Symmetric and Asymmetric Cryptographic Primitives

Design and Verification of Security Protocols and Security Ceremonies

Programa de Pós-Graduacão em Ciências da Computacão
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UNIVERSIDADE FEDERAL
DE SANTA CATARINA

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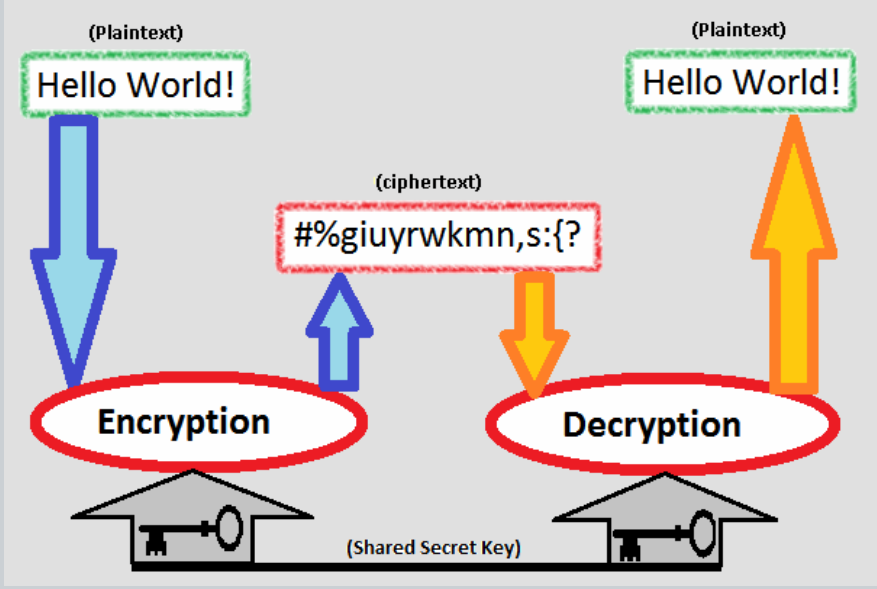

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- We will talk about key distribution protocols in the next lectures.

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- It can be made more efficient by using context of doubles and triples.

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- You find the period of the key and them use frequency analysis to crack all the mono alphabetic cipher independently.

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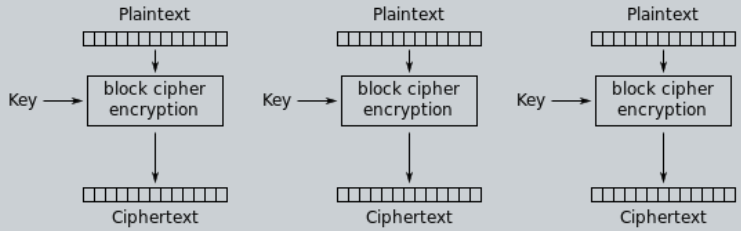

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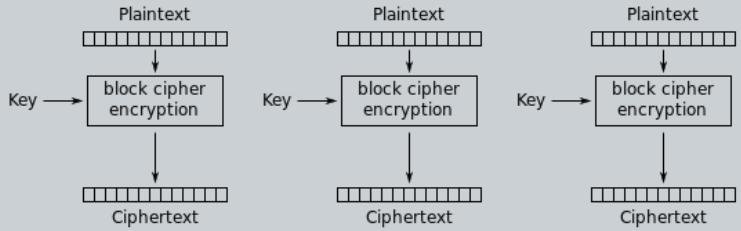

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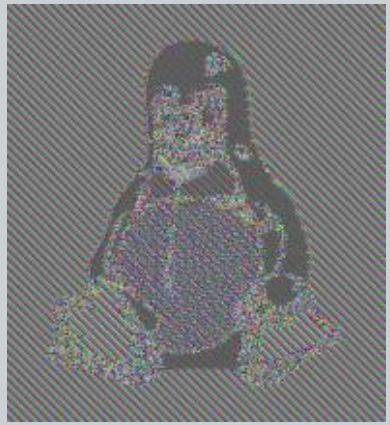

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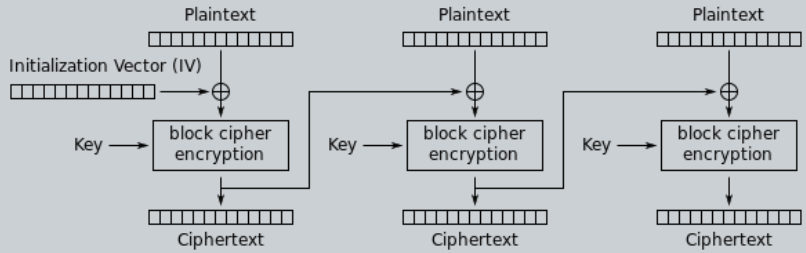

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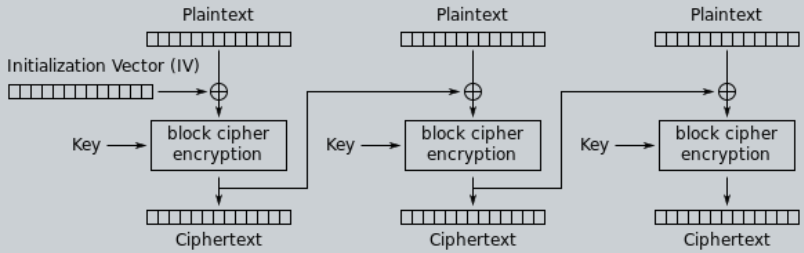

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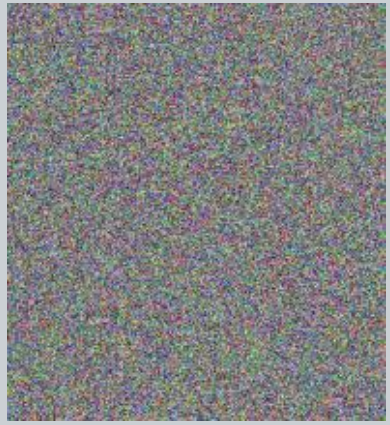

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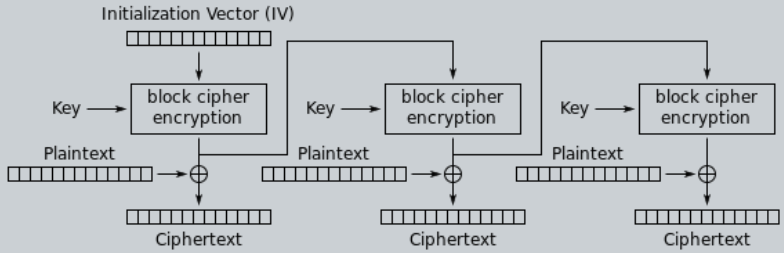

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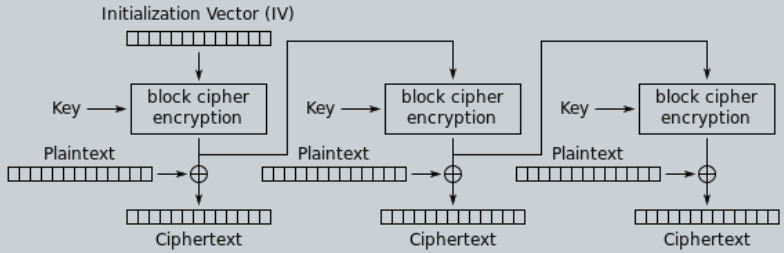

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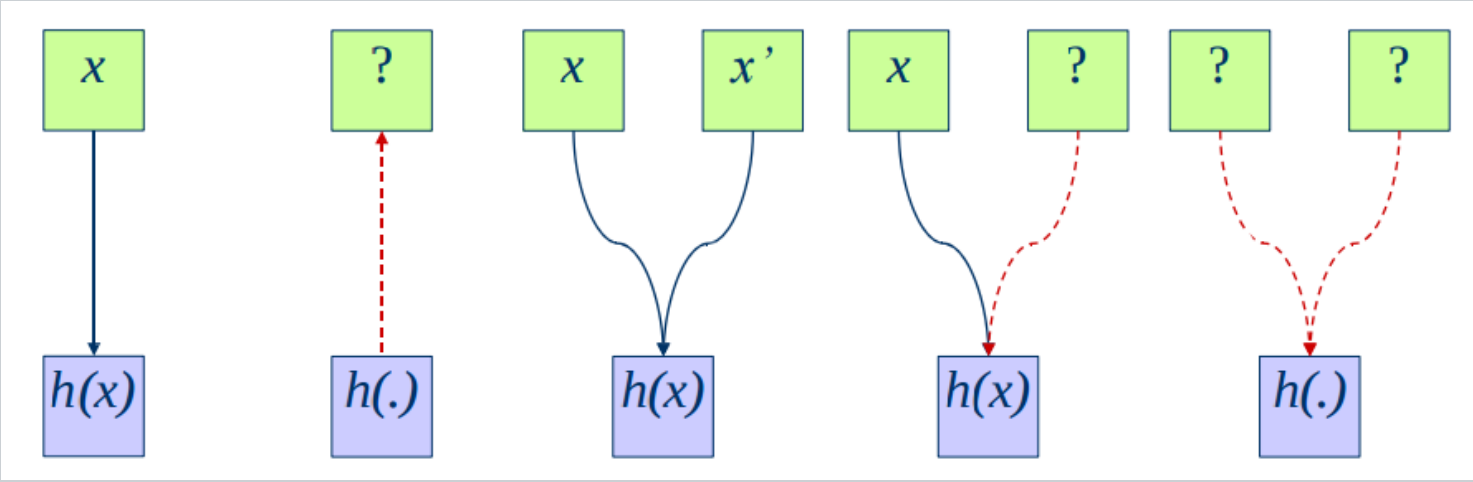

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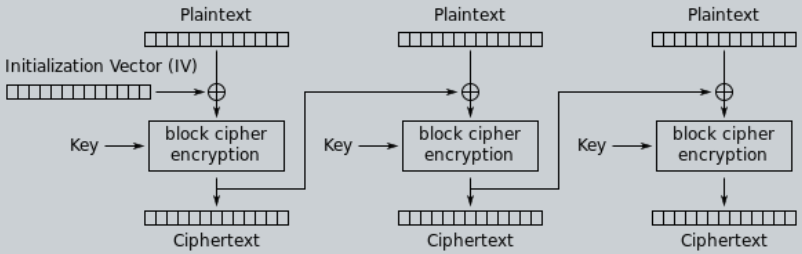
CBC-MAC Mode of Encryption



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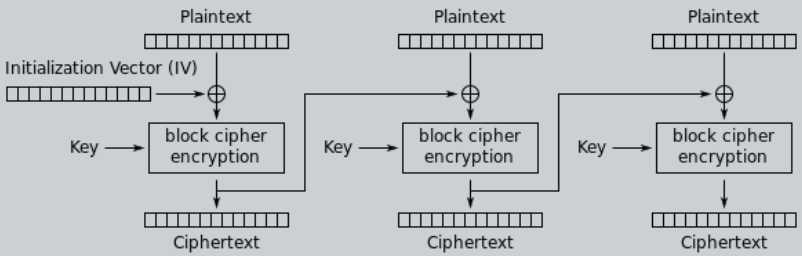

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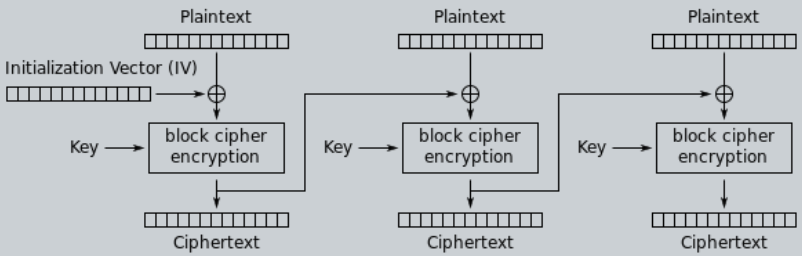

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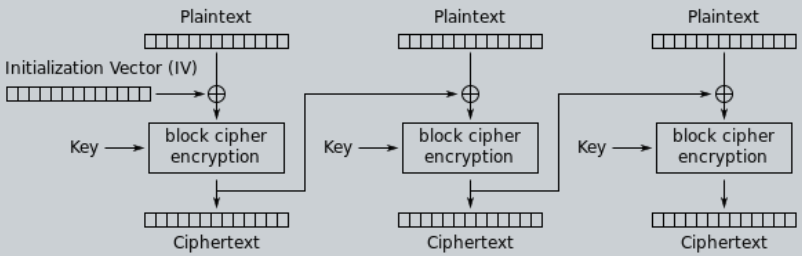

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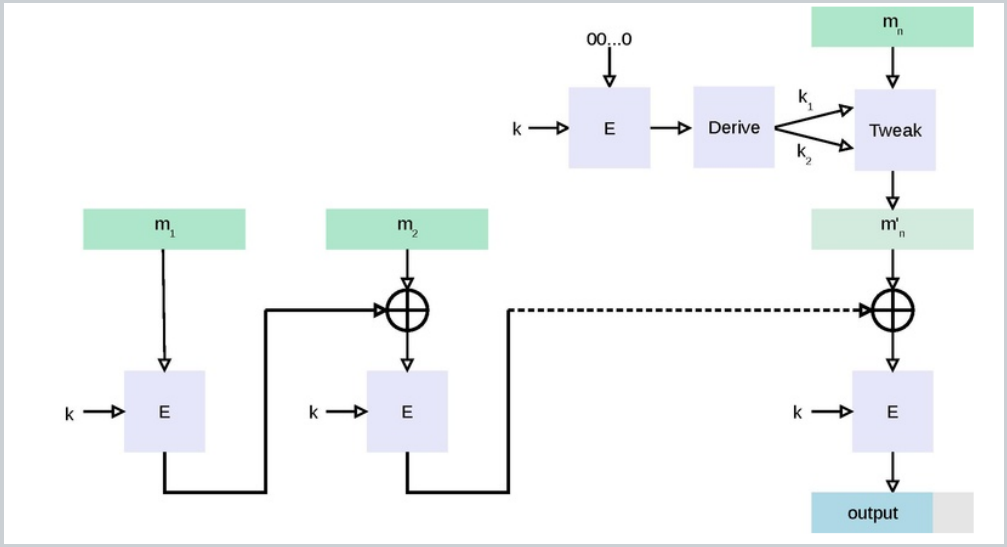
CMAC



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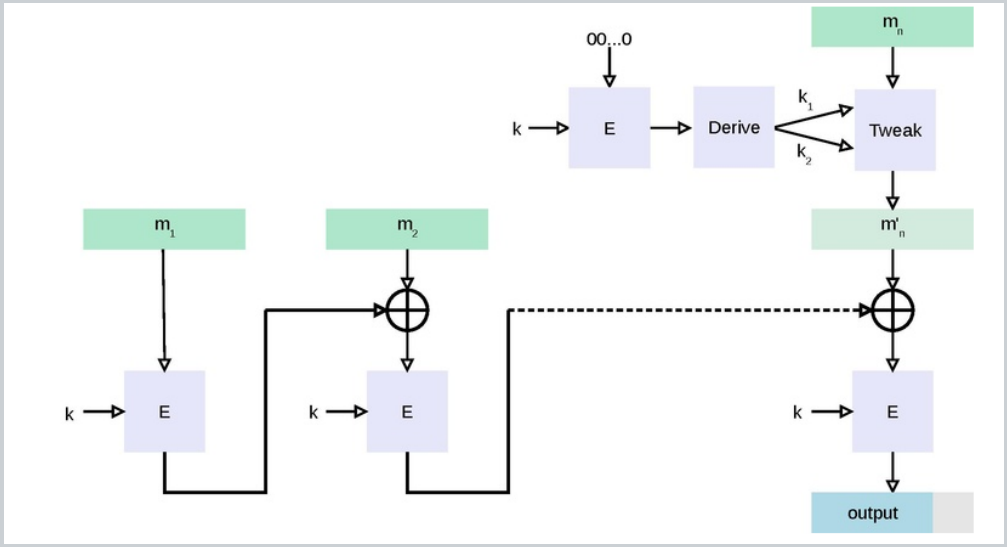

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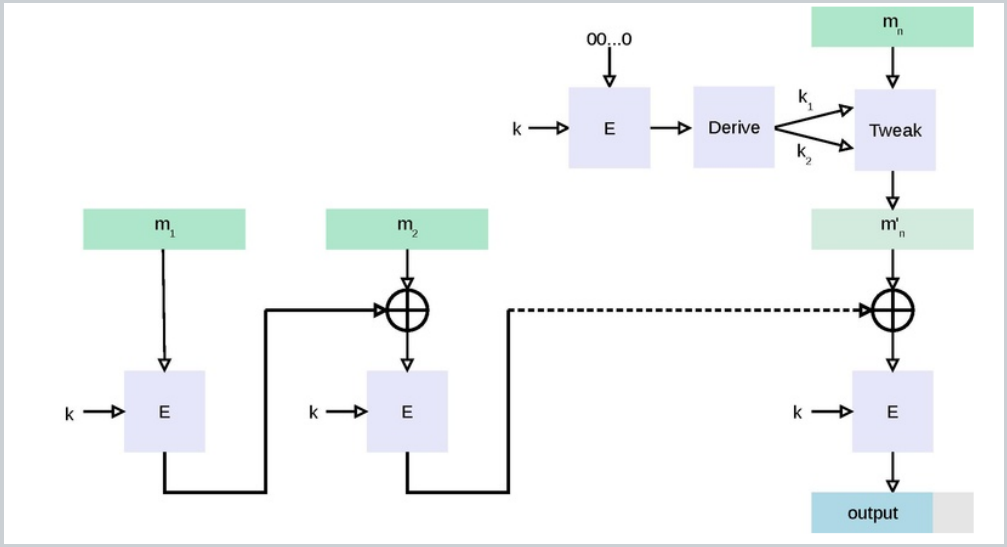

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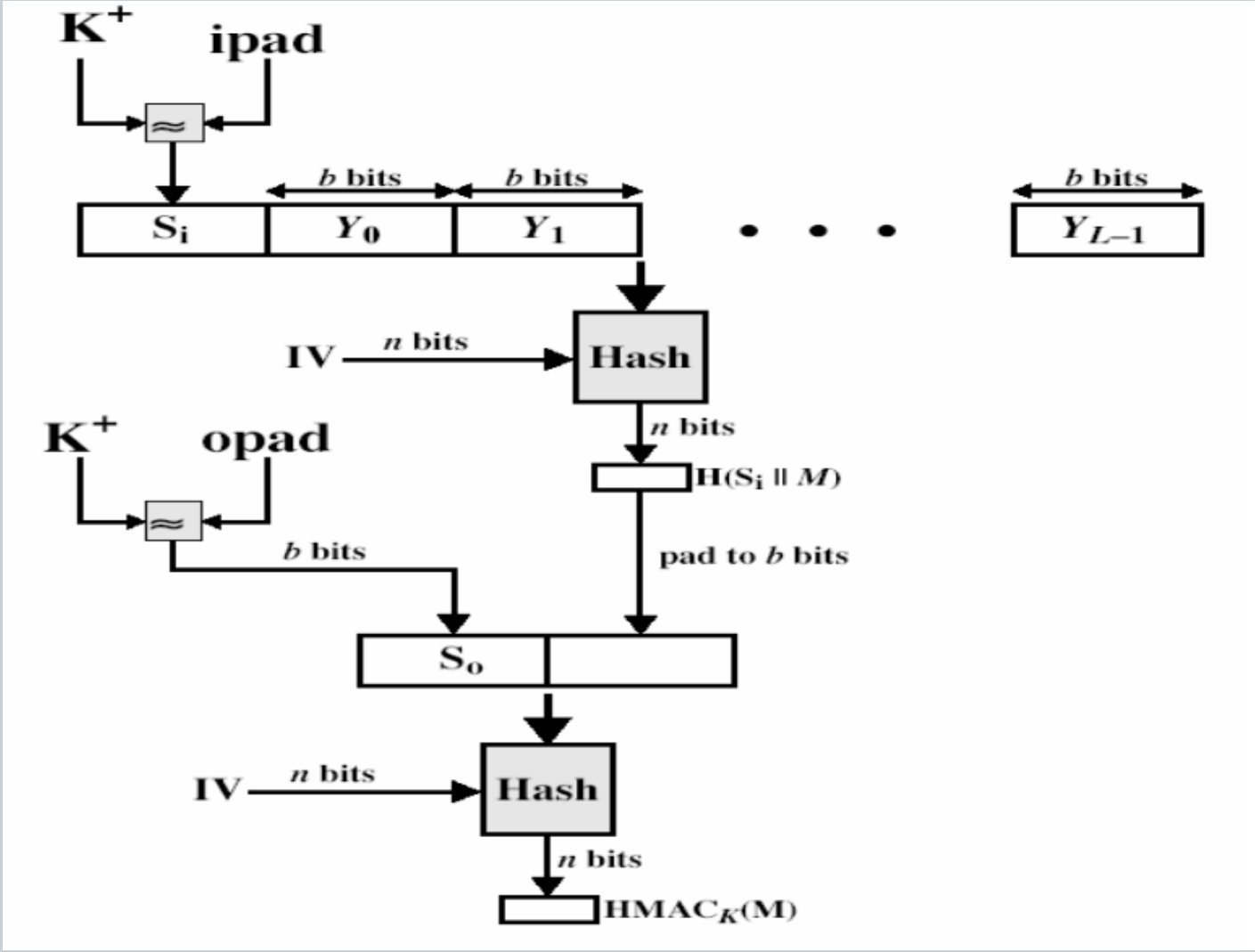
K+
ipad
b bits
b bits
b bits
Si
Y0
Y1
YL–1
IV
n bits
Hash
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So
IV
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HMACK(M)

Security of HMAC

- Security of HMAC relates to that of the underlying hash algorithm;
- If used with a secure hash functions and according to the specification (key size, and use correct output), no known practical attacks;

Properties of Symmetric Encryption

- Confidentiality of course!!!
- How to achieve authentication?
- And timeliness?
- And Integrity

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Questions????

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