

## Question 1

Code:

```
//Name: Meigan Wright
//ID: 96871
//Final Exam: Question 1

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

void main()
{
    char enteredStr[30];
    char* First, * Second;
    char newName[50];
    char* next_token;
    int i = 0;

    newName[0] = '\0';
    for (i = 0; i < 2; i++)
    {
        printf_s("Please enter the abbreviated names. \n");
        gets_s(enteredStr);

        First = strtok_s(enteredStr, " ", &next_token);
        Second = strtok_s(NULL, " ", &next_token);

        if (strcmp(First, "U") == 0)
        {
            strcat_s(newName, "University of ");
            strcat_s(newName, Second);
            puts(newName);
            newName[0] = '\0';
        }

        if (strcmp(Second, "U") == 0)
        {
            strcat_s(newName, First);
            strcat_s(newName, " University");
            puts(newName);
            newName[0] = '\0';
        }
    }
}
```

Output:

Please enter the abbreviated names.

U Toronto

University of Toronto

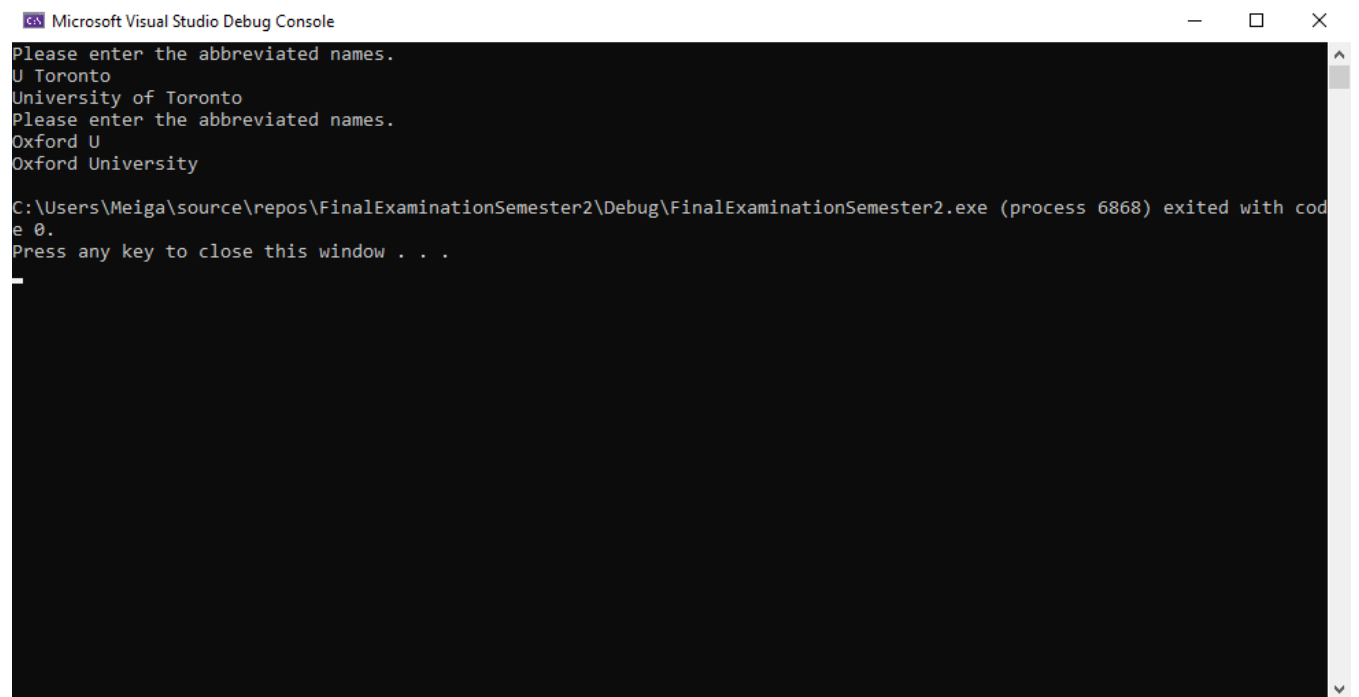
Please enter the abbreviated names.

Oxford U

Oxford University

C:\Users\Meiga\source\repos\FinalExaminationSemester2\Debug\FinalExaminationSemester2.exe  
(process 3144) exited with code 0.

Press any key to close this window . . .



The screenshot shows the Microsoft Visual Studio Debug Console window. The title bar reads "Microsoft Visual Studio Debug Console". The console output is as follows:

```
Please enter the abbreviated names.  
U Toronto  
University of Toronto  
Please enter the abbreviated names.  
Oxford U  
Oxford University  
C:\Users\Meiga\source\repos\FinalExaminationSemester2\Debug\FinalExaminationSemester2.exe (process 6868) exited with code 0.  
Press any key to close this window . . .
```

The console window has a dark background and a light gray scrollbar on the right side. The text is displayed in a monospaced font.

## Question 2:

Code:

```
//Name: Meigan Wright
//ID: 96871
//Final Exam: Question 2

#include <stdio.h>

typedef struct
{
    int ID;
    int vacationDays[6];
    int unusedDays;
} StaffVacation;

void main()
{
    StaffVacation s[5];
    int i, j;
    int totalDays;

    printf_s("Please enter your ID followed by your yearly TAKEN Vacation Days. \n");

    for (i = 0; i < 5; i++)
    {
        totalDays = 0;
        scanf_s("%d", &s[i].ID);

        for (j = 0; j < 6; j++)
        {
            scanf_s("%d", &s[i].vacationDays[j]);
        }

        for (i = 0; i < 5; i++)
        {
            totalDays = 0;

            for (j = 0; j < 6; j++)
            {
                totalDays += s[i].vacationDays[j];
                s[i].unusedDays = 120 - totalDays;
            }
        }

        printf_s("\n\n Employee ID \t Unused Vacation Days\n");

        for (i = 0; i < 5; i++)
        {
            printf_s("%d \t\t\t %d \n", s[i].ID, s[i].unusedDays);
        }
    }
}
```

Output:

Console:

Please enter your ID followed by your yearly TAKEN Vacation Days.

379

18 20 14 12 14 19

429

20 20 20 20 20 20

287

18 12 19 14 20 17

932

16 19 20 13 20 19

462

20 20 20 20 20 20

Employee ID	Unused Vacation Days
379	23
429	0
287	20
932	13
462	0

C:\Users\Meiga\source\repos\FinalExaminationSemester2\Debug\FinalExaminationSemester2.exe  
(process 10660) exited with code 0.

Press any key to close this window . . .

```
Microsoft Visual Studio Debug Console
Please enter your ID followed by your yearly TAKEN Vacation Days.
379
18 20 14 12 14 19
429
20 20 20 20 20 20
287
18 12 19 14 20 17
932
16 19 20 13 20 19
462
20 20 20 20 20 20

Employee ID      Unused Vacation Days
379              23
429              0
287              20
932              13
462              0

C:\Users\Meiga\source\repos\FinalExaminationSemester2\Debug\FinalExaminationSemester2.exe (process 7384) exited with code 0.
Press any key to close this window . . .
```

### Question 3:

Code:

```
//Name: Meigan Wright
//ID: 96871
//Final Exam: Question 3

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

FILE* inf, * outf;

typedef struct
{
    int ID;
    char first[15], last[15];
    int students;
    int totalGrant;
}Faculty;

void main()
{
    Faculty s[5];
    int i;

    fopen_s(&inf, "C:/Programming/grads.txt", "r");
    fopen_s(&outf, "C:/Programming/researchgrant.txt", "w");

    for (i = 0; i < 5; i++)
    {
        fscanf_s(inf, "%d%s%sd", &s[i].ID, s[i].first, sizeof(s[i].first),
s[i].last, sizeof(s[i].last), &s[i].students);

        s[i].totalGrant = 500 * s[i].students;

        fprintf_s(outf, "%d\t\t%s\t%s\t\t%d\n", s[i].ID, s[i].first, s[i].last,
s[i].totalGrant);
        printf_s("%d\t\t%s\t%s\t\t%d\n", s[i].ID, s[i].first, s[i].last,
s[i].totalGrant);

    }

}
```

Output:

Console:

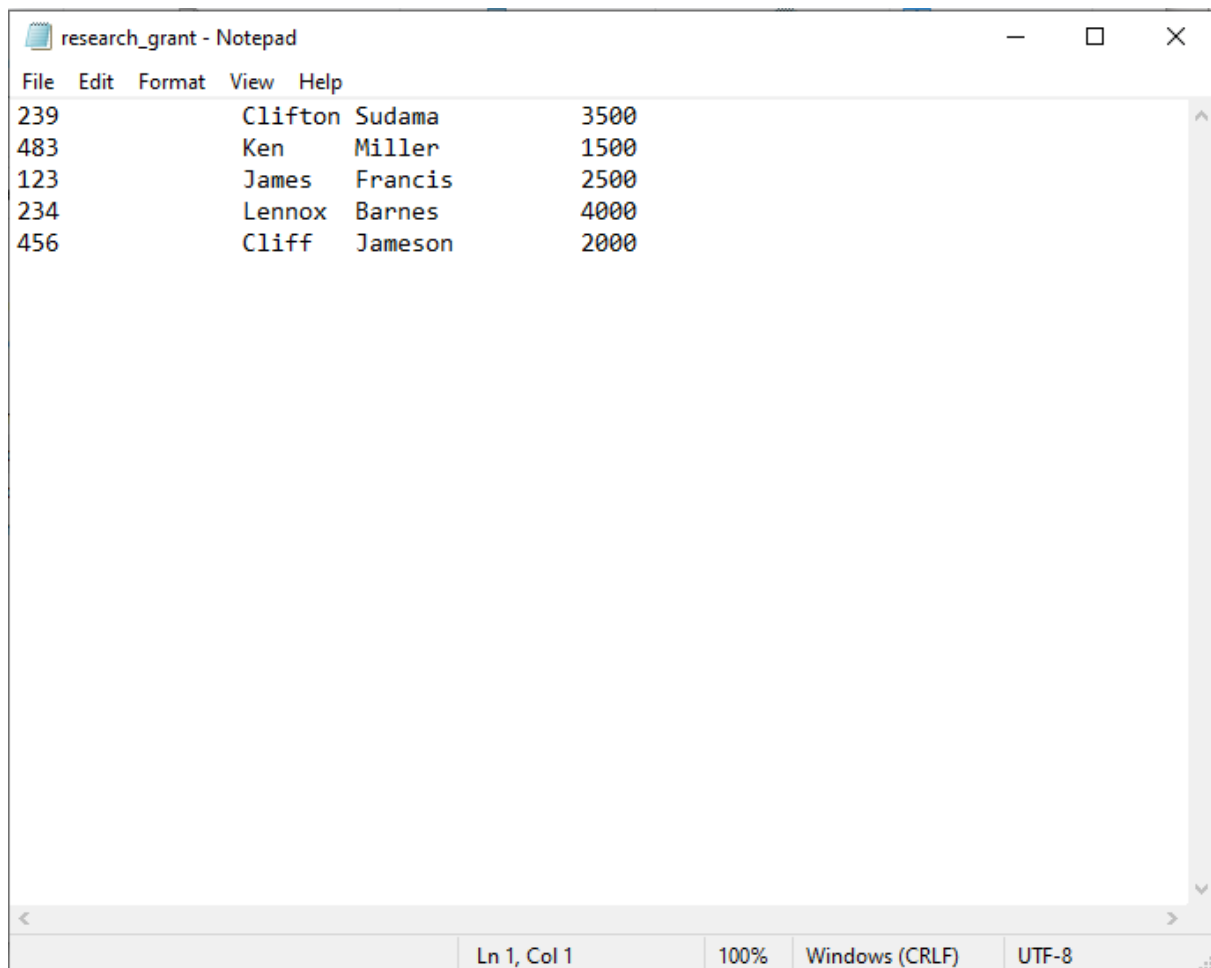
239	Clifton Sudama	3500
483	Ken Miller	1500
123	James Francis	2500
234	Lennox Barnes	4000
456	Cliff Jameson	2000

C:\Users\Meiga\source\repos\FinalExaminationSemester2\Debug\FinalExaminationSemester2.exe  
(process 16992) exited with code 0.

Press any key to close this window . . .

.txtfile:

239	Clifton	Sudama	3500
483	Ken	Miller	1500
123	James	Francis	2500
234	Lennox	Barnes	4000
456	Cliff	Jameson	2000



The screenshot shows a Notepad window with the title bar 'research\_grant - Notepad'. The menu bar includes 'File', 'Edit', 'Format', 'View', and 'Help'. The text content is identical to the table in the previous block. The status bar at the bottom indicates 'Ln 1, Col 1', '100%', 'Windows (CRLF)', and 'UTF-8'.

239	Clifton	Sudama	3500
483	Ken	Miller	1500
123	James	Francis	2500
234	Lennox	Barnes	4000
456	Cliff	Jameson	2000

```
Microsoft Visual Studio Debug Console

239          Clifton Sudama          3500
483          Ken Miller             1500
123          James Francis          2500
234          Lennox Barnes          4000
456          Cliff Jameson          2000

C:\Users\Meiga\source\repos\FinalExaminationSemester2\Debug\FinalExaminationSemester2.exe (process 12852) exited with code 0.
Press any key to close this window . . .
```