

# Data Types:

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- **Data types** are used to *define the type of data* that a variable can hold.

## Categories of data types in python:

There are **six** data types in python:

1. integer
2. float
3. string
4. double
5. boolean
6. complex

## 1. int:

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- **int** stand for **integer**.
- A variable that contains **integer/whole** value (..., -3, -2, -1, 0, 1, 2, 3, ...).

```
int a = 10
```

## 2. float:

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- float means that **decimal value**.
- A variable that contains decimal value (..., -3.5, -2.5, -1.5, 0.5, 1.5, 2.5, 3.5, ...)

```
float b = 10.5
```

## 3. string:

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- **str** stand for **string**.
- A String variable that contains Alphabets/words value (..., "Noor", "Ali", "Ahmed", ...)

```
str c = "Noor"
```

```
# a variable that contains Alphabets/words value (..., "Noor", "Ali", "Ahmed", ...)
```

## 4. double:

- **double** means that **long decimal value**.
- A variable that contains *long decimal value* (..., -3.859646, -2.859646, -1.859646, 0.859646, 1.859646, 2.859646, 3.859646, ...)

```
double d = 10.5247
```

```
# a variable that contains long decimal value (2.859646, 54.21574, 7.69843, etc.)
```

## 5. boolean:

- **bool** stand for **boolean**.
- A variable that contains **logical value** (*True, False*).

```
bool e = True
```

```
# a variable that contains True or False value (True, False)
```

## 6. complex:

- **complex** stand for **complex number**.
- A **complex number** comprises **a real part and an imaginary part**, denoted as **a + bi**, where a is the real part, b is the imaginary part, and i is the imaginary unit.

```
complex f = 10+5j
```

```
# a variable that contains real part and imaginary part (10+5j, 10-5j, 5j, -5j, etc.)
```

## Did you Think?

### Question # 1:

**who to know the type/class of your data ?**

### Answer:

- By using "**type**" function
- "**Type**" word is used to show the type/class of data that stored in a variable.

```
print(type(x))  
  
# class 'int' means class of x value is integer.  
  
print(type(y))  
  
# class 'str' means class of y value is string.
```