Learning Python with Ammar

Basic Python

01 - First Program

In [3]:
```
print("Hello World")
print("We are learning Python with Ammar")
```

```
Hello World
We are learning Python with Ammar
```

02 - Operators

In [5]:
```
print(2+3)
print(5-1)
print(6*2)
print(6/2)
print(13%3)
print(8//2)
print(2**3)
print(pow(3,2))
```

```
5
4
12
3.0
1
4
8
9
```

03 - Strings

In [7]:
```
print("Hello World")
print("We are learning Python with Ammar")
print('test for single quotes')
print("test for double quotes")
print('''test for triple quotes''')
```

```
Hello World
We are learning Python with Ammar
test for single quotes
test for double quotes
test for triple quotes
```

04 - Comments

Shortcut for placing comments is **Ctrl + /**

In [9]:
```
# print("we are learning python with ammar")
```

In [10]:
```
### **05 - Variables**
```

In [11]:
```
x = 3
print(x)
y = "We are learning Python with Ammar"
print(y)

x = x+10
print(x)

fruit_basket = "Mangoes"
fruit_basket = 10
print(fruit_basket)
print(type(fruit_basket))
```

```
3
We are learning Python with Ammar
13
10
<class 'int'>
```

- Rules to assign a veriable*
- 1. variable should contain letters, numbers or underscore*
- 2. Do not start with numbers*
- 3. spaces are not allowed*
- 4. Do not use keywords (break, set, media, test etc..)*
- 5. Short and descriptive*
- 6. Case sensitivity (always use lower case)*

06 - Input Variables

In [14]:
```
fruit_basket = "Mangoes"
print(fruit_basket)

# Using input function

fruit_basket = input("What is your favourite fruit? ")
print(fruit_basket)

# 2nd stage input function

name = input("What is your name? ")
greetings = "Hello!"
print(greetings, name)

# Another way of using stage 2 input function

name = input("What is your name? ")
```

```
print("Hello!", name)

# 3rd stage input function

name = input("What is your name? ")
age = input("How old are you? ")
print("Hello!", name, ", you are still young")
```

```
Mangoes
Kiwi
Hello! Amir
Hello! Amir
Hello! Amir , you are still young
```

07 - Conditional Logics

In [16]:
```
# ==, <, <=, >, >=, !=

print(4 == 4)
print(4 != 4)
print(5 < 4)
print(5 <= 6)
print(6 > 5)
print(6 >= 5)

# application of logical operators

rida_age = 11
age_req_for_school = 12
print(rida_age == age_req_for_school)

# input function with logical operator

age_at_school = 5
your_age = int(input("How old are you? "))
print(age_at_school == your_age)
```

```
True
False
False
True
True
True
False
False
```

08 - Type Conversion

In [20]:
```
x = 10
y = 2.5
z = "Hello"

print(type(x))

# implicit conversion
```

```
x = x*y
print(type(x))

# explicit conversion
age = input("Type your age? ")
print(age, type(int(age)))
```

```
<class 'int'>
<class 'float'>
45 <class 'int'>
```

09 - if else elif

In [22]:

```
req_age_at_school = 5
rida_age = 5

if rida_age == req_age_at_school:
    print("Rida can join the school")
elif 10 > rida_age > req_age_at_school:
    print("Rida can get admission in school")
elif rida_age >=10:
    print("Rida can join higher school")
else:
    print("Rida is too young to join the school")
```

```
Rida can join the school
```

10 - Functions

In [24]:

```
# 1
def print_name():
    print("Mumtaz Amir")
    print("Mumtaz Amir")
    print("Mumtaz Amir")

print_name()

# 2
def print_name():
   text = "Mumtaz Amir"
   print(text)
   print(text)
   print(text)

print_name()

# 3
def print_name(text):
   print(text)
   print(text)
   print(text)

print_name("Mumtaz Amir")

# Defining a function using if else statement
```

```
def school_calculator(age):
    if age == 5:
        print("Rida can join the school")
    elif 10 > age > 5:
        print("Rida can get admission in school")
    elif age >=10:
        print("Rida can join higher school")
    else:
        print("Rida is too young to join the school")

school_calculator(8)

# defining a function of future
def future_age(age):
    new_age = age + 20
    print("After 20 years, you will be of",new_age)

future_age(5)
```

```
Mumtaz Amir
Mumtaz Amir
Mumtaz Amir
Mumtaz Amir
Mumtaz Amir
Mumtaz Amir
Mumtaz Amir
Mumtaz Amir
Mumtaz Amir
Rida can get admission in school
After 20 years, you will be of 25
```

11 - Loops

In [26]:

```
# while and for loops
# while
x = 0
while (x<=5):
    print(x)
    x += 1

# for
for x in range(5,10):
    print(x)

# for loop in array break & continue
days = ["Mon", "Tue", "Wed", "Thu", "Fri", "Sat", "Sun"]
for x in days:
    # if x == "Fri":
    #     break
    if x == "Wed":
        continue
    print(x)
```

```
0
1
2
3
4
5
5
6
7
8
9
Mon
Tue
Thu
Fri
Sat
Sun
```

12 - Import Libraries

In [28]:
```python
# importing libraries numpy, pandas etc.
import math
print("The value of pi is", math.pi)

import statistics
x = [100, 150, 200, 250, 900, 350]
print(statistics.mean(x))
```

```
The value of pi is 3.141592653589793
325
```

13 - Troubleshooting

In [ ]:
```python
# Errors
# 1. SyntaxError--forgetting commas etc.
# print(This is a book)

# 2. RuntimeError--division by zero
# print 25/0

# 3. SemanticError--placing variable on wrong place
# name = "Mumtaz"
# print("My name is name")
```

In [ ]:
```python

```