

**TestNotes/pset1/Permutations.java**

```
1 // Permutations.java
2
3 /**
4  * Recursive method that prints all permutations of a string.
5  * PSET1: Exercise 9 (Extra Credit)
6  *
7  * @author Kuljit Takhar
8  * @version Last modified 19_Sept_2023
9  *
10 */
11
12 public class Permutations {
13     public static void main(String[] args) {
14         listPermutations("ABCD");
15     }
16
17     public static void listPermutations(String input) {
18         generatePermutations("", input);
19     }
20
21     private static void generatePermutations(String prefix, String remaining) {
22         int length = remaining.length();
23
24         if (length == 0) {
25             System.out.println(prefix);
26         } else {
27             for (int i = 0; i < length; i++) {
28                 String newPrefix = prefix + remaining.charAt(i);
29                 String newRemaining = remaining.substring(0, i) +
remaining.substring(i + 1);
30                 generatePermutations(newPrefix, newRemaining);
31             }
32         }
33     }
34 }
35
```