



Encrypted
Message

2. My challenge(s) were figuring out what binary numbers to use to get the decimal value, conversions, & following the conversions

Encrypting

message = "Vault";
key = "doubt";

11897117108116
10011111798116

Binary

128 64 32 16 8 4 2 1

V

a

u

l

t

118

97

117

108

116

01110110
00000000

01100001
00000000

01110101
00000000

01101100
00000000

01110100
00000000

d

o

u

b

t

100

111

117

98

116

01100100

01101111

01110101

01100010

01110100

XOR

01110110
01100100

00010010
1 2

01100001
01101111

00001110
0 E

01110101
01110101

00000000
0 0

01101100
01100010

00001110
0 E

01110100
01110100

00000000
0 0

12

0E

00

0E

00

Decrypting

120E000E00

12

0E

00

0E

00

XOR w/ key

$$\begin{array}{r}
 00010010 \\
 01100100 \\
 \hline
 01110110
 \end{array}$$

128 64 32 16 8 4 2 1

118

"j"

$$\begin{array}{r}
 00001110 \\
 01101111 \\
 \hline
 01100001
 \end{array}$$

97

"a"

$$\begin{array}{r}
 00000000 \\
 0110101 \\
 \hline
 0110101
 \end{array}$$

117

"u"

$$\begin{array}{r}
 00001110 \\
 01100010 \\
 \hline
 01101100
 \end{array}$$

108

"l"

$$\begin{array}{r}
 00000000 \\
 01110100 \\
 \hline
 01110100
 \end{array}$$

116

"t"

3. I would truncate the key to match the plaintext length.