

Lab 11

Question1

Code: Q1.c

```
#include <stdio.h>
int main( )
{
    FILE *fp ;
    char ch ;
    fp = fopen ( "/home/user/Documents/Employee.txt", "r" ) ;

    while ( 1 ){
        ch = fgetc ( fp ) ;
        if ( ch == EOF )
            break ;
        printf ( "%c", ch ) ;
    }
    printf ( "\n" ) ;
    fclose ( fp ) ;
}
```

Employee.txt

Output:

```
1 List of Employee
2
3 1. Karma Tenzin
4 2. Dorji Yangzom
5 3. Kinley Gyeltshen
6 4. Duba
7 5. Khotso
8 6. Nar Bdr
9 7. Gyeltshen Wangchuk
10 8. Kuenga Tenzin
11 9. Nima Gyeltshen
12 10.Jamyang Dorji
13 11.Karma
14 12.Dorji
15 13.Kinley
16 14.Tshering
17 15.Kinzang
18 16.Bdr
19 17.Gyeltshen
20 18.Tenzin
21 19.Nima
22 20.Jamyang
```

```
user@lab130-OptiPlex-3040:~/Documents/Lab11$ ./Q1
List of Employee

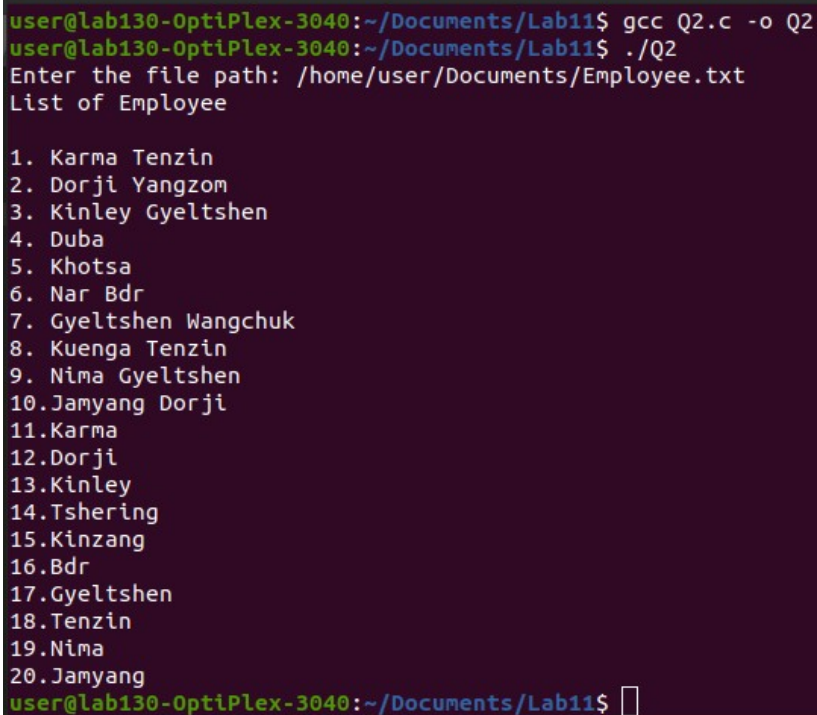
1. Karma Tenzin
2. Dorji Yangzom
3. Kinley Gyeltshen
4. Duba
5. Khotso
6. Nar Bdr
7. Gyeltshen Wangchuk
8. Kuenga Tenzin
9. Nima Gyeltshen
10.Jamyang Dorji
11.Karma
12.Dorji
13.Kinley
14.Tshering
15.Kinzang
16.Bdr
17.Gyeltshen
18.Tenzin
19.Nima
20.Jamyang
```

Question 2:

```
#include <stdio.h>
int main( )
{
FILE *fp ;
char path[100];
char ch;
printf("Enter the file path: "); //file path is /home/user/Documents/Employee.txt
scanf("%s",path);
fp = fopen ( path, "r" ) ;

while ( 1 ){
    ch = fgetc ( fp ) ;
    if ( ch == EOF )
        break ;
    printf ( "%c", ch ) ;
}
printf ( "\n" ) ;
fclose ( fp ) ;
}
```

Output:



```
user@lab130-OptiPlex-3040:~/Documents/Lab11$ gcc Q2.c -o Q2
user@lab130-OptiPlex-3040:~/Documents/Lab11$ ./Q2
Enter the file path: /home/user/Documents/Employee.txt
List of Employee

1. Karma Tenzin
2. Dorji Yangzom
3. Kinley Gyeltshen
4. Duba
5. Khotsa
6. Nar Bdr
7. Gyeltshen Wangchuk
8. Kuenga Tenzin
9. Nima Gyeltshen
10. Jamyang Dorji
11. Karma
12. Dorji
13. Kinley
14. Tshering
15. Kinzang
16. Bdr
17. Gyeltshen
18. Tenzin
19. Nima
20. Jamyang
user@lab130-OptiPlex-3040:~/Documents/Lab11$
```

Question 3:

```
#include <stdio.h>
#include <string.h>
int main()
{
    FILE *fp;
    int wordExist=0;
    int bufferLength = 255;
    char search[100];
    printf("Enter word you want to search: ");
    scanf("%s",search);
    char line1[bufferLength];

    char read[80]; //file path length
    int ch, character = 0, line = 0;
    fp = fopen("/home/user/Documents/Information.txt", "r"); //only read mode

    if (fp == NULL){
        printf("Can't open the file.\n" );
    }
    else{
        while(fgets(line1, bufferLength, fp))
        {
            char *ptr = strstr(line1, search);
            if (ptr != NULL)
            {
                wordExist=1;
                break;
            }
        }
        if (wordExist==1)
        {
            printf("%s exists.",search);
        }
        else
        {
            printf("%s doesn't exist.",search);
        }
    }
    if (fp == NULL){
        printf("Can't open the file.\n" );
    }
    else{
        while ((ch = fgetc(fp)) != EOF)
        {
            character++;
            if (ch == '\n')
                line++;
        }

        fclose(fp);
    }
}
```

```

    printf("\nNumber of characters = %d", character);
    printf("\nNumber of lines = %d\n", line);
}
return 0;
}

```

Information.txt

```

Information of myself
Karma Tenzin
Age:20
Enrollment number: 12190057

```

Output:

```

user@lab130-OptiPlex-3040:~/Documents/Lab11$ gcc Q3.c -o Q3
user@lab130-OptiPlex-3040:~/Documents/Lab11$ ./Q3
Enter word you want to search: Karma
Karma exists.
Number of characters = 35
Number of lines = 2
user@lab130-OptiPlex-3040:~/Documents/Lab11$ 

```

Question 4:

Code:

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

```

void show(char *fname, int n)
{
    // Open given file
    FILE *fp = fopen("/home/user/Documents/Employee.txt", "r");
    int curr_lines = 0, ch;

    // If not able to open file
    if (fp == NULL)
    {
        printf("File doesn't exist\n");
        return;
    }

    // Read contents of file
    while ((ch = fgetc(fp)) != EOF)
    {
        // print current character
        putchar(ch);

        // If current character is a new line character,
        // then increment count of current lines
        if (ch == '\n')
        {
            curr_lines++;

            // If count of current lines reaches limit, then
            // wait for user to enter a key
            if (curr_lines == n)
            {
                curr_lines = 0;
                getchar();
            }
        }
    }
}

```

```

        }
    }
}

fclose(fp);
}

// Driver program to test above function
int main()
{
    char fname[] = "/home/user/Documents/Employee.txt";
    int n = 5;
    show(fname, n);
    return 0;
}

```

Output:

```

user@lab130-OptiPlex-3040:~/Documents/Lab11$ ./Q4
List of Employee

1. Karma Tenzin
2. Dorji Yangzom
3. Kinley Gyeltshen

4. Duba
5. Khotsa
6. Nar Bdr
7. Gyeltshen Wangchuk
8. Kuenga Tenzin

9. Nima Gyeltshen
10. Jamyang Dorji
11. Karma
12. Dorji
13. Kinley

14. Tshering
15. Kinzang
16. Bdr
17. Gyeltshen
18. Tenzin

19. Nima
user@lab130-OptiPlex-3040:~/Documents/Lab11$ 

```

Question 5:

Code:

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

```
/* Function declaration */
```

```
int compareFile(FILE * fPtr1, FILE * fPtr2, int * line, int * col);
```

```
int main()
```

```
{
    /* File pointer to hold reference of input file */
```

```
    FILE * fPtr1;
```

```
    FILE * fPtr2;
```

```
    char path1[100];
```

```
    char path2[100];
```

```
    int diff;
```

```
    int line, col;
```

```
    /* Input path of files to compare */
```

```
    printf("Enter path of first file: ");
```

```
    scanf("%s", path1);
```

```
    printf("Enter path of second file: ");
```

```
    scanf("%s", path2);
```

```
    /* Open all files to compare */
```

```
    fPtr1 = fopen(path1, "r");
```

```
    fPtr2 = fopen(path2, "r");
```

```
    /* fopen() return NULL if unable to open file in given mode. */
```

```
    if (fPtr1 == NULL || fPtr2 == NULL)
```

```
    {
```

```
        /* Unable to open file hence exit */
```

```
        printf("\nUnable to open file.\n");
```

```
        printf("Please check whether file exists and you have read privilege.\n");
```

```
        exit(EXIT_FAILURE);
```

```
    }
```

```
    /* Call function to compare file */
```

```
    diff = compareFile(fPtr1, fPtr2, &line, &col);
```

```
    if (diff == 0)
```

```
    {
```

```
        printf("\nBoth files are equal.");
```

```
    }
```

```
    else
```

```
    {
```

```
        printf("\nFiles are not equal.\n");
```

```

    printf("Line: %d, col: %d\n", line, col);
}

/* Finally close files to release resources */
fclose(fPtr1);
fclose(fPtr2);

return 0;
}

/**
 * Function to compare two files.
 * Returns 0 if both files are equivalent, otherwise returns
 * -1 and sets line and col where both file differ.
 */
int compareFile(FILE * fPtr1, FILE * fPtr2, int * line, int * col)
{
    char ch1, ch2;

    *line = 1;
    *col = 0;

    do
    {
        // Input character from both files
        ch1 = fgetc(fPtr1);
        ch2 = fgetc(fPtr2);

        // Increment line
        if (ch1 == '\n')
        {
            *line += 1;
            *col = 0;
        }

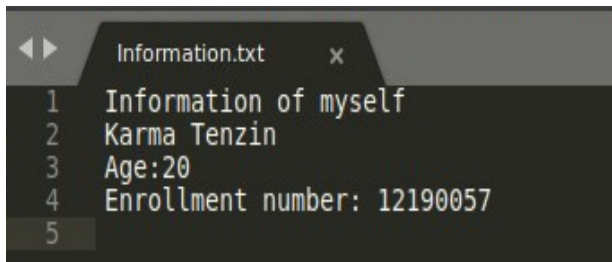
        // If characters are not same then return -1
        if (ch1 != ch2)
            return -1;

        *col += 1;
    } while (ch1 != EOF && ch2 != EOF);

    /* If both files have reached end */
    if (ch1 == EOF && ch2 == EOF)
        return 0;
    else
        return -1;
}

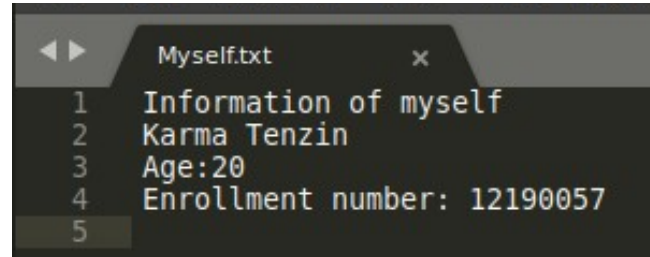
```

Information.txt



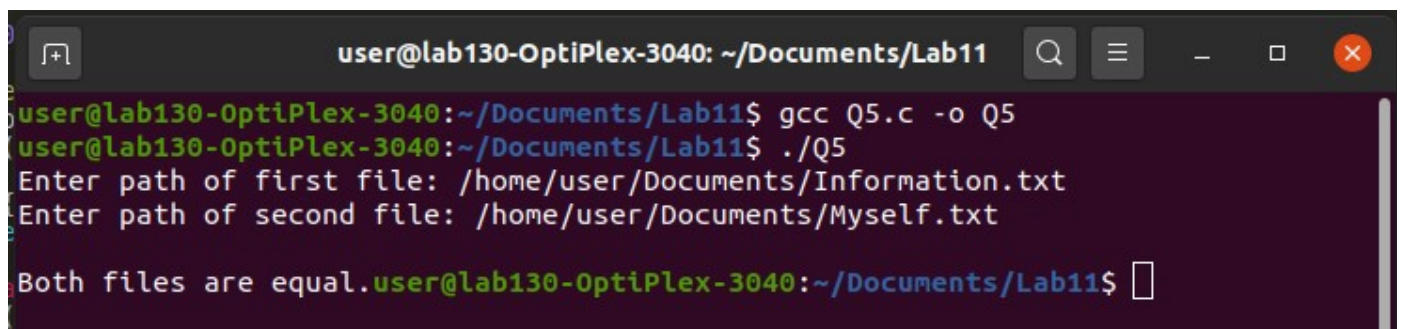
A screenshot of a text editor window titled 'Information.txt'. The editor shows five lines of text: '1 Information of myself', '2 Karma Tenzin', '3 Age:20', '4 Enrollment number: 12190057', and '5'. The line numbers are on the left, and the text is on the right. The editor has a dark background and a light-colored border.

Myself.txt



A screenshot of a text editor window titled 'Myself.txt'. The editor shows five lines of text: '1 Information of myself', '2 Karma Tenzin', '3 Age:20', '4 Enrollment number: 12190057', and '5'. The line numbers are on the left, and the text is on the right. The editor has a dark background and a light-colored border.

Output:



A screenshot of a terminal window titled 'user@lab130-OptiPlex-3040: ~/Documents/Lab11'. The terminal shows the following commands and output: 'gcc Q5.c -o Q5', './Q5', 'Enter path of first file: /home/user/Documents/Information.txt', 'Enter path of second file: /home/user/Documents/Myself.txt', and 'Both files are equal.' followed by a prompt 'user@lab130-OptiPlex-3040:~/Documents/Lab11\$'.