- Variable in Python names are case-sensitive (name, Name, and NAME are three different variables).
- The reserved words(keywords) in Python cannot be used to name the variable in Python.

### ➤ Variables Assignment in Python:-

Here, we will define a variable in python. Here, clearly we have assigned a number, a floating point number, and a string to a variable such as age, salary, and name.

✓ **Example:-**

```
# An integer assignment
age = 45
# A floating point
salary = 1456.8
# A string
name = "John"
print(age)
print(salary)
print(name)
```

➤ **Declaration and Initialization of Variables:-**

Let's see how to declare a variable and how to define a variable and print the variable.

✓ **Example:-**

```
# declaring the var
Number = 100
# display
print( Number)
```

➤ **Global and Local Python Variables:-**

- **Local variables** in Python are the ones that are defined and declared inside a function. We cannot call this variable outside the function.

**Example:-**

```
# This function uses local variable s
def f():
    s = "Welcome geeks"
    print(s)
f()
```

- **Global variables** in Python are the ones that are defined and declared outside a function, and we need to use them inside a function.

**Example:-**

```
# This function has a variable with
# name same as s
def f():
    print(s)
# Global scope
s = "I love Geeksforgeeks"
f()
```

**❖ What Are Variables in Python?**

Variables in Python are used to store data values. They act as containers for storing data, which can be used and manipulated throughout a program. In Python, variables do not need explicit declaration to reserve memory space; the declaration happens automatically when you assign a value to a variable.

**❖ Introduction to Booleans:-**

Booleans, or true ☐ /false ☐ values, are an essential part of programming, and Python is no exception!

In real life, we often make decisions based on whether something is true or false. For example, if it's raining outside, we might decide to take an umbrella. In programming, we use Booleans to make decisions too! We can write code that checks if something is true or false and then does something based on the answer.

For instance, think about a login page on a website. When a user enters their username and password, the program needs to check whether the information is correct or not. If it's correct, the program will let the user log in, and if it's incorrect, the program will deny access. This is just one example of how Booleans are used in real-world applications.