SAMPLE RUN

```
------------------------------------------------------------------------------------------------
Input message: My name is Ozymandias, King of Kings; Look on my Works, ye Mighty, and despair!

Encryption Method: 1

Output:
**************************************************
**************************************************
**********     CS463 PROJECT     **********
**********   BY DANIEL LEDWITH   **********
**********       FALL 2023       **********
**************************************************
**************************************************

Encryption Using Caesar Cipher:

plaintext:  My name is Ozymandias, King of Kings; Look on my Works, ye Mighty, and despair!
ciphertext: j7=,~+#='1=l87+~,"'~1I=h',%=-$=h',%1X=i--)=-,=+7=t-0)1I=7#=j'%&27I=~,"="#1.~'0>

Decryption Using Caesar Cipher:

ciphertext: j7=,~+#='1=l87+~,"'~1I=h',%=-$=h',%1X=i--)=-,=+7=t-0)1I=7#=j'%&27I=~,"="#1.~'0>
plaintext:  My name is Ozymandias, King of Kings; Look on my Works, ye Mighty, and despair!

Enter Y to continue encrypting messages; enter any other key to exit:
```

SAMPLE RUN

```
------------------------------------------------------------------------------------------------
Input message: My name is Ozymandias, King of Kings; Look on my Works, ye Mighty, and despair!

Encryption Method: 2

Output:
**************************************************
**************************************************
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**********   BY DANIEL LEDWITH   **********
**********       FALL 2023       **********
**************************************************
**************************************************

Encryption Using Affine Cipher:

plaintext:  My name is Ozymandias, King of Kings; Look on my Works, ye Mighty, and despair!
ciphertext: [r=%)}E=aH=iyr})%>a)H2=Ma%S=,L=Ma%SH<=T,,o=,%=}r=B,AoH2=rE=[aSZOr2=)%>=>EH3)aAD

Decryption Using Affine Cipher:

ciphertext: [r=%)}E=aH=iyr})%>a)H2=Ma%S=,L=Ma%SH<=T,,o=,%=}r=B,AoH2=rE=[aSZOr2=)%>=>EH3)aAD
plaintext:  My name is Ozymandias, King of Kings; Look on my Works, ye Mighty, and despair!

Enter Y to continue encrypting messages; enter any other key to exit:
```

SAMPLE RUN

```
------------------------------------------------------------------------------------------------
Input message: My name is Ozymandias, King of Kings; Look on my Works, ye Mighty, and despair!

Encryption Method: 3

Output:
**************************************************
**************************************************
**********     CS463 PROJECT     **********
**********   BY DANIEL LEDWITH   **********
**********       FALL 2023       **********
**************************************************
**************************************************

Encryption Using Linear-Feedback Shift Register:

plaintext:  My name is Ozymandias, King of Kings; Look on my Works, ye Mighty, and despair!
ciphertext:
00101111101111001010101101111000010011010011010111010100010000101010110011111000001101100110001100100010110010000000111110100100111
10010101110010010000101001110011100001001001110111001011100000001111111010000100011111110010001000011011010001110101011010111010100
01010011011011010110000100011111111101010101101011010010000110011011111101101001000010101010101110010100110110010000010010000110010
01001101011010101011111001011111101010111110111010010010001000110111010000010101011010110110100010100111111110110010001011010111100
10100111001101100100110100110110110101010100000101010000111101110011001010101110000111001110110000001000011100100
```

Decryption Using Linear-Feedback Shift Register:

```
ciphertext:
00101111101111001010101101111000010011010011010111010100010000101010110011111000001101100110001100100010110010000000111110100100111
10010101110010010000101001110011100001001001110111001011100000001111111010000100011111110010001000011011010001110101011010111010100
01010011011011010110000100011111111101010101101011010010000110011011111101101001000010101010101110010100110110010000010010000110010
01001101011010101011111001011111101010111110111010010010001000110111010000010101011010110110100010100111111110110010001011010111100
10100111001101100100110100110110110101010100000101010000111101110011001010101110000111001110110000001000011100100
plaintext:  My name is Ozymandias, King of Kings; Look on my Works, ye Mighty, and despair!

Enter Y to continue encrypting messages; enter any other key to exit:
```

SAMPLE RUN

```
------------------------------------------------------------------------------------------
Input message: My name is Ozymandias, King of Kings; Look on my Works, ye Mighty, and despair!

Encryption Method: 4

Output:
**************************************************
**************************************************
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**********   BY DANIEL LEDWITH   **********
**********       FALL 2023       **********
**************************************************
**************************************************

Encryption Using DES:

plaintext:  My name is Ozymandias, King of Kings; Look on my Works, ye Mighty, and despair!
ciphertext:
1001011001111000000010101001011111100010111101101000110101110001000101111000011110110001010001100000001110100001011100110101110000
0001110010111011110110100101110110011111110001011100011101010001110000111001100001011000000100110000110100101011110100111011011010
0000010010110000011100101101001010010001100110100111000111001010101101000111011101011100000111100100001001000001000000010111110100
1100101110110011010010001001011000100101110101001000000110010000001010110100110010001001111011000100001111110110100000111001100100
0100110001011001110010011110001010011001101111001100110001010011100000010010110111111011100000101001111111100101101110000
```

Decryption Using DES:

```
ciphertext:
1001011001111000000010101001011111100010111101101000110101110001000101111000011110110001010001100000001110100001011100110101110000
0001110010111011110110100101110110011111110001011100011101010001110000111001100001011000000100110000110100101011110100111011011010
0000010010110000011100101101001010010001100110100111000111001010101101000111011101011100000111100100001001000001000000010111110100
1100101110110011010010001001011000100101110101001000000110010000001010110100110010001001111011000100001111110110100000111001100100
0100110001011001110010011110001010011001101111001100110001010011100000010010110111111011100000101001111111100101101110000
plaintext:  My name is Ozymandias, King of Kings; Look on my Works, ye Mighty, and despair!

Enter Y to continue encrypting messages; enter any other key to exit:
```

SAMPLE RUN

```
------------------------------------------------------------------------------------------------
Input message: My name is Ozymandias, King of Kings; Look on my Works, ye Mighty, and despair!

Encryption Method: 5

Output:
**************************************************
**************************************************
**********     CS463 PROJECT     **********
**********   BY DANIEL LEDWITH   **********
**********       FALL 2023       **********
**************************************************
**************************************************

Encryption Using RSA:

plaintext:  My name is Ozymandias, King of Kings; Look on my Works, ye Mighty, and despair!
ciphertext:
101011100111110111001000000001000110110001110101110101100010001110011110001101100010111001111101111101000101101000000010101011010
011000111101011000101101000110101111111001010101111000111001011111101001110110000010111110111100110101001111010001011010010000101
100001001010100001000110100111110100010000111100001110110110010111111010000100000000010000000001010000110111001000101100100011111
111111001100101100001001000110100001010110110001110011000001010010100100101001010011001001000111110000001110110010001111111111100
101111001010011011101010000010011010101011100011001100111000011111111111100100011101111100111110110111101001001111100101000100101111
011011001111111010101010010100010111011010110011100100001010101110001001111010110100010100111110000100010001011101011110100001011
000110001111111001100000111011000111111011101011101011100000000111100111100001101100101111100111011001010000010110011011001010011
000101010011010110010111111101001011100101001111100000010000100100101110000010011001100011000111010000000011111000
```

Decryption Using RSA:

```
ciphertext:
101011100111110111001000000001000110110001110101110101100010001110011110001101100010111001111101111101000101101000000010101011010
011000111101011000101101000110101111111001010101111000111001011111101001110110000010111110111100110101001111010001011010010000101
100001001010100001000110100111110100010000111100001110110110010111111010000100000000010000000001010000110111001000101100100011111
111111001100101100001001000110100001010110110001110011000001010010100100101001010011001001000111110000001110110010001111111111100
101111001010011011101010000010011010101011100011001100111000011111111111100100011101111100111110110111101001001111100101000100101111
011011001111111010101010010100010111011010110011100100001010101110001001111010110100010100111110000100010001011101011110100001011
000110001111111001100000111011000111111011101011101011100000000111100111100001101100101111100111011001010000010110011011001010011
000101010011010110010111111101001011100101001111100000010000100100101110000010011001100011000111010000000011111000
plaintext:  My name is Ozymandias, King of Kings; Look on my Works, ye Mighty, and despair!

Enter Y to continue encrypting messages; enter any other key to exit:
```

```
SAMPLE RUN
---------------------------------------------------------------------------------------------
Input message: My name is Ozymandias, King of Kings; Look on my Works, ye Mighty, and despair!

Encryption Method: 6

Output:
**************************************************
**************************************************
**************     CS463 PROJECT     **************
**************   BY DANIEL LEDWITH   **************
**************       FALL 2023       **************
**************************************************
**************************************************

Encryption Using Elgamal:

plaintext:  My name is Ozymandias, King of Kings; Look on my Works, ye Mighty, and despair!
ciphertext:
10100101110011101111111001110000111110011101001111100011000010101110001110110000010110000100011100011001010110110101100001111010001
10110010101001100010111000010011101000111010100001011001010001011010011010110100000000100001010101101111110000111101111001111110110
11001001111011111110001101110011011100110000111010101111000101010110010000101011110001010011000010000111000011111010001010011010 11
10111011001001110100000001100110111011111010111100111010000111000100101110101001101001001001100010011100110010000011100101110001 00
00010000010110101110111101010100001100101101100001001100000100000100000000101111000111010001000000010011001001110000011011100011111
0011101010101011010110010010111000100110111101100101001000100111110111010001

Decryption Using Elgamal:

ciphertext:
10100101110011101111111001110000111110011101001111100011000010101110001110110000010110000100011100011001010110110101100001111010001
10110010101001100010111000010011101000111010100001011001010001011010011010110100000000100001010101101111110000111101111001111110110
11001001111011111110001101110011011100110000111010101111000101010110010000101011110001010011000010000111000011111010001010011010 11
10111011001001110100000001100110111011111010111100111010000111000100101110101001101001001001100010011100110010000011100101110001 00
00010000010110101110111101010100001100101101100001001100000100000100000000101111000111010001000000010011001001110000011011100011111
0011101010101011010110010010111000100110111101100101001000100111110111010001
plaintext:  My name is Ozymandias, King of Kings; Look on my Works, ye Mighty, and despair!

Enter Y to continue encrypting messages; enter any other key to exit:
```