Pass 2:

```
import java.util.*;

import java.io.*;


class Pass2{

   public static void main(String args[]) {

      pass2();

      System.out.println("Argument List Array(ALA) for Pass2");

      display(Pass1.ala, Pass1.alac, 2);

      System.out.println("Note: All tables are displayed here whereas the expanded output is stored
in the file pass2_output.txt");

   }


   static void pass2() {

      int alap = 0, index, mdtp, flag = 0, i, j;

      String s, temp;

      try {

         BufferedReader inp = new BufferedReader(new FileReader("pass1_output.txt"));

         File op = new File("pass2_output.txt");

         if (!op.exists())

            op.createNewFile();

         BufferedWriter output = new BufferedWriter(new FileWriter(op.getAbsoluteFile()));


         for (; (s = inp.readLine()) != null; flag = 0) {

            StringTokenizer st = new StringTokenizer(s);

            String str[] = new String[st.countTokens()];

            for (i = 0; i < str.length; i++)

               str[i] = st.nextToken();

            for (j = 0; j < Pass1.mntc; j++) {

               if (str[0].equals(Pass1.mnt[j][1])) {

                  mdtp = Integer.parseInt(Pass1.mnt[j][2]);
```

```
                st = new StringTokenizer(str[1], ",");
                String arg[] = new String[st.countTokens()];
                for (i = 0; i < arg.length; i++) {
                    arg[i] = st.nextToken();
                    Pass1.ala[alap++][1] = arg[i];
                }
                for (i = mdtp; !(Pass1.mdt[i][0].equalsIgnoreCase("MEND")); i++) { // Expand until
MEND
                    index = Pass1.mdt[i][0].indexOf("#");
                    temp = Pass1.mdt[i][0].substring(0, index);
                    temp += Pass1.ala[Integer.parseInt("" + Pass1.mdt[i][0].charAt(index + 1))][1]; //
Convert char->string->integer & append it
                    output.write(temp);
                    output.newLine();
                }
                flag = 1;
              }
            }
            if (flag == 0) { // When it is not a macro
              output.write(s);
              output.newLine();
            }
          }
          output.close();
      } catch (FileNotFoundException ex) {
          System.out.println("Unable to find file ");
      } catch (IOException e) {
          e.printStackTrace();
      }
  }

  static void display(String a[][], int n, int m) {
```

```
    int i, j;
    for (i = 0; i < n; i++) {
      for (j = 0; j < m; j++)
        System.out.print(a[i][j] + " ");
      System.out.println();
    }
  }
}
```

Output:

```
Argument List Array(ALA) for Pass2
0 DATA1
1 DATA2
2 DATA3
3 DATA4


PRG2 START
 USING *,BASE
A 1,DATA1
L 2,DATA2
L 3,DATA3
ST 4,DATA4
FOUR DC F'4'
FIVE DC F'5'
BASE EQU 8
TEMP DS 1F
 DROP 8
 END
```