Week1

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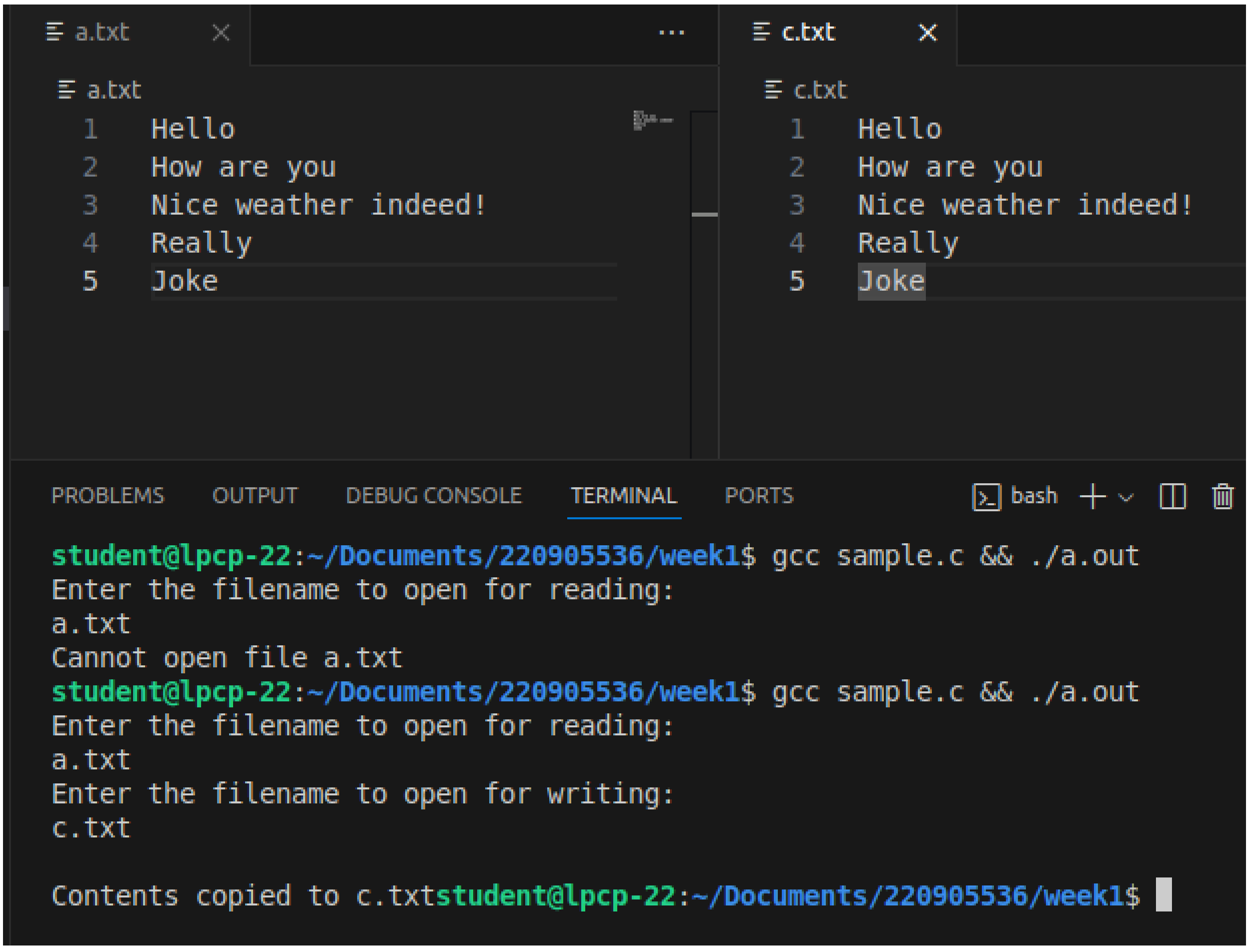
Title: BASIC FILE HANDLING OPERATIONS

Sample Exercise:

Write a C program to copy the contents of source file to destination file

```
#include <stdio.h>
#include <stdlib.h> // For exit()
int main()
{
	FILE *fptr1, *fptr2;
	char filename[100], c;
	printf("Enter the filename to open for reading: \n");
	scanf("%s", filename);
	fptr1 = fopen(filename, "r");
	// Open one file for reading
	if (fptr1 == NULL)
	{
		printf("Cannot open file %s \n", filename);
		exit(0);
	}
	printf("Enter the filename to open for writing: \n");
	scanf("%s", filename);
	fptr2 = fopen(filename, "w+"); // Open another file for writing
	c = fgetc(fptr1);
	// Read contents from file
	while (c != EOF)
	{
		fputc(c, fptr2);
		c = fgetc(fptr1);
	}
	printf("\nContents copied to %s", filename);
	fclose(fptr1);
	fclose(fptr2);
	return 0;
}
```

Output:



```
a.txt
Hello
How are you
Nice weather indeed!
Really
Joke
```

```
c.txt
Hello
How are you
Nice weather indeed!
Really
Joke
```

```
student@lpcp-22:~/Documents/220905536/week1$ gcc sample.c && ./a.out
Enter the filename to open for reading:
a.txt
Cannot open file a.txt
student@lpcp-22:~/Documents/220905536/week1$ gcc sample.c && ./a.out
Enter the filename to open for reading:
a.txt
Enter the filename to open for writing:
c.txt

Contents copied to c.txtstudent@lpcp-22:~/Documents/220905536/week1$ 
```

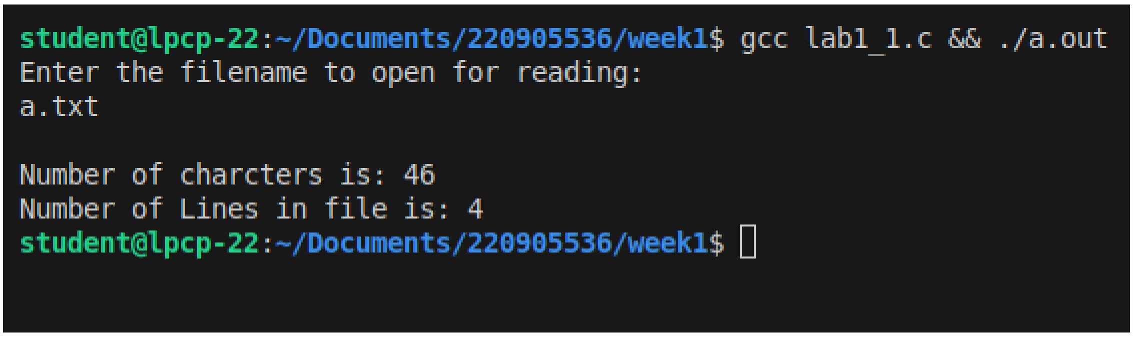
Lab Exercise:

1) Source Code: To count the number of lines and characters in a file.

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

void countChar_Lines(char *filename)
{
        int charCount=0, lineCount=0;
        FILE *file1 = fopen(filename,"r");
        char c = fgetc(file1);
        while (c!=EOF)
        {
                charCount++;
                if (c=='\n')
                {
                        lineCount++;
                        charCount--;
                }
                c = fgetc(file1);
        }
        printf("\nNumber of charcters is: %d",charCount);
        printf("\nNumber of Lines in file is: %d\n",lineCount);
        fclose(file1);
}

int main()
```

```
{
        char filename[100];
        printf("Enter the filename to open for reading: \n");
        scanf("%s", filename);
        countChar_Lines(filename);
        return 0;
}
```

Output:

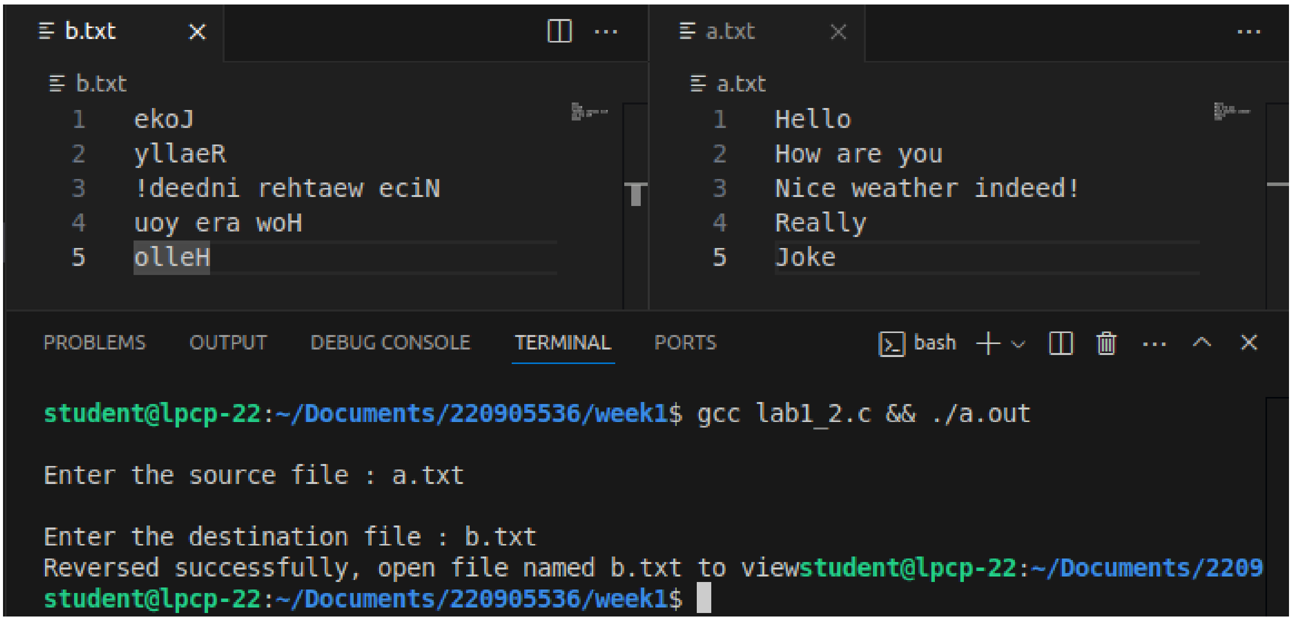


```
student@lpcp-22:~/Documents/220905536/week1$ gcc lab1_1.c && ./a.out
Enter the filename to open for reading:
a.txt

Number of charcters is: 46
Number of Lines in file is: 4
student@lpcp-22:~/Documents/220905536/week1$ 
```

2) Source Code: To reverse the file contents and store in another file. Also display the size of file using file handling function.

```
#include<stdio.h>

void reverseFile(FILE *file1, FILE *file2)
{
        char c = fgetc(file1);
        if (c==EOF)
        {
                return;
        }
        reverseFile(file1,file2);
        fputc(c,file2);
}

int main()
{
        char srcFile[128], destFile[128];
        printf("\nEnter the source file : ");
        scanf("%s",srcFile);
                printf("\nEnter the destination file : ");
        scanf("%s", destFile);
        FILE *file1 = fopen(srcFile,"r");
        FILE *file2 = fopen(destFile,"w+");
        reverseFile(file1,file2);
        printf("Reversed successfully, open file named %s to view",destFile);
        fclose(file1);
        fclose(file2);
        return 0;
}
```

Output:



```
ekoJ
yllaeR
!deedni rehtaew eciN
uoy era woH
olleH
```

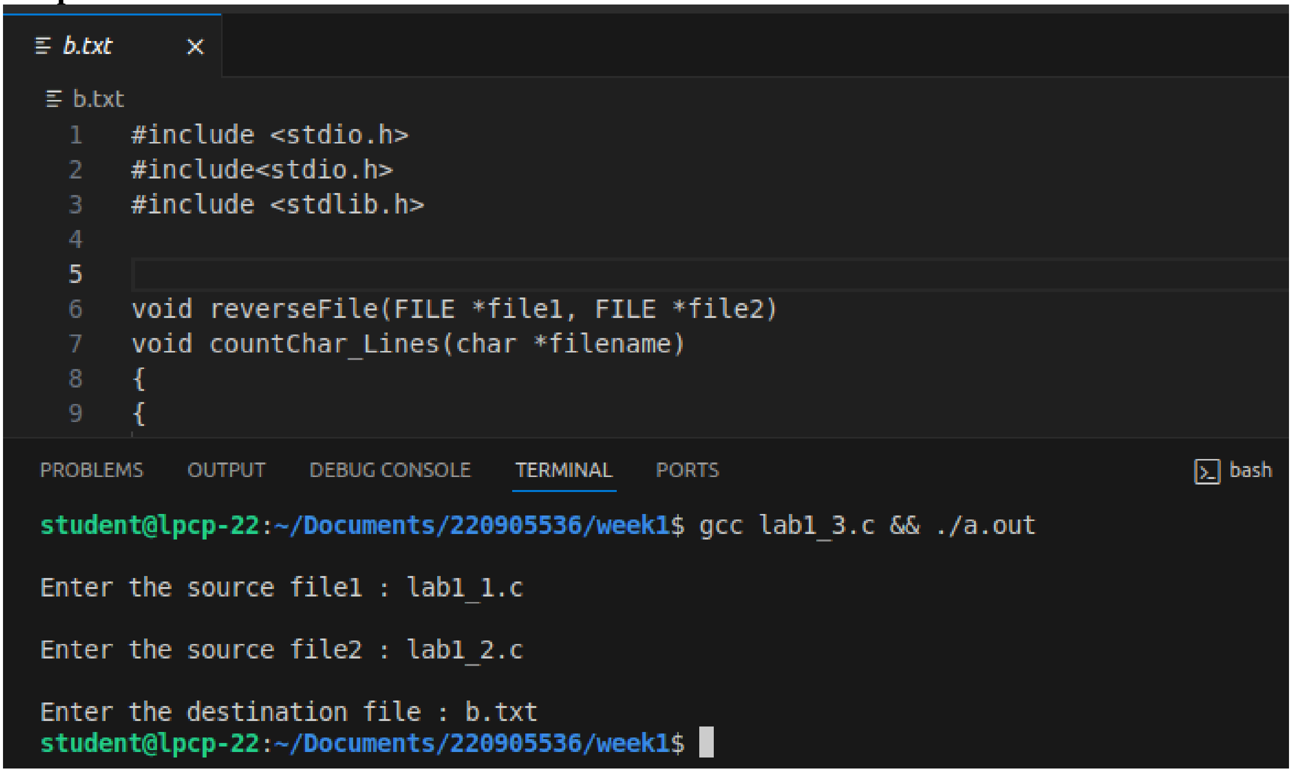
```
Hello
How are you
Nice weather indeed!
Really
Joke
```

```
student@lpcp-22:~/Documents/220905536/week1$ gcc lab1_2.c && ./a.out

Enter the source file : a.txt

Enter the destination file : b.txt
Reversed successfully, open file named b.txt to viewstudent@lpcp-22:~/Documents/2209
student@lpcp-22:~/Documents/220905536/week1$ 
```

3. Source Code: That merges lines alternatively from 2 files and stores it in a resultant file.

```
#include <stdio.h>

void readLinesAtsameTime(char *srcfile1, char *srcfile2, char *destFile)
{
        char buffer[1024];
        FILE *file1 = fopen(srcfile1, "r");
        FILE *file2 = fopen(srcfile2, "r");
        FILE *file3 = fopen(destFile, "w+");

        // to read same lines from two files concurrently
        while (1)
        {
                if (fgets(buffer, sizeof(buffer), file1))
                {
                        fputs(buffer, file3);
                }
                else
                {
                        break;
                }
                if (fgets(buffer, sizeof(buffer), file2))
                {
                        fputs(buffer, file3);
                }
                else
                {
                        break;
                }
        }

         // if file2 is read but file1 not
        while (fgets(buffer, sizeof(buffer), file1))
        {
                fputs(buffer, file3);
        }

         // if file1 is read but file2 not
        while (fgets(buffer, sizeof(buffer), file2))
        {
                fputs(buffer, file3);
        }

        fclose(file1);
        fclose(file2);
        fclose(file3);
}

int main()
{
        char file1[128], file2[128], destFile[128];
        printf("\nEnter the source file1 : ");
        scanf("%s", file1);
        printf("\nEnter the source file2 : ");
        scanf("%s", file2);
        printf("\nEnter the destination file : ");
        scanf("%s", destFile);
        readLinesAtsameTime(file1, file2, destFile);
        printf("Operation accomplished, open file named %s to view",destFile);
        return 0;
}
```

Output:



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


void reverseFile(FILE *file1, FILE *file2)
void countChar_Lines(char *filename)
{
{
```

```
student@lpcp-22:~/Documents/220905536/week1$ gcc lab1_3.c && ./a.out

Enter the source file1 : lab1_1.c

Enter the source file2 : lab1_2.c

Enter the destination file : b.txt
student@lpcp-22:~/Documents/220905536/week1$
```