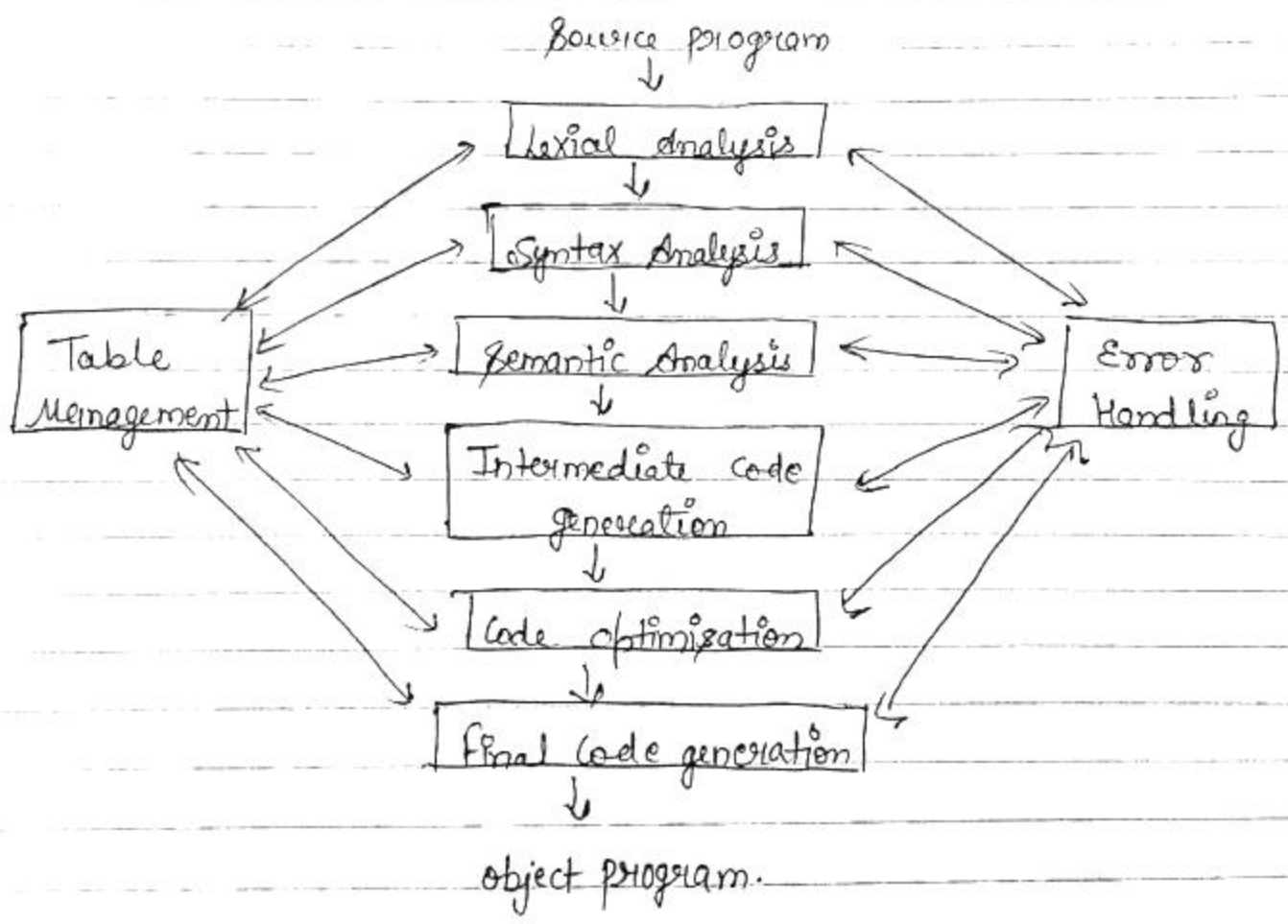


OS
Unit 1

* Compiler

Compiler is a special program that processes statement written in particular language and turns them into machine language or "code" that a computer's processors uses. After compiling process, the entire object program is loaded into main memory.

- phases of compiler :



* Interpreter

Interpreter takes one instruction from source code program, translates it into machine language and executes the instruction. Thus, the interpreter translates and executes first statement before it goes to second statement.

* Linker

If a program consist of several subroutines, the object subroutine must be contained together to form a complete run. The software that combines these object subroutine into one load module is known as linker.

* Loader

Loader is a program that loads machine code of a program in the system memory. In computing, loader is the part of an operating system that is responsible for loading programs.

* MACRO and MEND.

In assembly language program, if a set of instructions is repeated more than once, then we use macro facility to avoid such repetition.

MACRO <macro name>

} Body of macro.

MEND

A MACRO statement indicates that a macro definition follows, while the statement MEND indicates the end of macro definition.

* Difference Between Compiler and Interpreter:

Compiler

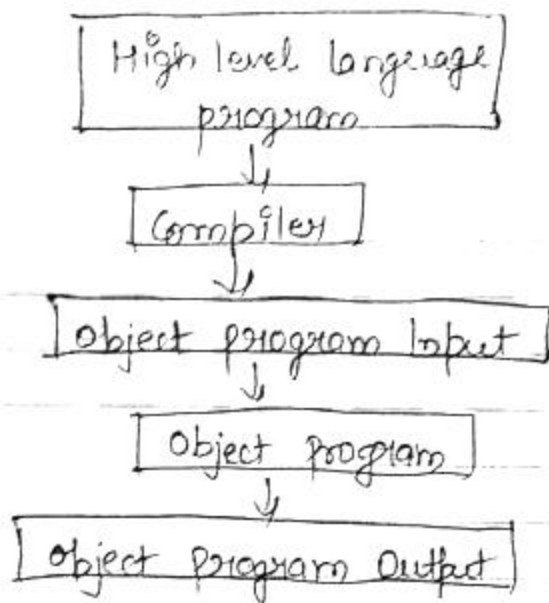
1. Compiler takes entire program as input.
2. Debugging of errors is much ~~more~~ complex as the compiler produces list of errors for the entire program.
3. It is faster.
4. Execution time is faster.
5. Memory requirement is more.

Interpreter

1. Interpreter takes one instruction as input.
2. Debugging of errors is much simpler because it is done in steps.
3. It is slower.
4. Execution time is slower.
5. Memory requirement is less.

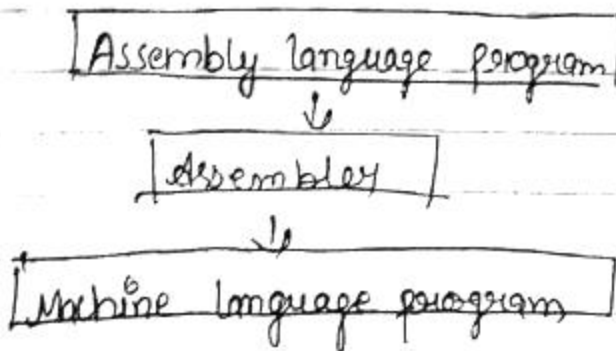
* process of Execution of programs written in highest level language, is carried out in two steps:

1. The source program must firstly be translated into object program using a language translator then
2. Finally the object program is loaded into memory and executes.



* Assembler

Assembler is a computer's program that translates assembly language to an object file or machine language format.



• Advantages of Assembly languages :

- 1) It is easier to write and traces out errors in an assembly language. Thus it saves programmer's time.
- 2) Assembly language programs can be easily modified than machine language program.