Data Tyes

In [1]:
```
1 25
```

Out[1]: 25

In [2]:
```
1 print(25)
```

```
25
```

In [3]:
```
1 var = 5
```

In [4]:
```
1 var
```

Out[4]: 5

In [5]:
```
1 #Integer
2 # 25, 35, 45
```

In [7]:
```
1 #String
2 'Muneer Ahmed Quadri'
```

Out[7]: 'Muneer Ahmed Quadri'

In [8]:
```
1 "Data Science"
```

Out[8]: 'Data Science'

In [9]:
```
1 "Techma's Student"
```

Out[9]: "Techma's Student"

In [10]:
```
1 #Float
2 #20.5, 40.2, 60.8
```

In [12]:
```
1 #Boolean/Bool
2 #True/False
3 #Yes/No
```

Variable

In [13]:
```
1 #Container for storing data values.
```

Rules

- Variable should not start with a number or special character.
- Variable can be in caps or small letter.
- '_' can be used in a variable.
- You can have numbers in a variable but not in start.

Examples

- a
- a1
- student_name
- stu_name1

In [16]:
```
1 name = "Muneer Ahmed Quadri" #string
```

In [17]:
```
1 name
```

Out[17]:
```
'Muneer Ahmed Quadri'
```

In [19]:
```
1 telephone = 012345678
```

```
  File "C:\Users\dell\AppData\Local\Temp/ipykernel_17220/674662169.py", li
ne 1
    telephone = 012345678
                        ^
SyntaxError: leading zeros in decimal integer literals are not permitted;
use an 0o prefix for octal integers
```

In [22]:
```
1 telephone = '012345678'
```

In [21]:
```
1 telephone = 12345678
2 #Integers can not start with zero.
```

In [23]:
```
1 print(name)
```

```
Muneer Ahmed Quadri
```

type()

In [24]:
```
1 type(name)
```

Out[24]:
```
str
```

In [25]:
```
1 type(telephone)
```

Out[25]:
```
str
```

In [26]:
```
1 isMorning = False
```

In [27]:
```
1 type(isMorning)
```

Out[27]:
```
bool
```

In [28]:
```
1 type(1234)
```

Out[28]:
```
int
```

Type Casting

In [30]:
```
1 num = '1234'
```

In [31]:
```
1 type(num)
```

Out[31]:
```
str
```

In [32]:
```
1 int(num)
```

Out[32]:
```
1234
```

In [33]:
```
1 type(num)
```

Out[33]:
```
str
```

In [34]:
```
1 num = int(num)
```

In [35]:
```
1 type(num)
```

Out[35]:
```
int
```

In [36]:
```
1 #str()
2 #float()
```

Strings

In [37]:
```
1 name
```

Out[37]:
```
'Muneer Ahmed Quadri'
```

In [38]:
```
1 "My name is Muneer"
```

Out[38]:
```
'My name is Muneer'
```

In [40]:
```
1 name = input("Enter your name: ")
```

```
Enter your name: Muneer Ahmed Quadri
```

In [41]:
```
type(name)
```

Out[41]:
```
str
```

In [1]:
```
num  = int(input("Enter a number: "))
type(num)
```

```
Enter a number: 12345
```

Out[1]:
```
int
```

In [2]:
```
num  = int(input("Enter a number: "))
type(num)
```

```
Enter a number: Muneer

---------------------------------------------------------------------------
ValueError                                Traceback (most recent call last)
~\AppData\Local\Temp/ipykernel_10808/3478236258.py in <module>
----> 1 num  = int(input("Enter a number: "))
      2 type(num)

ValueError: invalid literal for int() with base 10: 'Muneer'
```

In [2]:
```
name = input("Enter your number: ")
print('Hello, Mr./Mrs. Ahmed')
```

```
Enter your number: Muneer
Hello, Mr./Mrs. Ahmed
```

In [3]:
```
name = input("Enter your number: ")
print('Hello, Mr./Mrs. '+ name) #Concatenation
```

```
Enter your number: Muneer
Hello, Mr./Mrs. Muneer
```

In [5]:
```
name = input("Enter your number: ")
print('Hello, Mr./Mrs.', name)
```

```
Enter your number: Muneer
Hello, Mr./Mrs. Muneer
```

In [6]:
```
name = input("Enter your number: ")
print(f'Hello, Mr./Mrs. {name}') #Formatting
```

```
Enter your number: Muneer
Hello, Mr./Mrs. Muneer
```

Length

In [9]:
```
#len()
print(name)
len(name)
```

```
Muneer
```

Out[9]: 6

Slicing

In [10]:
```
name = 'Techma Zone'
```

In [11]:
```
#T->0
#e->1
#c->2
```

In [12]:
```
len(name)
```

Out[12]: 11

In [13]:
```
name[2]
```

Out[13]: 'c'

In [14]:
```
name[3]
```

Out[14]: 'h'

In [15]:
```
#name[start:stop(n-1):number of steps]
name[0:6]
```

Out[15]: 'Techma'

In [16]:
```
print(name[:6])
print(name[7:])
```

```
Techma
Zone
```

In [17]:
```
name[-1]
```

Out[17]: 'e'

In [18]:
```
name[::-1]
```

Out[18]: 'enoZ amhceT'

In [19]:
```
name[::1]
```

Out[19]: 'Techma Zone'

In [20]:
```
name[::2]
```

Out[20]: 'Tcm oe'

Boolean and Operators

In [21]:
```
#bool()
bool('name')
```

Out[21]: True

In [22]:
```
#null values
bool(None)
```

Out[22]: False

In [24]:
```
#Airthmetic Operator
20 + 9
```

Out[24]: 29

In [26]:
```
age = 20+5
age
```

Out[26]: 25

In [28]:
```
100-50
```

Out[28]: 50

In [29]:
```
100*50
```

Out[29]: 5000

In [30]:
```
100/5
```

Out[30]: 20.0

In [31]:
```
100//5 #floor division
```

Out[31]: 20

In [33]:
```
10**5
```

Out[33]: 100000

In [2]:
```
100%40
```

Out[2]: 20

Comparision Operator

In [3]:
```
5 == 5
```

Out[3]: True

In [4]:
```
1 5 != 5
```

Out[4]: False

In [5]:
```
1 10 > 5
```

Out[5]: True

In [6]:
```
1 10 < 5
```

Out[6]: False

Program

In [7]:
```
1 age = int(input("Enter any number: "))
2 age >= 18
```

```
Enter any number: 12
```

Out[7]: False

In [8]:
```
1 age = int(input("Enter any number: "))
2 age >= 18
```

```
Enter any number: 18
```

Out[8]: True

In [ ]:
```
1
```