

In Week 2: Data Structures and Functions, we studied key Python data structures—lists, tuples, dictionaries, and sets. Lists are mutable and allow operations like indexing, appending, slicing, and popping. Tuples are immutable and used for storing fixed sequences. Dictionaries store data in key-value pairs and support methods like `get()`, `update()`, and `items()`. Sets store unique items and support operations like union and intersection. We also explored functions, which help modularize code using `def` and return values. Lambda functions allow creating small anonymous functions with concise syntax. Recursion was introduced through examples like the Fibonacci series, where a function calls itself with a base case. We practiced list comprehensions for efficient list creation with conditions. Hands-on exercises included data transformations like filtering and summing, using both standard functions and lambdas. In the client project, we developed a data cleaning script to remove duplicates, filter data, and compute aggregates such as averages.