# Assignment #3 Design Doc – Max Chiu

# Pseudocode –

## Caesar Cipher (Encrypt & Decrypt)

1. Define a return string
2. Loop through input string
   1. For each character, add the input key (subtract for decrypt)
   2. If the resulting character is greater than the range (less than the range for decrypt)
      1. Subtract the character by the range until it is in range (add the character by the range for decrypt)
   3. Add the character to the return string
3. Return the string

## Bellaso Cipher (Encrypt & Decrypt)

1. Define a return string
2. Define a final key string
3. Loop through the # of characters in input string
   1. Define a character that is equal to the current index modulo key length of the key
   2. Add said character to final key string
4. Loop through the input string
   1. Since input string length is the same as the final key length
      1. For each character add the current index input string character with the current index final key character (subtract for decrypt)
   2. If the resulting character is greater than the range (less than the range for decrypt)
      1. Subtract the character by the range until is in range (add the character by the range for decrypt)
   3. Add the character to the return string
5. Return the string

# Test Table –

|  |  |  |  |
| --- | --- | --- | --- |
| Input Text | Input Key | Encrypted (Caesar) | Decrypt (Caesar) |
| ABC | 3 | DEF | >?@ |
| \_ | 4 | # | [ |
| MAX | 1 | NBY | L@W |
| 911 | 5 | >66 | 4,, |

|  |  |  |  |
| --- | --- | --- | --- |
| Input Text | Input Key | Encrypted (Bellaso) | Decrypt (Bellaso) |
| ABC | CMS | DOV | XOJ |
| \_ | ‘ ‘ (space) | @ | ? |
| 123 | 555 | ()\* | DEF |

# UML Diagram –

