CMSC203 Assignment 3 Documentation

* Class: CMSC203
 * Instructor: Dr.Grinberg
 * Description: The CryptoManager class holds all the methods to execute the code. GUI driver class helps display the code in a more user friendly manner.
 * Due: 03/18/2024
 * Platform/compiler: Eclipse
 * I pledge that I have completed the programming assignment independently.
* I have not copied the code from a student or any source.
* I have not given my code to any student.
* Print your Name here: __Sousanna Chugunova_____

Part1: Pseudo Code: Here is a pseudo code for Assignment 3 program:

```
// Define constants for the lower and upper
bounds of ASCII characters and the range of
characters
CONSTANT LOWER_RANGE = ' '
CONSTANT UPPER_RANGE = '_'
CONSTANT RANGE = UPPER_RANGE -
LOWER_RANGE + 1
// Define a method to check if a string is within
the allowable bounds of ASCII codes
METHOD isStringInBounds(plainText)
 FOR each character in plainText
 IF the character is less than LOWER_RANGE
or greater than UPPER_RANGE
 RETURN false
 END FOR
 RETURN true
// Define a method to encrypt a string using the
Caesar Cipher
METHOD caesarEncryption(plainText, key)
 IF the plainText is not within the allowable
Bounds
RETURN "The selected string is not in
bounds, Try again."
 END IF

 SET encryptedText to an empty string
 FOR each character in plainText
 Calculate the encrypted character using the
Caesar Cipher formula
 Append the encrypted character to
encryptedText
 END FOR
 RETURN encryptedText
// Define a method to encrypt a string using the
Bellaso Cipher
METHOD bellasoEncryption(plainText, bellasoStr)
 SET encryptedText to an empty string
 SET bellasoLength to the length of bellasoStr
```

```
 FOR each character in plainText
 Get the corresponding character from
bellasoStr
 Calculate the encrypted character using the
Bellaso Cipher formula
 Append the encrypted character to
encryptedText
 END FOR
 RETURN encryptedText
// Define a method to decrypt a string
encrypted with the Caesar Cipher
METHOD caesarDecryption(encryptedText, key)
 SET decryptedText to an empty string
 FOR each character in encryptedText
 Calculate the decrypted character using the
Caesar Cipher formula
 Append the decrypted character to
decryptedText
 END FOR
 RETURN decryptedText
// Define a method to decrypt a string
encrypted with the Bellaso Cipher
METHOD bellasoDecryption(encryptedText,
bellasoStr)
 SET decryptedText to an empty string
 SET bellasoLength to the length of bellasoStr
 FOR each character in encryptedText
 Get the corresponding character from
bellasoStr
 Calculate the decrypted character using the
Bellaso Cipher formula
Append the decrypted character to
decryptedText
 END FOR
 RETURN decryptedText
```

Part2: UML Class Diagram

Crypto Manager
-LOWER_RANGGE: char -UPPER_RANGE: char -RANGE: int
+isStringInBounds(plaintext:String): boolean +ceaserEncryption(plaintext:String, key :int): String +bellasoEncryption (plaintext:String, bellasoStr: String): String +ceaserDecryption (encrypted Text:String, key:int): String +bellasoDecryption (encrypted Text: String, bellassoStr: String): String

Part3: Comprehensive Test Plan

A good test plan should be comprehensive. This means you should have a few test cases that test when the input is in and out of range, division by 0, incorrect Data type, etc.(Provide valid and invalid input).

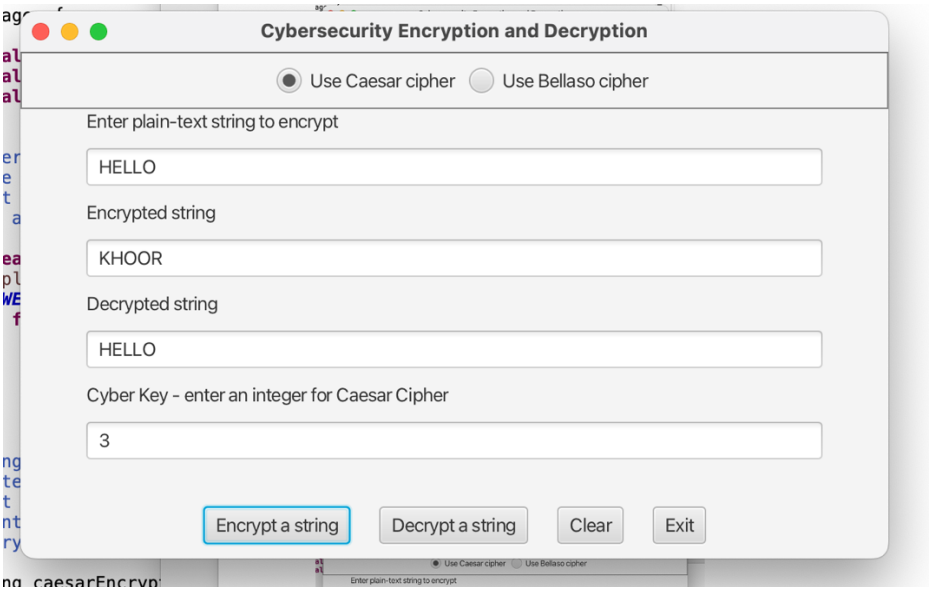
Notes:

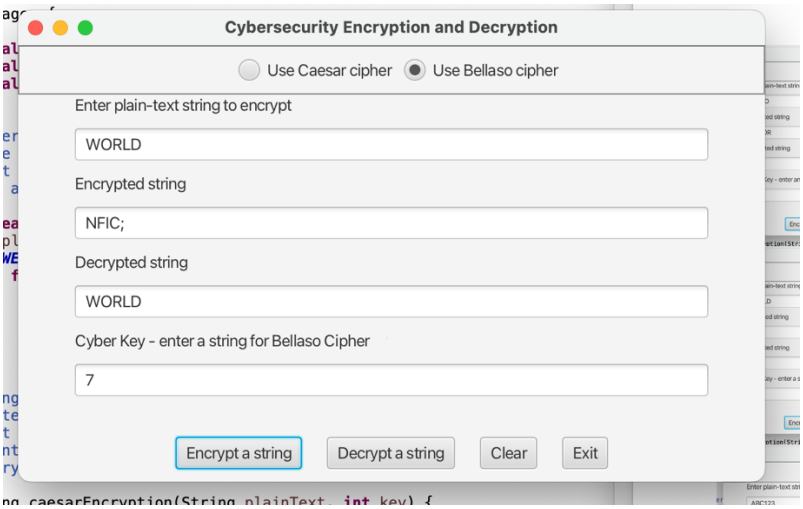
1. **For Design Document: Fill out only the first three columns.**
2. **For Implementation: Complete Test Plan and fill out all columns.**

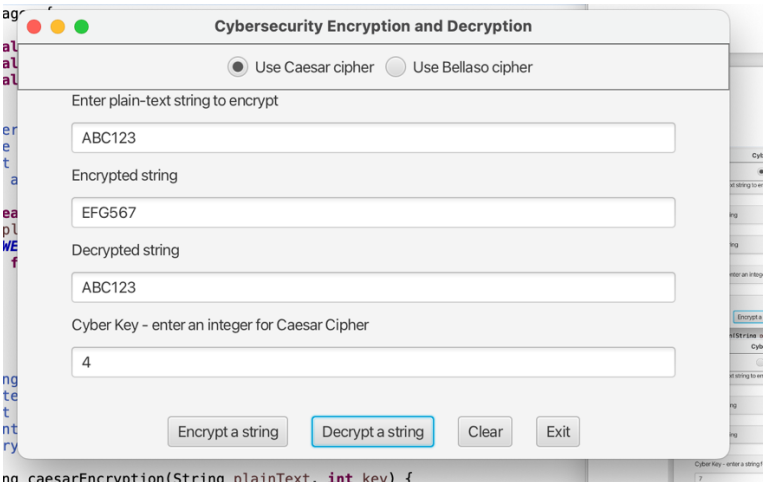
Cases	Input	Expected Output	Actual Output	Did Test Pass?
Case 1	HELLO	KHOOR	KHOOR	yes
Case 2	WORLD	DVSUM	NFIC;	no
Case 3	abc123	EFG657	EFG567	yes
Case 4	hello@#	error	QMTTXH+\	no

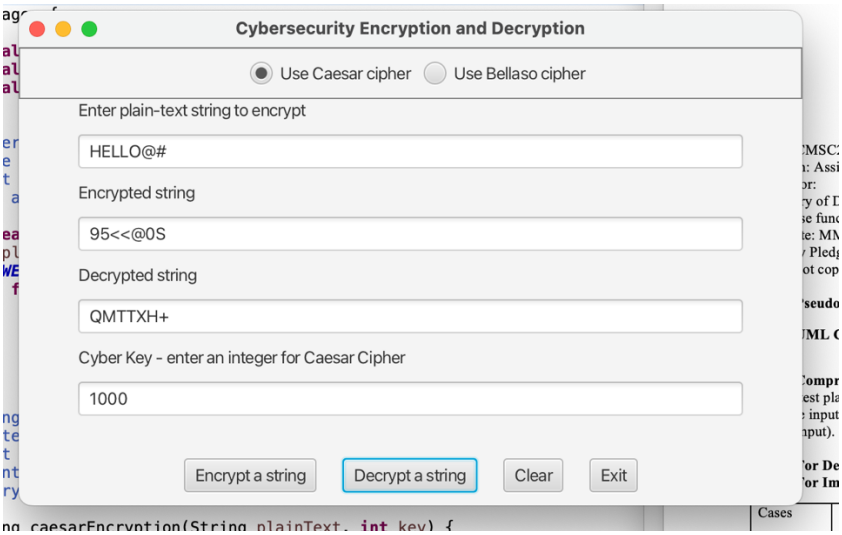
Part4: Screenshots:

a) Screenshots of the application running in your IDE (Eclipse, NetBeans, etc).

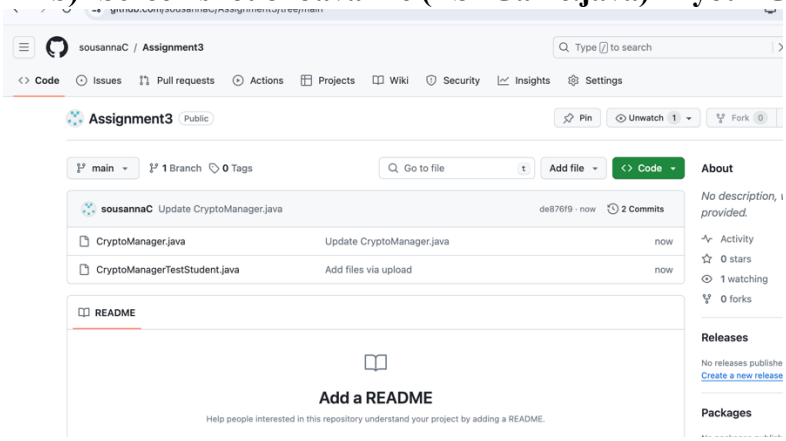




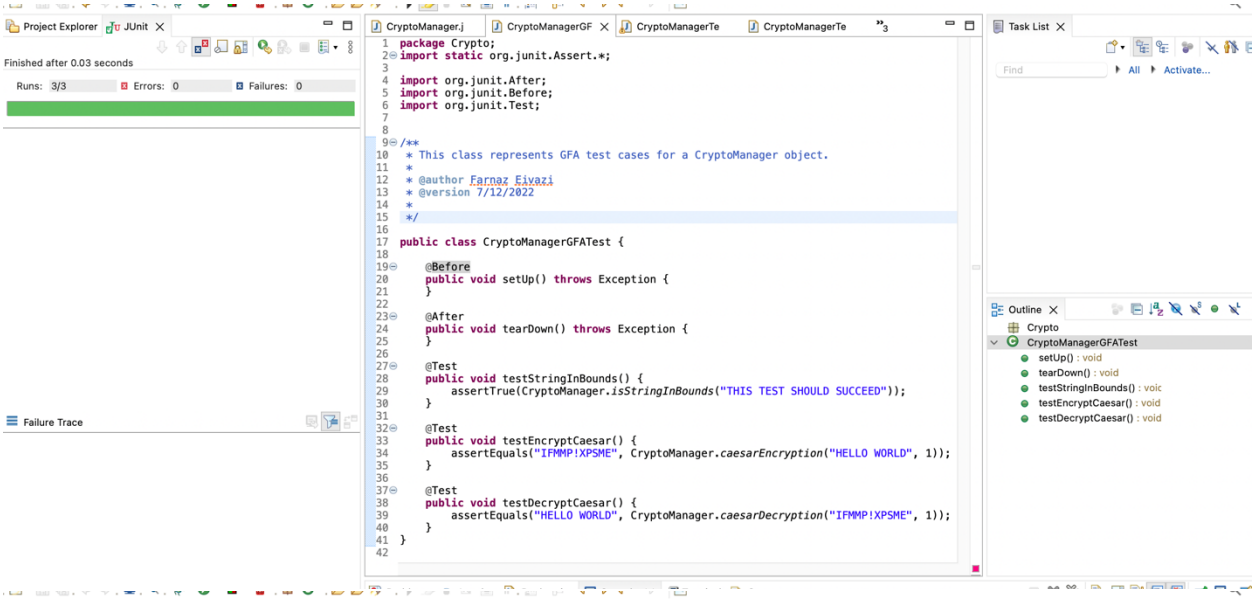


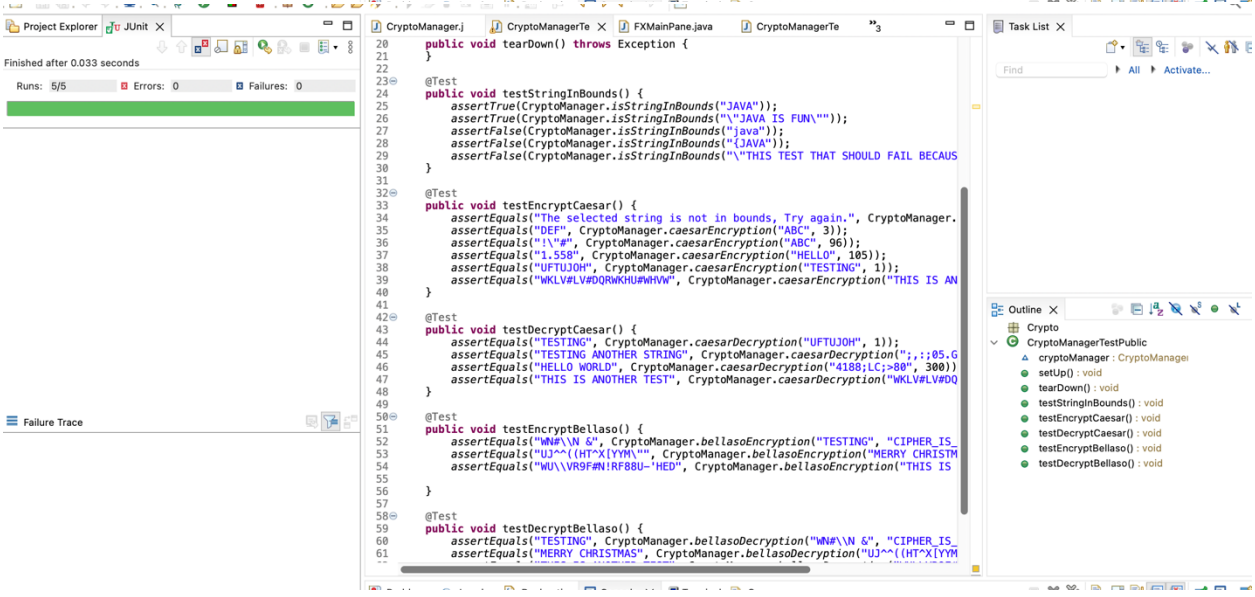


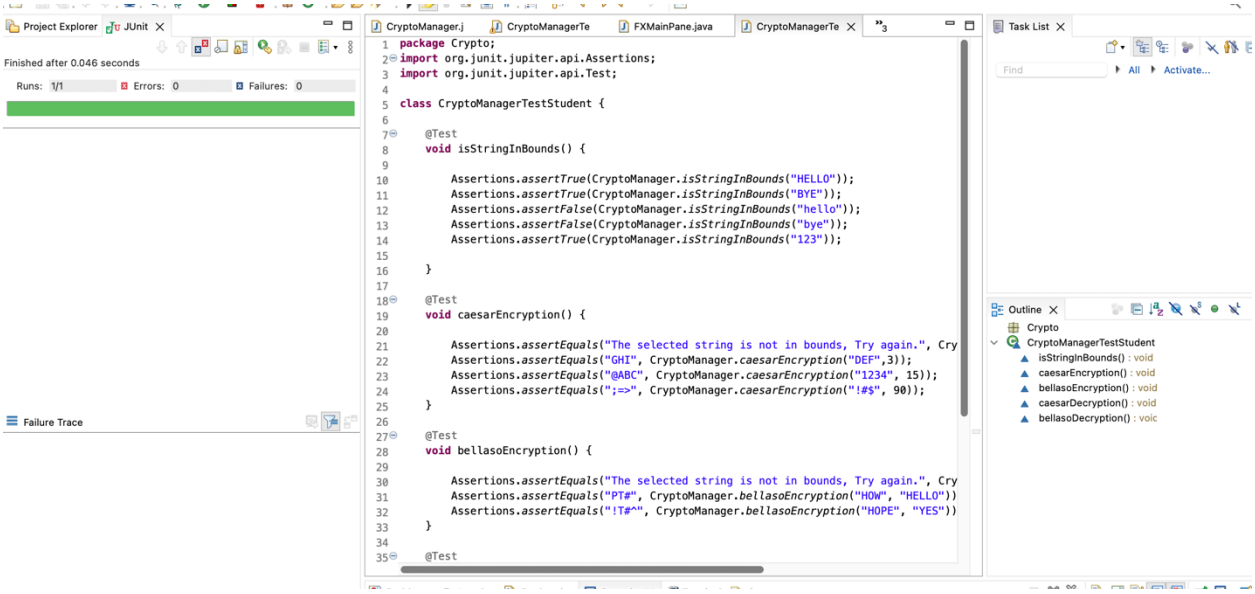
b) Screen shot of Java file (ESPGame.java) in your GitHub repository.

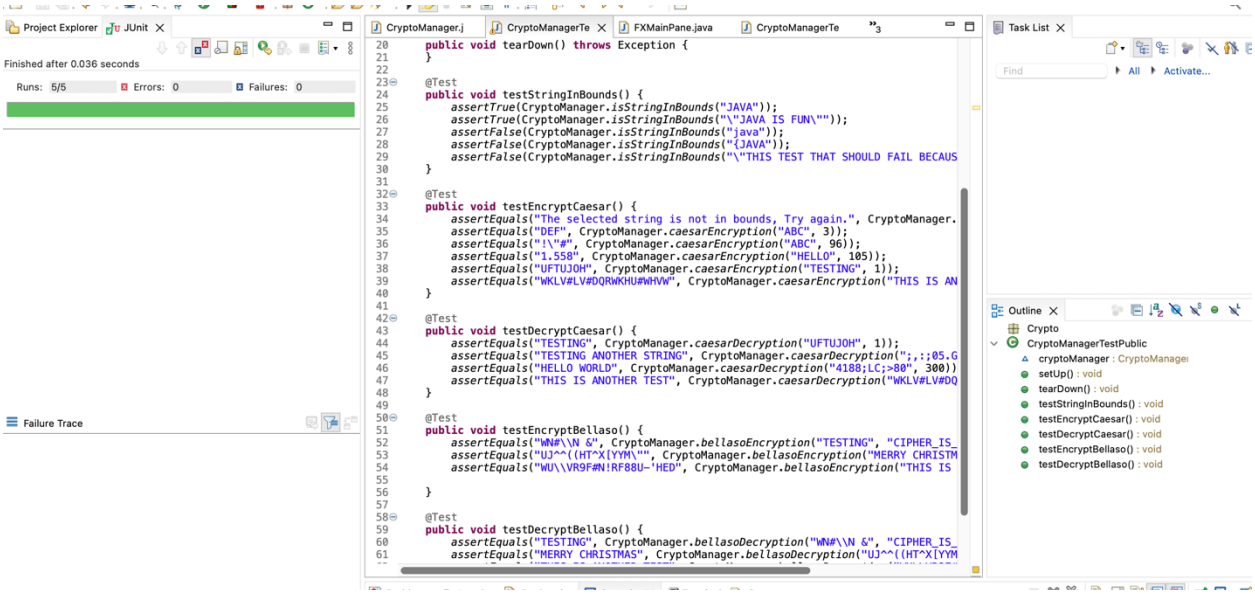


Screen snapshots of Junit Tests with extended methods' tests









Lessons Learned <Provide answers to the questions listed above>**:**

Write about your Learning Experience, highlighting your lessons learned and learning experience from working on this project.

What have you learned? How to have patience when making an encrypter/decrypter.

What did you struggle with? Finding the correct submission template

What would you do differently on your next project? Ask questions sooner

What parts of this assignment were you successful with, and what parts (if any) were you not successful with? I was successful in completing the assignment. I had trouble with downloading the correct version of Junit.

Provide any additional resources/links/videos you used to while working on this assignment/project.

Check List: <Provide answers to the column Y/N or N/A >**:**

#		**Y/N**
1.	**Assignment files:**	
	• FirstInitialLastName_ Assignment3_Complete.zip	**Y**
	• FirstInitialLastName_Assignment3.docx/.pdf	**Y**
	• Source java files	**Y**
	• FirstInitialLastName_ Assignment3_JavaFiles.zip	**Y**
2.	**Program compiles**	**Y**
3.	**Program runs with desired outputs related to a Test Plan**	**Y**
4.	**Documentation file:**	
	• Comprehensive Test Plan	**Y**
	• Screenshots from IDE	**Y**
	• Screenshots of your GitHub account with submitted Assignment# (if required)	**Y**
	• Pseudocode	**Y**
	• Lessons Learned	**Y**
	• Checklist is completed and included in the Documentation	Y