

Copilot

Regular expressions (regex) in Java are indeed powerful for various string manipulation and validation tasks. Here are some common tasks you can accomplish using regex:

1. Validation:

- **Email Validation:**

```
String emailRegex = "[a-zA-Z0-9._%+-]+@[a-zA-Z0-9.-]+\\.[a-zA-Z]{2,6}$";
Pattern pattern = Pattern.compile(emailRegex);
Matcher matcher = pattern.matcher(email);
boolean isValid = matcher.matches();
```

- **Phone Number Validation:**

```
String phoneRegex = "^\\d{10}$";
Pattern pattern = Pattern.compile(phoneRegex);
Matcher matcher = pattern.matcher(phoneNumber);
boolean isValid = matcher.matches();
```

2. Search and Replace:

- **Replace All Digits:**

```
String text = "My phone number is 1234567890";
String replacedText = text.replaceAll("\\d", "*");
```

- **Remove Whitespace:**

```
String text = "Hello World";
String noWhitespace = text.replaceAll("\\s", "");
```

3. Extraction:

- **Extract All Digits:**

```
String text = "Order number: 12345";
Pattern pattern = Pattern.compile("\\d+");
Matcher matcher = pattern.matcher(text);
while (matcher.find()) {
    System.out.println(matcher.group());
}
```

- **Extract Words:**

```
String text = "Hello World!";
Pattern pattern = Pattern.compile("\\b\\w+\\b");
Matcher matcher = pattern.matcher(text);
while (matcher.find()) {
    System.out.println(matcher.group());
}
```

4. Splitting Strings:

- **Split by Comma:**

```
String text = "apple,banana,orange";
String[] fruits = text.split(",");
```

- **Split by Whitespace:**

```
String text = "Hello World";  
String[] words = text.split("\\s+");
```

5. Pattern Matching:

- **Check if String Contains Only Letters:**

```
String text = "Hello";  
boolean isOnlyLetters = text.matches("[a-zA-Z]+");
```

- **Check if String is a Valid Date (MM/DD/YYYY):**

```
String dateRegex = "^(0[1-9]|1[0-2])/([0-2][0-9]|3[01])/\\d{4}$";  
Pattern pattern = Pattern.compile(dateRegex);  
Matcher matcher = pattern.matcher(date);  
boolean isValidDate = matcher.matches();
```

These examples should give you a good starting point for using regular expressions in Java. If you have any specific tasks in mind, feel free to let me know!