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| Renad Zaid Almurayshid  439012192 | Cryptography |
| Wasan Fawzi Alharthi  439004596 | CheckDuplicate |
| Shahad Hassan Aldadi  436004870 | String Reverse |

Encoder Pseudocode

algorithm encoder (String Lettres , int number ):

String Ciphertext 🡨 " "

For i 🡨0 to 25 less than Letters (i+1)

Character x 🡨 Letters at char (i)

IF

X = Uppercase

For j 🡨 0 to 25 less than upper length (j+1)

IF

X =upper( j )

Ciphertext🡨 Ciphertext +upper (j+number) % upper

ELSE

For j 🡨 0 to 25 less than lower length

X = lower( j)

Ciphertext🡨 Ciphertext +lower (j+number) % lower

END

END

END

RETURN Ciphertext

END

Decoder Pseudocode

String plaintext 🡨 " "

For i 🡨 0 to 25 less than cipher text ( i +1 )

Character x 🡨 Ciphertext at char ( i )

IF

X = uppercase

For j 🡨 0 to 25 less then upper ength (j + 1)

IF

X=upper (j)

IF

j – index more or equal zero

plain text 🡨 plaintext +upper ( j - number)

ELSE

Plain text 🡨 plaintext+upper( j – number )+ upperlength

END IF

END

ELSE

For j 🡨 0 to 25 less than lower length ( j +1)

IF

X = lower( j )

IF

j -number more or equal zero

plaintext 🡨 plaintext +lower ( j – number)

ELSE

Plain text 🡨 plain text + lower ( j – number )+lower length

END IF

END

END

END

RETURN plain text

END

checkDuplicate Pseudocode

Algorithem check Duplicate(head)

C<-head

IF c=null

PRINT is empty

ElSE

LOOP c!=tail

LOOP g<-c->next , g !=tail-> next , g<-g<-next

IF c->data=g->data

return true

END LOOP

c=c->next

return false

String reverse Pseudocode

FUNCTION : reverse (head)

IF head->next is null

Return head->data

Else

Return reverse (head->next)+head->data

ENDIF

ENDFUNCTION