

# Java Generics & Collections

*Quick reference slides*

# Generics Basics

- Type safety at compile-time
- Angle-bracket syntax: `List<String>`
- Diamond operator `<>` for inference
- Bounded parameters: `<T extends Number>`
- Wildcards: `List<?>`, `List<? extends Number>`

# Core Collection Interfaces

- List
- Set
- Queue
- Deque
- Map

Implementations: ArrayList, LinkedList, HashSet, TreeSet,  
PriorityQueue, ArrayDeque, HashMap, LinkedHashMap, TreeMap

# Collection Utilities

- `Collections.sort(list) / reverseOrder()`
- `Collections.shuffle(list)`
- `Collections.unmodifiableList(list)`
- `Arrays.asList(array)`
- Stream API for functional-style operations