

Java 8 forEach()

The **Java** `forEach()` method is a utility function to iterate over a collection such as (list, set or map) and [stream](#). It is used to perform a given action on each the element of the collection.

The `forEach()` method has been added in following places:

- **Iterable** interface – This makes `Iterable.forEach()` method available to all collection classes except `Map`
- **Map** interface – This makes `forEach()` operation available to all map classes.
- **Stream** interface – This makes `forEach()` and `forEachOrdered()` operations available to all types of stream.

1. Iterable forEach()

1.1. forEach() Method

The given code snippet shows the default implementation of `forEach()` method in [Iterable](#) interface.

Internally it uses the [enhanced for-loop](#). So using the new for-loop will give the same effect and performance as `forEach()` method.

Iterable.java

```
default void forEach(Consumer<? super T> action)
{
    Objects.requireNonNull(action);
    for (T t : this) {
        action.accept(t);
    }
}
```

The `forEach()` method performs the given `action` for each element of the `Iterable` until all elements have been processed or the `action` throws an exception.

Example 1: Java program to iterate over a List using `forEach()`

Using `forEach()` method

```
List<String> names = Arrays.asList("Alex", "Brian", "Charles");

names.forEach(System.out::println);
```

Program Output:

```
Alex
Brian
Charles
```

1.2. Creating consumer action

In above example, the **action** represents an operation that accepts a single input argument and returns no result. It is an instance of **Consumer** interface.

By creating the consumer action like this, we can specify *multiple statements* to be executed in a syntax similar to a method.

Creating consumer action

```
List<String> names = Arrays.asList("Alex", "Brian", "Charles");

Consumer<String> makeUpperCase = new Consumer<String>()
{
    @Override
    public void accept(String t)
    {
        System.out.println(t.toUpperCase());
    }
};

names.forEach(makeUpperCase);
```

Program Output:

```
ALEX
BRIAN
CHARLES
```