

# Sécurité des SI – Série 2

## Partial correction

### 2. Entropy computation

$$H(P) = 1.35$$

$$H(K) = 1.58$$

$$H(C) = 2.13$$

$$H(P \mid C = 1) = 0.87$$

$$H(P \mid C = 2) = 0.72$$

$$H(P \mid C = 3) = 0.87$$

$$H(P \mid C = 4) = 0.95$$

$$H(P \mid C = 5) = 0$$

$$H(P \mid C) = 0.80$$

### 3. Huffman Code of english language

a 0001

j 110110101

s 1000

b 001111

k 1101100

t 111

c 10110

l 00001

u 10111

d 00000

m 11000

v 110111

e 011

n 0101

w 11001

f 11010

o 0010

x 110110100

g 001100

p 001110

y 001101

h 1001

q 110110110

z 110110111

i 0100

r 1010

code length : 4.2058

entropy : 4.176234076308164