

# Class 01 Assignment - February 2024

## ✓ Assignment: Python Data Types & Special Keywords

### ◆ Objective

Is assignment ka maqsad hai ke Python ke basic data types aur special (reserved) keywords ko samjha jaaye aur unka sahi use seekha jaaye.

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### 📖 Python Data Types Overview

Python mein har value ek specific type ka hota hai. Neeche kuch commonly used data types diye gaye hain:

Data Type	Description	Example
int	Integers (whole numbers)	<code>x = 10</code>
float	Decimal numbers	<code>pi = 3.14</code>
str	Strings (text)	<code>name = "Waqar"</code>
bool	Boolean values (True/False)	<code>is_student = True</code>
list	Ordered, mutable collection	<code>colors = ["red", "blue"]</code>
tuple	Ordered, immutable collection	<code>dimensions = (1920, 1080)</code>
dict	Key-value pairs	<code>person = {"name": "Waqar", "age": 22}</code>
set	Unordered, unique items	<code>unique_nums = {1, 2, 3}</code>

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## 📖 Python Special Keywords (Reserved Words)

Python ke kuch words already language ke liye reserved hote hain. Inhein variables ya function names ke liye use nahi kiya ja sakta.

### ✔ Commonly Used Keywords:

Keyword	Description
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if, else, elif	Conditions check karne ke liye
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for, while	Loops (repetition) ke liye
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def, return	Functions banane aur value return karne ke liye
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class	Class banane ke liye (OOP)
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import, from	External module import karne ke liye
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### ❏ Code Examples: Data Types + Keywords:

#### # Data Types

```
x = 25          # int
pi = 3.14       # float
name = "Waqar"  # str
is_cool = True  # bool
marks = [80, 90, 100] # list
person = {"name": "Waqar", "age": 22} # dict
```

#### # Using Keywords

```
if is_cool:
    print("Waqar is cool 😎")
else:
    print("Waqar needs a break!")
```

#### # Function Example

```
def greet(name):  
    return "Hello, " + name  
  
print(greet("Waqar"))
```

## ✓ Assignment: Exploring Google Colab

### ◆ Objective

Is task ka goal hai Google Colab ka use seekhna — jo ke ek powerful, free tool hai. Python development ke liye, especially for AI/ML and data science.

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### 📖 What is Google Colab?

**Google Colab (Colaboratory)** ek browser-based Python environment hai jo Google ki taraf se free mein diya jata hai. Iska interface Jupyter Notebook jaisa hota hai — lekin online!

### ✓ Key Features:

- No setup needed — run directly in browser
  - Free access to GPU & TPU
  - Real-time collaboration like Google Docs
  - Upload files from Google Drive
  - Great for Python, data science, AI/ML, etc.
  - **Google Colab** ne mujhe bina setup ke Python run karne ka tareeqa sikhaya.
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### □ Basic Steps to Use Colab

1. Visit: <https://colab.research.google.com>
2. Click on **New Notebook**
3. Type Python code in a cell
4. Press **Shift + Enter** to run
5. Save work in Google Drive

## Hands-on Python Practice in Colab

### # Print hello world

```
print("Hello from Google Colab!")
```

### # Working with types

```
a = 10
```

```
b = 3.5
```

```
c = "Waqar"
```

```
d = True
```

```
print(type(a), type(b), type(c), type(d))
```

### # Simple loop

```
for i in range(5):
```

```
    print("Value of i is:", i)
```

### # Function demo

```
def square(n):
```

```
    return n * n
```

```
print("Square of 5 is:", square(5))
```