**Montgomery College**

**CMSC 203**

**Assignment 3 Design**

**Pseudocode**

1. Create a class CryptoManager.java with has as attributes the key of Caesar and Bellaso, the upper and lower bounds and the text that will need to be converted.
2. Build the constructor, to give default value to the attributes.
3. Create the stringInBounds method to make sure that the string stays in the bounds. Will return a boolean value.
4. Create the string method encryptCaesar which will have the string plaintext and the integer key as parameters. Will help us set the value of the key and the text that will need encryption. If the key is bigger than the range, we substract UPPER\_BOUND - LOWER\_BOUND + 1 to the key. The number we get will be used as a key, or else will be substracted the same way until we get a valid key value.
5. Create the string method decryptCaesar which will have the string plaintext and the integer key as parameters to decrypt a previously encoded text.
6. Create the string method encryptBellaso which will have the string plaintext and a string key as parameters this time. Will help us set the value of the key and the text that will need encryption. In a similar mannerthan with Caesar, the key will be readjusted to fit the range
7. Create the string method decryptBellaso with string plaintext and string key as parameters. Will reverse the operation.

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Input text | Input Key | Encrypted (method1) | Encrypted (method2) | Decrypt (method1) | Decrypt (method2) |
| CHAT | 1 | DIBU |  |  |  |
| CHAT | AB | error | DJBF |  |  |
| MOM | 1 |  |  | NPN |  |
| 😊 | ABC | error |  | error |  |

**UML**

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| --- |
| CryptoManager |
| * UPPER\_BOUND: int * LOWER\_BOUND: int * key: int * text: String * bellaso : String |
| * + stringInBounds(plaintext : String) : boolean * + encryptCaesar(plainText: String, key: int): String * + decryptCaesar(plainText: String, key: int): String * + encryptBellaso(plainText: String, bellasoStr: String): String * + decryptBellaso(plainText: String, bellasoStr: String): String |