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

```
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

```
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
```