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\* Project: lab01\_main.cpp

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\* Date: Created on Jan 17, 2017

\* Purpose: This program initializes an array and allows for dynamic array modification via user input

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#include <iostream>

#include <string>

#include "lab01\_methods.h"

using namespace std;

double \* v;

int arr\_index;

int size;

int \* input;

bool executing = true;

/\*

\* Function: Initialize

\* Input: None

\* Output: None

\* Purpose: Initializes an empty array of size 2

\*/

void Initialize() {

arr\_index = 0;

size = 2;

v = new double[size];

input = new int;

}

/\*

\* Function: Finalize

\* Input: None

\* Output: None

\* Purpose: Deletes the dynamically allocated global variables

\*/

void Finalize() {

delete [] v;

v = NULL;

delete input;

executing = false;

}

/\*

\* Function: ReadUserInput

\* Input: None

\* Output: None

\* Purpose: Read's and returns the user's input from cin

\* if an invalid input is given

\*/

void ReadUserInput() {

cout << "Select an option: ";

cin >> \*input;

}

/\*

\* Function: HandleUserInput

\* Input: None

\* Output: None

\* Purpose: Calls the appropriate function based on the user input, or re-displays the menu

\* if an invalid input is given

\*/

void HandleUserInput() {

switch (\*input) {

case 1:

cout << "You selected 'Print the array'" << endl;

break;

case 2:

cout << "You selected 'Append element at the end'" << endl;

break;

case 3:

cout << "You selected 'Remove last element'" << endl;

break;

case 4:

cout << "You selected 'Insert one element'" << endl;

break;

case 5:

cout << "You selected 'Exit'" << endl;

Finalize();

break;

default:

cout << "You have entered an invalid input. Please enter the number that corresponds with the command you wish to execute. Re-displaying main menu..." << endl;

cin.clear();

cin.ignore(10000,'\n');

break;

}

}

/\*

\* Function: PrintMainMenu

\* Input: None

\* Output: None

\* Purpose: Print's the main program's menu, detailing user modifications

\*/

void PrintMainMenu() {

cout << "Main menu:" << endl << endl;

cout << "1. Print the array" << endl;

cout << "2. Append element at the end" << endl;

cout << "3. Remove last element" << endl;

cout << "4. Insert one element" << endl;

cout << "5. Exit" << endl << endl;

}

/\*

\* Function: Main

\* Input: None

\* Output: None

\* Purpose: Print's the main program's menu, detailing user modifications

\*/

int main() {

Initialize();

while (executing) {

PrintMainMenu();

ReadUserInput();

HandleUserInput();

}

return 0;

}

Output:

Matts-MacBook-Pro:lab01 mspringer$ g++ lab01\_main.cpp -o main

Matts-MacBook-Pro:lab01 mspringer$ ./main

Main menu:

1. Print the array

2. Append element at the end

3. Remove last element

4. Insert one element

5. Exit

Select an option: g

You have entered an invalid input. Please enter the number that corresponds with the command you wish to execute. Re-displaying main menu...

Main menu:

1. Print the array

2. Append element at the end

3. Remove last element

4. Insert one element

5. Exit

Select an option: 4

You selected 'Insert one element'

Main menu:

1. Print the array

2. Append element at the end

3. Remove last element

4. Insert one element

5. Exit

Select an option: 5

You selected 'Exit'

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