Assignment No :1B

//Java program to implement pass-2 of assembler.

Source code:

```
package spos;
import java.io.BufferedReader;
import java.io.FileReader;
import java.io.FileWriter;
import java.io.IOException;
import java.util.HashMap;
public class Pass2 {
public static void main(String[] Args) throws IOException{
 BufferedReader b1 = new BufferedReader(new
FileReader("d:\\intermediate.txt"));
 BufferedReader b2 = new BufferedReader(new FileReader("d:\\symtab.txt"));
 BufferedReader b3 = new BufferedReader(new FileReader("d:\\littab.txt"));
 FileWriter f1 = new FileWriter("e:\\Pass2.txt");
 HashMap<Integer, String> symSymbol = new HashMap<Integer, String>();
 HashMap<Integer, String> litSymbol = new HashMap<Integer, String>();
 HashMap<Integer, String> litAddr = new HashMap<Integer, String>();
 String s;
 int symtabPointer=1,littabPointer=1,offset;
 while((s=b2.readLine())!=null){
 String word[]=s.split("\t\t\t");
 symSymbol.put(symtabPointer++,word[1]);
 }
 while((s=b3.readLine())!=null){
 String word[]=s.split("\t\t");
 litSymbol.put(littabPointer,word[0]);
 litAddr.put(littabPointer++,word[1]);
 }
 while((s=b1.readLine())!=null){
 if(s.substring(1,6).compareToIgnoreCase("IS,00")==0)
 {
   f1.write("+ 00 0 000\n");
 }
 else if(s.substring(1,3).compareToIgnoreCase("IS")==0){
```

```
f1.write("+ "+s.substring(4,6)+" ");
if(s.charAt(9)==')')
{
f1.write(s.charAt(8)+" ");
offset=3;
}
else
{
f1.write("0 ");
offset=0;
}
if(s.charAt(8+offset)=='S')
f1.write(symSymbol.get(Integer.parseInt(s.substring(10+offset,s.length()-
1)))+"\n");
else
f1.write(litAddr.get(Integer.parseInt(s.substring(10+offset,s.length()-1)))+"\n");
}
else if(s.substring(1,6).compareToIgnoreCase("DL,01")==0){
String s1=s.substring(10,s.length()-1),s2="";
for(int i=0;i<3-s1.length();i++)
s2+="0";
s2+=s1;
f1.write("+ 00 0 "+s2+"\n");
}
else
{
f1.write("\n");
}
}
f1.close();
b1.close();
b2.close();
b3.close();
System.out.println("pass2 completed successfully");
}
}
```

Input Files:

Intermediate.txt :

(AD,01)(C,200)
(IS,04)(1)(L,1)
(IS,05)(1)(S,1)
(IS,04)(1)(S,1)
(IS,04)(3)(S,3)
(IS,01)(3)(L,2)
(IS,07)(6)(S,4)
(DL,01)(C,5)
(DL,01)(C,1)
(IS,02)(1)(L,3)
(IS,07)(1)(S,5)
(IS,00)
(AD,03)(S,2)+2
(IS,03)(3)(S,3)
(AD,03)(S,6)+1
(DL,02)(C,1)
(DL,02)(C,1)
(AD,02)
(DL,01)(C,1)

symtab.txt:

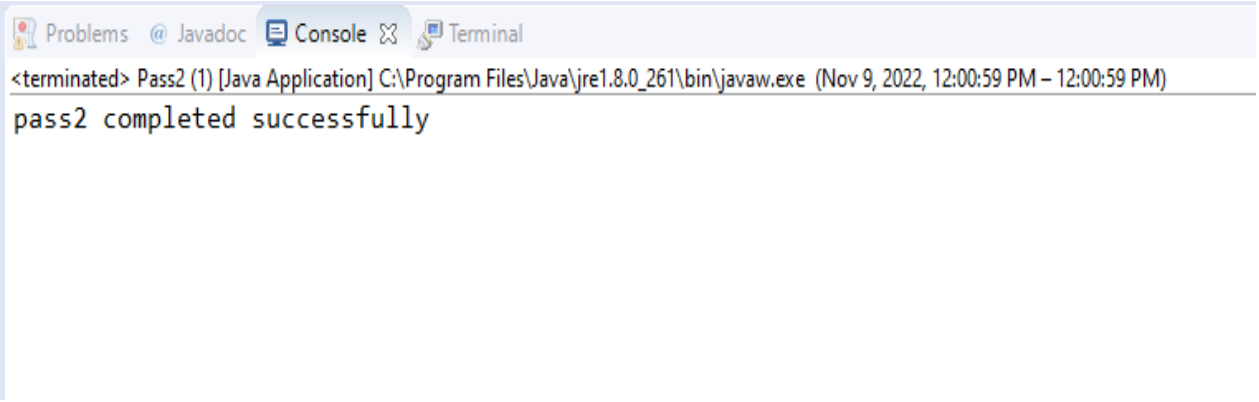
A	211	1
LOOP	202	1
B	212	1
NEXT	208	1
BACK	202	1
LAST	210	1

Littab.txt:

5	206
1	207
1	213

Output:

After execution it shows following message on console and store the target code in pass2.txt file:



Pass2.txt:

+ 04 1 206

+ 05 1 211

+ 04 1 211

+ 04 3 212

+ 01 3 207

+ 07 6 208

+ 00 0 005

+ 00 0 001

+ 02 1 213

+ 07 1 202

+ 00 0 000

+ 03 3 212

+ 00 0 001