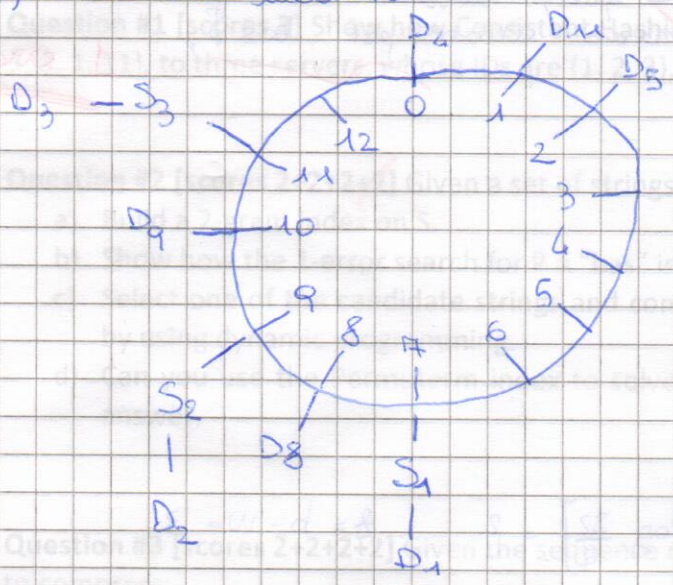
Esercizio 1

$Doc = \{2, 4, 5, 9, 3, 8, 1, 11\}$ server $= \{1, 2, 3\}$

$h(x) = 2x + 5 \mod 13$



$S_1 - D_1 - D_5 - D_{11} - D_4$

$S_2 - D_2 - D_8$

$S_3 - D_3 - D_9$

Esercizio 2

$S = \{bag, bar, bus, bet, bit\}$
$S_1 \quad S_2 \quad S_3 \quad S_4 \quad S_5$

(a) $k = 2$ aggiungiamo $k-1$ $

$\$b \to S_1, S_2, S_3, S_4, S_5$
$ba \to S_1, S_2$
$ag \to S_1$
$ar \to S_2$
$bu \to S_3$
$us \to S_3$
$be \to S_4$
$et \to S_4$
$bi \to S_5$
$it \to S_5$

(b) $e = 1$ $P = bas$

$\$b \to S_1, S_2, S_3, S_4, S_5$
$ba \to S_1, S_2$
as

$|Q| - k \cdot e = 3 - 2 \cdot 1 = 1 \Rightarrow$ deve esserci almeno un bigramma in comune, quindi i candidati sono S_1, S_2, S_3, S_4, S_5

(c)

	ε	b	a	s
ε	0	1	2	3
b	1	0	1	2
a	2	1	0	2
r	3	1	1	H

Q3

a) $q = 22 \quad b = \lceil \log 4 \rceil = 5$

$n = 7 \quad w = \lceil \log \frac{q}{n} \rceil = 2$

1	0 0 0	0 1
5	0 0 1	0 1
7	0 0 1	1 1
10	0 1 0	1 0
12	0 1 1	0 0
18	1 0 0	1 0
21	1 0 1	0 1

$L = 01 \; 01 \; 11 \; 10 \; 00 \; 10 \; 01$

$H = \underset{0}{10} \; \underset{1}{10} \; \underset{2}{10} \; \underset{3}{10} \; \underset{4}{10} \; \underset{5}{10}$

b) $S' = (1, 4, 2, 3, 2, 6, 3)$

$\gamma(1) = 1 \quad \gamma(2) = 010 \quad \gamma(3) = 011$

$\gamma(4) = 00100 \quad \gamma(6) = 00110$

SO: 1 00100 010 011 010 00110 011

c) $S'\text{-BASE} = (0, 3, 1, 2, 1, 5, 2)$

00 11 01 10 01 11 10

EXCEPTIONS 3, 5

d) 3-NIBBLE(1) → 001

3-NIBBLE(2) → 010

3-NIBBLE(3) = 011

3-NIBBLE(4) = 101 000

3-NIBBLE(6) = 101 010

SO: 001 101000 010 011 010 101010 011

Q4

$a(B) = h(A) + h(C) + h(D) = 1 + 1 + 1 = 3$

$a(D) = h(A) + h(B) = 1 + 2 = 3$

$h(B) = a(D) = 1$

$h(D) = a(A) + a(B) + a(C) = 1 + 2 + 1 = 4$