

Practical No:- 02

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");
            symSymbol.put(symtabPointer++,word[1]);
        }
        while((s=b3.readLine())!=null){
            String word[]=s.split("\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 ");
            }
        }
    }
}
```

```

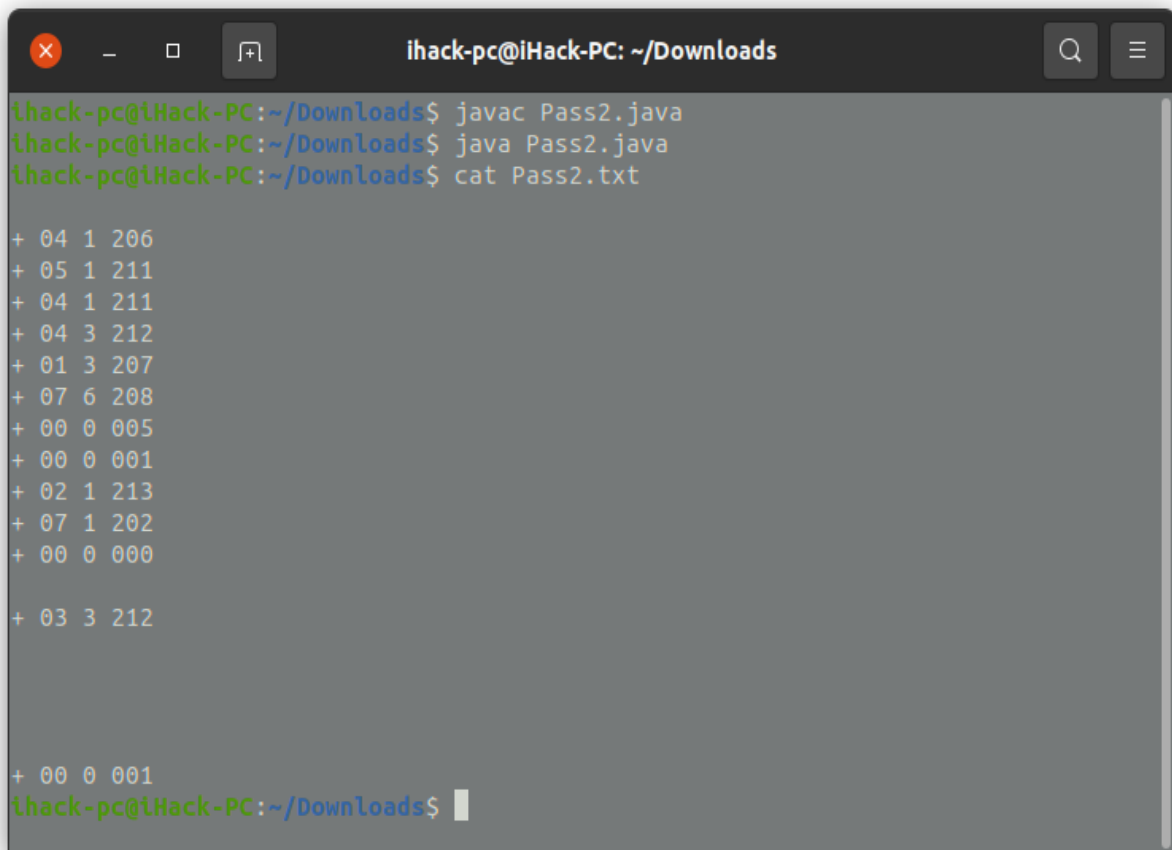
        offset=0;
    }
    if(s.charAt(8+offset)=='S')

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();
}
}

```

Output :-



```
ihack-pc@iHack-PC: ~/Downloads
ihack-pc@iHack-PC:~/Downloads$ javac Pass2.java
ihack-pc@iHack-PC:~/Downloads$ java Pass2.java
ihack-pc@iHack-PC:~/Downloads$ cat 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
ihack-pc@iHack-PC:~/Downloads$
```