Unit IV: "Symbol Tables"

Symbol Table: A symbol table is a data structure used by a compiler to keep track of the scope, life and binding information about names which are used in the source program to identify the various program elements. Each entry in the symbol table is a pair of the form (name, information).

name	information
X	real

Each time a name is encountered, the symbol table is searched to see whether that name has been seen previously. If the name is new, it is entered into the table. Thus, a symbol table mechanism must allow the user to add new entries and search existing entries efficiently.

Use of Symbol tables:

Information collected in the symbol table is used during several stages in the compilation process. It is used in semantic analysis i.e., in checking that uses of names are consistent with their implicit or explicit declarations. It is also used in during code generation. There we need to know how much and what kind of run-time storage must be allocated to a name. It can be used to aid in error detection and correction.

[P.T.O.]