UNIT TESTING

➢   CUnit is a lightweight system for writing, administering, and running unit tests in C.

➢   It provides C programmers a basic testing functionality with a flexible variety of user interfaces.

➢   CUnit is built as a static library which is linked with the user's testing code. It uses a simple framework for building test structures, and provides a rich set of assertions for testing common data types.

1. For writetofile function:

Test_Case 1-6

```c
void writetofile_sunnycases(void)
{
        CU_ASSERT_EQUAL(writetofile("hello","eng","gem","halllo","1"), 1);
        CU_ASSERT_EQUAL(writetofile("hola","fre","gem","halllo","1"), 1);
        CU_ASSERT_EQUAL(writetofile("bonjour","gem","eng","welcome","1"), 1);


}

void writetofile_rainycases(void)
{
        CU_ASSERT_EQUAL(writetofile("hello","","","",""), 0);
        CU_ASSERT_EQUAL(writetofile("hola","eng","","hi","1"), 0);
        CU_ASSERT_EQUAL(writetofile("welcome","gem","","bonjour","1"), 0);

}
```

2. For modify() function

Test_Case 7-12

```c
void modify_sunnycases(void)
{
        CU_ASSERT_EQUAL(modify("English_German.txt","Happy","Make"), 1);
        CU_ASSERT_EQUAL(modify("German_English.txt","Wald","Make"), 1);
        CU_ASSERT_EQUAL(modify("French_German.txt","Heureux","Make"), 1);
}

void modify_rainycases(void)
{
        CU_ASSERT_EQUAL(modify("engh_erman.txt","Happy","Make"), 0);
        CU_ASSERT_EQUAL(modify("abcd","Happy","Make"), 0);
}
```

3.For delete() function

Test_Case 13-18

```c
void delete_sunnycases(void)
{
        CU_ASSERT_EQUAL(delete("English_German.txt","Make"), 1);
        CU_ASSERT_EQUAL(delete("German_English.txt","Make"), 1);
        CU_ASSERT_EQUAL(delete("French_German.txt","Make"), 1);



}

void delete_rainycases(void)
{
        CU_ASSERT_EQUAL(delete("engh_erman.txt","Happy"), 0);
        CU_ASSERT_EQUAL(delete("French_German.txt","xyz"), 0);
}
```

4.For translate() function

Test_Case 19-25

```c
void translate_sunnycases(void)
{
        CU_ASSERT_EQUAL(translate("Hallo","German","French"), 1);
        CU_ASSERT_EQUAL(translate("Contento","Spanish","English"), 1);
        CU_ASSERT_EQUAL(translate("Bosque","Spanish","German"), 1);



}

void translate_rainycases(void)
{
        CU_ASSERT_EQUAL(translate("","Happy","abc"), 0);
        CU_ASSERT_EQUAL(translate("healo","Spanish","German"), 0);
        CU_ASSERT_EQUAL(translate("Hello","panish","German"), 0);
```

Output:

```
harsh@DESKTOP-NJGS31F ~/sprint_2/src
$ ./x2.exe


     CUnit - A unit testing framework for C - Version 2.1-3
     http://cunit.sourceforge.net/


Suite: suite writetofile...
  Test: Test for writetofile() in sunny cases ...passed
  Test: Test for writetofile() in rainy cases ...passed
Suite: suite modify...
  Test: Test for modify() in sunny cases ...passed
  Test: Test for modify() in rainy cases ...passed
Suite: suite delete...
  Test: Test for delete() in sunny cases ...passed
  Test: Test for delete() in rainy cases ...passed
Suite: suite translate...
passedg is Waldy translate() in sunny cases ...meaning is Bonjour
  Test: Test for translate() in rainy cases ...passed

Run Summary:    Type  Total    Ran Passed Failed Inactive
              suites      4      4    n/a      0        0
               tests      8      8      8      0        0
             asserts     22     22     22      0      n/a

Elapsed time =    0.031 seconds
```

IT_Case1: Running the Server - User Login

```
Subha@SUBHA-X360-PAVILION ~/SystemProgramming/Sprint2/sprint_2/sprint_2/bin
$ ./server.exe
1) Login
2) Run
1
Welcome to the Login_System
Please Enter your LoginID
User
Please Enter your Password
12345

1) Add New Language
2) Add New Word_Meaning
3) Modify Words
4) Delete Words
5) Exit
enter your choice
```

IT_Case2: Add New Language

```
1) Add New Language
2) Add New Word_Meaning
3) Modify Words
4) Delete Words
5) Exit
enter your choice
1
please enter your source language: English
please enter your target language: Russian
Enter your word
Yellow
Enter your meaning
Желтый
 press 0 for continue or  1 for exit: 0
Enter your word
Blue
Enter your meaning
Синий
 press 0 for continue or  1 for exit: 1

1) Add New Language
2) Add New Word_Meaning
3) Modify Words
4) Delete Words
5) Exit
enter your choice
```

IT_Case3: Add New Word_Meaning

```
1) Add New Language
2) Add New Word_Meaning
3) Modify Words
4) Delete Words
5) Exit
enter your choice
2
please enter your source language: English
please enter your target language: German
Enter your word
Remember
Enter your meaning
Denken Sie daran
 press 0 for continue or  1 for exit: 1

1) Add New Language
2) Add New Word_Meaning
3) Modify Words
4) Delete Words
5) Exit
enter your choice
```

IT_Case4: Modify Words

```
1) Add New Language
2) Add New Word_Meaning
3) Modify Words
4) Delete Words
5) Exit
enter your choice
3
Enter path of source file: English_French.txt
Enter word to replace: Hello
Enter the New word: Helllllooooo

Successfully replaced all occurrences of 'Hello' with 'Helllllooooo'.
1) Add New Language
2) Add New Word_Meaning
3) Modify Words
4) Delete Words
5) Exit
enter your choice
```

IT_Case5: Delete Words

```
1) Add New Language
2) Add New Word_Meaning
3) Modify Words
4) Delete Words
5) Exit
enter your choice
4


 Delete a specific line from a file :
-----------------------------------------------
 Input the file name to be opened : English_French.txt
Enter your word
Hello

1 Now the content of the file English_French.txt is :
Good Morning:Bonjour
Happy:Heureux
Forest:Forêt

1) Add New Language
2) Add New Word_Meaning
3) Modify Words
4) Delete Words
5) Exit
enter your choice
```

IT_Case6: Running the Client - Translator

```
Subha@SUBHA-X360-PAVILION ~/SystemProgramming/Sprint2/sprint_2/sprint_2/bin
$ ./server.exe
1) Login
2) Run
2
```

```
Subha@SUBHA-X360-PAVILION ~/SystemProgramming/Sprint2/sprint_2/sprint_2/bin
$ ./client.exe

Please Enter The Word to Translate: Hello
Please Enter Your Source Language: English
Please Enter Your Target Language: Hindi

      Meaning: नमस्ते

Please Enter The Word to Translate: Good Morning
Please Enter Your Source Language: English
Please Enter Your Target Language: Spanish

      Meaning: Buenos días
```

UT PLAN

TEST CASE ID	STEP	PRECONDITIONS/DEPENDE	TEST CASE	TEST DATA	EXPECTED RESULTS	RESULTS OB	STATUS(PASS/FAIL)	
Test_case 1-6	Add a new Language and Add a word(Server Side)(both sunny and rainy cases)	User should only be **Admin**	Add a language	Source language,target language and add words n their meaning in database	New language added in database	DONE	PASS	
Test_case 1-6	Append a new word and its meaning into a specific language(Server Side)(both sunny and rainy cases)	User should only be **Admin**	Add new word n translation in database	Source language,target language and add words n their meaning in database.	New meaning added	DONE	PASS	
Test_case 7-12	Edit Word and their Meaning(Server Side)(both sunny and rainy cases)	User should only be **Admin**	change word n translation in database	Source language,target language and old words and new word to replace in database.	Word modify in database	DONE	PASS	
Test_case 13-18	Delete Word(Server Side)(both sunny and rainy cases)	User should only be **Admin**	delete word n translation in database	Source language,target language and delete words n its meaning in database.	Word n meaning deleted in database	DONE	PASS	
Test_case 19-25	Translate a word from source language to target language(Server Side)(both sunny and rainy cases)	User should only from client	Word for translation	Word for translation,Source language	Translation displayed in target language	DONE	PASS	

IT PLAN

TEST CASE	TEST DATA	EXPECTED RESULTS	RESULTS OBTAINED	STATUS(PASS/FAIL)
Admin Access	Admin:username,groupname	Granted Login	DONE	PASS
Add a language	**Source language,target language and add words n their meaning in database**	New language added in database	DONE	PASS
Add new word n translation in database	Source language,target language and add words n their meaning in database.	New meaning added	DONE	PASS
change word n translation in database	Source language,target language and old words and new word to replace in database.	Word modify in database	DONE	PASS
delete word n translation in database	Source language,target language and delete words n its meaning in database.	Word n meaning deleted in database	DONE	PASS
Word for translation	Word for translation,Source language,target language	Translation displayed in target language	DONE	PASS