CCNE – Data Structure Final lab Assignment

Use the following structure to define a list of teachers.

typedef struct node

{

int id; //id of the teacher

char \* name; //name of the teacher

int age; //age of the teacher

struct node \*next; //Address of the next node

} Teacher;

Teacher \*head = NULL;

**head** is a global pointer of type Teacher which will point to the first node in the linked list. The advantage of declaring **head** global is we can directly use it in any function without passing it as a parameter.

**Insert and Search Functions**

Create a function insert, that will add a new node to the linked list. The insert function accepts teacher details as arguments. It creates a new node with the teacher details passed to the function and then inserts the new node at the beginning of the linked list.

The id, name and age of the teacher must be entered by the user. The id must be unique so you have to create a function that searches within the linked list if the new id is already used.

**The Search Function**

The search function searches the record based on the id number. The search function accepts 1 parameter that is the id number of the teacher we want to search. The function traverses all the nodes of the linked list to find the required record.

This function is used to find out if a new id is already used.

**Display Function**

This function searches the record based on the id number. The search function accepts 1 parameter that is the id number of the teacher we want to search. The function traverses all the nodes of the linked list to find the required record and display its details (id, name, age).

**Update Function**

The update function first searches for the node with the required id number. If the node is found, the program asks the user to enter new updated values of the name and age.

**Delete Function**

Delete works similar to search. We search for the record by its id number. If the record is found, we delete it from the linked list.

**Display Function**

Display function traverse the linked list and print all the details of each node of the linked list.

you have to use a menu to allow the user to chose one of the previous options or 0 (zero) to exit.