

CS240 Assignment 5

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Question 1

(a)

LZ keeps track of different patterns that occur in the text, and adds new patterns based on the ones previously encountered. New patterns are constructed by appending the current character with the previous longest prefix pattern in the text.

(b)

0	A	32	VE	64	OT	96	β - β
1	B	33	ER	65	TH	97	β NEV
2	C	34	R β	66	HI	98	VER.
3	D	35	β G	67	ING	99	..
4	E	36	GI	68	G,	100	..
5	F	37	IV	69	, β G	101	
6	G	38	VE β	70	GR	102	
7	H	39	β I	71	RE	103	
8	I	40	IN	72	EA	104	
9	J	41	N,	73	AT	105	
10	K	42	, β	74	T β	106	
11	L	43	β N	75	β O	107	
12	M	44	NEV	76	OR	108	
13	N	45	VER	77	R β S	109	
14	O	46	R β G	78	SM	110	
15	P	47	GIV	79	MA	111	
16	Q	48	VE β I	80	AL	112	
17	R	49	IN,	81	LL	113	
18	S	50	, β N	82	L,	114	
19	T	51	NEVE	83	, β L	115	
20	U	52	ER β	84	LA	116	
21	V	53	β NE	85	AR	117	
22	W	54	EVE	86	RG	118	
23	X	55	ER	87	GE	119	
24	Y	56	NEVER	88	E β	120	
25	Z	57	R β N	89	β OR	121	
26	β	58	NEVER β	90	R β P	122	
27	,	59	β -	91	PE	123	
28	.	60	- β	92	ET	124	
29	-	61	β IN	93	TT	125	
30	NE	62	N β	94	TY	126	
31	EV	63	β NO	95	T β	127	

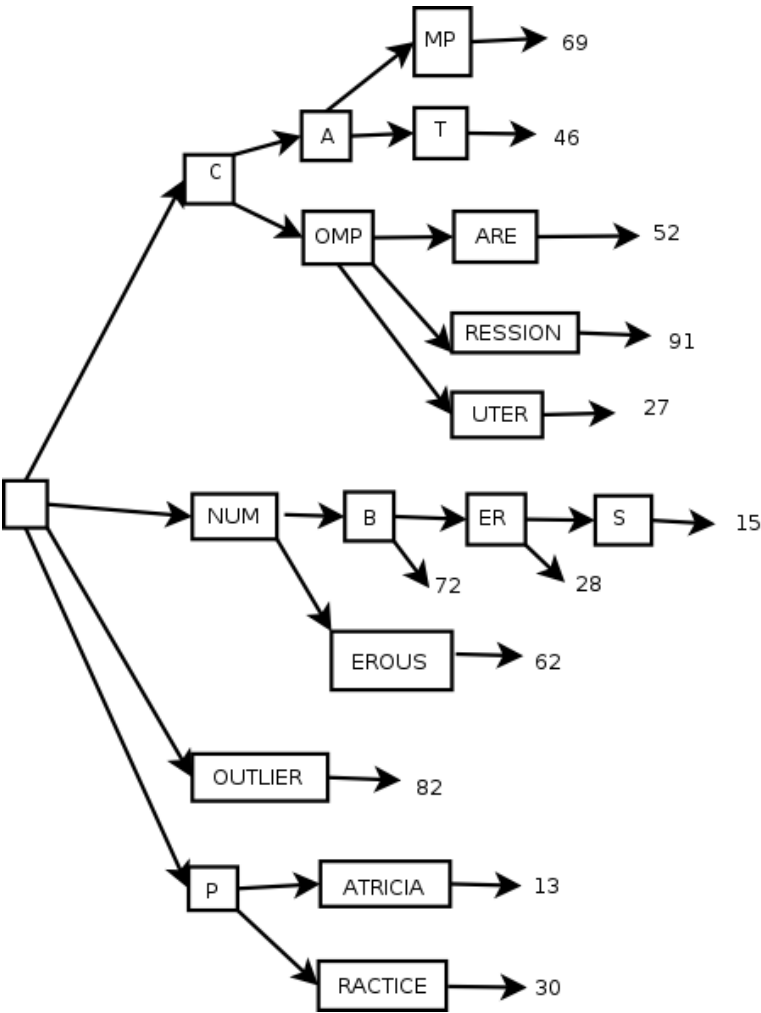
Table 1: Table for the Dictionnary

(c)

Fragment	Code
N	13
E	4
V	21
E	4
R	17
\not{b}	26
G	6
I	8
VE	32
\not{b}	26
I	8
N	13
,	27
\not{b}	26
NE	30
VE	32
R \not{b}	34
GI	36
VE \not{b}	38
IN	40
\not{b}	42
NEV	44
ER	33
\not{b} N	43
EV	31
ER \not{b}	52
NEVE	51
R \not{b}	34
NEVER	56
\not{b}	26
-	29
\not{b} I	39
N	13
\not{b} N	43
O	14
T	19
H	7
IN	40
G	6
\not{b}	42

Fragment	Code
G	6
R	17
E	4
A	0
T	19
\not{b}	26
O	14
R \not{b}	34
S	18
M	12
A	0
L	11
L	11
, \not{b}	42
L	11
A	0
R	17
G	6
E	4
\not{b} O	75
R \not{b}	34
P	15
E	4
T	19
T	19
Y	24
\not{b} -	59
\not{b} NE	53
VER	45
.	28
.	28
.	28
\$	

Question 2



Question 3

	a	d	a	d	n	a	c	j	a	b	b	a	e	d	a	c	a	n	a	d	a
h	601	603	609	609	607	595	595	597	591	591	592	591	604	600	600	600					
														c							
															c						
																c	a	n	a	d	a

Question 4

(a)

$\pi_{\text{PersonName}, \text{Street}, \text{City}}(\text{lives} \bowtie_{\text{PersonName}} (\sigma_{\text{CompanyName} = \text{'First Bank Corporation' AND Salary} < 85000}(\text{works})))$

(b)

$\pi_{\text{PersonName}}((\text{works} \bowtie_{\text{CompanyName}} \text{located}) \bowtie_{\text{City}, \text{PersonName}} \text{lives})$

(c)

$\pi_{\text{PersonName}}(\text{lives} \bowtie_{\text{PersonName}, \text{Street}, \text{City}} (\delta_{\text{PersonName} \leftarrow \text{Temp}, \text{ManagerName} \leftarrow \text{PersonName}}(\text{lives} \bowtie_{\text{PersonName}} (\delta_{\text{PersonName} \leftarrow \text{ManagerName}, \text{Temp} \leftarrow \text{PersonName}}(\text{manages}))))))$

(d)

$\pi_{\text{PersonName}}(\sigma_{\text{Salary} > \text{MgrSalary}}(\delta_{\text{ManagerName} \leftarrow \text{PersonName}, \text{PersonName} \leftarrow \text{Temp}, \text{MgrSalary} \leftarrow \text{Salary}}(\text{works} \bowtie_{\text{PersonName}} (\delta_{\text{PersonName} \leftarrow \text{ManagerName}, \text{Temp} \leftarrow \text{PersonName}}(\text{manages})))) \bowtie_{\text{PersonName}} \text{works}))$