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Practical No: 6

**1) Write a python program to create a tuple having numbers till 20. Print half of its values in 1 line and another half in the next line.**

CODE:

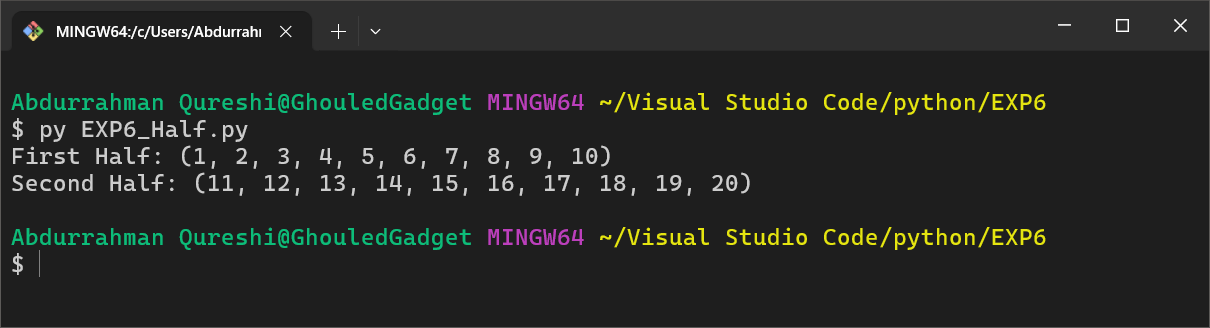
numbers = tuple(range(1, 21))

half = len(numbers) // 2

print("First Half:", numbers[:half])

print("Second Half:", numbers[half:])

OUTPUT:



**2) Write a python program to create a tuple having all numbers from 1 to 100. Now create another tuple whose values are even numbers in the first tuple.**

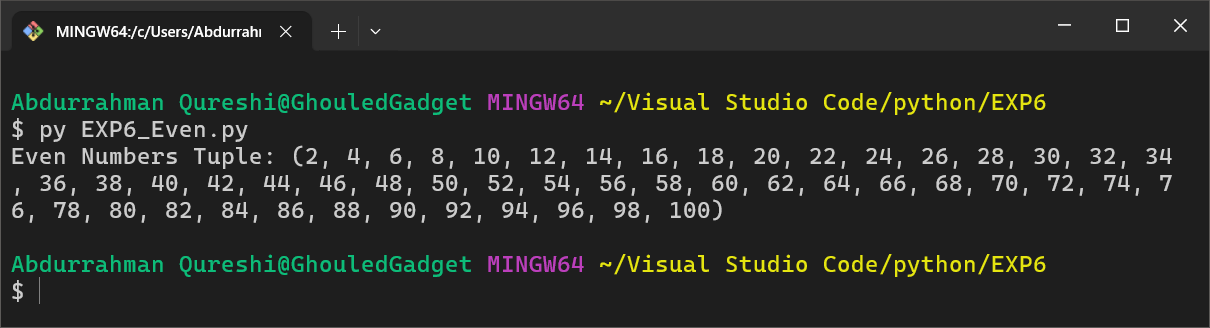
CODE:

numbers = tuple(range(1, 101))

even\_numbers = tuple(num for num in numbers if num % 2 == 0)

print("Even Numbers Tuple:", even\_numbers)

OUTPUT:



**3) Write a python program to concatenate two tuples.**

CODE:

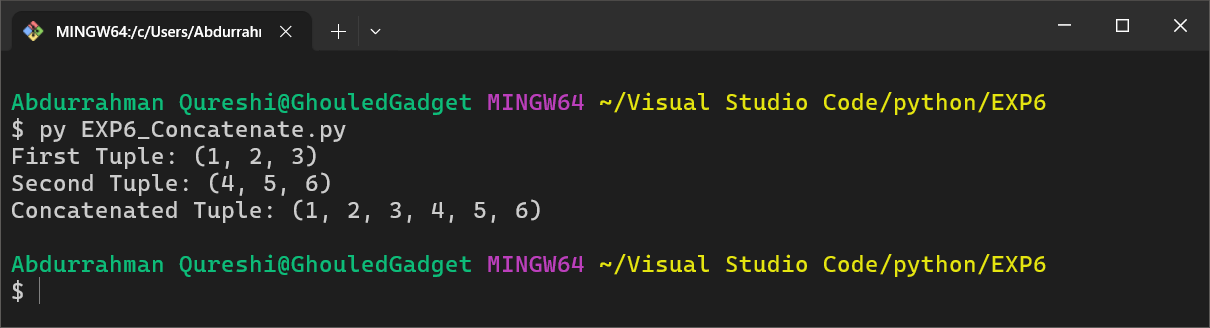
tuple1 = (1, 2, 3)

tuple2 = (4, 5, 6)

concatenated\_tuple = tuple1 + tuple2

print("Concatenated Tuple:", concatenated\_tuple)

OUTPUT:



**4) Write a python program to accept elements in the form of tuple and display their sum and average.**

CODE:

numbers = tuple(map(int, input("Enter numbers separated by space: ").split()))

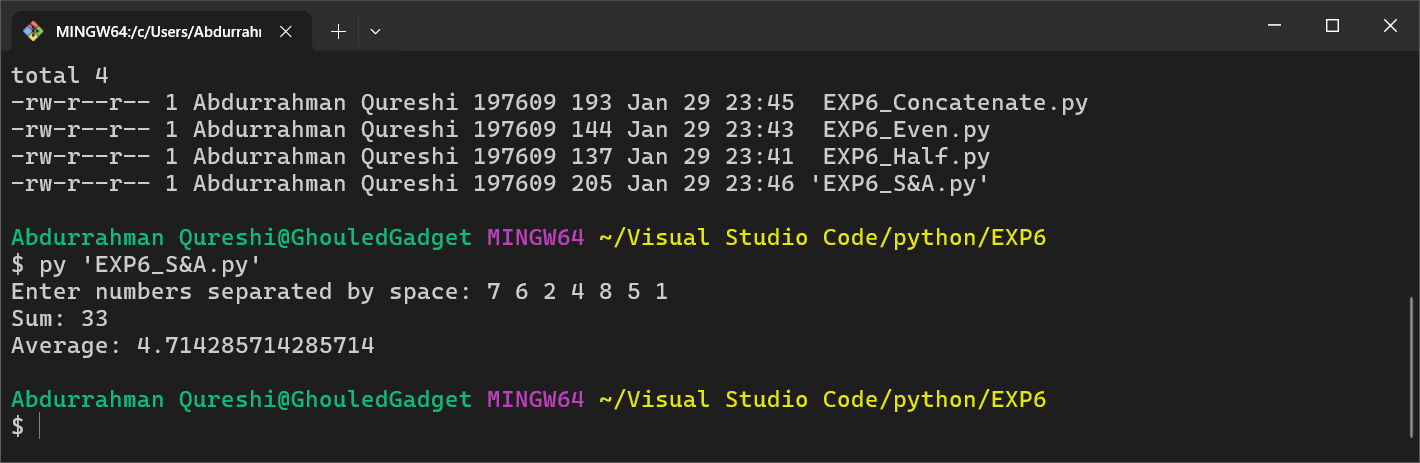
sum\_values = sum(numbers)

avg\_value = sum\_values / len(numbers)

print("Sum:", sum\_values)

print("Average:", avg\_value)

OUTPUT:



**5) Write a python program to find the first occurrence of an element in a tuple.**

CODE:

numbers = (10, 20, 30, 40, 50, 30, 60, 70)

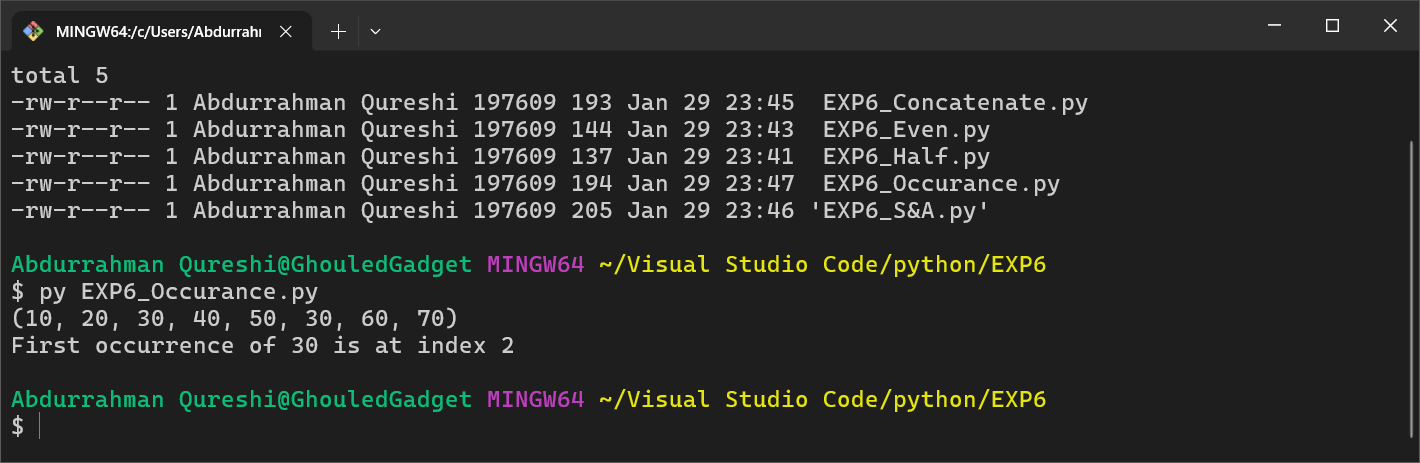
search\_element = 30

index = numbers.index(search\_element)

print(numbers)

print(f"First occurrence of {search\_element} is at index {index}")

OUTPUT:



**6) Write a python program to pickle List, dictionary, tuple and string.**

CODE:

import pickle

data = {

    "list": [1, 2, 3, 4, 5],

    "dict": {"name": "qarq90", "age": 20},

    "tuple": (10, 20, 30),

    "string": "Death is an old friend"

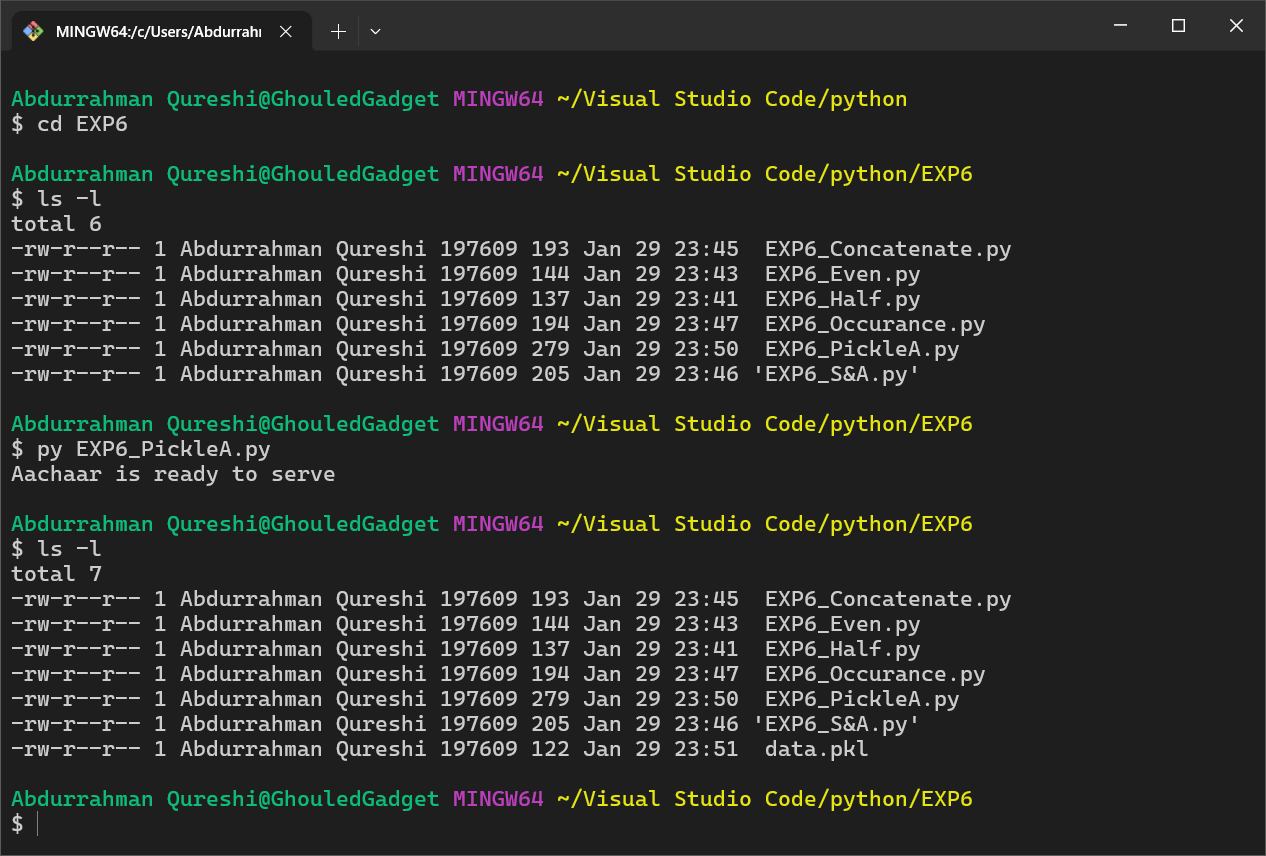
}

with open("data.pkl", "wb") as file:

    pickle.dump(data, file)

print("Aachaar is ready to serve")

OUTPUT:



**7) Write a python program to demonstrate 2 methods of the tuple.**

CODE:

numbers = (10, 20, 30, 40, 50, 30, 60, 30)

print(numbers)

print("Count of 30:", numbers.count(30))

print("Index of 40:", numbers.index(40))

OUTPUT:



**8) Write a python program to demonstrate 5 methods of set.**

CODE:

my\_set = {1, "2", 3.6, "Black People", "Hee hee haa"}

my\_set.add(6)

print("Set:", my\_set)

my\_set.remove(3.6)

print("Set:", my\_set)

my\_set.discard(500)

print("Set:", my\_set)

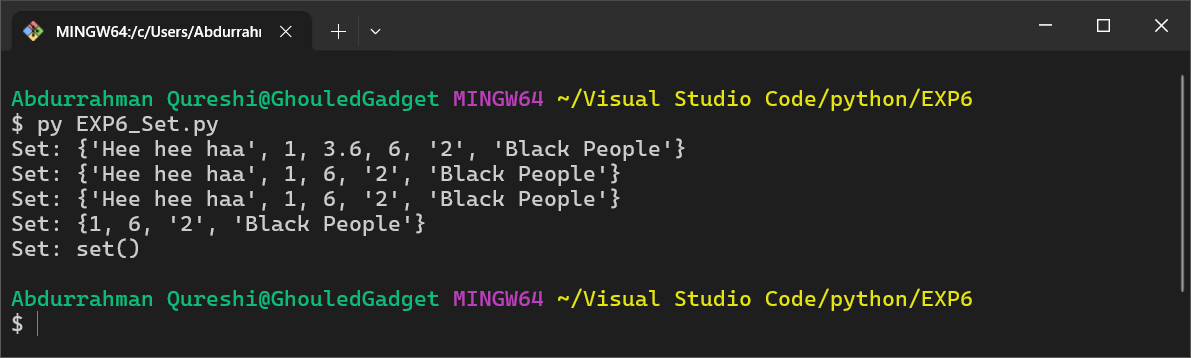
popped\_element = my\_set.pop()

print("Set:", my\_set)

my\_set.clear()

print("Set:", my\_set)

OUTPUT:



9) Write a python program to pickle tuples and strings.

CODE:

import pickle

data = {

    "tuple": (100, 200, 300),

    "string": "Aachar this string!"

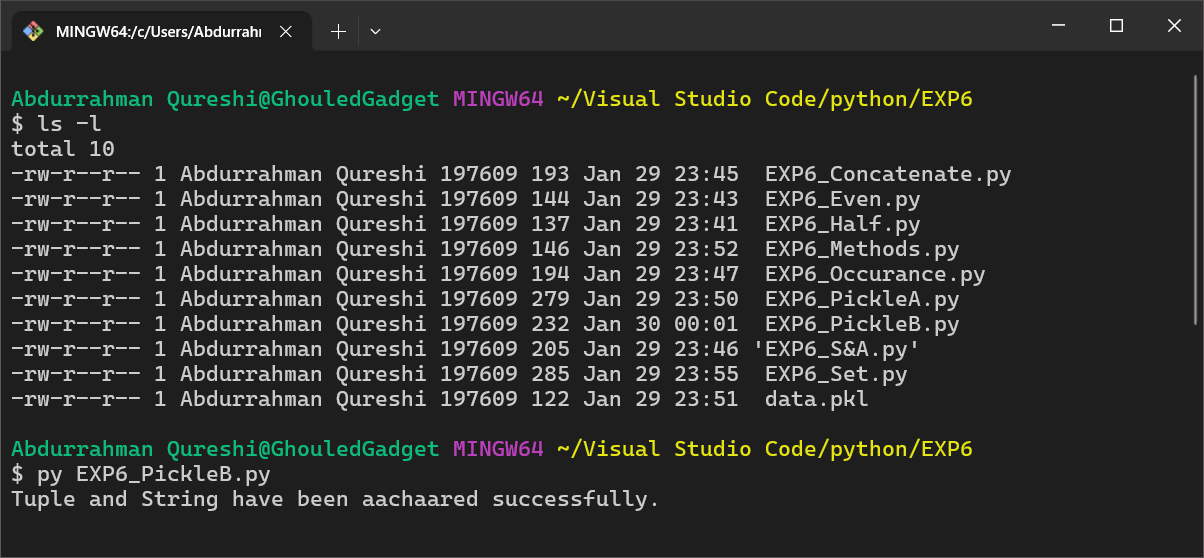
}

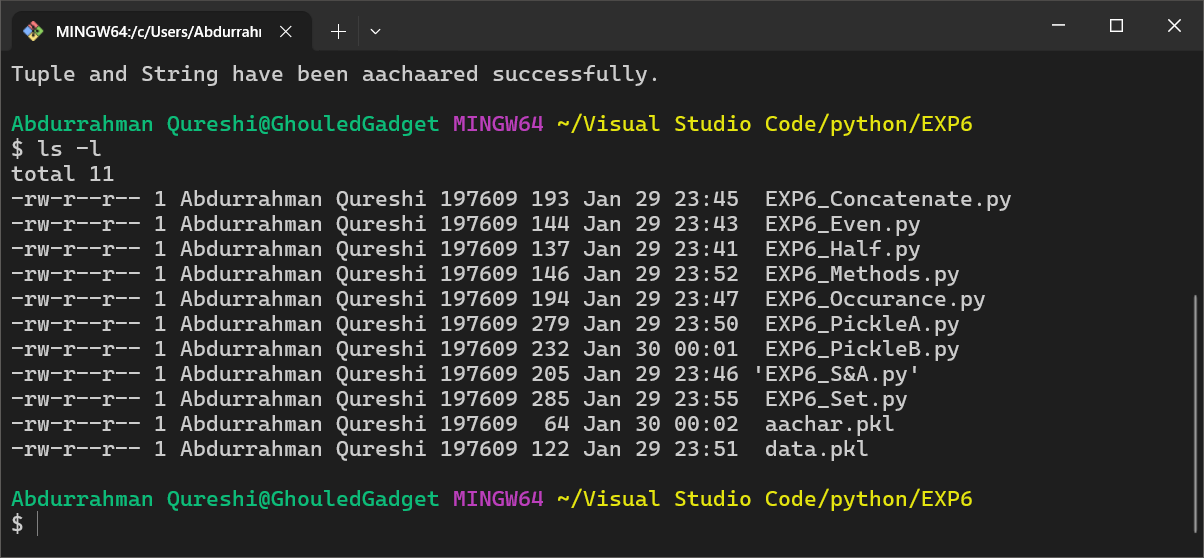
with open("aachar.pkl", "wb") as file:

    pickle.dump(data, file)

print("Tuple and String have been aachaared successfully.")

OUTPUT:





**10) Write a python program to implement snake ladder game using python dictionary**

CODE:

import time

import time

import random

SLEEP\_BETWEEN\_ACTIONS = 1

MAX\_VAL = 100

PLAYER\_DINE = True

snake = {

12: 2,

23: 4,

36: 12,

69: 48,

98: 56,

87: 29,

74: 69,

41: 55,

}

ladder = {

14: 25,

47: 61,

78: 91,

89: 95,

96: 99,

63: 80,

32: 46,

21: 73,

}

playerX = {

"name": "",

"position": 0,

}

playerY = {

"name": "",

"position": 0,

}

def get\_name():

print()

playerX["name"] = input("😀 Player 1 would like to be called as: ")

playerY["name"] = input("😀 Player 2 would like to be called as: ")

print()

def roll\_dice(player\_dine):

new\_dice\_value = random.randint(1, 6)

if not player\_dine:

player = playerX

else:

player = playerY

new\_position = player["position"] + new\_dice\_value

if new\_position == 100:

print(f"{player['name']} rolled 🎲 and got {new\_dice\_value}")

print(f"{player['name']} moved ▶▶▶▶ to {new\_position}")

print(f"{player['name']} WON ✨🎉")

exit()

if new\_position > 100:

print(f"{player['name']} is on {player['position']} and needs {100 - player['position']}")

return

player["position"] = new\_position

print(f"{player['name']} rolled 🎲 and got {new\_dice\_value}") # 3

print(f"{player['name']} moved ▶▶▶▶ to {player['position']}") # 12 --> 15

if player["position"] in snake:

print(f"🐍 Oops! {player['name']} got bitten by a snake! Sliding down to {snake[player['position']]}")

player["position"] = snake[player["position"]]

if player["position"] in ladder:

print(f"### Yay! {player['name']} climbed a ladder! Moving up to {ladder[player['position']]}")

player["position"] = ladder[player["position"]]

print()

get\_name()

for i in range(1, 60):

if PLAYER\_DINE:

PLAYER\_DINE = False

else:

PLAYER\_DINE = True

roll\_dice(PLAYER\_DINE)

time.sleep(SLEEP\_BETWEEN\_ACTIONS)

OUTPUT:

