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**Class : TE COMP**

Assignment No:2

# Problem Statement: Implement Pass-II of two pass assembler for pseudo-machine in Java using object oriented

**features. The output of assignment-1 (intermediate file and symbol table) should be input for this assignment.**

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("intermediate.txt")); BufferedReader b2 = new BufferedReader(new FileReader("symtab.txt")); BufferedReader b3 = new BufferedReader(new FileReader("littab.txt"));

FileWriter f1 = new FileWriter("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

1)))+"\n");

}

f1.write(litAddr.get(Integer.parseInt(s.substring(10+offset,s.length()-

elseif(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;

}

else{

}

}

f1.write("+ 00 0 "+s2+"\n");

f1.write("\n");

f1.close();

b1.close();

b2.close();

b3.close();

}

}

/\*

# OUTPUT:

sspm@sspm-1011PX:~/Desktop/sspm \_SPOS/Turn1/A2$ javac Pass2.java sspm@sspm- 1011PX:~/Desktop/nsspm\_SPOS/Turn1/A2$ java Pass2 sspm@sspm- 1011PX:~/Desktop/sspm\_SPOS/Turn1/A2$ cat Pass2.txt

intermediate code - (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)

|  |  |  |
| --- | --- | --- |
| Symbol Table -- | | |
| A | 211 | 1 |
| LOOP | 202 | 1 |
| B | 212 | 1 |
| NEXT | 208 | 1 |
| BACK | 202 | 1 |
| LAST | 210 | 1 |

|  |  |
| --- | --- |
| literal table -- |  |
| 5 | 206 |
| 1 | 207 |
| 1 | 213 |

machine code --

+ 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