

Assignment #2 Answer Sheet

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Completed in Java JDK 16, using IntelliJ IDEA 2021.

Program files located in src/Main.java

- 1) The output also includes all character to bitstring conversions for a visual aid.

The character A is equivalent to 00000.
The character A to Z is equivalent to 000001101010011011101101011001.
The character (?) is equivalent to 111101110111111.
The character Wilana is equivalent to 1011001000010111000000110100000.

The bitstring 00000 is equivalent to A.
The bitstring 000000000100010 is equivalent to ABC.
The bitstring 000100000010011 is equivalent to CAT.
The bitstring 111101110111111 is equivalent to (?).

4)

PlainText:	how do you like computer science
RoundKey:	101101010010100101101011
CipherText:	HOW .XW(H,)ZNFWNZWBYHAMBZDEJTGJV

2. The encryption doesn't work, as it turns out.

CipherText:	HOW .XW(H,)ZNFWNZWBYHAMBZDEJTGJV
Reverse Key:	100101101011101101010010
Decrypted Text:	HOW Q DJFE JJB HJAUDXO?RGEVUWQ,

- 3.

PlainText:
cryptography is an important tool for network security. but there are other issues for network security.

RoundKey:	101101010010100101101011
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CipherText:	CQKA,DVWW (LYCQKCEIQCAN XK(LYBQGDYPAIBFQWC .KBAEDMNQGA?XW(? .WAAADINA DN)X(.KCYLCIJACANZXG(LYBIFDAMA DN?
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4.

Large prime: 223
-> The number 223 is prime.

Large prime: 6337
-> The number 6337 is prime.

Large prime: 7573
-> The number 7573 is prime.