

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

public class RegularExpressionsDemo {

    public static void main(String[] args) {

        String text = "The quick brown fox jumps over the lazy dog.";

        // Pattern matching

        Pattern pattern = Pattern.compile("fox");
        Matcher matcher = pattern.matcher(text);
        System.out.println("Pattern matching:");
        while (matcher.find()) {
            System.out.println("Match found: " + matcher.group());
        }

        // String splitting

        System.out.println("\nString splitting:");
        String[] words = text.split("\\s");
        for (String word : words) {
            System.out.println(word);
        }

        // String replacement

        String replacedText = text.replaceAll("fox", "cat");
        System.out.println("\nString replacement:");
        System.out.println(replacedText);

        // Pattern matching with groups

        String email = "shivathejanerella4596@domain.com";
        Pattern emailPattern = Pattern.compile("([a-zA-Z0-9._-]+)@([a-zA-Z0-9.-]+)\\.([a-zA-Z]{2,})");
        Matcher emailMatcher = emailPattern.matcher(email);
        System.out.println("\nPattern matching with groups:");
```

```
if (emailMatcher.matches()) {  
    System.out.println("Username: " + emailMatcher.group(1));  
    System.out.println("Domain: " + emailMatcher.group(2));  
    System.out.println("Extension: " + emailMatcher.group(3));  
} else {  
    System.out.println("Invalid email format.");  
}  
}  
}
```