Lab 5

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* 코드 첨부 (Code)

#include <stdio.h>

#include <stdbool.h>

int main(void)

{

int studentIDS[100] = {0, };

int len = 0;

int num;

while(1)

{

printf("Enter a number.\n");

printf("0. Terminate the program\n");

printf("1. Add a Student ID\n");

printf("2. Delete Student ID\n");

printf("3. Insert Student ID at a given position or index\n");

printf("4. Search Student ID\n");

printf("5. Update Student ID\n");

printf("6. Display Student IDs\n");

printf("=> ");

scanf("%d", &num);

switch(num)

{

case 0:

{

// 0) Terminate the program

return 0;

break;

}

case 1:

{

// 1) Add a Student ID

int given\_id;

int is\_given\_num = false;

printf("Enter a student ID : ");

scanf("%d", &given\_id);

// Cheak if the student ID is unique

for(int i = 0; i < 100; i++) {

if(given\_id == studentIDS[i])

{

printf("Already given Studnet ID.\n\n");

is\_given\_num = true;

break;

}

}

if(is\_given\_num)

break;

// Add a Student ID into an Array

printf("Successfully added.\n\n");

studentIDS[len] = given\_id;

len += 1;

break;

}

case 2:

{

// 2) Delete Student ID

int given\_id;

int is\_there = false;

int idx;

printf("Enter a Student ID to delete : ");

scanf("%d", &given\_id);

for(int i = 0; i < 100; i++) {

if(given\_id == studentIDS[i])

{

is\_there = true;

idx = i;

break;

}

}

if(is\_there)

{

for(int i = idx; i < len; i++)

{

studentIDS[i] = studentIDS[i+1];

}

len -= 1;

printf("Delete Completed\n\n");

}

else

{

printf("Failed to found the ID.\n\n");

}

break;

}

case 3:

{

// 3) Insert Student ID at a given position or index

int given\_id;

int given\_idx;

int is\_given\_num = false;

printf("Enter a student ID : ");

scanf("%d", &given\_id);

printf("Enter a number of position to push it : ");

// Cheak if the student ID is unique

for(int i = 0; i < 100; i++) {

if(given\_id == studentIDS[i])

{

printf("Already given Studnet ID.\n\n");

is\_given\_num = true;

break;

}

}

if(is\_given\_num)

break;

// Add a Student ID into an Array

printf("Successfully added.\n\n");

if (given\_idx < len)

{

int i = len;

for(i; i > given\_idx; i--) {

studentIDS[i] = studentIDS[i-1];

}

}

studentIDS[given\_idx] = given\_id;

len += 1;

break;

}

case 4:

{

// 4) Search Student ID

int given\_id;

int is\_there = false;

printf("Enter a Student ID to search : ");

scanf("%d", &given\_id);

for(int i = 0; i < 100; i++) {

if(given\_id == studentIDS[i])

{

printf("Given ID is now on position %d.", i);

is\_there = true;

break;

}

}

if(is\_there == false)

printf("Given ID is NOT in the list.\n\n");

break;

}

case 5:

{

// 5) Update Student ID

int given\_id;

int is\_there = false;

int change\_id;

printf("Enter a Student ID to update : ");

scanf("%d", &given\_id);

for(int i = 0; i < 100; i++) {

if(given\_id == studentIDS[i])

{

printf("I found it. Which number to change? : ");

scanf("%d", &change\_id);

studentIDS[i] = change\_id;

is\_there = true;

printf("Update Completed\n\n");

break;

}

}

if(is\_there == false)

printf("Failed to found the ID.\n\n");

break;

}

case 6:

{

// 6) Display Student IDs

for(int i = 0; i < len; i++)

{

printf("Position : %d, Student ID : %d\n", i, studentIDS[i]);

}

printf("\n");

break;

}

default:

break;

}

}

return 0;

}