

Arrays, Objects, Modules, JShell, and Regular Expressions in Java



Beginning Java 9 Fundamentals: Arrays, Objects, Modules, JShell, and Regular Expressions by Kishori Sharan

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In this article, we will discuss arrays, objects, modules, JShell, and regular expressions in Java. These are important concepts in Java programming, and understanding them will help you to write more effective and efficient code.

Arrays

An array is a data structure that stores a fixed-size sequential collection of elements of the same type. In Java, arrays are objects, and they can be created using the `new` keyword. The following code creates an array of integers:

```
java int[] numbers = new int[10];
```

The `numbers` array has a length of 10, and it can store up to 10 integers. The elements of an array can be accessed using the `[]` operator. The

following code accesses the first element of the `numbers` array:

```
java int firstNumber = numbers[0];
```

Arrays are a powerful data structure, and they can be used to store a variety of data. However, it is important to remember that arrays are fixed-size, and they cannot be resized. If you need to store a variable-size collection of data, you should use a collection class such as `ArrayList`.

Objects

An object is a data structure that contains data and methods. In Java, objects are created using the `new` keyword. The following code creates a new `Person` object:

```
java Person person = new Person();
```

The `person` object has a number of properties, such as `name`, `age`, and `address`. The properties of an object can be accessed using the `.` operator. The following code accesses the `name` property of the `person` object:

```
java String name = person.getName();
```

Objects are a powerful way to organize and store data. They can be used to represent a variety of real-world entities, such as people, cars, and books.

Modules

A module is a self-contained unit of code that can be reused in multiple projects. Modules can be created using the `module` keyword. The following code creates a module named `my-module` :

```
java module my-module { exports le; }
```

The `my-module` module exports the `le` package. This means that other modules can access the classes in the `le` package.

Modules are a powerful way to organize and reuse code. They can help to improve the modularity and maintainability of your projects.

JShell

JShell is a Java shell that allows you to interactively execute Java code. JShell is a great way to learn Java, and it can also be used to test and debug code. To start JShell, simply type `jshell` at the command prompt.

Once JShell has started, you can enter Java code at the prompt. JShell will evaluate the code and display the results. For example, the following code creates an array of integers and then prints the first element of the array:

```
jshell int[] numbers = new int[10]; System.out.println(numbers[0]);
```

JShell is a powerful tool that can be used to learn, test, and debug Java code.

Regular Expressions

A regular expression is a sequence of characters that define a search pattern. Regular expressions can be used to find and replace text, and they

can also be used to validate data. The following regular expression matches any word that starts with the letter "a":

```
^a.*$
```

The following code uses the **Matcher** class to find all occurrences of the regular expression in a string:

```
java String text ="The cat sat on the mat."; Pattern pattern =  
Pattern.compile("^a.*$"); Matcher matcher = pattern.matcher(text); while  
(matcher.find()){System.out.println(matcher.group()); }
```

Regular expressions are a powerful tool that can be used to find and replace text, and they can also be used to validate data.

In this article, we have discussed arrays, objects, modules, JShell, and regular expressions in Java. These are important concepts in Java programming, and understanding them will help you to write more effective and efficient code.



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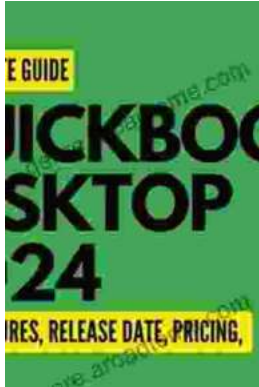
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