

COMP110: Lists and Dictionaries

Lists and dictionaries are essential data structures.

1. Lists

```
fruits = ["apple", "banana", "cherry"]  
  
print(fruits[0])    # Output: apple  
  
fruits.append("date") # Add element  
  
print(len(fruits))  # Length of list
```

2. Iterating Through a List

```
for fruit in fruits:  
    print(fruit)
```

3. List Slicing

```
numbers = [0, 1, 2, 3, 4]  
  
print(numbers[1:4]) # Output: [1, 2, 3]
```

4. Dictionaries

```
person = {"name": "Alice", "age": 20}  
  
print(person["name"])    # Output: Alice  
  
person["age"] = 21        # Update value  
  
person["major"] = "CS"    # Add new key-value
```

5. Iterating Through Dictionary

```
for key, value in person.items():
```

```
print(f"{key}: {value}")
```

6. Useful Methods

- list: `append()`, `remove()`, `pop()`, `sort()`, `reverse()`
- dict: `keys()`, `values()`, `items()`, `get()`