

Stages of Translation

Lexical Analysis

Uses the source code as input and replaces the key words with their binary tokens from the look-up table.

A symbol table is created for the variables.

It will output error messages if it finds an error. For example if a keyword is not in the look up table, or a variable is undefined.

It will remove all additional lines, spaces tabs and comments.



Syntax Analysis

The code is checked to see if it is grammatically correct.

Further errors may be picked up, these won't be as accurate as the error logging in the lexical stage.

Semantic checks are carried out, including label checks, flow of control checks and Declaration checks.

Must ensure that certain control constructs are used in the right places.



Code Generation

By now, all errors have been removed or reported and the code is all binary.

Compiler takes each statement and translates it into low level/ intermediate code. One-to-many process

Optimisation is when the compiler gets rid of any lines which are not strictly necessary, this makes the program shorter so it takes up less memory and runs faster.