
Level up
your basic Java
understanding

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Foodie
Cat lover

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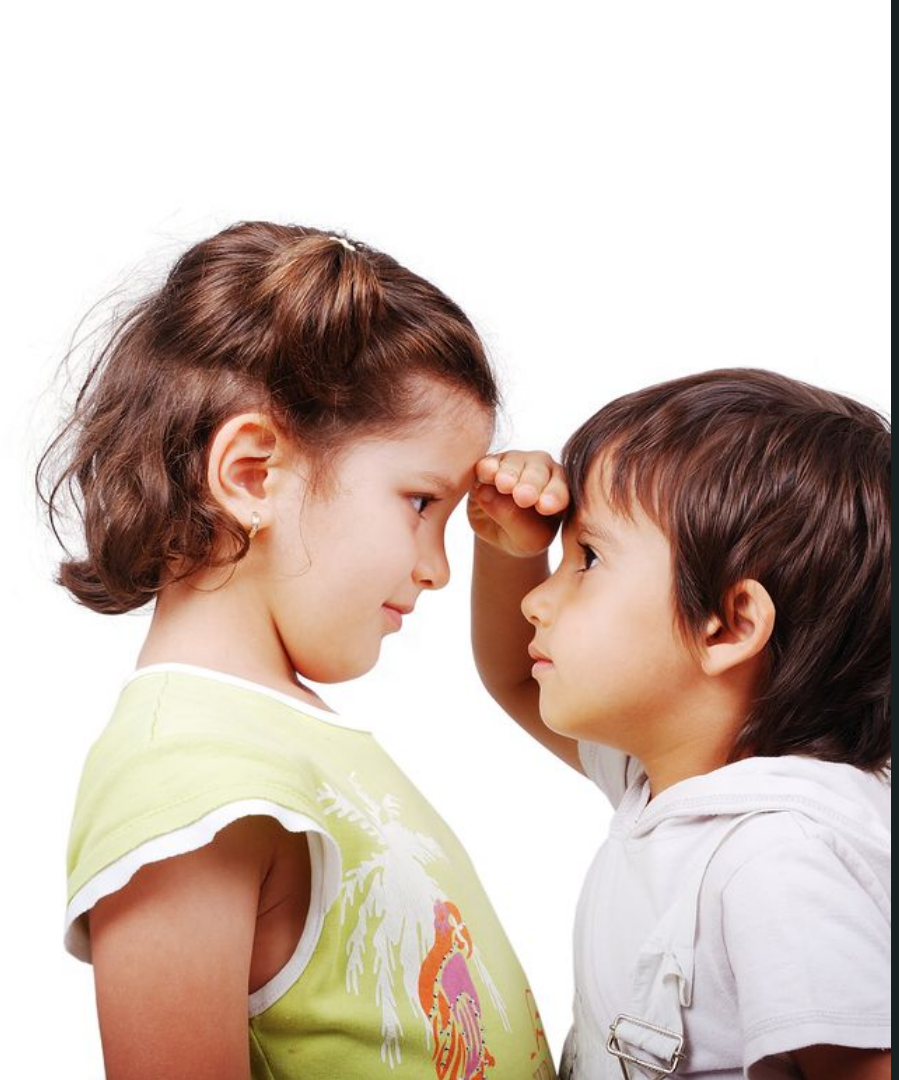
Java Developer
Gamer
Fantasy reader


CHALLENGING WAY
RIGHT WAY
HARD WAY
FAST WAY
DIFFICULT WAY
EASY WAY

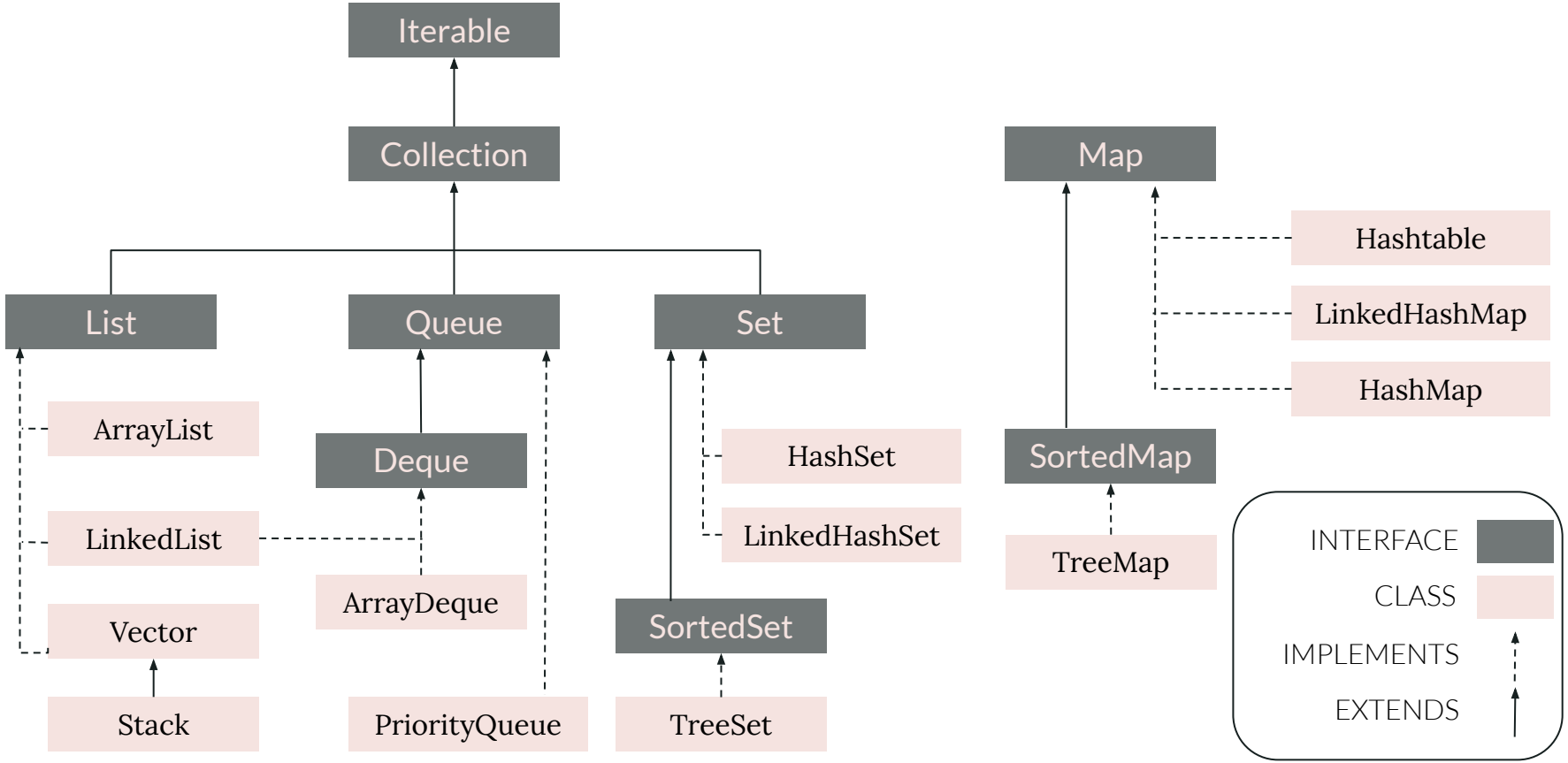

collections
framework



```
int childrensHeights[] = { 95, 103, 147, 110 };
int arrayLength = 4;
int tallest = childrensHeights[0];

for (int i = 0; i < arrayLength; i++) {
        if (tallest < childrensHeights[i]) {
                tallest = childrensHeights[i];
        }
}
System.out.print(tallest); //147
```


how does
the collections
framework
works?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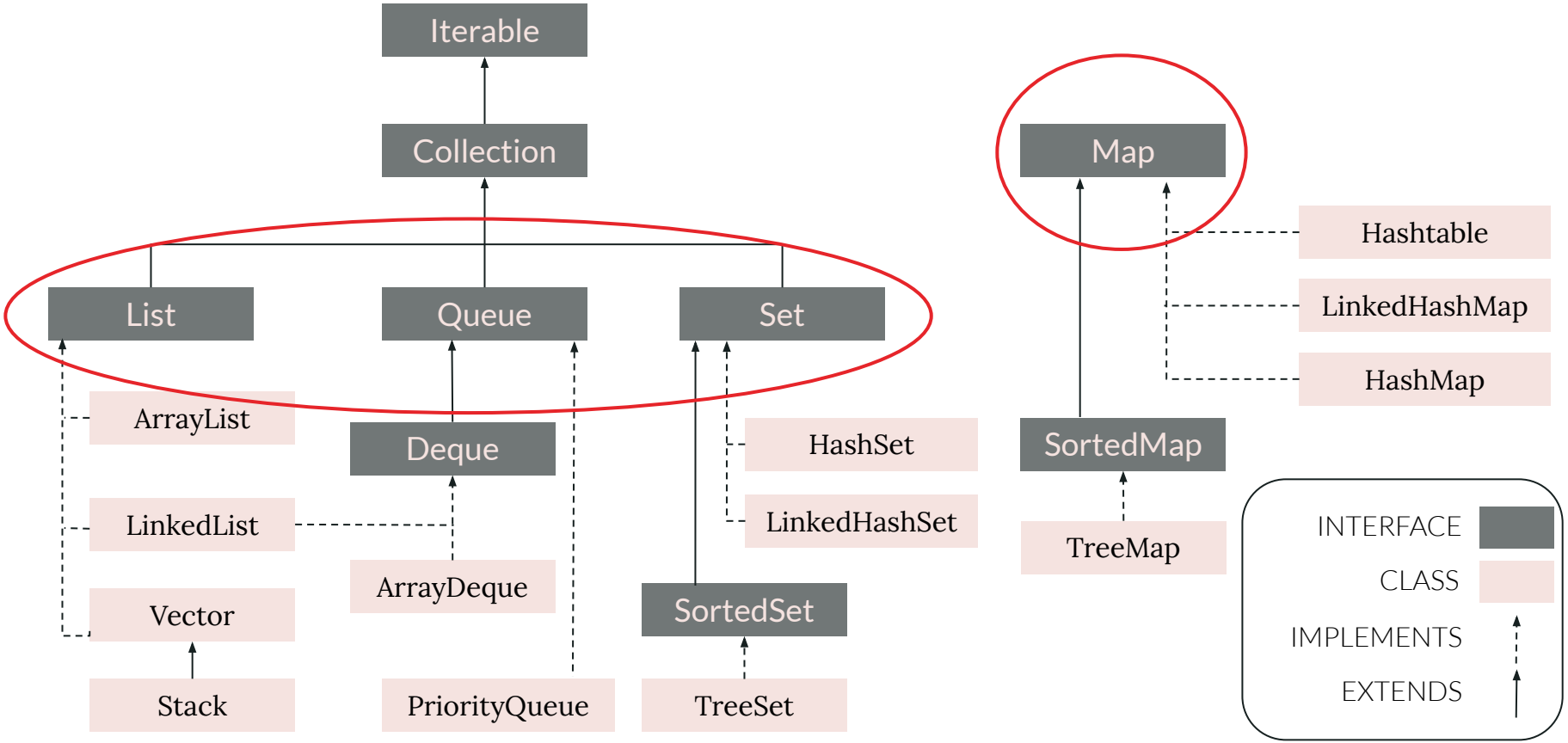
INTERFACE
CLASS
IMPLEMENTS
EXTENDS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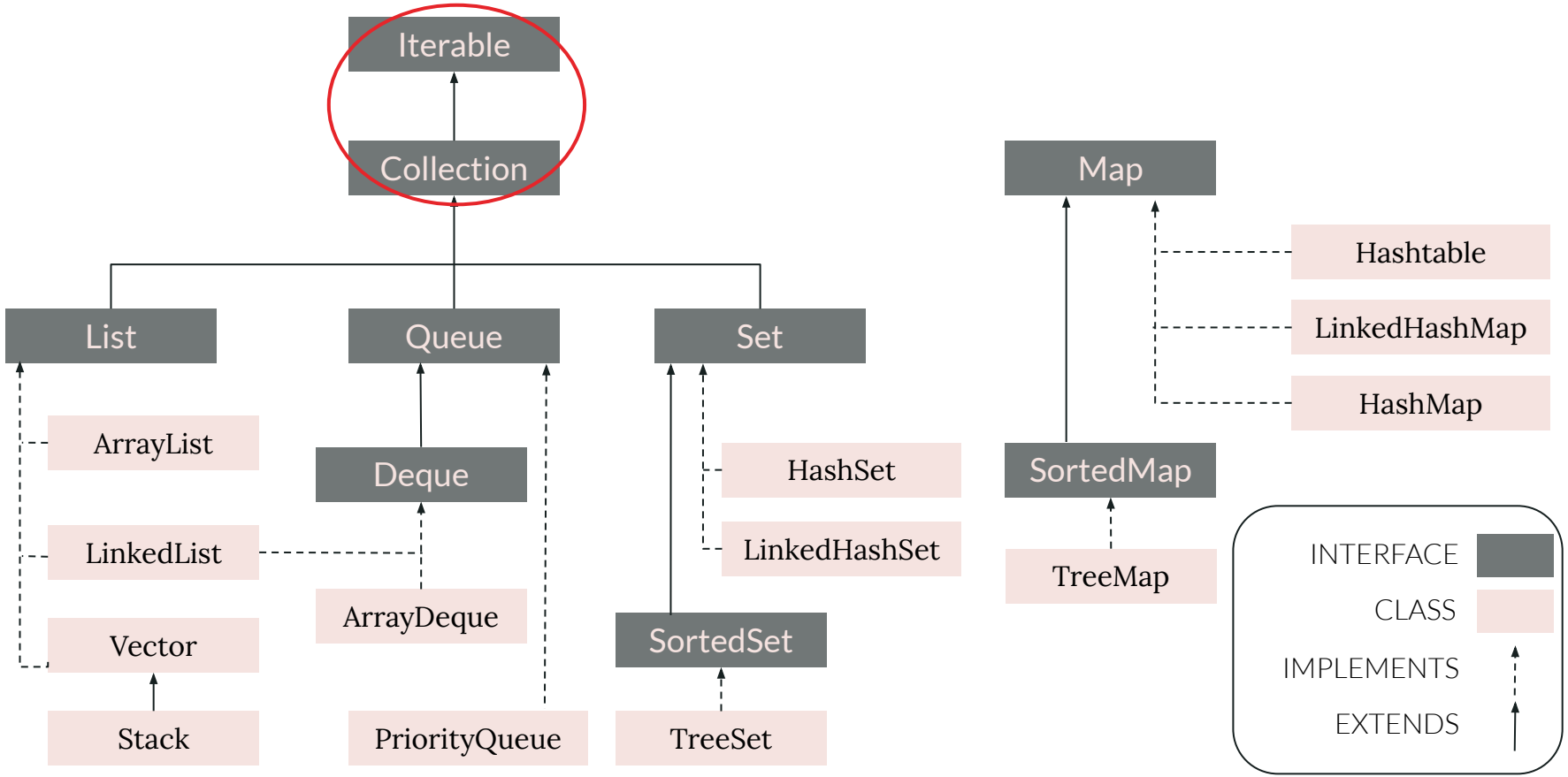
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```java
List<Integer> childrensHeights = new ArrayList<>();
childrensHeights.add(95);
childrensHeights.add(103);
Collections.addAll(childrensHeights, 147, 110);
int tallest = childrensHeights.get(0);
for (Integer height : childrensHeights) {
        if (tallest < height) {
                tallest = height;
        }
}
System.out.print(tallest); //147
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```java
List<Integer> childrensHeights = new ArrayList<>();
childrensHeights.add(95);
childrensHeights.add(103);
Collections.addAll(childrensHeights, 147, 110);
int tallest = childrensHeights.stream()
                .mapToInt(v -> v).max()
                .orElseThrow(NoSuchElementException::new);
System.out.print(tallest); // 147
```

```
List<Integer> childrensHeights = new ArrayList<>();
childrensHeights.add(95);
childrensHeights.add(103);
Collections.addAll(childrensHeights, 147, 110);
List<Integer> childrensHeightsUnmodifiableList =
Collections.unmodifiableList(childrensHeights);

childrensHeightsUnmodifiableList.add(111) ;  //Exception
childrensHeights.add(111);
System.out.print(childrensHeights); //[95, 103, 147, 110, 111]
```

```
List<Integer> childrensHeightsViaArrayAsList = Arrays.asList(95, 103,147, 110);
childrensHeightsViaArrayAsList.add(111); //Exception

List<Integer> childrensHeightsViaArrayList = new ArrayList<>(Arrays.asList(95,
                                                                103, 147, 110));
childrensHeightsViaArrayList.add(111);
System.out.print(childrensHeights); //[95, 103, 147, 110, 111]
```

```
Person randomPerson = new Person("John Doe", 42);
List<Object> listWithMiscObjects = Arrays.asList("TDC", 2021, randomPerson);
System.out.println(listWithMiscObjects);
 //[TDC, 2021, Person [age=42, name=John Doe]]
```

GENERICS

```java
List<Integer> childrensHeights = new ArrayList<>();
childrensHeights.add(95);
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Collections.addAll(childrensHeights, 147, 110);
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        }
}
System.out.print(tallest); //147
```
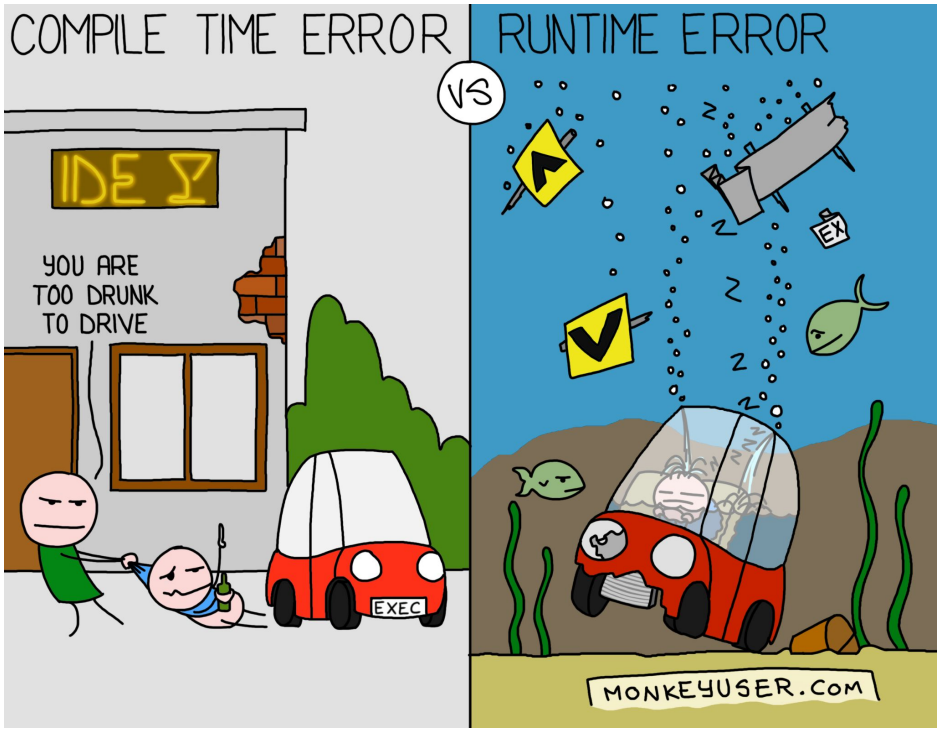
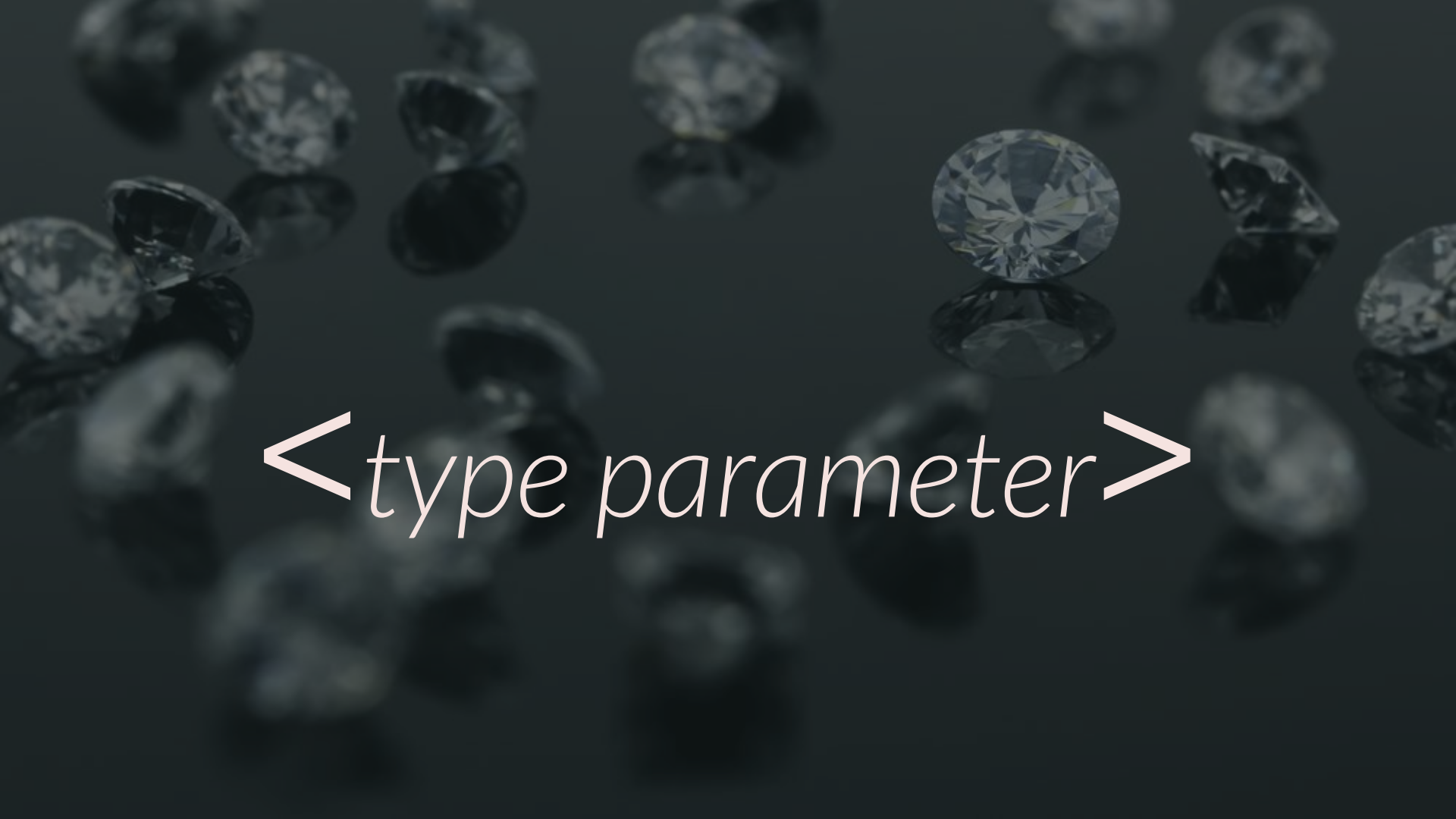

```
List childrensHeights = new ArrayList();
childrensHeights.add(95);
childrensHeights.add(103);
Collections.addAll(childrensHeights, 147, 110);
int tallest = (Integer) childrensHeights.get(0);
for(Object height : childrensHeights) {
   if (tallest < (Integer) height) {
      tallest = (Integer) height;
   }
}
System.out.print(tallest); // 147
```

```
List childrensHeights = new ArrayList();
childrensHeights.add(95);
childrensHeights.add(103);
Collections.addAll(childrensHeights, 147, 110);
int tallest = (Integer) childrensHeights.get(0);
for(Object height : childrensHeights) {
   if (tallest < (Integer) height) {
      tallest = (Integer) height;
   }
}
System.out.print(tallest); // 147
```

How **Generics** works?

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```
Integer[] childrensHeights = { 95, 103, 147, 110 };

public static <T> List<T> fromArrayToList(T[] a) {
        return Arrays.stream(a).collect(Collectors.toList()); //[95, 103, 147, 110]
}
```

```
Child child1 = new Child("John Doe", 95);
Child child2 = new Child("Jane Doe", 103);
Child child3 = new Child("Richard Roe", 147);
Child children[] = { child1, child2, child3 };

public static <T extends Person> List<T> fromArrayToList(T[] a) {
        return Arrays.stream(a).collect(Collectors.toList());
        //[Child [height=95, name=John Doe],
        //Child [height=103, name=Jane Doe],
        //Child [height=147, name=Richard Roe]]
}
```

```
List<?> wildcards = new ArrayList<>();
wildcards.add(null);
System.out.println(wildcards); //[null]
```

```
Child child1 = new Child("Jhon Doe", 95);
Child child2 = new Child("Jane Doe", 103);
Child child3 = new Child("Richard Roe", 147);
List<Child> children = new ArrayList<>();
Collections.addAll(children, child1, child2, child3);

public static Person findTallest(final List<? extends Person> people){
        return people.stream().max(Comparator.comparingInt(Person::getHeight))
                              .orElseThrow(NoSuchElementException::new);
                             //Child [height=147, name=Richard Roe]
}
```


REWIND


Savings


ALWAYS REMEMBER...
SAFETY FIRST!

Q & A

The code used in this presentation is available here

https://git.io/JZtXa