Question 1

Code:

```c
//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.
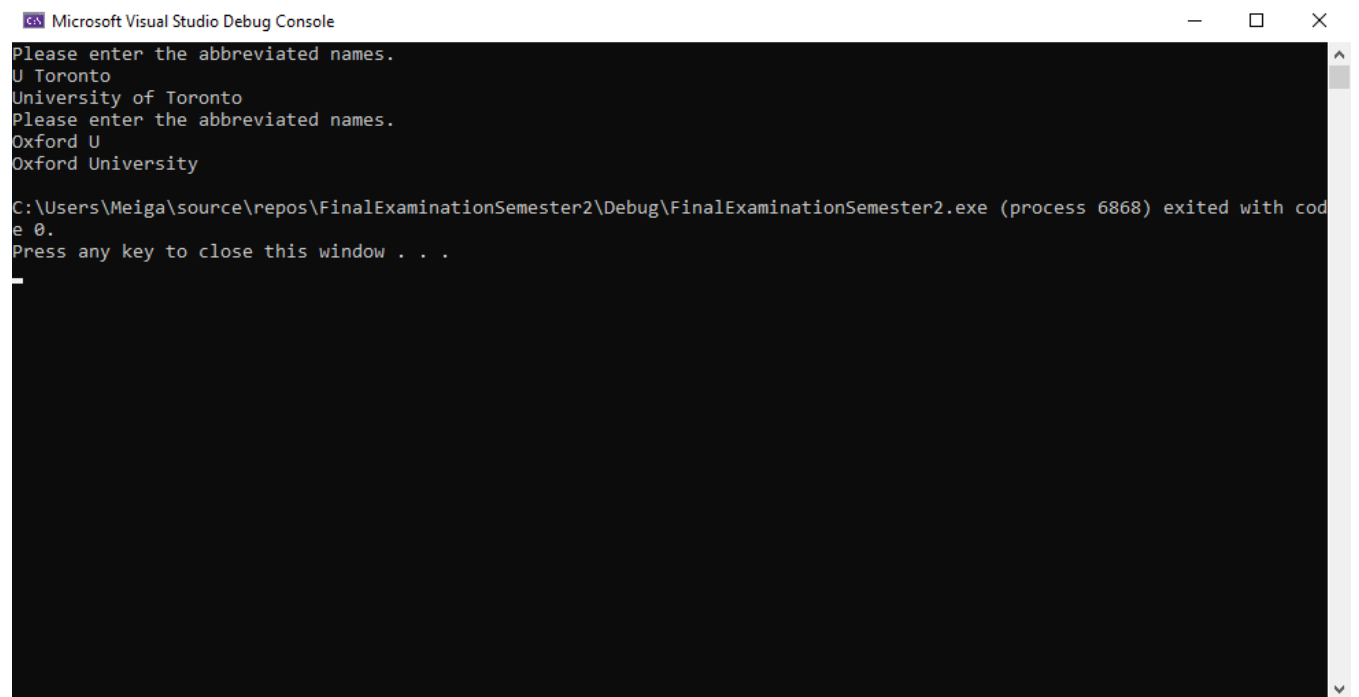
U Toronto

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 . . .

Microsoft Visual Studio Debug Console

```
Please enter the abbreviated names.
U Toronto
University of Toronto
Please enter the abbreviated names.
Oxford U
Oxford University

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Press any key to close this window . . .
```

Question 2:

Code:

```c
//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

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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 cod
e 0.
Press any key to close this window . . .
```

Question 3:

Code:

```c
//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%s%d", &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:

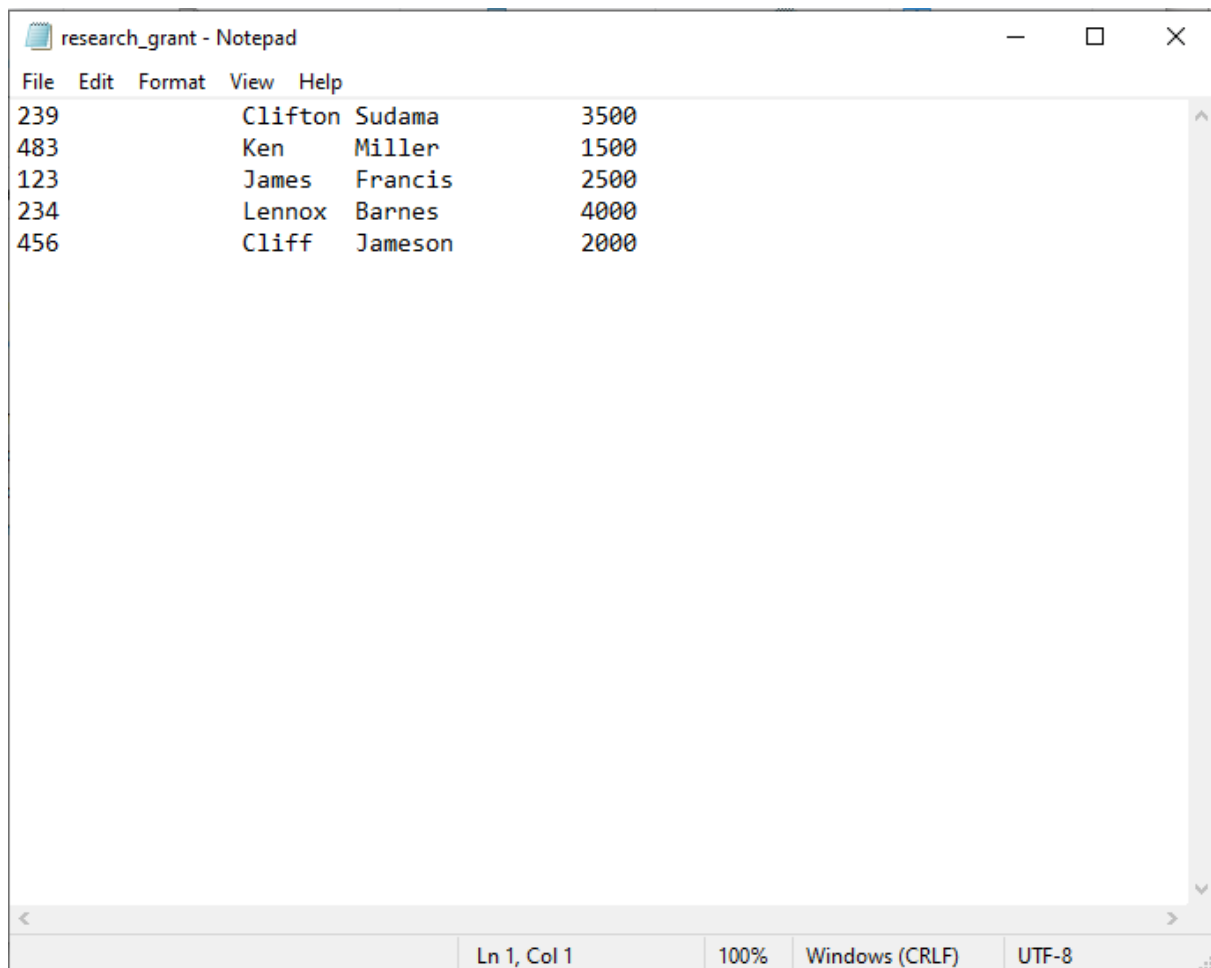239   Clifton Sudama   3500

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

```
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 co
de 0.
Press any key to close this window . . .
```