UNIT TESTING REPORT

➢ We are using CUnit for testing user authentication and validity of loading details from user.txt
➢ We have made various header files along with .c and main file. At the end we are using MakeFile to compile and run the program.

CUnit Testcases for checking an IP is in Blacklist:

- ○ **3 Sunny testcases** (Valid input files) and **3 rainy testcases** (Invalid input files)

```c
//sunny - valid input strings are passed to the checkvalidity function and checked if 1 is returned or not.
void test_SunnyCases(void) // Sunny Testcases
{
    char *str1 = "127.0.0.20";
    char *str2 = "127.34.213.1";
    char *str3 = "127.0.0.100";
    CU_ASSERT(check_BlackList(str1) == 0);
    CU_ASSERT(check_BlackList(str2) == 0);
    CU_ASSERT(check_BlackList(str3) == 0);
}
```

```c
//rainy - invalid input strings are passed to the checkvalidity function and checked if 0 is returned or not.
void test_RainyCases(void) // Rainy Testcases
{

    char *str4 = "12.204.255.255";
    char *str5 = "127.0.0.10";
    char *str6 = "127.0.0.1606";
    CU_ASSERT(check_BlackList(str4) == 1);
    CU_ASSERT(check_BlackList(str5) == 1);
    CU_ASSERT(check_BlackList(str6) == 1);
}
```

CUnit Testcases for authentication:

- o **3 Sunny testcases** (Valid input files) and **3 rainy testcases** (Invalid input files)

```c
void test_SunnyCases_auth(void) // Sunny Testcases
{
    char *user1 = "gokul";
    char *pass1 = "123";
    char *user2 = "harshith";
    char *pass2 = "123";
    char *user3 = "awsads";
    char *pass3 = "123";
    CU_ASSERT(strcmp(authenticate(user1, pass1), "Authenticated") == 0);
    CU_ASSERT(strcmp(authenticate(user2, pass2), "Authenticated") == 0);
    CU_ASSERT(strcmp(authenticate(user3, pass3), "Authenticated") == 0);

void test_RainyCases_auth(void) // Rainy Testcases
{

    char *user1 = "gokul";
    char *pass1 = "12";
    char *user2 = "harshith";
    char *pass2 = "23";
    char *user3 = "sandeep";
    char *pass3 = "13";
    CU_ASSERT(strcmp(authenticate(user1, pass1), "Not Authenticated") == 0);
    CU_ASSERT(strcmp(authenticate(user2, pass2), "Not Authenticated") == 0);
    CU_ASSERT(strcmp(authenticate(user3, pass3), "Not Authenticated") == 0);
}
```

CUnit Report for check blacklist and authenticate functionality:

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


Suite: Testing_Suite1
  Test: Testing Sunny Cases ...


passed
  Test: Testing Rainy Cases ...


passed
  Test: Testing Sunny of authenticate Cases ...passed
  Test: Testing Rainy of authenticate Cases ...passed

Run Summary:    Type  Total    Ran Passed Failed Inactive
              suites     1      1    n/a      0        0
               tests     4      4      4      0        0
             asserts    12     12     12      0      n/a

Elapsed time =    0.000 seconds
```