Data Structure and Algorithm

Quiz #9

Tuesday, June 4th, 2013

Name : _____   Student ID : _____

Problem 1.

Please calculate the prefix function of pattern string *abacababac*, and try to use the pattern string to match the string *ababacababababacabcabacababacababac*.

1. Prefix Function

i	1	2	3	4	5	6	7	8	9	10
$P[i]$	a	b	a	c	a	b	a	b	a	c
$\pi[i]$	0	0	1	0	1	2	3	2	3	4

2. Matching Process

Index	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
Text	a	b	a	b	a	c	a	b	a	b	a	b	a	c	a	b	c	a	b	a
$\pi[i]$	1	2	3	2	3	4	5	6	7	8	9	2	3	4	5	6	0	1	2	3

Index	21	22	23	24	25	26	27	28	29	30	31	32	33
Text	c	a	b	a	b	a	c	a	b	a	b	a	c
$\pi[i]$	4	5	6	7	8	9	10	5	6	7	8	9	10