1 (a)

S = database$

BWT(S) = et

(please include some your solution)

1 (b)

During exam, the initial values of the alphabets are less important. For this qn, after MTF, the last two a's should be 2, 0.

i.e.,

102, 116, …, **2, 0**

1 (c)

Pls illustrate your steps using either F & L column, or C[] and Occ.

Final answe

2 (a) & (b)

(a? bab)*
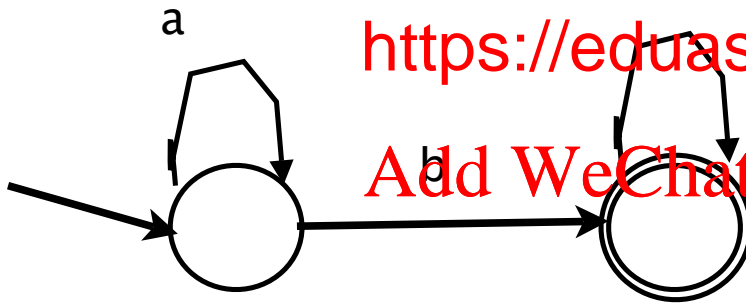
3

- /bib//book[year > 2000]/author always produces a subset of the result from /bib[*//year > 2000]//book/author

- As the latter can match more general cases, for example /bib//last-updated/year may contain the last update date of the entire bib database, which includes all the books.

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4(a)

The idea:

Your answer should consider the encoding of the XML tree into the balanced parentheses / bits:
(((()()())(()()()))(()))
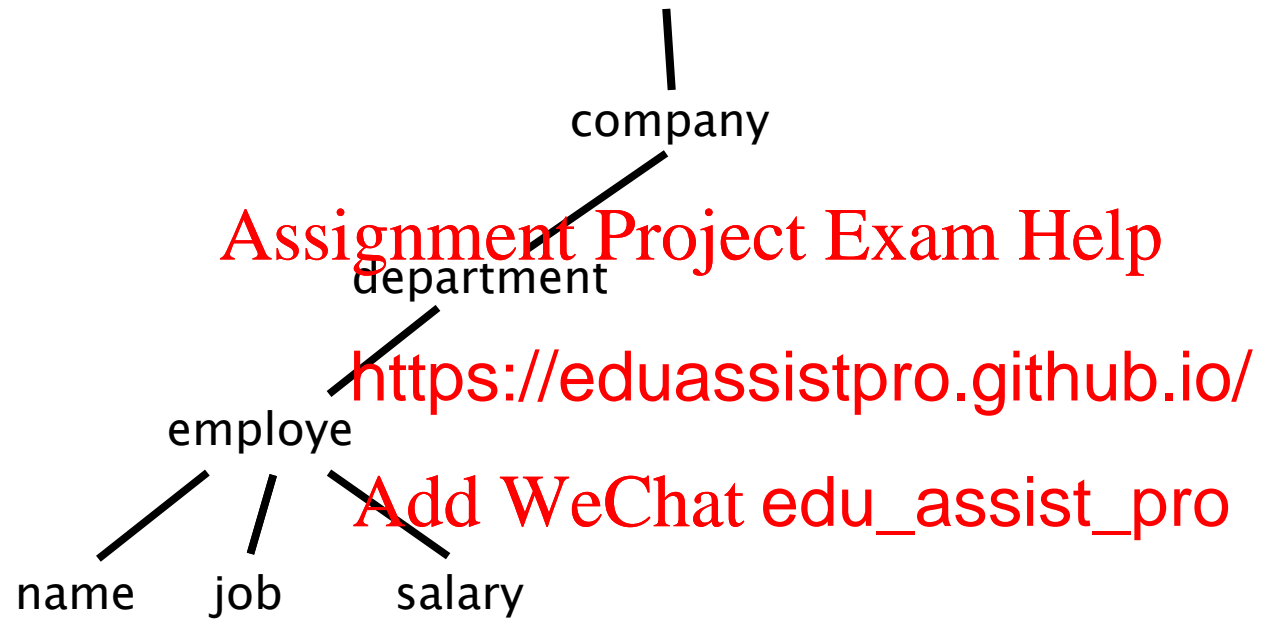You will then need to assume these parentheses are stored in blocks
and explain how mu   n in ISX can
efficiently compute

4(b)

company

department

employe

name   job   salary
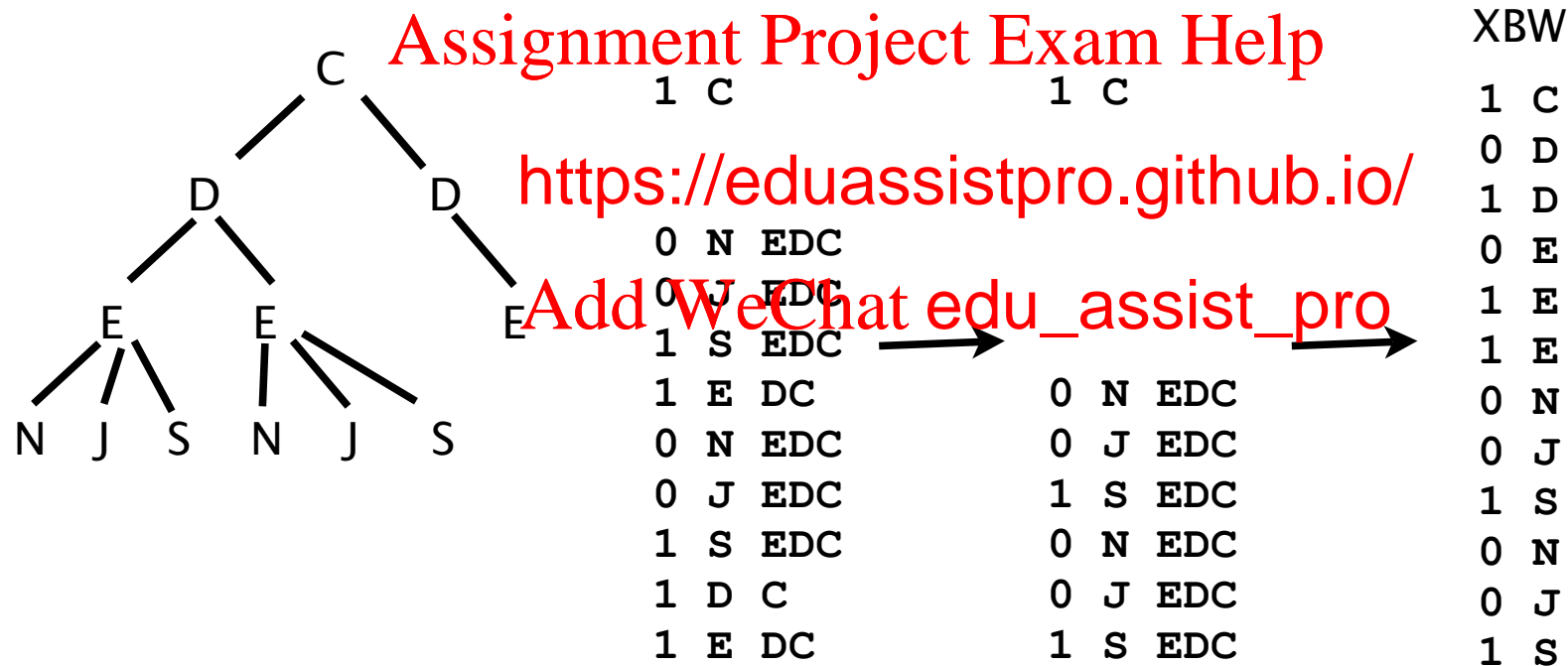
40

5

Use an example to illustrate how to match a sub-path on the following XBW (for simplicity, the text values are not shown here):

```
        C
      /   \
     D     D
    /|\     \
   E E       E
  /|\ /|\
 N J S N J S
```

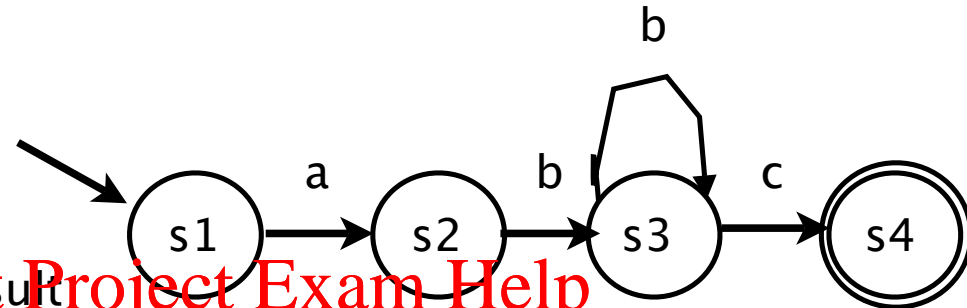|				XBW
1 C		1 C		1 C
				0 D
				1 D
0 N EDC				0 E
0 J EDC				1 E
1 S EDC	→	0 N EDC	→	1 E
1 E DC		0 J EDC		0 N
0 N EDC		1 S EDC		0 J
0 J EDC		0 N EDC		1 S
1 S EDC		0 J EDC		0 N
1 D C		1 S EDC		0 J
1 E DC				1 S

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6

Start   Stop
Site1
(x1,s1) (y1,s3)
(x4,s3) (y3,s4)
Site2
(y1,s2) (z2,s3)
(y1,s3) (z2,s3)
(y3,s2) (z2,s3)
(y3,s3) (z2,s3)
Site3
(z2,s2) (x4,s3)
(z2,s3) (x4,s3)

Scan Result
Site1
(x1,s1) x3
(x4,s3) x3
Site2
(y1,s4) y1
(y1,s2) y3
(y1,s3) y3
(y3,s4) y3
Site3
(z2,s1) z3
(z2,s4) z2
(z2,s2) z2
(z2,s3) z2

...acing these ...ables from (x1, s1), we obtain the final results:
y3, z2, x3, y3