DATA SCIENCE COURSE TUTORIAL # 20

3.12 Match Case Statements

The `match case` statement in Python (introduced in Python 3.10) is similar to the switch statement in other programming languages. It allows you to compare a value against multiple patterns and execute the block of code that matches.

Basic match case Example

```python
choice = 2

match choice:
    case 1:
        print("Option 1 selected")
    case 2:
        print("Option 2 selected")
    case 3:
        print("Option 3 selected")
    case _:
        print("Invalid option")
```

Output:

```
Option 2 selected
```

Using match case with Strings

```python
day = "Sunday"

match day:
    case "Monday":
        print("Start of the week")
    case "Friday":
        print("Weekend is near")
    case "Saturday" | "Sunday":
        print("It is the weekend!")
    case _:
        print("Regular weekday")
```

Output:

```
It is the weekend!
```

Using Guards in match case

We can add conditions (called guards) with `if` inside a `case`.

```python
marks = 85

match marks:
    case m if m >= 90:
        print("Grade: A")
    case m if m >= 80:
        print("Grade: B")
    case m if m >= 70:
        print("Grade: C")
    case _:
        print("Grade: D")
```

Output:

```
Grade: B
```

Why use match case?

- Cleaner and more readable than multiple `if elif else`.
- Supports multiple matches using `|`.
- Allows conditions with `if` inside cases.