

# Assignment\_03\_20101197\_Abir\_Ahammed\_Bhuiyan

October 3, 2022

```
[1]: #oop_1
class DataType:
    def __init__(self, name, value):
        self.name = name
        self.value = value

data_type1 = DataType('Integer', 1234)
print(data_type1.name)
print(data_type1.value)
print('=====')

data_type2 = DataType('String', 'Hello')
print(data_type2.name)
print(data_type2.value)
print('=====')

data_type3 = DataType('Float', 4.0)
print(data_type3.name)
print(data_type3.value)
```

```
Integer
1234
=====
String
Hello
=====
Float
4.0
```

```
[2]: #oop_2
class Flower:
    def __init__(self):
        self.name = None
        self.color = None
        self.num_of_petal = None

flower1 = Flower()
```

```

flower1.name="Rose"
flower1.color="Red"
flower1.num_of_petal=6
print("Name of this flower:", flower1.name)
print("Color of this flower:", flower1.color)
print("Number of petal:", flower1.num_of_petal)
print("=====")
flower2 = Flower()
flower2.name="Orchid"
flower2.color="Purple"
flower2.num_of_petal=4
print("Name of this flower:", flower2.name)
print("Color of this flower:", flower2.color)
print("Number of petal:", flower2.num_of_petal)

print("flower1 object's memory address:", hex(id(flower1)))
print("flower2 object's memory address:", hex(id(flower2)))

if(hex(id(flower1)) == hex(id(flower2))):
    print("they are same")
else:
    print("they are different")

```

```

Name of this flower: Rose
Color of this flower: Red
Number of petal: 6
=====
Name of this flower: Orchid
Color of this flower: Purple
Number of petal: 4
flower1 object's memory address: 0x7fb1396fae50
flower2 object's memory address: 0x7fb138e9b310
they are different

```

```

[3]: #oop_3
class Wadiya():
    def __init__(self):
        self.name = 'Aladeen'
        self.designation = 'President Prime Minister Admiral General'
        self.num_of_wife = 100
        self.dictator = True

wadiya = Wadiya()
print("Part 1:")

```

```

print("Name of President:", wadiya.name)
print("Designation:", wadiya.designation)
print("Number of wife:", wadiya.num_of_wife)
print("Is he/she a dictator:", wadiya.dictator)

print("Part 2:")
wadiya.name="Donald Trump"
wadiya.designation="President"
wadiya.num_of_wife=1
wadiya.dictator=False
print("Name of President:", wadiya.name)
print("Designation:", wadiya.designation)
print("Number of wife:", wadiya.num_of_wife)
print("Is he/she a dictator:", wadiya.dictator)

print("previous information lost")

```

Part 1:

Name of President: Aladeen

Designation: President Prime Minister Admiral General

Number of wife: 100

Is he/she a dictator: True

Part 2:

Name of President: Donald Trump

Designation: President

Number of wife: 1

Is he/she a dictator: False

previous information lost

```

[4]: #oop_4
class Joker:
    def __init__(self, name, power, is_he_psycho):
        self.name = name
        self.power = power
        self.is_he_psycho = is_he_psycho

j1 = Joker('Heath Ledger', 'Mind Game', False)
print(j1.name)
print(j1.power)
print(j1.is_he_psycho)
print("=====")

j2 = Joker('Joaquin Phoenix', 'Laughing out Loud', True)
print(j2.name)
print(j2.power)

```

```

print(j2.is_he_psycho)
print("=====")

if j1 == j2:
    print('same')
else:
    print('different')

j2.name = 'Heath Ledger'

if j1.name == j2.name:
    print('same')
else:
    print('different')

print("\n")
print("j1 object and j2 object referring to different memory addresses. That is,
↳ why first if/else block prints 'different'")
print("\n")
print("j2 object's instance variable 'name' has changed after running 'j2.name =
↳ 'Heath Ledger'". So, 'j1.name' and 'j2.name' became same that is why,
↳ second if/else block prints 'same'")

```

```

Heath Ledger
Mind Game
False
=====
Joaquin Phoenix
Laughing out Loud
True
=====
different
same

```

j1 object and j2 object referring to different memory addresses. That is why first if/else block prints 'different'

j2 object's instance variable 'name' has changed after running "j2.name = 'Heath Ledger'". So, 'j1.name' and 'j2.name' became same that is why second if/else block prints 'same'

```

[5]: #oop_5
class Pokemon:
    def __init__(self, pokemon1_name, pokemon2_name, pokemon1_power,
↳ pokemon2_power, damage_rate):

```

```

        self.pokemon1_name = pokemon1_name
        self.pokemon2_name = pokemon2_name
        self.pokemon1_power = pokemon1_power
        self.pokemon2_power = pokemon2_power
        self.damage_rate = damage_rate

team_pika = Pokemon('pikachu', 'charmander', 90, 60, 10)
print('====Team 1====')
print('Pokemon 1:', team_pika.pokemon1_name, team_pika.pokemon1_power)
print('Pokemon 2:', team_pika.pokemon2_name, team_pika.pokemon2_power)
pika_combined_power = (team_pika.pokemon1_power + team_pika.pokemon2_power) * \
    team_pika.damage_rate
print('Combined Power:', pika_combined_power)

team_bulb = Pokemon('bulbasaur', 'squirtle', 80, 70, 9)
print('====Team 2====')
print('Pokemon 1:', team_bulb.pokemon1_name, team_bulb.pokemon1_power)
print('Pokemon 2:', team_bulb.pokemon2_name, team_bulb.pokemon2_power)
bulba_combined_power = (team_bulb.pokemon1_power + team_bulb.pokemon2_power) * \
    team_bulb.damage_rate
print('Combined Power:', bulba_combined_power)

```

```

====Team 1====
Pokemon 1: pikachu 90
Pokemon 2: charmander 60
Combined Power: 1500
====Team 2====
Pokemon 1: bulbasaur 80
Pokemon 2: squirtle 70
Combined Power: 1350

```

```

[6]: #oop_6
class Player:
    def __init__(self):
        self.name = None
        self.jersey_number = None
        self.position = None

player1 = Player()
player1.name = "Ronaldo"
player1.jersey_number = 9
player1.position = "Striker"
print("Name of the Player:", player1.name)
print("Jersey Number of player:", player1.jersey_number)

```

```

print("Position of player:", player1.position)
print("=====")
player2 = Player()
player2.name = "Neuer"
player2.jersey_number = 1
player2.position = "Goal Keeper"
print("Name of the player:", player2.name)
print("Jersey Number of player:", player2.jersey_number)
print("Position of player:", player2.position)

```

Name of the Player: Ronaldo  
 Jersey Number of player: 9  
 Position of player: Striker  
 =====  
 Name of the player: Neuer  
 Jersey Number of player: 1  
 Position of player: Goal Keeper

```

[7]: #oop_7
class Country:
    def __init__(self, name="Bangladesh", continent="Asia", capital="Dhaka",
    ↪fifa_ranking=187):
        self.name = name
        self.continent = continent
        self.capital = capital
        self.fifa_ranking = fifa_ranking

country = Country()
print('Name:', country.name)
print('Continent:', country.continent)
print('Capital:', country.capital)
print('Fifa Ranking:', country.fifa_ranking)
print('=====')
country.name = "Belgium"
country.continent = "Europe"
country.capital = "Brussels"
country.fifa_ranking = 1
print('Name:', country.name)
print('Continent:', country.continent)
print('Capital:', country.capital)
print('Fifa Ranking:', country.fifa_ranking)

```

Name: Bangladesh  
 Continent: Asia  
 Capital: Dhaka

```

Fifa Ranking: 187
=====
Name: Belgium
Continent: Europe
Capital: Brussels
Fifa Ranking: 1

```

```

[8]: #oop_8
class DemonSlayer:
    def __init__(self, name, style, number_of_technique, kill):
        self.name = name
        self.style = style
        self.number_of_technique = number_of_technique
        self.kill = kill

tanjiro = DemonSlayer("Tanjiro", "Water Breathing", 10, 10)
print('Name:',tanjiro.name)
print('Fighting Style:',tanjiro.style)
print(f'Knows {tanjiro.number_of_technique} technique(s) and has killed_
↳{tanjiro.kill} demon(s)')
print('=====')
zenitsu = DemonSlayer("Zenitsu", "Thunder Breathing", 1, 4)
print('Name:',zenitsu.name)
print('Fighting Style:',zenitsu.style)
print(f'Knows {zenitsu.number_of_technique} technique(s) and has killed_
↳{zenitsu.kill} demon(s)')
print('=====')
inosuke = DemonSlayer("Inosuke", "Beast Breathing", 5, 7)
print('Name:',inosuke.name)
print('Fighting Style:',inosuke.style)
print(f'Knows {inosuke.number_of_technique} technique(s) and has killed_
↳{inosuke.kill} demon(s)')
print('=====')
print(f'{tanjiro.name}, {zenitsu.name}, {inosuke.name} knows total {tanjiro.
↳number_of_technique + zenitsu.number_of_technique + inosuke.
↳number_of_technique} techniques')
print(f'They have killed total {tanjiro.kill + zenitsu.kill + inosuke.kill}_
↳demons')

```

```

Name: Tanjiro
Fighting Style: Water Breathing
Knows 10 technique(s) and has killed 10 demon(s)
=====
Name: Zenitsu
Fighting Style: Thunder Breathing
Knows 1 technique(s) and has killed 4 demon(s)
=====

```

Name: Inosuke

Fighting Style: Beast Breathing

Knows 5 technique(s) and has killed 7 demon(s)

=====

Tanjiro, Zenitsu, Inosuke knows total 16 techniques

They have killed total 21 demons

[ ]: