Python Online Free Ramzan Course 2025
Taught by: Shaida Muhammad

Lists

Day 7 - Python Basics

Shaida Muhammad

Tuesday, March 11, 2025

ShaidaSherpao@gmail.com

Agenda

1 What are lists?

2 Creating and accessing lists

3 List methods: append(), remove(), pop(), etc.

4 Slicing and indexing

5 Hands-on practice

What are Lists?

- **Definition:** A list is a collection of items stored in a specific order.
- **Features:**
  - Ordered: Items have a defined order.
  - Mutable: Items can be added, removed, or changed.
  - Can contain different data types.
- **Example:**

```
fruits = ["apple", "banana", "cherry"]
```

Creating and Accessing Lists

- **Creating a List:**

```
my_list = [1, 2, 3, "apple", True]
```

- **Accessing Items:**
  - Use indexing (`list[index]`).
  - Indexing starts from `0`.

```
fruits = ["apple", "banana", "cherry"]
print(fruits[0])  # Output: apple
print(fruits[1])  # Output: banana
```

- **Negative Indexing:**

```
print(fruits[-1])  # Output: cherry
```

List Methods

- **Adding Items:**
  - `append()`: Adds an item to the end.

    ```
    fruits.append("orange")
    ```

  - `insert()`: Adds an item at a specific position.

    ```
    fruits.insert(1, "mango")
    ```

- **Removing Items:**
  - `remove()`: Removes a specific item.

    ```
    fruits.remove("banana")
    ```

  - `pop()`: Removes an item at a specific index (or the last item if no index is provided).

    ```
    fruits.pop(1)
    ```

- **Other Methods:**
  - `sort()`: Sorts the list.
  - `reverse()`: Reverses the list.
  - `clear()`: Removes all items.

Slicing and Indexing

- **Slicing:** Extracting a part of the list.

```
numbers = [1, 2, 3, 4, 5]
print(numbers[1:3])  # Output: [2, 3]
print(numbers[:3])   # Output: [1, 2, 3]
print(numbers[2:])   # Output: [3, 4, 5]
```

- **Indexing:** Accessing a specific item.

```
print(numbers[2])  # Output: 3
```

Hands-On Practice

- **Task 1:** Create a list of your favorite fruits and print each fruit.

```
fruits = ["apple", "banana", "cherry"]
for fruit in fruits:
    print(fruit)
```

- **Task 2:** Add a new fruit to the list and print the updated list.

```
fruits.append("orange")
print(fruits)
```

- **Task 3:** Remove a fruit from the list and print the updated list.

```
fruits.remove("banana")
print(fruits)
```

- **Task 4:** Sort the list in alphabetical order.

```
fruits.sort()
print(fruits)
```

- **Task 5:** Slice the list to print the first two fruits.

```
print(fruits[:2])
```

Recap

- Lists are ordered, mutable collections of items.
- Use indexing and slicing to access items.
- List methods like append(), remove(), pop(), sort(), and reverse() are useful for modifying lists.

Homework

1. Create a list of your favorite movies and print each movie.
2. Add a new movie to the list and print the updated list.
3. Remove a movie from the list and print the updated list.
4. Sort the list in reverse order and print it.

Q&A

- Do you have any questions?
- Share your thoughts.

Closing

Next class: Tuples