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import java.io.BufferedReader;
import java.io.File;
import java.io.FileReader;
import java.io.IOException;

public class App {
    public static void main(String argv[]) throws IOException {

        File file = new File("test_sample.txt");
        BufferedReader br = new BufferedReader(new FileReader(file));

        String st;
        int line_num = 0;

        while ((st = br.readLine()) != null) {

            line_num++;

            System.out.printf("This is line %d      :  ", line_num);

            System.out.println(st);

            String[] parts = st.split(" ");

            System.out.println(" ***** This is for RE - (a|b)cd*  ");

            for (int i = 0; i < parts.length; i++) {
                String result = processRE(parts[i]);
                System.out.println("          From main :  " + result + " - " +
parts[i]);

            }

            System.out.println(" ***** This is for RE - a(bc)*d  ");

            for (int i = 0; i < parts.length; i++) {
                String result = processRE2(parts[i]);
                System.out.println("          From main :  " + result + " - " +
parts[i]);

            }

        }

        static String processRE(String in_str) {
            // This is for RE - ab*c
            int i = 0;
            System.out.println("Input string is :  " + in_str);

            if (in_str.substring(i, i + 1).equals("a") || in_str.substring(i, i +
1).equals("b")) {
                i++;

                if (in_str.substring(i, i + 1).equals("c")) {
                    i++;

                    while (i < in_str.length()) {

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        if (in_str.substring(i, i + 1).equals("d")) {
            i++;
        }
    }
    if (in_str.length() == i) {
        return "Pattern found";
    }
}

return "Reject";
}

static String processRE2(String in_str) {
    // This is for RE - ab*c
    int i = 0;
    System.out.println("Input string is : " + in_str);

    if (in_str.substring(i, i + 1).equals("a")) {
        i++;

        while (i < in_str.length() - 1) {
            if (in_str.substring(i, i + 2).equals("bc")) {
                i++;
                i++;
            } else break;
        }
        if (i < in_str.length())
            if (in_str.substring(i, i + 1).equals("d")) {
                i++;

                if (in_str.length() == i) {
                    return "Pattern found";
                }
            }
    }

    return "Reject";
}
}

```