

TX00FL42-3001

PYTHON DATA STRUCTURES: TUPLE, SET, AND DICTIONARY

MUATH OTHMAN



LET'S CHECK HOMEWORKS!



EXAM

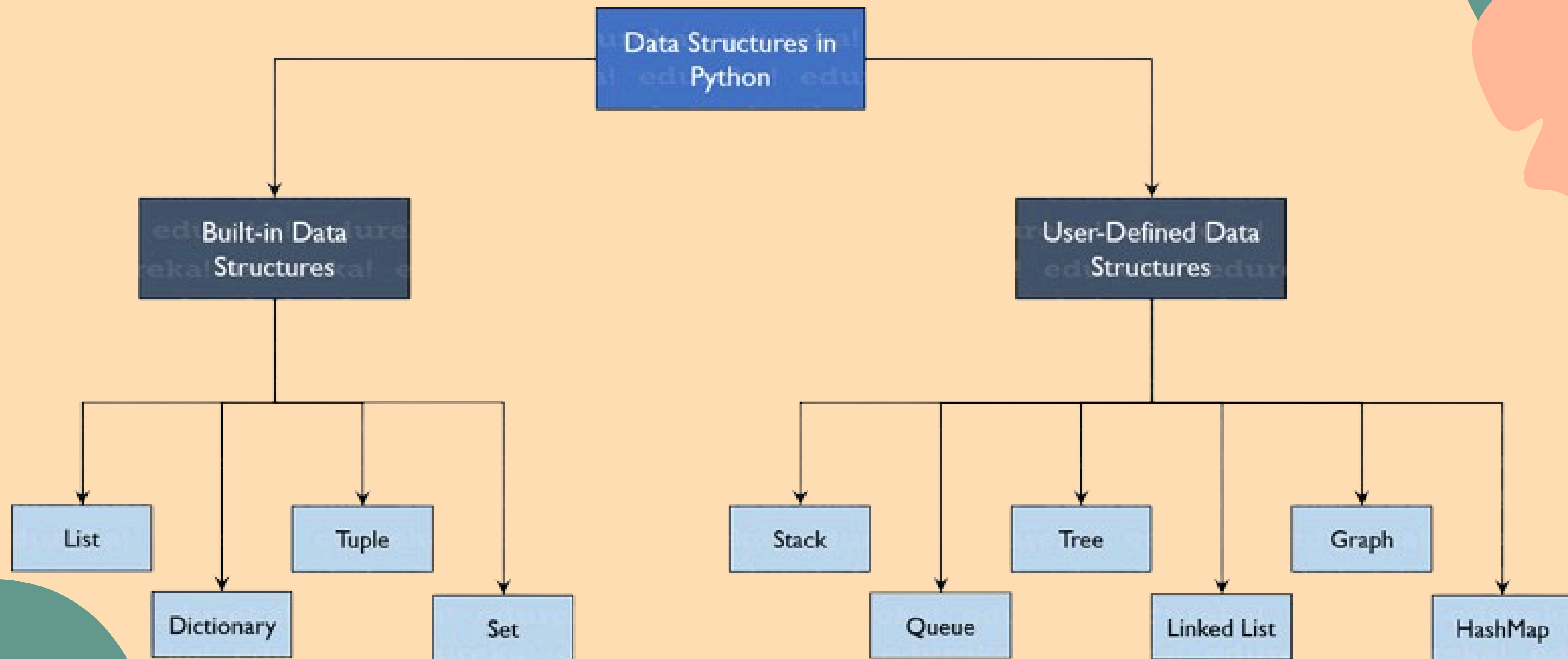
NEXT WEEK



LEARNING OBJECTIVES

- Understand the Use Cases of Python Data Structures
- Implement Python Programs Using Tuples, Sets, and Dictionaries
- Solve Real-World Problems Using Tuples, Sets, and Dictionaries





WHAT IS A TUPLE?



WHAT IS A TUPLE?



```
days_of_the_week = ("Monday", "Tuesday", "Wednesday", "Thursday", "Friday", "Saturday", "Sunday")
```

WHAT IS A TUPLE?



```
days_of_the_week = ("Monday", "Tuesday", "Wednesday", "Thursday", "Friday", "Saturday", "Sunday")
```

**Do you see a difference between
a tuple and a list?**

ASKING FOR A DAY NUMBER AND PRINTS THE CORRESPONDING DAY

```
day_number = int(input("Enter the day number (1-7): "))  
day = days_of_the_week[day_number-1]  
print(f"Day number {day_number} is {day}.")
```

TUPLE CAN BE:



```
fruits = "Orange", "Banana", "Apple"
```

DESTRUCTURE TUPLES INTO INDIVIDUAL VARIABLES



```
fruits = "Orange", "Banana", "Apple"  
(first, second, third) = fruits  
print(f"The fruits are: {first}, {second} and {third}.")
```

The background is a solid light orange color. It features abstract, organic shapes in teal and a darker orange. One teal shape is in the top right corner, and another is in the bottom left corner. A darker orange shape is also in the bottom left corner, partially overlapping the teal one. The text is centered in the middle of the image.

**LET'S CREATE
TABLE**

The background is a solid light orange color. In the top right corner, there is a teal shape and an orange shape. In the bottom left corner, there is a teal shape and an orange shape.

EXERCISE

WHAT IS A SET?



WHAT IS A SET?



```
games = {"Monopoly", "Chess", "Cluedo"}
```

WHAT IS A SET?



```
games = {"Monopoly", "Chess", "Cluedo"}
```

Why there is no indexing?

HOW TO CREATE SET?



```
names = set()  
names.add("Mary")  
print(names)
```

SET OPERATIONS

```
● ● ●  
  
games = {"Monopoly", "Chess", "Cluedo"}  
print(games)  
  
games.add("Dominion")  
print(games)  
  
games.remove("Chess")  
print(games)  
  
games.add("Cluedo")  
print(games)  
  
for g in games:  
    print(g)
```

The background is a solid light orange color. In the top right corner, there is a teal shape that curves downwards and to the left, and an orange shape that curves downwards and to the right. In the bottom left corner, there is a teal shape that curves upwards and to the right, and an orange shape that curves upwards and to the left.

**LET'S CONTINUE
OUR TABLE**

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EXERCISE

WHAT IS A DICTIONARY?



WHAT IS A DICTIONARY?



```
numbers = {"Viivi": "050-1234567", "Ahmed": "040-1112223"}
```

DICTIONARY OPERATIONS



```
numbers["Olga"] = "050-1011012"  
if "Viivi" in numbers:  
    print(f"Viivi's number is {numbers['Viivi']}.")
```

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**LET'S CONTINUE
OUR TABLE**

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EXERCISE