3) Cousins of Compiler

1) Preprocessor 2) Assembler 3) Loader & Link-editor

1) Preprocessor:

-> is a program that processes its input data to produce output that is used as input to another program.

-> They perform the following functions:

1. Macro processing 2. File Inclusion
3. Rational Preprocessors 4. Language extension

1. Macro processing:

->specifies how a certain input sequence should be mapped to an output sequence according to a defined procedure.

2. File Inclusion:

-> Includes header files into the program text.

-> finds an #include directive it replaces it by the entire content of the specified file.

3. Rational Preprocessors:

->These processors change older languages with more modern flow-of-control and data-structuring facilities.

4. Language extension:

-> These processors attempt to add capabilites to the language by what amounts to built-in macros

2) Assembler:

-> Assembler creates object by translating assembly instruction into machine code.

There are two - types of assemblers:

1. One - pass assemblers
2. Two - pass assemblers.

i) One - pass assemblers:

-> assume that all symbols will be defined before any instruction that references them.

2) Two - pass assemblers:

-> create a table with all symbol and their values in the first pass, and then use the table in a second pass to generate code.

3) Linker and Loader:

linker

-> ais a program that takes one or more objects generated by a compiler and combines them into a single executable program.

Three tasks of the linker are

1) Searches the program to find library routines used by the program.

2. Determines the memory locations ~~that code~~

3. Resolve references among files.

Loader

-> responsible for loading programs in memory.