Chapter 47 - Match Case

Theory:

This chapter covers the topic of Match Case.

Code Example:

```
# ■ What is match in Python?
# The match statement is Python's version of switch-case logic, introduced in Python 3.10.
# It uses pattern matching to compare values and run specific code blocks based on the
pattern.
# ■ Syntax:
# match variable:
# case pattern1:
# # do something
# case pattern2:
# # do something else
# case _:
# # default case
# ■ Basic Example
command = "start"
match command:
case "start":
print("Starting...")
case "stop":
print("Stopping...")
case "pause":
print("Paused.")
case _:
print("Unknown command")
# ■ Example with Numbers
x = 3
match x:
case 1:
print("One")
case 2:
print("Two")
case 3:
print("Three")
case _:
print("Something else")
# ■ Use Cases
# ■ 1. Matching Multiple Values
animal = "dog"
match animal:
case "dog" | "puppy":
print("It's a dog!")
case "cat":
print("It's a cat!")
case _:
print("Unknown animal")
# ■ 2. Matching with Conditions (if)
age = 25
match age:
case x if x < 18:
```

```python
        print("Minor")
    case x if x >= 18 and x < 60:
        print("Adult")
    case _:
        print("Senior")
# ■ 3. Matching Data Structures (Tuples, Lists)
point = (0, 2)
match point:
    case (0, 0):
        print("Origin")
    case (0, y):
        print(f"Y-axis at y={y}")
    case (x, 0):
        print(f"X-axis at x={x}")
    case (x, y):
        print(f"Point at ({x}, {y})")
# ■ 4. Matching Dictionaries with Classes
class User:
    def __init__(self, name, age):
        self.name = name
        self.age = age
user = User("Milan", 22)
match user:
    case User(name="Milan", age=22):
        print("Hello Milan!")
    case User(name=name, age=age):
        print(f"Hello {name}, age {age}")
    case _:
        print("Unknown user")
# ■ 5. Destructuring Lists
values = [1, 2, 3]
match values:
    case [1, 2, 3]:
        print("Matched exact list")
    case [1, *rest]:
        print(f"Starts with 1, rest: {rest}")
    case _:
        print("No match")
# ■ When Not to Use It
# ■ In versions before Python 3.10
# ■ For simple if-else when pattern matching is overkill
#my code
```