Project (Individual) - Spring 2021

CPCS-425 Information Security

Coordinator(s) Dr. Syed Hassan

8875

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Section	**ZE**

Obtained Marks		out of 10

SO	Max	Obtained Marks
2	8	

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Project Rubric
Information Security (CPCS-425)
Spring-2021

Student ID: 1742589	**Student Name:** Omar Abdulaziz Hassan Alqurashi	**Section:** ZE

	Unacceptable (1)	**Poor (2)**	**Good (3)**	**Excellent (4)**
Solution [SO-2]	An incomplete solution is implemented on the required platform. It does not compile and/or run.	A completed solution is implemented on the required platform, and uses the compiler specified. It runs, but has logical errors.	A completed solution is tested and runs but does not meet all the specifications and/or work for all test data.	A completed solution runs without errors. It meets all the specifications and works for all test data.
Program Design [SO-2]	Few of the selected structures are appropriate. Program elements are not well designed.	Not all of the selected structures are appropriate. Some of the program elements are appropriately designed.	The program design generally uses appropriate structures. Program elements exhibit good design.	The program design uses appropriate structures. The overall program design is appropriate.
	Unacceptable (0.25)	**Poor (0.5)**	**Good (0.75)**	**Excellent (1)**
User Interface	User interaction is incomplete and does not meet specifications.	User interaction minimally meets the specifications, but does not increase the usability of the program.	User interaction generally meets the specifications and is acceptable to the user.	User interaction is as specified and is natural to the user.
Code Readability	Insufficient program documentation, incorrect indentation, and/or poor identifier selection.	Program is minimally documented, some identifiers are inappropriate or inconsistent indentation.	Some required documentation is missing, or identifiers are inappropriate, or statements are not indented correctly.	All required documentation is present, the program is correctly indented, and appropriate identifiers are selected
Total Score	_____ / 10			

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1 Introduction

This report illustrates the implemented functionalities of this Cipher Application in detail. The UML Use-Case Diagram and UML Class Diagram will be used to simplify explanation of the program.

2 UML Use-Case Diagram

The first diagram is the UML Use-Case diagram *(figure 1)*, which illustrates what any user can do with this program:

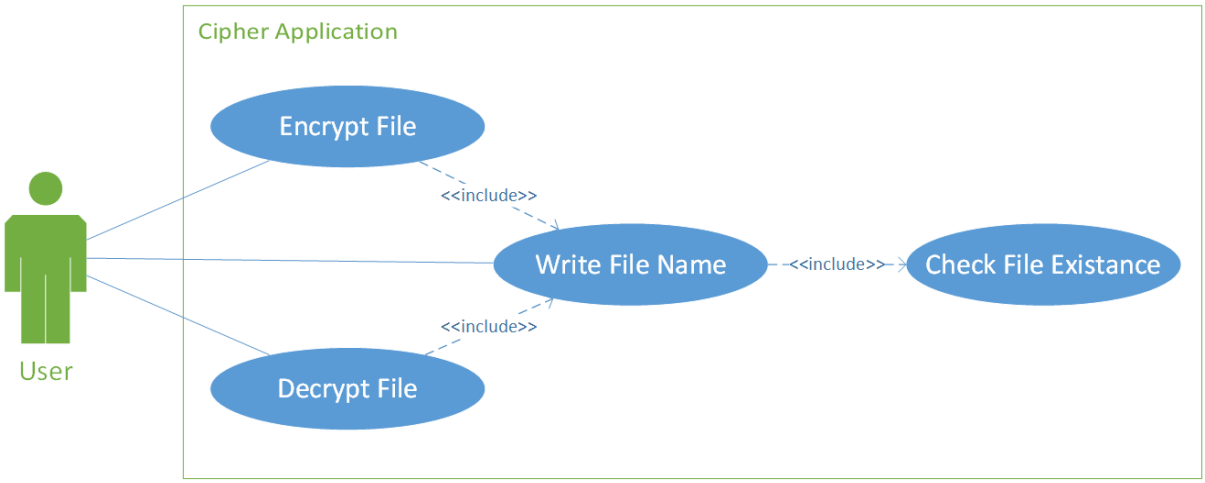

Figure 1: Use-Case Diagram for Cipher Application

As it is shown, the user can either encrypt, or decrypt a file. Choosing a file is by entering its name through the command-line interface (The file must be existed in the root of the program directory).

3 UML Class Diagram

The second one is the UML Class diagram, which explains the structure of the program; one for the actual program (in *src* package), and one for testing (in *test* package), as it is shown in the following *(figure 2)*:

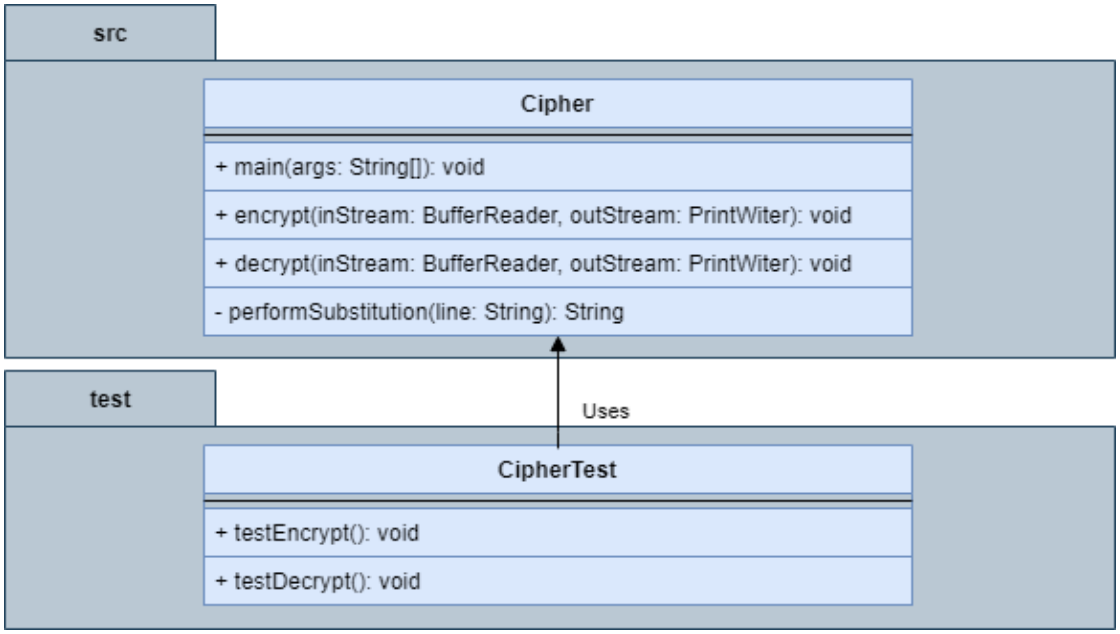

Figure 2: Class Diagram for Cipher Application & for Testing

3.1 Cipher Program

In *src* package, there are four methods within Cipher class:

main Method: This is place where the program starts. It has many operations:

- Command Line Interface (Including input validations)
- Reading and Writing Files
- Calling *encrypt method* or *decrypt method*

encrypt Method: Encrypting a given file, then produce the encrypted message as cipher.txt (only if num. chars per line > 3).

decrypt Method: Decrypt a given file, then produce the decrypted message as decrypt.txt (only if num. chars per line > 3).

performSubstitution Method: Perform substitution, then return the result as String.

3.2 CipherTest Program

In *test* package, there are four methods within CipherTest class:

testEncrypt Method: Test of encrypt method, of class Cipher.

testDecrypt Method: Test of decrypt method, of class Cipher.

4 Screenshots of The Program

The following are the screenshots of the program, *figures (3,4,5)* are for the main program, and *figure 6* is for testing program:

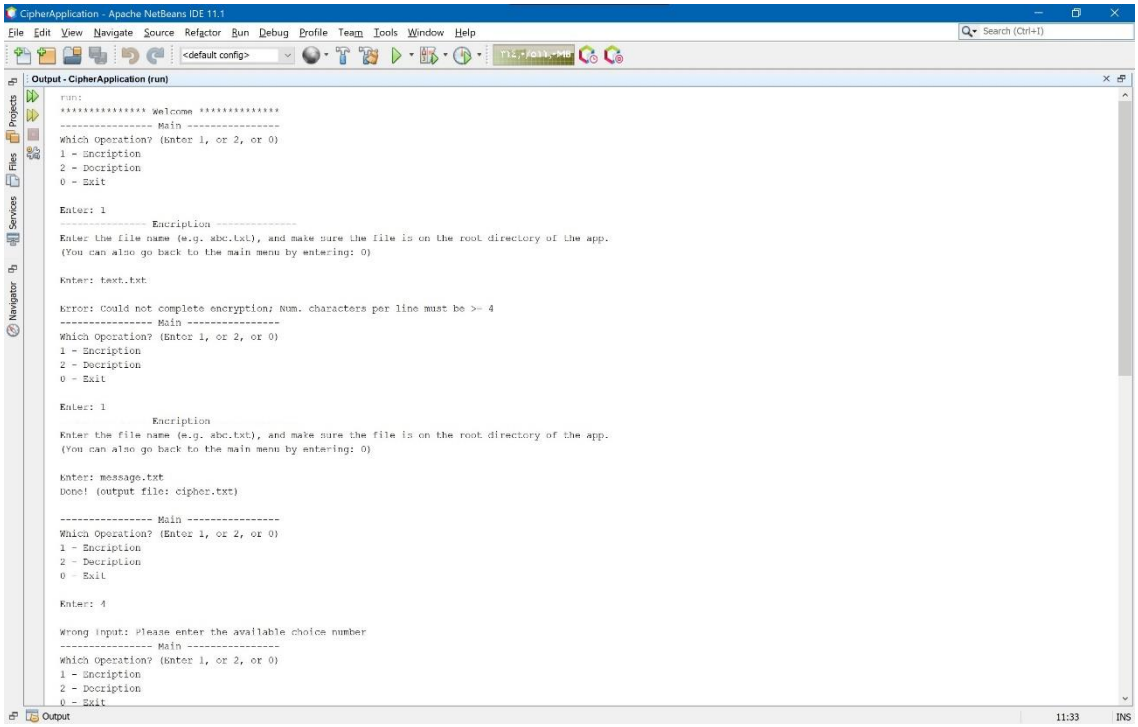

Figure 3: Main Program (Part 1)

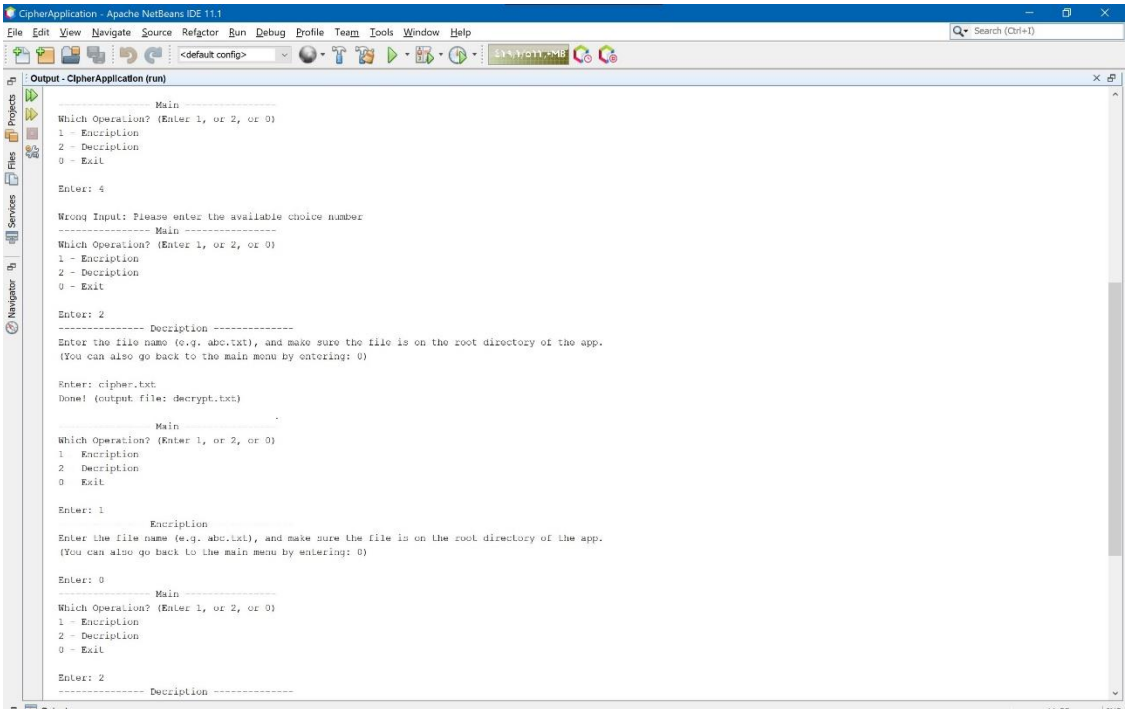

Figure 4: Main Program (Part 2)

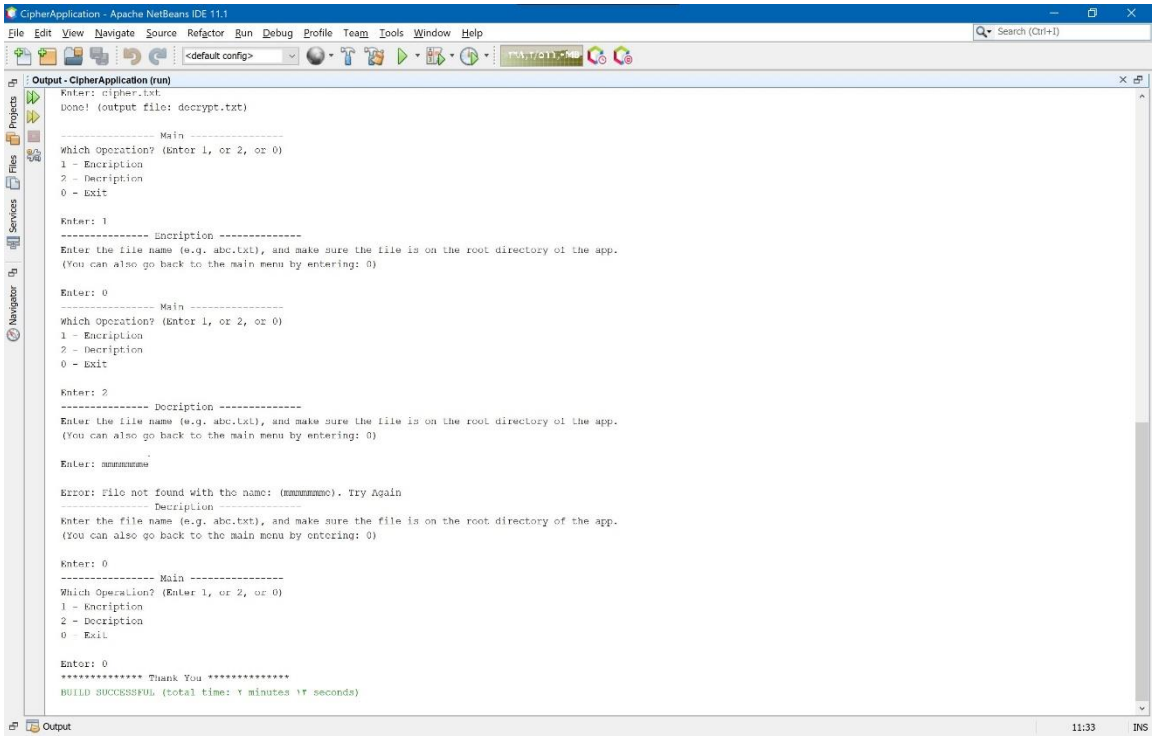

Figure 5: Main Program (Final Part)

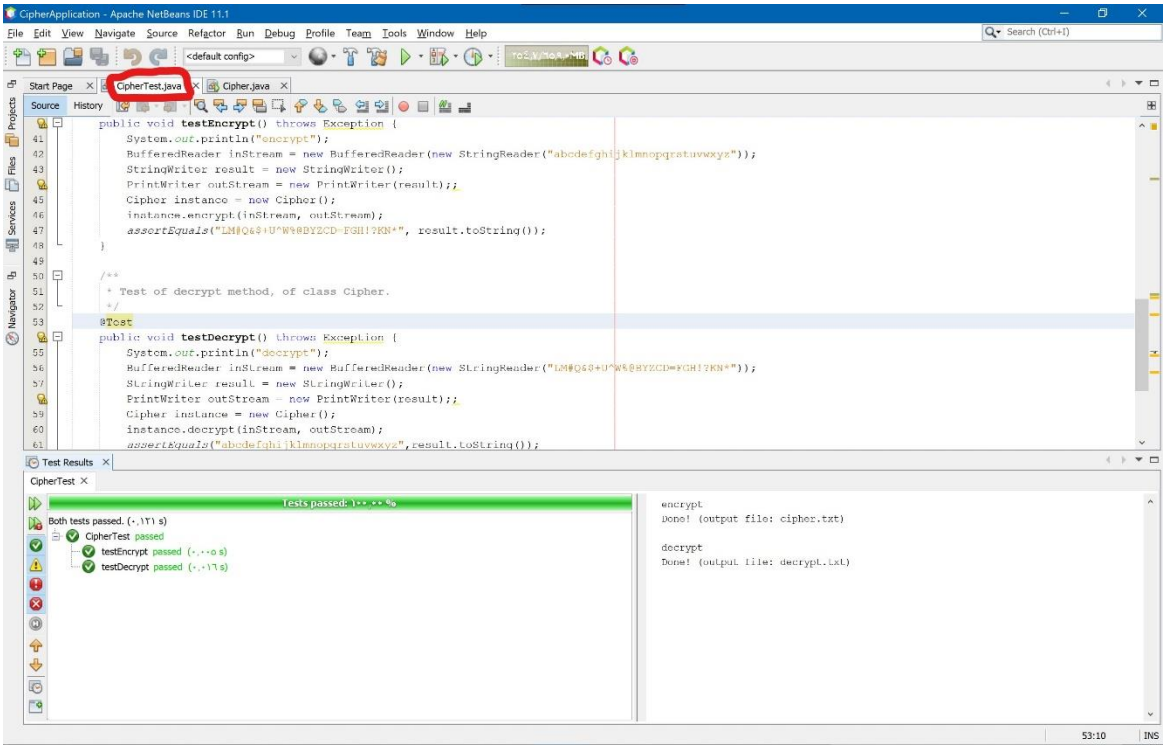

Figure 6: Testing Program