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CSE-C

Analysis of different implementations of symbol table in C

(i) Using linked list:

The structure of symbol table is created with integers, string and pointer to ~~next~~ next element as members. The string is value of identifier a pointer links to next element.

The ~~next~~ insert function is created to add identifiers to structure and display is used to show all stored identifiers. The symbol table stores the ID and info about the identifier. The advantage of using linked list is that we can add & delete identifiers and additional info

(ii) Symbol table using Hash table:

structure of symbol table is declared with integer and character pointer members. The integer and characters act as ~~the~~ line and ID key value pair, there is also insert and display functions. The code automatically takes in identifies and inserts them to hash table with sequentially generated keys. To stop the while loop, enter 0 and the stored info and identifies are displayed.

(iii) Symbol table using linear list.

Declare a 2 dimensional array of characters. Each row in this data structure stores 1 identifier. ~~an~~ function symbol table That does inserting and searching operations into linear list. The search operation goes through each element in list and compares it to current ID to check if identifier is already present. Then the insert function is used if identifier is not present.