**GROUP ASSIGNMENT (20%)**

Write a complete program to allow the user to input students' name and mark, display the keyed in data, search for specific data and filter data. Use the following requirements and sample input and output to write the program:

i. Create a structure named *record* with the following members:
- name : *string*
- mark : *integer*

ii. In **main( )** function :
- Create an array type structure named *student* with 5 elements.
- Use *for loop* statement to input the five students' *name* and *mark* into array *student*.
- Display the menu. Refer to the sample output.
- Use *do while loop*:
  - Prompt the user to enter option.
  - Use *switch* statement and call function accordingly based on the option input by user.
    - if option is 1 – call function *Display(...)* and send the array *student* as argument.
    - if option is 2 – call function *Search(...)* and send the array *student* as argument.
    - if option is 3 – call function *Filter(...)* and send the array *student* as argument.
  - Repeat the process as long as the user wants to continue.

iii. In **Display(…)** function :
- Use *for loop* statement to display all the students' *name* and *mark*.

iv. In **Search(…)** function :
- Prompt the user to input name to *search*.
- Use *for loop* statement and *strcmp(...)* to *search* the name by comparing the *name* in the array *student*.
- If the data is found, display "*Data found*" together with the *name* and *mark*, else display *"Data not found*".

v. In **Filter(…)** function :
- Prompt the user to input *start* mark and *end* mark.
- Use *for loop* and *if* statement to filter the data based on the *start* and the *end* mark.
- Display students' *name* and *mark* which are in the range of the *start* and the *end* mark.

Sample output : *(Bold values are input from user)*

```
Student #1
Enter name : John
Enter mark : 90

Student #2
Enter name : Megan
Enter mark : 75

Student #3
Enter name : Susan
Enter mark : 80

Student #4
Enter name : Jimmy
Enter mark : 82

Student #5
Enter name : Tony
Enter mark : 70

Menu
1. Display data
2. Search data
3. Filter data

Choose option <1,2,3> : 1

Students Record
John       90
Megan      75
Susan      80
Jimmy      82
Tony       70

Do you want to continue ? <Y-Yes  N-No> : Y

Choose option <1,2,3> : 2

Enter name to search : Jimmy
Data found.
Name : Jimmy
Mark : 82

Do you want to continue ? <Y-Yes  N-No> : Y

Choose option <1,2,3> : 3

Enter start mark  : 75
Enter end mark    : 85

Student records with mark between 75 and 85
Megan     75
Susan     80
Jimmy     82

Do you want to continue ? <Y-Yes  N-No> : N

Thank you.
```

**EVALUATION FORM (20 Marks)**

| Id | Name |
|---|---|
| 1191200368 | IRDINA BINTI AHMAD HILMI |
| 1191202539 | IVEN LOW ZHI YIN |
| 1191202333 | LAM JERN HERR |
| 1191202487 | NG SIEW YANG |

| No | Item | Mark |
|---|---|---|
| **1.** | **Coding** | **/ 18** |
| **2.** | **Comments (0=>Null 1=>Poor 2=>Good)** | **/ 2** |

****Copy and Paste the code here. Save this document as PDF File.**

```
#include <stdio.h>
#include <string.h>

int x = 0;
struct record {
	char name [50] ;
	int mark;
};

void display (struct record student[]);
void search (struct record student[]);
void filter (struct record student[]);

int main()//Written by : Iven Low
{
	struct record student [5]; // structure array named student with 5 elements
	int y = 1, menu;
	char answer;

	for(x=0;x<5;x++)
	{
		printf("Student #%d\n", y);
		printf("Enter name : ");
		scanf("%s", student[x].name); // prompt user to enter student's name
		printf("Enter mark : ");
```

```
        scanf("%d", &student[x].mark); // prompt user to enter student's mark
        y++;
        printf("\n");
}

printf("Menu\n");
printf("1. Display data\n");
printf("2. Search data \n");
printf("3. Filter data \n");
fflush(stdin);
printf("\n");

do {
        printf("Choose option <1,2,3> : ");
        scanf("%d", &menu); // prompt the user to enter option
        printf("\n");

//switch case is used to check which option in the menu the user have key in
//Written by : Irdina
switch(menu)
{
        case '1' : display(student);
                        break;
        case '2' : search(student);
                        break;
        case '3' : filter(student);
                        break;
}
        /*if (menu==1)
        display(student);
        else if (menu==2)
        search(student);
        else if (menu==3)
        filter(student);
        else
        {
                printf("Invalid option\n\n");
        }*/

        //Written by : Ng Siew Yang
        fflush(stdin);
        printf("Do you want to continue ? <Y-Yes  N-No> : ");
        scanf("%c", &answer);
        printf("\n");
```

```
		}while (answer == 'Y');// the process will repeat as long as the user wants to continue,if the user did not key in character Y, it will display Thank you and terminate the program.
		printf("Thank you.\n");
}

void display(struct record student[])//written by : Ng Siew Yang
{
	//In function display, if user chooses option 1 the output will show all 5 names and marks that the user have entered
	printf("Students Record\n");
	for (x=0; x<5; x++)
	{
		printf("%s \t %d\n", student[x].name, student[x].mark );
	}
	printf("\n");
	return ;
}

void search(struct record student[]) //Lam Jern Herr
{
	int i, error = 0;
	char name[50];

	fflush(stdin);
	printf("Enter name to search : ");
	gets(name); //User is prompt to enter name that they want to search
	for (x=0; x<5; x++)
	{
		if (strcmp(name, student[x].name)==0) //Using strcmp, it will compare the previous infromation and the current entered name, if it matches the output will display "data found", the student's name and mark
		{
		printf("Data found.\n");
		printf("Name : %s\n",student[x].name);
		printf("Mark : %d\n\n", student[x].mark);
		}
			else
			{
			error++;
			}
		}
	if (error==5)
	{
		printf("Data not found\n\n"); //if the names does not match, it will display "data not found" and return to the option of choosing the menu
```

```
	}
	return ;
}

void filter (struct record student[])//written by : Irdina
{
	int startmark, endmark;
	//In function void filter, user is asked to enter the start mark and end mark to find student with those marks in between
	printf("Enter start mark : ");
	scanf("%d", &startmark);
	printf("Enter end mark   : ");
	scanf("%d", &endmark);
	printf("\n");
	printf("Student records with mark between %d and %d\n", startmark, endmark);
	//Using for loop, output will display the marks between start and end mark that user have entered from the main function of information that have been entered
	for (x=0; x<5; x++)
	{
		if (student[x].mark >= startmark && student[x].mark<= endmark)
		{
		printf("%s \t %d\n", student[x].name, student[x].mark);
		}
	}
	printf("\n");
	return;
}
```