Caeser Cipher



Cleartext: Maggie, Thursday, 7pm.

ABCDEFGHIJKLMNOPQRSTUVWXYZ

ABCDEFGHIJKLMNOPQRSTUVWXYZ

Caeser Cipher



Cleartext: Maggie, Thursday, 7pm.

ABCDEFGHIJKLMNOPQRSTUVWXYZ DEFGHIJKLMNOPQRSTUVWXYZABC

Pdjjlh, Wkxuvgdb, 7sp.

Letter frequencies in English text[†]



| | % | | % | | % |
|---|------------|---|-----|--------------|-----|
| E | 13.1 | D | 4.1 | G | 1.4 |
| T | 9.0 | L | 3.6 | В | 1.3 |
| 0 | 8.2 | C | 2.9 | \mathbf{V} | 1.0 |
| A | 7.8 | F | 2.9 | K | 0.4 |
| N | 7.3 | U | 2.8 | X | 0.3 |
| Ι | 6.8 | M | 2.6 | J | 0.2 |
| R | 6.6 | P | 2.2 | Q | 0.1 |
| S | 6.5 | Y | 1.5 | Z | 0.1 |
| H | 5.9 | W | 1.5 | | |

†Davies, D.W. & Price, W.L., "Security for Computer Networks", Wiley, 1989

Digrams and trigrams in English text[†]

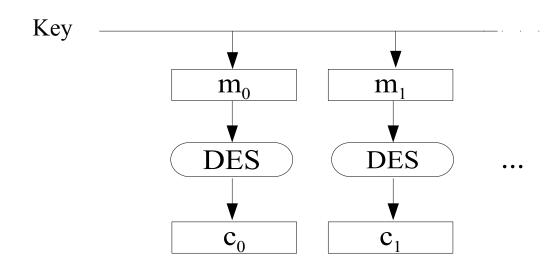


| TH | THE |
|------------------------|-----|
| HE | AND |
| $\mathbf{A}\mathbf{N}$ | THA |
| IN | ENT |
| ER | ION |
| RE | TIO |
| ES | FOR |
| ON | NDE |
| $\mathbf{E}\mathbf{A}$ | HAS |
| TI | NCE |

†Davies, D.W. & Price, W.L., "Security for Computer Networks", Wiley, 1989

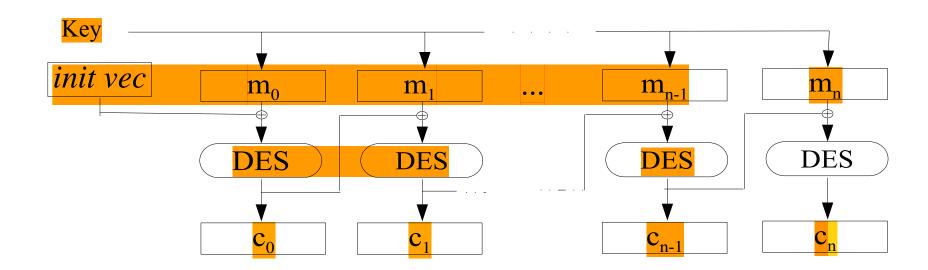
DES Encryption





DES CBC Mode





RSA



```
c = cryptotext

m = message

public key = (e,n)

private key = d
```

- $\bullet c = me \mod n$
- $\bullet m = cd \mod n$