

```
1 package assembler;
2
3 import java.io.*;
4 import java.util.*;
5
6 public class Pass2 {
7     public static void main(String[] args) throws IOException {
8         BufferedReader inter = new BufferedReader(new
9 FileReader("intermediate.txt"));
10        BufferedReader symtab = new BufferedReader(new FileReader("symtab.txt"));
11        BufferedWriter target = new BufferedWriter(new FileWriter("target.txt"));
12
13        // Load symbol table into hashmap
14        Map<String, String> symTable = new HashMap();
15        String line;
16        while ((line = symtab.readLine()) != null) {
17            String[] parts = line.trim().split("\t");
18            if (parts.length == 2)
19                symTable.put(parts[0], parts[1]);
20        }
21
22        // Instruction codes and registers
23        List<String> inst = Arrays.asList("STOP", "ADD", "SUB", "MULT", "MOVER",
24 "MOVEM", "COMP", "BC", "DIV", "READ", "PRINT");
25        List<String> reg = Arrays.asList("AREG", "BREG", "CREG", "DREG");
26
27        while ((line = inter.readLine()) != null) {
28            String[] parts = line.trim().split("\t");
29            String lc = parts[0];
30            String opcode = parts[1];
31            String operand1 = parts.length > 2 ? parts[2] : "";
32            String operand2 = parts.length > 3 ? parts[3] : "";
33
34            if (opcode.equals("START") || opcode.equals("END")) continue;
35            if (opcode.equals("DS")) continue;
36            if (opcode.equals("DC")) {
37                target.write(lc + "\t" + "00\t00\t" + operand1 + "\n");
38                continue;
39            }
40
41            int opCodeVal = inst.indexOf(opcode);
42            int regCodeVal = reg.indexOf(operand1);
43
44            String address = symTable.getOrDefault(operand2, "000");
45
46            target.write(lc + "\t" + String.format("%02d", opCodeVal) + "\t" +
47                         String.format("%02d", regCodeVal) + "\t" + address + "\n");
48        }
49    }
50}
```

```
48         inter.close();
49         symtab.close();
50         target.close();
51
52         System.out.println("Pass-II complete. Target code generated in target.txt.");
53     }
54 }
55 }
```