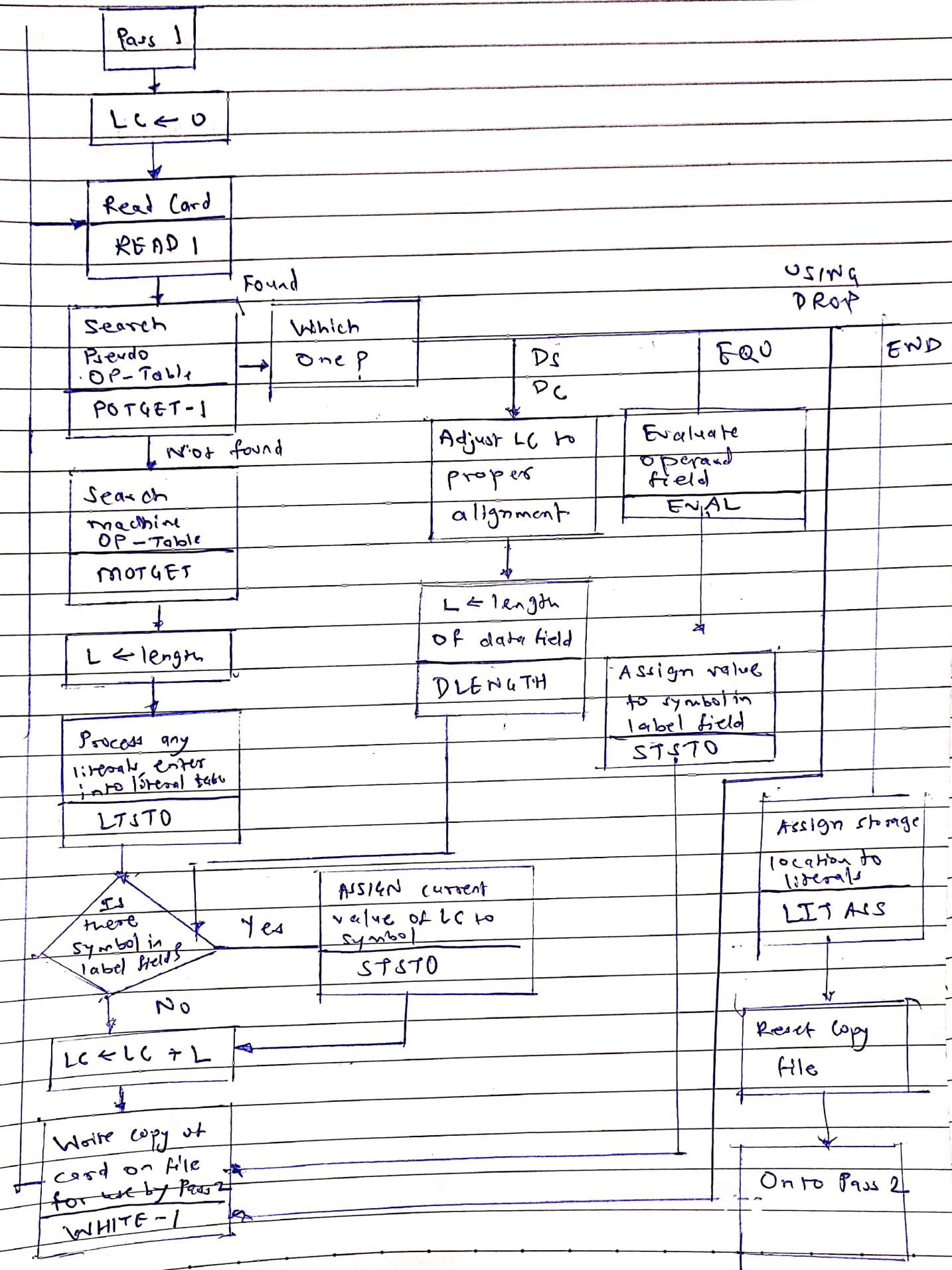


6A] Flowchart for Pass 1 of Two Pass Assembler



① DS and DC:

- These both are the assembler directive that tells the assembler something it needs to know in order to carry out the assembly process

DC stands for Define Constant. In assembly language specified as

<label> DC <value> Define constant

<label> DS <value> Define storage

<label> = Symbolic name,

<value> = It indicates the value supplied by the programmer

They can affect both LC and the definition of the symbol in the pass - 1.

② EQU:

- Define the symbol and assign the value evaluate by the expression in the operand field

③ Using and Drop:

- These Pseudo - Opcodes neither define symbols labels nor affect the location counter. So no processing required only save the USING and DROP cards for pass 2

④ END:

- When END is encountered pass 1 is terminated and literals are assigned the storage locations and we goto pass 2.

The mentioned steps are repeated for next iteration

⑥B Dynamic Linking Loader

- Dynamic Linker Loader is a special part of an operating system that loads external shared libraries into a running process and then binds those shared libraries dynamically to the running process. This approach is also called dynamic linking or late linking.
- It retrieves the addresses of functions and variables contained in the library, execute those functions or access those variables, and unload the library from memory.
- It is often used to allow several executing programs to share one copy of subroutine or library.
For eg., run time support routines for C could be stored in dynamic link library. A single copy of the routines in this library could be loaded into the memory of the computer. All C programs currently in execution could be linked to this one copy, instead of linking a separate copy into each object program.
- It provides the ability to load the routines only when they are needed so lot of time and memory is saved if subroutines are large with lots of external references.
- It helps in not loading the entire library for execution.
- In dynamic linking loader is used to load the main program.

Advantage

- No over head is incurred unless the procedure to be called or referenced is actually used.
- A further advantage is that the system can be dynamically configured.

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Disadvantage

- Considerable overhead and complexity incurred, due to the fact that we have postponed most of the binding process until the execution time.