ASSIGNMENT 3 DATA STRUCTURES

LINKED LIST

Case story:

You are going to create a system that record number of student information which could be added or deleted or updated.

Naming your source code file with ***yourstudentID*_3**, for example, **210020101_3.c**

A. The screen will have main menu like this

```
STUDENT RECORD SYSTEM
1. Input New Record
2. Search Record
3. Update Record
4. Show Records
9. Delete Record
Your choice: _
```

B. If you choose 1, you'll be asked to input student's ID number and student's name. The input will be like

```
Type Student's ID Number: _
Type Student's Name: _
```

Student's ID number should not have duplicate. So, after you input Student's ID number, you should immediately check all the recorded data, if there is already same ID number in the list.

If found duplicate ID number already in the recorded data, the input will be rejected, and warning message appear like this

```
Input Denied.
Student's ID Number already in the record.
```

After that, you'll asked If you have more data to input

```
Input another data ?{Y/N]: _
```

If you answer Y, you will repeat point B, otherwise you will back to main menu (point A)

C. if you choose 2, you'll be asked about search condition. The input will be like

```
Search based on ID [I] or name [N] ?: _
```

If you choose I, then you will be asked to input student's ID number:

```
Type Student's ID Number to look for: _
```

If you choose N, then you will be asked to input student's name:

```
Type Student's Name to look for: _
```

After that, your code should be able to search the data based on Student's ID number or Student's name and then show **all** the data that **match exactly** with the search condition. The output would be like, for example search for student's name Milo where there are 2 students with that name:

```
Student ID      Student Name
2001001         Milo
2001102         Milo
```

After show the list, you'll asked If you have more data to input

```
Search again ?{Y/N]: _
```

If you answer Y, you will repeat point C, otherwise you will back to main menu (point A)

D. If you choose 3, you will be asked to input Student's ID number to update

```
Type Student's ID Number to update: _
```

Your code then searches the data for the ID number.

D1. If found, it will show the information like this

```
ID Number  : xxxxxxx
Name       : yyyyyyyy
```

Where xxxxxxx ID number you are looking for, and yyyyyy is the correlated name with that ID number and continue to D3.

D2. If not found, it will show the message like this

```
ID Number is not found.
```

And continue to D4.

D3. You'll be asked to input new student's ID number and student's name. The input will be like

```
Type New Student's ID Number: _
Type New Student's Name: _
```

The new ID number should not have duplicate. So, after you had input ID number, you should immediately check all the recorded data, if there is already same ID number in the list.

If found duplicate ID number already in the recorded data, the input will be rejected, and warning message appear like this

```
Update Denied.
There is another same ID Number already in the record.
```

If not found duplicate ID number, then the ID number that you want to update will be replace with the new ID number that you had inputted also with the name.

D4. After that, you'll asked If you have more data to input

```
Update another data ?{Y/N]: _
```

If you answer Y, you will repeat point D, otherwise you will back to main menu (point A)

E. If you choose 4, it will show all the entry that you have made. The output would be like this, for example:

```
Student ID      Student Name
2001001         Milo
2001102         Milo
```

And the system back to main menu (point A).

F. If you choose 9, you'll be asked to input ID number to delete

```
Type Student's ID Number to be deleted: _
```

Your code should search for the ID number

F1. If found, it should show the information like this:

```
ID Number  : xxxxxxx
Name       : yyyyyyyy
```

And then you'll be asked confirmation to delete

```
Are you sure to delete this data ? [Y/N] _
```

If you answer Y, then the data will be deleted and not appear in the list anymore. If you answer N, nothing changes.

Continue to F3.

F2. If not found, it will show message like this.

```
ID Number not found.
```

F3. The system will ask if there is another data to delete

```
Delete another data ? [Y/N]: _
```

If you answer Y, then repeat point F, other wise going back to main menu (point A)

Rule

1. The program will use linked list model, whether using simple linked list or double linked list or circular linked list or any linked list is up to you, its your freedom as programmer to decide

2. Using C language programming to solve the task.

3. Upload your code, using **https://bit.ly/UnggahTugas3**, no later than November 30th, 2021.

You have enough time (2 weeks) to finish the assignment, so don't waste your time.

4. All similar code will receive Zero point.