20/03/2021

Crypto homework week3

Plaintext:

S o p h i a I m a m

Plaintext ASCII Codes:

83 111 112 104 105 97 32 73 109 97 109

Plaintext Hex:

0x53 0x6f 0x70 0x68 0x69 0x61 0x20 0x49 0x6d 0x61 0x6d

Plaintext Binary:

0b01010011 0b01101111 0b01110000 0b01101000 0b01101001 0b01100001 0b00100000 0b01001001 0b01101101 0b01100001 0b01101101

Key:

t h e o n e t i m e p a d i s m u c h e a s i e r w i t h c o m p u t e r s

Key ASCII Codes:

116 104 101 111 110 101 116 105 109 101 112 97 100 105 115 109 117 99 104 101 97 115 105 101 114 119 105 116 104 99 111 109 112 117 116 101 114 115

Key Hex:

0x74 0x68 0x65 0x6f 0x6e 0x65 0x74 0x69 0x6d 0x65 0x70 0x61 0x64 0x69 0x73 0x6d 0x75 0x63 0x68 0x65 0x61 0x73 0x69 0x65 0x72 0x77 0x69 0x74 0x68 0x63 0x6f 0x6d 0x70 0x75 0x74 0x65 0x72 0x73

Key Binary:

0b01110100 0b01101000 0b01100101 0b01101111 0b01101110 0b01100101 0b01110100 0b01101001 0b01101101 0b01100101 0b01110000 0b01100001 0b01100100 0b01101001 0b01110011 0b01101101 0b01110101 0b01100011 0b01101000 0b01100101 0b01100001 0b01110011 0b01101001 0b01100101 0b01110010 0b01110111 0b01101001 0b01110100 0b01101000 0b01100011 0b01101111 0b01101101 0b01110000 0b01110101 0b01110100 0b01100101 0b01110010 0b01110011

Performing XOR

The XOR of 0b01010011 xor 0b01110100 is:

Result: 0b00100111

The XOR of 0b01101111 xor 0b01101000 is:

Result: 0b00000111

The XOR of 0b01110000 xor 0b01100101 is:

Result: 0b00010101

The XOR of 0b01101000 xor 0b01101111 is:

Result: 0b00000111

The XOR of 0b01101001 xor 0b01101110 is:

Result: 0b00000111

The XOR of 0b01100001 xor 0b01100101 is:

Result: 0b00000100

The XOR of 0b00100000 xor 0b01110100 is:

Result: 0b01010100

The XOR of 0b01001001 xor 0b01101001 is:

Result: 0b00100000

The XOR of 0b01101101 xor 0b01101101 is:

Result: 0b00000000

The XOR of 0b01100001 xor 0b01100101 is:

Result: 0b00000100

The XOR of 0b01101101 xor 0b01110000 is:

Result: 0b00011101

Temporary List: ["'", '\x07', '\x15', '\x07', '\x07', '\x04', 'T', ' ', '\x00', '\x04', '\x1d']

Ciphertext Binary:

0b00100111 0b00000111 0b00010101 0b00000111 0b00000111 0b00000100 0b01010100 0b00100000 0b00000000 0b00000100 0b00011101

Ciphertext Hex:

0x27 0x7 0x15 0x7 0x7 0x4 0x54 0x20 0x0 0x4 0x1d

Ciphertext ASCII Codes:

39 7 21 7 7 4 84 32 0 4 29

Ciphertext:

' T