LPCC Assignment 1-A

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Aim: Generate Symbol table, Literal table, Pool table & Intermediate code of a two-pass Assembler for the given source code.
1-a: Generate symbol table from given assembly code

Objective:

1. To generate symbol table
2. To understand the working of two-pass Assembler

Theory:

Symbol Table :
- It is a data-structure maintained throughout all the phases of a compiler
- All the identifier's names along with their types are stored here
- The symbol table makes it easier for the compiler to quickly search the identifier record and retrieve it
- The symbol table is also used for scope management.

Program:

1A.py :

```
import pandas as pd

tfile = open('Task.txt','r')
symbol = dict()
LocCount = 0

for line in tfile:
    line.strip()
    words = line.split()
```

```python
    if line.startswith('START'):
        LocCount = int(words[-1])
        continue

    if len(words)>3 :
        symbol[str(words[0])] = LocCount

    if 'DC' in line:
        symbol[str(words[0])] = LocCount

    if 'DS' in line:
        symbol[str(words[0])] = LocCount
        LocCount += int(words[-1])
        continue

    if 'EQU' in line:
        if words[0] not in symbol.keys():
            symbol[str(words[0])] = symbol[str(words[-1])]
    LocCount += 1

symbol_table =
pd.DataFrame(list(symbol.items()),columns=['Symbol','Address'])

print(symbol_table)
```

Input File :

Task.txt :

```
START 200
MOVER AREG =7
MOVER BREG X
L1 MOVER BREG =1
LTORG
NEXT ADD AREG =2
X DS 1
END
```

Output:


```
File  Edit  View  Search  Terminal  Help
digvijay@digvijay:~/Desktop/Practicals/LPCC/ass1$ python 1A.py
   Symbol   Address
0       X      205
1    NEXT      204
2      L1      202
digvijay@digvijay:~/Desktop/Practicals/LPCC/ass1$
```