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*Description: This program creates a linked list and the user can add a number, delete it, search the list, and display it*

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*Date: 11/8/22*

*Status: Complete*

*\*/*

**#include** <iostream>

**#include** <string>

**using** **namespace** std;

**struct** entry {

**int** number;

entry **\***next;

};

**char** menu();

**void** orderedInsert(entry**\*** **&**head, **int** choice);

**void** deleteEntry(entry**\*** **&**head, **int** choice);

entry**\*** search(entry **\***head, **int** choice);

**void** display(entry**\*** head);

**int** main() {

entry **\***head **=** **NULL**;

entry **\***ptr;

**char** c;

**do** {

**int** i;

**char** choice **=** menu();

**switch** (choice) {

**case** 'A':

cout **<<** "Enter number you would like to add (-9999 to exit):" **<<** endl;

cin **>>** i;

orderedInsert(head, i);

**break**;

**case** 'B':

cout **<<** "Enter number you would like to delete:" **<<** endl;

cin **>>** i;

deleteEntry(head, i);

**break**;

**case** 'C':

cout **<<** "Enter number you would like to search for:" **<<** endl;

cin **>>** i;

ptr **=** search(head, i);

**break**;

**case** 'D':

display(head);

**break**;

}

cout **<<** "Enter z to continue" **<<** endl;

cin **>>** c;

} **while** (c **==** 'z');

}

**char** menu() {

**char** input;

cout **<<** "A. Add a number" **<<** endl **<<** "B. Delete a number" **<<** endl **<<** "C. Search for a number" **<<** endl **<<** "D. Display the whole list of numbers" **<<** endl **<<** "E. Exit" **<<** endl;

cout **<<** "Enter your choice:" **<<** endl;

cin **>>** input;

**return** input;

}

**void** orderedInsert(entry**\*** **&**head, **int** choice) {

entry **\***current;

entry **\***node **=** **new** entry;

node->number **=** choice;

node->next **=** **NULL**;

**if** ((head **==** **NULL**) **||** (head->number **>=** node->number)) {

node->next **=** head;

head **=** node;

}

**else** {

current **=** head;

**while** (current->next **!=** **NULL** **&&** current->next->number **<** choice) {

current **=** current->next;

}

node->next **=** current->next;

current->next **=** node;

}

}

**void** deleteEntry(entry**\*** **&**head, **int** choice) {

entry **\***current;

entry **\***previous;

current **=** head;

previous **=** **NULL**;

**while** (current **!=** **NULL** **&&** current->number **!=** choice) {

previous **=** current;

current **=** current->next;

}

**if** (current **==** **NULL**) {

cout **<<** "The number you want to delete isn't on the list." **<<** endl;

}

**else** **if** (previous **==** **NULL**) {

head **=** head->next;

**delete** current;

}

**else** {

previous->next **=** current->next;

**delete** current;

}

}

entry **\***search(entry **\***head, **int** choice) {

entry **\***current **=** head;

**while** (current) {

**if** (current->number **==** choice) {

**return** current;

}

current **=** current->next;

}

**if** (current **==** **NULL**) {

cout **<<** "Number not found" **<<** endl;

}

**else** {

cout **<<** "The number " **<<** current **<<** " was found" **<<** endl;

}

}

**void** display(entry**\*** head) {

entry**\*** current **=** head;

**while** (current **!=** **NULL**) {

cout **<<** current->number **<<** " " **<<** endl;

current **=** current->next;

}

cout **<<** endl;

}

Text

Description automatically generated