

Three Classical Ciphers
Group 5
Professor Johnson
10/1/24

Resubmission for Unit Testing

We forgot to include a unit test for the `check_message` function of our Cipher Project. The included picture below is a test we wrote for this function. The check message function takes user input and makes sure it is legal (all alphabetical letters and spaces only). The check message function returns this message and also saves this message to a file called `message.txt`. Our unit tests make sure that the message that is returned is the same message that is written to the `message.txt` file. Additionally our unit test makes sure that the `message.txt` file is able to be opened and that the message returned is of legal input for our cipher functions. Our unit test returns true if it passes all of these parameters.

As we were trying to implement this test we encountered an error. Since we chose to write out project using `#include` for our cpp files (rather than using a `.h` file) we were having trouble calling the `check_message` function inside my testing file. This is because the function lives in our `cipher_main.cpp` file which has a main function of its own. Since we need to `#include` this file inside the unit testing file, it's also pulling the main function as well as the `check_message` function. This causes an error because our unit testing file has a main function of its own. We realize now that a better approach would be to use a `.h` file for compiling our code and use classes instead of the approach we took. If we could do this project over then that is definitely the approach we would take. However we included the picture of the function below so that we may hopefully be able to get the points back that we lost for this portion of the rubric.

```
void test_check_message() {
    string test_message = check_message();

    ifstream file("Message.txt"); // Open the file
    if (file.is_open()) {
        string message;
        getline(file, message); // Read the first line

        if(message != test_message) {
            cout<< "Check Message Fails" <<endl;
            file.close();
            return;
        }

        for (int i = 0; i < message.length(); i++) {
            // if the character is not a letter or space
            if (!isalpha(message[i]) && !isspace(message[i])) {
                // error message is given
                cout << "You can only use alphabetical letters and spaces. Check Message Failed" << endl;
                // return from for loop
                file.close();
                return;
            }
        }
        file.close(); // Close the file
    } else {
        cout << "Unable to open the file. Check Message Failed" << endl;
    }
}
```