BCSL-021 C Language Programming Solved Assignment

Q1. Write an interactive C program which prompts the user with the following options on the opening menu:

- 1) General Information of the Learner Support Centre(LSC)
- 2) Programmes activated in the study center
- 3) Scheduling of theory/practical sessions for BCA-MCA programmes
- 4) Academic Councillor's Details
- 5) Schedules for Assignment submissions for various programmes
- 6) Quit

Enter your choice:

If an "1" is entered, prompt the user to enter the study center code and know the general details about the study like name of the learner support center(LSC), name of the regional center, name of the study center coordinator, programme in-charge details etc. If "2" is entered, it should give the details of all the programmes that are activated in the LSC. If "3" is entered, it should give the schedules for the theory and practical counseling sessions for BCA and MCA programmes for the current session. If "4" is entered it should display the details of the academic counselors' associated with respective programmes. If "5" is entered it should display the assignment submission schedules for various programmes for the current session activated in that LSC. If the user enters any letters or numbers other than the choice, redisplay the prompt. All output should go to the terminal and all input should come from the keyboard.

Solu.

For better readability refer my GitHub repository: <u>BCSL 021 Assignment Solution</u>

Instructions:

Learner Support Desk

Clone the repo using below command

git clone git@github.com:Sahil-4/BCSL021-assginment-solution.git

Run below command(s) to compile and run the program

```
gcc dataset.c utils.c main.c -o main
./main
or
...
gcc dataset.c utils.c main.c -o main; ./main;
```

Note: Make sure you have gcc compiler installed in your system and you are running the command(s) in the directory where main.c dataset.c utils.h and utils.c are present

You can get all the files from my GitHub Repository.

Problem Statement:

Write an interactive C program which prompts the user with the following options on the opening menu:

- 1. General Information of the Learner Support Centre(LSC)
- 2. Programmes activated in the study center
- 3. Scheduling of theory/practical sessions for BCA-MCA programmes
- 4. Academic Councillor's Details
- 5. Schedules for Assignment submissions for various programmes
- 6. Quit

Enter your choice:

If an "1" is entered, prompt the user to enter the study center code and know the general details about the study like name of the learner support center(LSC), name of the regional center, name of the study center coordinator, programme in-charge details etc.

If "2" is entered, it should give the details of all the programmes that are activated in the LSC.

If "3" is entered, it should give the schedules for the theory and practical counseling sessions for BCA and MCA programmes for the current session.

If "4" is entered it should display the details of the academic counselors' associated with respective programmes.

If "5" is entered it should display the assignment submission schedules for various programmes for the current session activated in that LSC.

If the user enters any letters or numbers other than the choice, redisplay the prompt. All output should go to the terminal and all input should come from the keyboard.

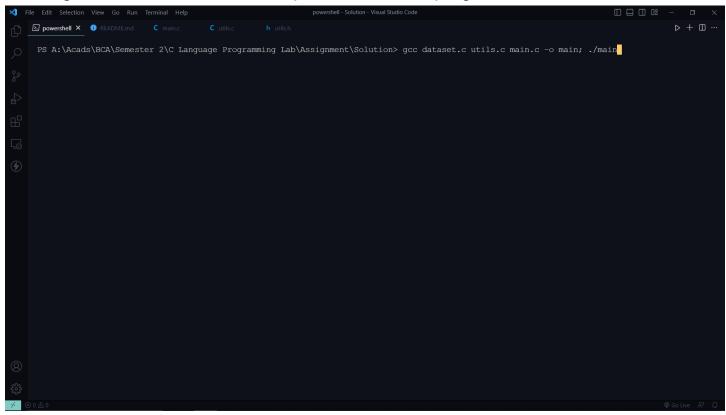
Solution Logic:

I have divided the logic mainly into three segments:

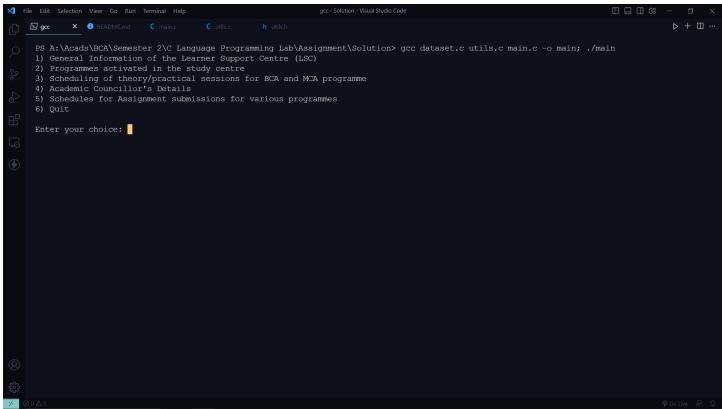
- 1. dataset.c Here i have added the data related to LSCs, Counseling Schedule, Course Coordinator and Assignment Submission dates
- 2. utils.c Utility file is the file where I have defined the operation which I'm using in the main file like displayGeneralInfo, displayActivatedPrograms etc. For this I have also used a header file [Utility Header File](./utils.h) in same file I have define structures also for holding data (which is defined in [dataset](./dataset.c))
- 3. main.c Then out main file comes this is the entry point of our program the flow of program will start from here
- 4. Through main.c I have provided the main menu and asked users to input any option. This option I'm handing using a switch case statement. If the user presses 1 Case 1 will get executed and the displayGeneralInfo() function declared in utils.h and defined in utils.c will get executed.

Screenshots of Runtime:

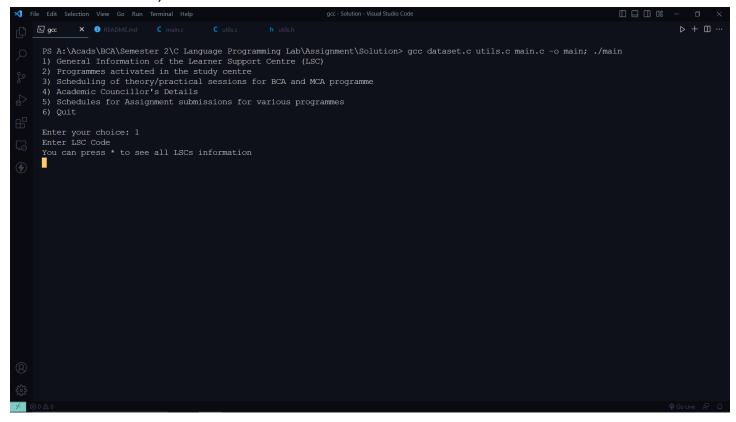
Running the start command to compile and execute program



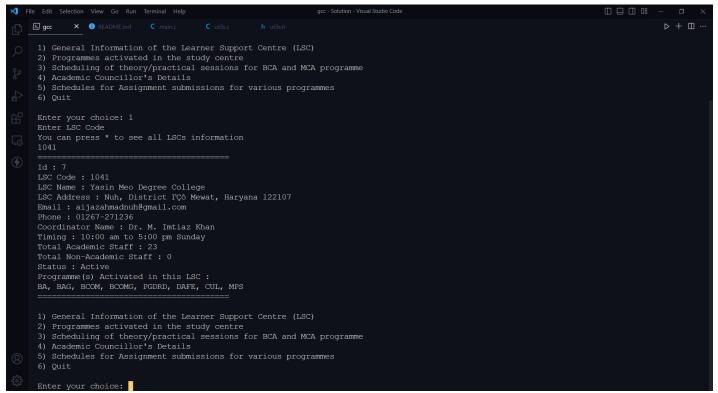
Main menu/interface of program



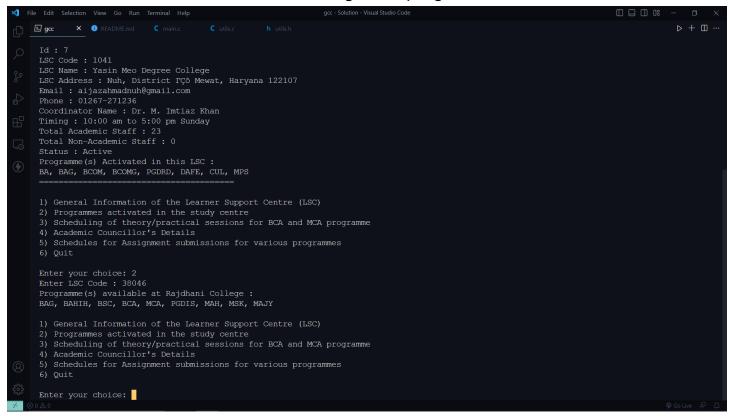
Selected 1 To get LSCs details (Then we have been asked LSC Code or press * to get details of all LSCs)



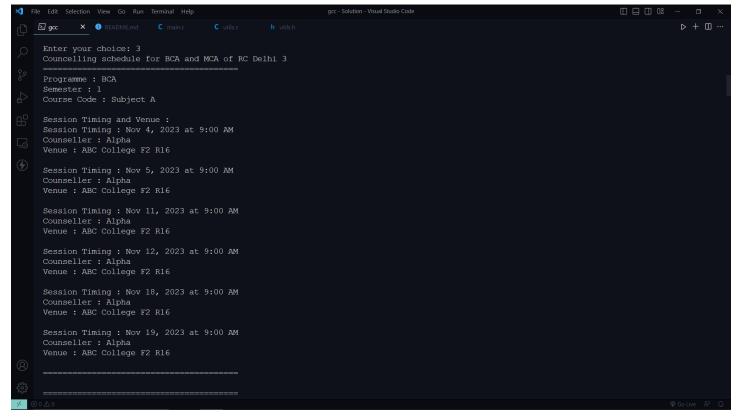
Entered LSC Code 1041 and got the details of this LSC

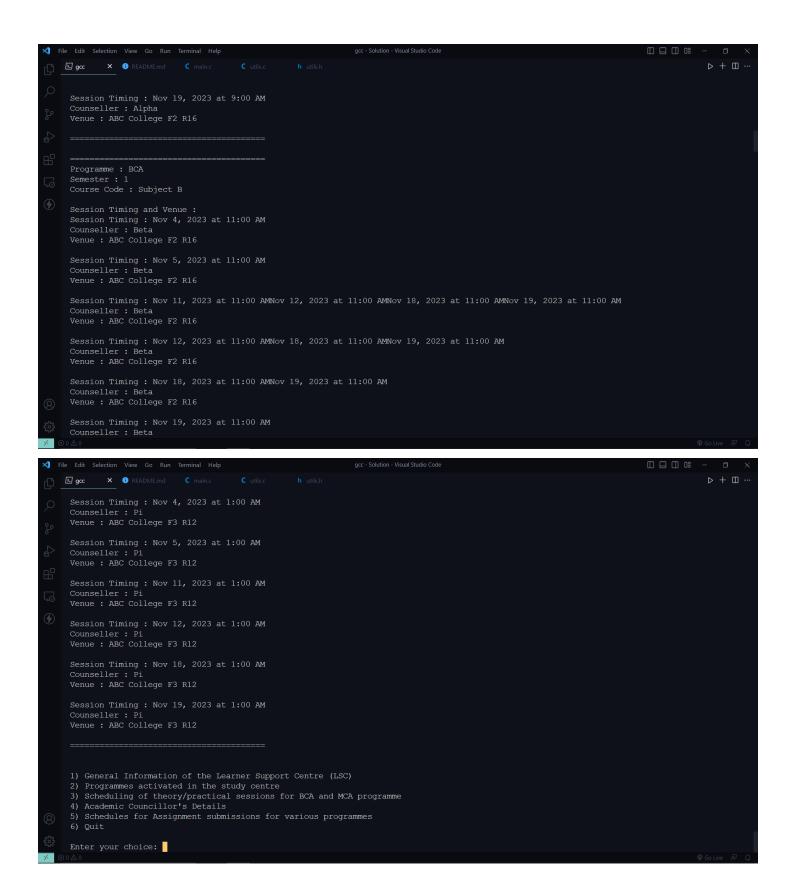


Again we have provided the main menu and being asked to choose from I selected 2 and entered LSC Code 38046 after this i got the programmes activated in this LSC

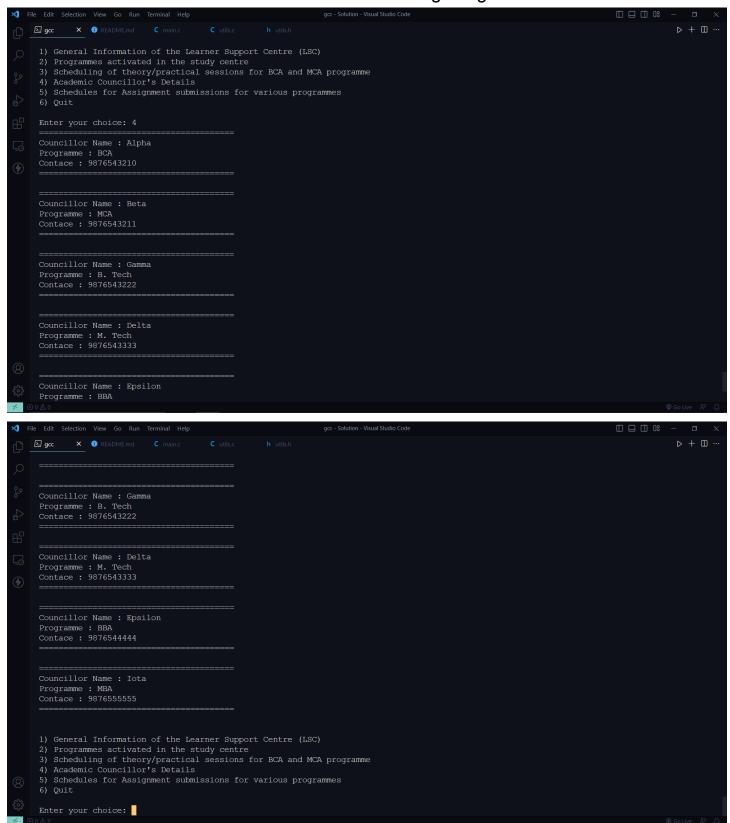


After this I choose 3 in main menu to get details of Theory/Practical Schedule

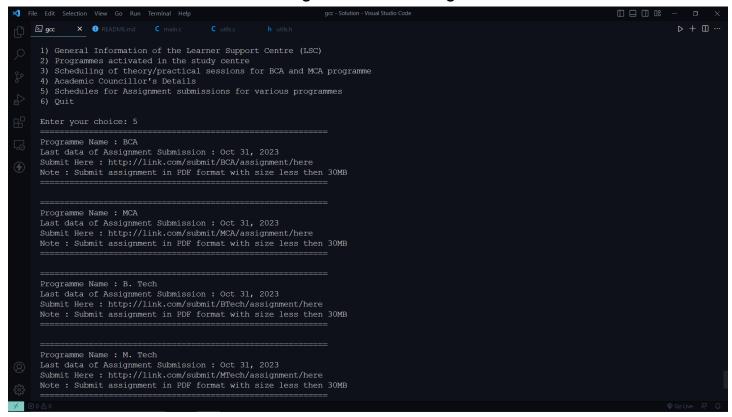


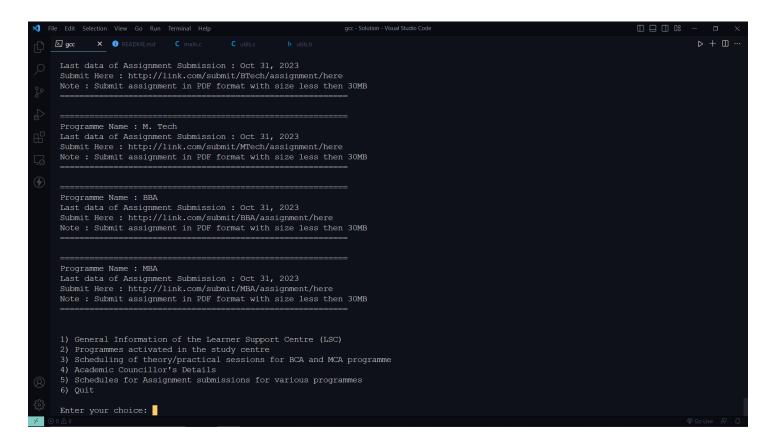


Then I returned to the main menu and choose 4 for getting details of councilors

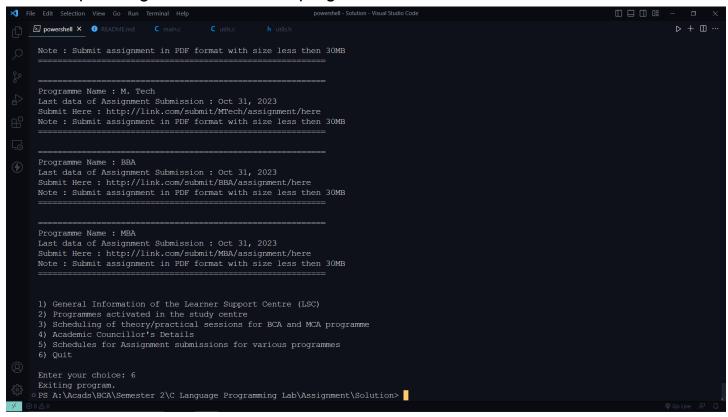


Next from main menu I choose 5 to get details of assignment submission schedule

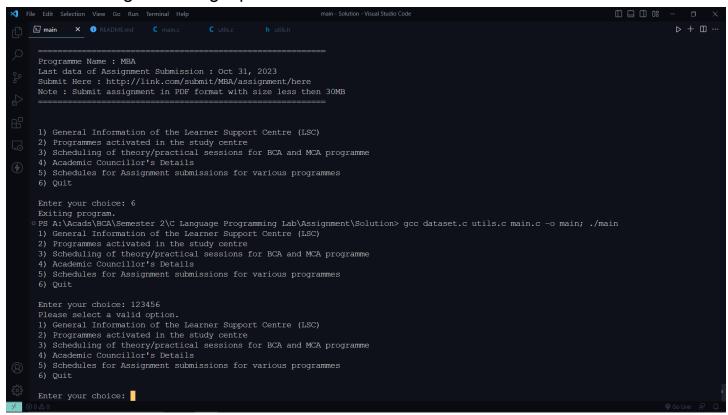




Here I'm pressing 6 to exit from the program



This is when I gave wrong input



```
`main.c`
#include <stdio.h>
#include "utils.h"
// To compile and run : gcc dataset.c utils.c main.c -o main; ./main;
/* Print the main menu */
void print_menu() {
  printf("1) General Information of the Learner Support Centre (LSC)\n2)
Programmes activated in the study centre\n3) Scheduling of theory/practical
sessions for BCA and MCA programme\n4) Academic Councillor's Details\n5)
Schedules for Assignment submissions for various programmes\n6)
Quit\n\nEnter your choice: ");
}
// entry point
int main() {
  int choice;
  do {
    print_menu();
    scanf("%d", &choice);
    switch (choice) {
    case 1:
```

Code:

```
displayGeneralInfo();
    break;
  case 2:
    displayActivatedPrograms();
    break;
  case 3:
    displaySchedulingInfo();
    break;
  case 4:
    displayAcademicCouncillors();
    break;
  case 5:
    displayAssignmentSchedules();
    break;
  case 6:
    printf("Exiting program.\n");
    break;
  default:
    printf("Please select a valid option.\n");
} while (choice != 6);
return o;
```

```
`utils.h`
#ifndef UTILS_H
#define UTILS_H
// Structure to hold information about a learner support center
struct LearnerSupportCentre {
  int _id;
  char code[10];
  char name[100];
  char address[200];
  char coordinator[100];
  char phone[20];
  char email[100];
  char timing[30];
  char programmes[40][40];
  int programmes_total;
  int staff_academic;
  int staff_non_academic;
  char status[20];
};
// Structure to hold information about a counselling schedule
struct CounsellingSchedule {
  char programme[4];
  int semester;
  char course code[15];
  char councillor[26];
```

```
char session_timing[10][24];
  int total_sessions;
  int session_duration;
  char venue[48];
};
// Structure to hold information about a councillor
struct Councillor {
  char programme[8];
  char name[26];
  char phone[12];
};
// Structure to hold information about a councillor
struct AssignmentSubmissionSchedule {
  char programme[12];
  char submission_date[15];
  char link[50];
  char note[100];
};
// Function to display general information
void displayGeneralInfo();
// Function to display activated programs
```

```
void displayActivatedPrograms();
// Function to display scheduling information
void displaySchedulingInfo();
// Function to display academic councillor details
void displayAcademicCouncillors();
// Function to display assignment submission schedules
void displayAssignmentSchedules();
#endif
`utils.c`
#include <stdio.h>
#include <conio.h>
#include <string.h>
#include "utils.h"
// dataset
extern struct LearnerSupportCentre lsc_dataset[];
extern struct CounsellingSchedule councelling schedule BCA dataset[];
extern struct CounsellingSchedule councelling schedule MCA dataset[];
extern struct Councillor councillors dataset[];
```

```
extern struct AssignmentSubmissionSchedule
assignment_submission_schedule[];
// constants
extern int SIZE OF LSC DATASET;
extern int SIZE_OF_COUNSELLING_SCHEDULE_BCA_DATASET;
extern int SIZE OF COUNSELLING SCHEDULE MCA DATASET;
extern int SIZE OF COUNSELLORS DATASET;
extern int SIZE OF ASSIGNMENT SUBMISSION SCHEDULE DATASET;
// functions
/* Show details of selected LSC */
void printLSCDetails(struct LearnerSupportCentre lsc) {
 printf("Id:%d\nLSC Code:%s\nLSC Name:%s\nLSC Address:%s\nEmail:
%s\nPhone: %s\nCoordinator Name: %s\nTiming: %s\nTotal Academic Staff:
%d\nTotal Non-Academic Staff: %d\nStatus: %s\n", lsc. id, lsc.code, lsc.name,
lsc.address, lsc.email, lsc.phone, lsc.coordinator, lsc.timing, lsc.staff academic,
lsc.staff_non_academic, lsc.status);
 printf("Programme(s) Activated in this LSC : \n");
 for (int i = 0; i < lsc.programmes_total; i++) {</pre>
   printf("%s", lsc.programmes[i]);
   if (i!= lsc.programmes total - 1) {
     printf(", ");
```

```
printf("\n");
 /* Function to display general information */
void displayGeneralInfo() {
  char scCode[10] = "\o";
  printf("Enter LSC Code\n");
 printf("You can press * to see all LSCs information\n");
  scanf("%s", scCode);
 if (!strcmp(scCode, "*")) {
    for (int i = o; i < SIZE_OF_LSC_DATASET; i++) {</pre>
      printLSCDetails(lsc_dataset[i]);
  } else {
    for (int i = o; i < SIZE_OF_LSC_DATASET; i++) {</pre>
      if (!strcmp(lsc_dataset[i].code, scCode)) {
        printLSCDetails(lsc_dataset[i]);
        return;
    printf("No LSC found by this code.\n\n");
```

```
/* Function to display activated programs */
void displayActivatedPrograms() {
  char scCode[10] = "\o";
  printf("Enter LSC Code : ");
  scanf("%s", scCode);
  for (int i = o; i < SIZE OF LSC DATASET; i++) {
    if (!strcmp(lsc_dataset[i].code, scCode)) {
      printf("Programme(s) available at %s : \n", lsc_dataset[i].name);
      for (int j = 0; j < lsc_dataset[i].programmes_total; j++) {</pre>
         printf("%s", lsc_dataset[i].programmes[j]);
         if (j != lsc_dataset[i].programmes_total - 1) {
           printf(", ");
      printf("\n\n");
      return;
  printf("No LSC found by this code.\n\n");
/* Show details of Counselling Schedule */
void printCounsellingShedule(struct CounsellingSchedule schedule) {
```

}

```
printf("Programme : %s\nSemester : %d\nCourse Code : %s\n\n",
schedule.programme, schedule.semester, schedule.course_code);
 printf("Session Timing and Venue : \n");
 for (int i = 0; i < schedule.total_sessions; i++) {</pre>
   printf("Session Timing : %s\nCounseller : %s\nVenue : %s\n\n",
schedule.session timing[i], schedule.councillor, schedule.venue);
 printf("========|\n\n");
/* Function to display scheduling information */
void displaySchedulingInfo() {
 printf("Councelling schedule for BCA and MCA of RC Delhi 3\n");
 for (int i = o; i < SIZE_OF_COUNSELLING_SCHEDULE_BCA_DATASET; i++) {
   printCounsellingShedule(councelling_schedule_BCA_dataset[i]);
 printf("\n");
 for (int i = o; i < SIZE_OF_COUNSELLING_SCHEDULE_MCA_DATASET; i++)</pre>
{
   printCounsellingShedule(councelling_schedule_MCA_dataset[i]);
 printf("\n");
/* print details of councillor */
```

```
void printCouncellors(struct Councillor councillor) {
 printf("Councillor Name : %s\nProgramme : %s\nContace : %s\n",
councillor.name, councillor.programme, councillor.phone);
 /* Function to display academic counselor details */
void displayAcademicCouncillors() {
 for (int i = o; i < SIZE_OF_COUNSELLORS_DATASET; i++) {</pre>
   printCouncellors(councillors_dataset[i]);
 printf("\n");
void printAssignmentSubmissionInfo(struct AssignmentSubmissionSchedule
schedule) {
======== \langle n'' \rangle;
 printf("Programme Name : %s\nLast data of Assignment Submission :
%s\nSubmit Here: %s\nNote: %s\n", schedule.programme,
schedule.submission_date, schedule.link, schedule.note);
=======\langle n \rangle
```