Issues in the symbol table:

There are number of phases associated with the construction of symbol tables. The building phase involves the insertion of symbols and their associated values into the table and the referencing phase accesses these values from the table. A record is deleted from the symbol table when the scoping rules of the language determine the object can no longer be referenced. The symbol table is referenced during most of the phases viz. syntax analyzer, semantic analyzer, memory allocation and code generation. Therefore, the symbol table should reside in the main memory during the most of the processing. So, the constraints which must be considered in the design of symbol tables are processing time and memory space.

Capabilities of a symbol table manager:

i) It should be able to enter the symbols in the table and return the address of the entries.

ii) It should allow to search the symbol table to check whether a particular symbol already exist in the table. If it exists, it should return the address of the entry.

iii) It should be able to delete arbitrary element and groups of elements from the table, ex, it should be able to delete all the local variables associated with a particular block level in an efficient manner.

iv) The search time must be as fast as possible. Therefore, the entire table should be in memory.