

10. Writing a program in Java to verify implementations of regular expressions.

Source Code:

```
package FirstPackage;
import java.util.regex.*;

public class RegexDemo {
    public static void main(String[] args) {
        // creating a regular expression pattern
        Pattern pattern = Pattern.compile("\\d+");

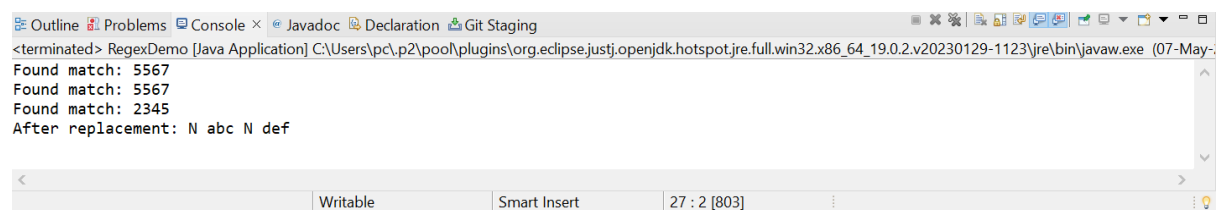
        // creating a matcher object
        Matcher matcher = pattern.matcher("5567 abc 2345 def");

        // finding the first match
        if (matcher.find()) {
            System.out.println("Found match: " + matcher.group());
        }

        // finding all matches
        matcher.reset();
        while (matcher.find()) {
            System.out.println("Found match: " + matcher.group());
        }

        // replacing matches
        String newStr = matcher.replaceAll("N");
        System.out.println("After replacement: " + newStr);
    }
}
```

Output:



The screenshot shows an IDE window with a console tab. The console output is as follows:

```
<terminated> RegexDemo [Java Application] C:\Users\pc\p2\pool\plugins\org.eclipse.justi.openjdk.hotspot.jre.full.win32.x86_64_19.0.2.v20230129-1123\jre\bin\javaw.exe (07-May-2023 10:00:00 AM)
Found match: 5567
Found match: 5567
Found match: 2345
After replacement: N abc N def
```

The IDE interface includes tabs for Outline, Problems, Console, Javadoc, Declaration, and Git Staging. The status bar at the bottom indicates 'Writable', 'Smart Insert', and '27 : 2 [803]'.