A computer screen shot of a program

AI-generated content may be incorrect.

A computer screen shot of a program

AI-generated content may be incorrect.

A screenshot of a computer

AI-generated content may be incorrect.

A computer screen shot of a program

AI-generated content may be incorrect.

n **Apex**, Collections are **built-in data structures** used to group and manage multiple elements of similar or key-value data. Just like in Java, Apex provides **three main types of collections**:

**✅ Main Collection Types in Apex**

| **Collection Type** | **Description** | **Stores Duplicates?** | **Maintains Order?** | **Allows Nulls?** | **Key-Based Access?** | **When to Use** |
| --- | --- | --- | --- | --- | --- | --- |
| List<T> | Ordered collection of elements (like array) | ✅ Yes | ✅ Yes | ✅ Yes | ❌ No | When you need ordered access or duplicates |
| Set<T> | Unordered collection of unique elements | ❌ No | ❌ No | ✅ Yes | ❌ No | When you want only unique values |
| Map<K, V> | Key-value pair collection | ✅ Yes (values) | ❌ No | ✅ Yes (for key & value) | ✅ Yes | When you want fast access by key |

**🔍 Detailed Checkpoints of Apex Collections**

| **Feature / Checkpoint** | **List<T>** | **Set<T>** | **Map<K, V>** |
| --- | --- | --- | --- |
| **Duplicates Allowed** | ✅ Yes | ❌ No | ✅ Only in values |
| **Order Maintained** | ✅ Yes | ❌ No | ❌ No |
| **Key-Based Access** | ❌ No | ❌ No | ✅ Yes |
| **Null Values Allowed** | ✅ Yes | ✅ Yes | ✅ Yes (null key and null value allowed) |
| **Index-Based Access** | ✅ Yes | ❌ No | ❌ No |
| **Best Use Case** | Ordered data, duplicates | Unique set of items | Lookup table, fast key access |
| **Iteration** | For loop, while, for-each | For-each | KeySet, entrySet, values |
| **Typical Methods** | add(), get(), remove(), size() | add(), contains(), remove() | put(), get(), remove(), keySet() |

**🛠️ Example Snippets**

**🔹 List Example:**

apex

CopyEdit

List<String> names = new List<String>{'Ravi', 'Ravi', 'Kiran'};

System.debug(names); // ['Ravi', 'Ravi', 'Kiran']

**🔹 Set Example:**

apex

CopyEdit

Set<String> uniqueNames = new Set<String>{'Ravi', 'Ravi', 'Kiran'};

System.debug(uniqueNames); // {'Ravi', 'Kiran'}

**🔹 Map Example:**

apex

CopyEdit

Map<Integer, String> students = new Map<Integer, String>();

students.put(1, 'Ravi');

students.put(2, 'Kiran');

System.debug(students.get(1)); // Ravi

**🧠 Other Points to Remember:**

* Collections are stored in **heap memory**, and are subject to **governor limits** (e.g., max 10,000 records in SOQL).
* You can use **SOQL queries** directly into Lists or Maps.

apex

CopyEdit

List<Account> accs = [SELECT Id, Name FROM Account LIMIT 10];

* Maps can use **SObject IDs** as keys for efficient access.

A screenshot of a computer

AI-generated content may be incorrect.

A screenshot of a computer program

AI-generated content may be incorrect.

A white background with blue text

AI-generated content may be incorrect.



