

# Test Plan

# DIFF tool

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## 1.0 INTRODUCTION

DIFF tool is an easy and straightforward command line tool that takes two text files as input and provides the similarities and differences between the two files.

The tool takes a line from the first text file and searches for a match in the second text file, so we have three cases:

The line exists in both input files: the line will be printed and colored with white and an equal symbol "=" is added before it.

The line is only in the first file or the line is modified in the second file by adding or removing or modifying one character or more: the line will be printed and colored with red and a minus symbol "-" is added before it.

The line is only in the second file or the line is modified in the first file by adding or removing or modifying one character or more: the line will be printed and colored with green and a plus symbol "+" is added before it.

For example:

The first file contains:

```
im abdullah
im 25 years old
i love to play football
i live in egypt
```

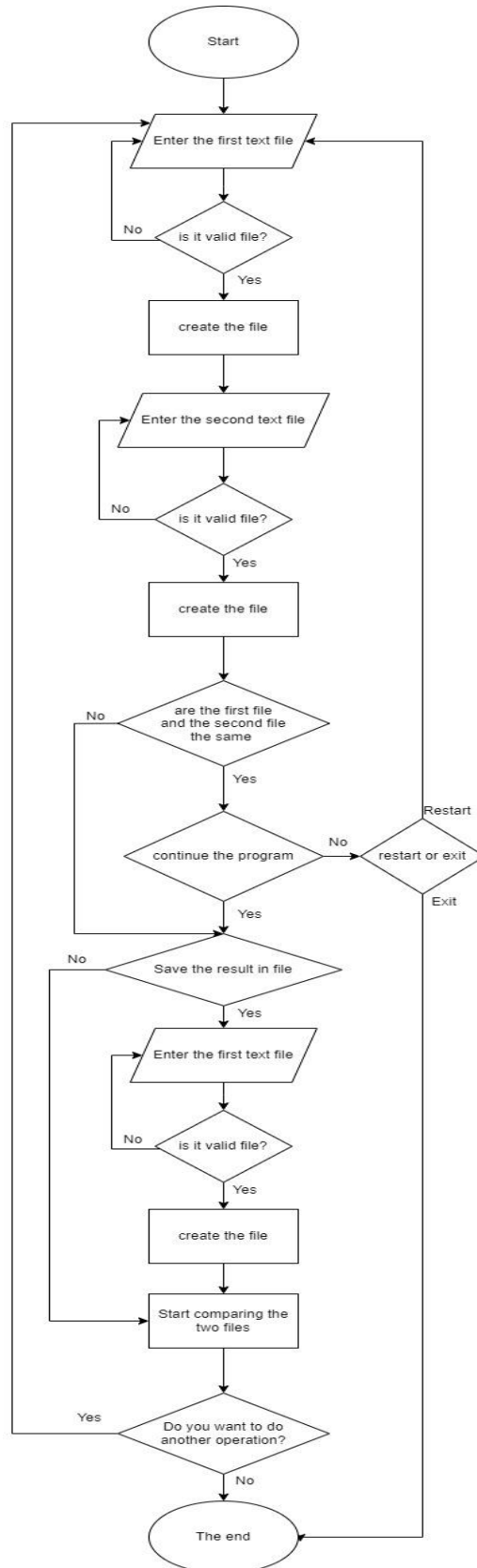
the second file contains:

```
im abdullah
im a recent graduate
im 25 years old
im a programmer
```

The result:

```
##### The Beginning Of The Comparison #####
=      im abdullah
+      im a recent graduate
=      im 25 years old
-      i love to play football
-      i live in egypt
+      im a programmer
##### The End Of The Comparison #####
```









## 2.0 PROGRAM FLOWCHART:



### 3.0 TESTING STRATEGY

First, apply alpha testing (Unit testing) for each unit to ensure that all units work correctly and deliver the expected output.

Directory:

Name	Date modified	Type	Size
 a.exe	2/24/2023 3:47 PM	Application	81 KB
 DIFF_Config.h	2/24/2023 2:56 PM	C/C++ Header	1 KB
 DIFF_Interface.h	2/24/2023 3:01 PM	C/C++ Header	2 KB
 DIFF_Program.cpp	2/24/2023 3:35 PM	C++ Source File	4 KB
 file1.txt	2/24/2023 3:46 PM	Text Document	1 KB
 file2.txt	2/24/2023 3:46 PM	Text Document	1 KB
 main.cpp	2/24/2023 3:47 PM	C++ Source File	5 KB
 Test Plan.docx	2/25/2023 3:15 PM	Microsoft Word D...	99 KB

#### 3.1 Alpha Testing (Unit Testing)

This tool has 4 units to test:

1. `bool OpenFile(fstream& _file_stream, string& _file_name, ios_base::openmode _mode);`
2. `void CloseFile(fstream& _file_stream);`
3. `inline bool GotoLine(fstream& _file_stream, unsigned int _num);`
4. `void CompFiles(fstream& _file1, fstream& _file2, fstream& _out_file);`

##### 3.1.1 OpenFile:

prototype:

```
bool OpenFile(fstream& _file_stream, string& _file_name, ios_base::openmode _mode);
```

Test cases:

_file_stream	_file_name	Expected output	Expected terminal output
obj	file	false	ERROR: the file extension is invalid...
obj	.txt	false	ERROR: the file name is too short...
obj	file1.txt	true	INFO: The file is opened successfully...

### 3.1.2 CloseFile:

prototype:

```
void CloseFile(fstream& _file_stream);
```

Test cases:

_file_stream	Expected terminal output
fstream without calling open()	INFO: The file was already colsed...
fstream after calling close()	INFO: The file was already colsed...
fstream after calling open()	INFO: The file is closed successfully...

### 3.1.3 GotoLine:

prototype:

```
inline bool GotoLine(fstream& _file_stream, unsigned int _num);
```

Test cases:

_file_stream	_num	Expected output
File has 5 lines	1	true
File has 5 lines	5	true
File has 5 lines	5<	false

### 3.1.4 CompFiles:

prototype:

```
void CompFiles(fstream& _file1, fstream& _file2, fstream& _out_file);
```

Test cases:

_file1	_file2	Expected terminal output
im abdullah im 25 years old i love to play football i live in egypt	im abdullah im a recent graduate im 25 years old im a programmer	= im abdullah + im a recent graduate = im 25 years old - i love to play football - i live in egypt + im a programmer
im abdullah im 25 years old i love to play football i live in egypt		- im abdullah - im 25 years old - i love to play football - i live in egypt
	im abdullah im a recent graduate im 25 years old im a programmer	+ im abdullah + im a recent graduate + im 25 years old + im a programmer
im abdullah im 25 years old	im abdullah im 25 years old	= im abdullah + = im 25 years old

## 3.2 System and Integration Testing

Input text files:

file1.txt	file2.txt
im abduallah im 25 years old	im abduallah im 25 years old

System test case #1:

Question	User input	Expected terminal output/Action
first file:- ----- Enter a valid file name or file path Note: must end up with ".txt" and contains at least 5 charcters	File1.txt	INFO: The file is opened successfully...
second file:- ----- Enter a valid file name or file path Note: must end up with ".txt" and contains at least 5 charcters	File2.txt	INFO: The file is opened successfully...
Save the result in a separate file ? - If YES, Press "1" - If NO, Press "0"	0	The results show up
Do you want to do another operation? - If YES, Press "1" - If NO, Press "0"	0	The program exits
	1	The program starts again

```

Microsoft Visual Studio Debug Console

*****Welcome*****
first file:-
-----
Enter a valid file name or file path
Note: must end up with ".txt" and contains at least 5 charcters
>> file1.txt

INFO: The file is opened successfully...

second file:-
-----
Enter a valid file name or file path
Note: must end up with ".txt" and contains at least 5 charcters
>> file2.txt

INFO: The file is opened successfully...

Save the result in a separate file ?
- If YES, Press "1"
- If NO, Press "0"
>> 0

##### The Beginning Of The Comparison #####
=
im abduallah
+
im 25 years old
=
##### The End Of The Comparison #####

INFO: The file is closed successfully...
INFO: The file is closed successfully...

Do you want to do another operation?
- If YES, Press "1"
- If NO, Press "0"
>> 0

C:\Users\Abdullah Ezzat\source\repos\siemens_task\x64\Debug\siemens_task.exe (process 11372) exited with code 0.
To automatically close the console when debugging stops, enable Tools->Options->Debugging->Automatically close the console when debugging stops.
Press any key to close this window . . .

```

## DIFF tool

### System test case #2:

Question	User input	Expected terminal output/Action
first file:- ----- Enter a valid file name or file path Note: must end up with ".txt" and contains at least 5 charcters	File1.txt	INFO: The file is opened successfully...
second file:- ----- Enter a valid file name or file path Note: must end up with ".txt" and contains at least 5 charcters	File1.txt	INFO: The file is opened successfully...
WARNING: The two files are the same...! - To continue, Press "1" - To restart the program, Press "2" - To restart the program, Press "2" - To exit the program, Press "3"	1	The program continues normally like test case #1
	2	The program starts from the beginning
	3	The program ends
	O.W.	ERROR: Invalid choice...

C:\Users\Abdullah Ezzat\source\repos\siemens\_task\x64\Debug\siemens\_task.exe

```
*****Welcome*****
first file:-
-----
Enter a valid file name or file path
Note: must end up with ".txt" and contains at least 5 charcters
>> file1.txt

INFO: The file is opened successfully...

second file:-
-----
Enter a valid file name or file path
Note: must end up with ".txt" and contains at least 5 charcters
>> file1.txt

INFO: The file is opened successfully...

WARNING: The two files are the same...!
- To continue, Press "1"
- To restart the program, Press "2"
- To restart the program, Press "2"
- To exit the program, Press "3"
>>
```



## DIFF tool

### System test case #3:

Question	User input	Expected terminal output/Action
first file:- ----- Enter a valid file name or file path Note: must end up with ".txt" and contains at least 5 charcters	File1.txt	INFO: The file is opened successfully...
second file:- ----- Enter a valid file name or file path Note: must end up with ".txt" and contains at least 5 charcters	File2.txt	INFO: The file is opened successfully...
Note: If you entered one of the two input files, the data will be removed before the comparison...  Enter a valid file name or file path Note: must end up with ".txt" and contains at least 5 charcters	File3.txt	INFO: The file is opened successfully...  The program creates file3.txt. The results show up. The program saves the results in file3.txt.
Do you want to do another operation? - If YES, Press "1" - If NO, Press "0"	0	The program exits
	1	The program starts again

```

*****Welcome*****
first file:-
-----
Enter a valid file name or file path
Note: must end up with ".txt" and contains at least 5 charcters
>> file1.txt

INFO: The file is opened successfully...

second file:-
-----
Enter a valid file name or file path
Note: must end up with ".txt" and contains at least 5 charcters
>> file2.txt

INFO: The file is opened successfully...

Save the result in a separate file ?
- If YES, Press "1"
- If NO, Press "0"
>> 1

Note: If you entered one of the two input files, the data will be removed before the comparison...
Enter a valid file name or file path
Note: must end up with ".txt" and contains at least 5 charcters
>> file3.txt

INFO: The file is opened successfully...

##### The Beginning Of The Comparison #####
=      im abdullah
+
=      im 25 years old
##### The End Of The Comparison #####

INFO: The file is closed successfully...
INFO: The file is closed successfully...
INFO: The file is closed successfully...

Do you want to do another operation?
- If YES, Press "1"
- If NO, Press "0"
>>

```