Matching Operations in Stream.

In this lesson, we will explore the matching operations in Stream.

We'll cover the following

Matching operations are terminal operations that are used to check if elements with certain criteria are present in the stream or not.

There are mainly three matching functions available in `Stream`. These are:

- `anyMatch()`
- `allMatch()`
- `noneMatch()`

We will discuss each one of them with examples.

`1) anyMatch()`

Here is the syntax of this method:

```
boolean anyMatch(Predicate<? super T> predicate)
```

It takes a predicate as input and returns

- `true` if at least one element matches the criteria.
- `false` if no element matches the criteria.
- `false` if the stream is empty.

In the below example, we have a List of `Person` objects. We need to check if there is any person residing in a particular country.

```
import java.util.ArrayList;
import java.util.Arrays;

import java.util.List;
import java.util.stream.Stream;

public class StreamDemo {

    public static void main(String[] args) {
        List<Person> list = new ArrayList<>();
        list.add(new Person("Dave", 23,"India"));
        list.add(new Person("Joe", 18,"USA"));
        list.add(new Person("Ryan", 54,"Canada"));
        list.add(new Person("Iyan", 5,"India"));
        list.add(new Person("Ray", 63,"China"));

        boolean anyCanadian = list.stream()
                .anyMatch(p -> p.getCountry().equals("Canada"));

        System.out.println("Is there any resident of Canada: " + anyCanadian);

    }
}


class Person {
    String name;
    int age;
    String country;

    Person(String name, int age, String country) {
        this.name = name;
        this.age = age;
        this.country = country;
    }

    public String getName() {
        return name;
    }

    public int getAge() {
        return age;
    }

    public String getCountry() {
        return country;
    }

}
```

2) allMatch()

Here is the syntax of this method:

> **boolean allMatch(Predicate<? super T> predicate)**

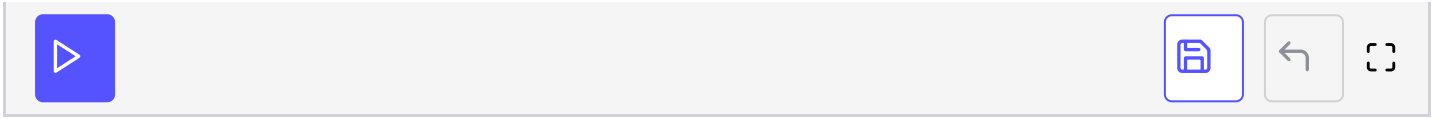
It takes a predicate as input and returns

- `true` if all elements match the criteria.
- `true` if the stream is empty.
- `false` if even a single element does not match the criteria.

In the below example, we have a List of `Person` objects. We need to check if all the persons are residents of a particular country.

```
import java.util.ArrayList;
import java.util.Arrays;
import java.util.List;
import java.util.stream.Stream;

public class StreamDemo {

    public static void main(String[] args) {
        List<Person> list = new ArrayList<>();
        list.add(new Person("Dave", 23,"India"));
        list.add(new Person("Joe", 18,"USA"));
        list.add(new Person("Ryan", 54,"Canada"));
        list.add(new Person("Iyan", 5,"India"));
        list.add(new Person("Ray", 63,"China"));

        boolean anyCanadian = list.stream()
                .allMatch(p -> p.getCountry().equals("Canada"));

        System.out.println("Are all persons canadian: " + anyCanadian);

    }
}


class Person {
    String name;
    int age;
    String country;

    Person(String name, int age, String country) {
        this.name = name;
        this.age = age;
        this.country = country;
    }

    public String getName() {
        return name;
    }

    public int getAge() {
        return age;
    }
```

```
    public String getCountry() {
        return country;
    }

}
```



3) noneMatch()

Here is the syntax of this method:

> **boolean noneMatch(Predicate<? super T> predicate)**

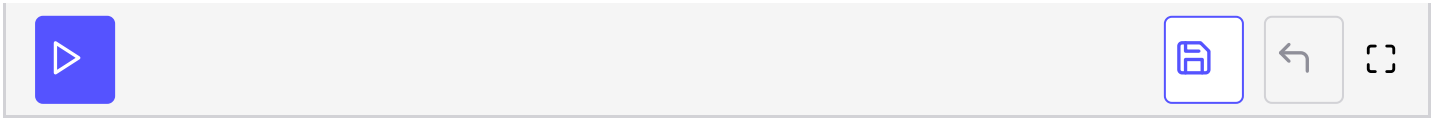
It takes a predicate as input and returns

- `true` if no elements of the stream match the provided predicate.
- `true` if the stream is empty.
- `false` if even a single element matches the criteria.

In the below example, we have a list of `Person` objects. We need to check if all the persons are residents of a particular country.

```
import java.util.ArrayList;
import java.util.Arrays;
import java.util.List;
import java.util.stream.Stream;

public class StreamDemo {

    public static void main(String[] args) {
        List<Person> list = new ArrayList<>();
        list.add(new Person("Dave", 23,"India"));
        list.add(new Person("Joe", 18,"USA"));
        list.add(new Person("Ryan", 54,"Canada"));
        list.add(new Person("Iyan", 5,"India"));
        list.add(new Person("Ray", 63,"China"));

        boolean anyRussian = list.stream()
                .noneMatch(p -> p.getCountry().equals("Russia"));

        System.out.println(anyRussian);

    }
}
```

```
class Person {
    String name;
    int age;
    String country;

    Person(String name, int age, String country) {
        this.name = name;
        this.age = age;
        this.country = country;
    }

    public String getName() {
        return name;
    }

    public int getAge() {
        return age;
    }

    public String getCountry() {
        return country;
    }

}
```



That’s all we have in matching operations. In the next lesson, we will discuss finding operations.