Example Questions: String Matching

Due No due date **Points** 26 **Questions** 3 **Time Limit** None
Allowed Attempts Unlimited

Instructions

Attention! If an answer consists of a sequence of items, the items must be separated with commas, with no blank. No sign is to be put at the ends of the sequence.
For example: 1,3,4,6
Another example: APPLE,ORANGE,BANANA

Take the Quiz Again

Attempt History

	Attempt	Time	Score
LATEST	Attempt 1	less than 1 minute	0 out of 26

Submitted Dec 16 at 12:23pm

Unanswered **Question 1** 0 / 8 pts

Select the true statements.

orrect Answer

- [ ] The asymptotic order of the maximum running time of algorithm Brute-Force is the same as that of algorithm Quicksearch.
- [ ] The running time of the KMP algorithm in the best case: $mT(n,m) \in \Theta(n/m+1)$
- [ ] The string matching algorithms search an occurrence of a given pattern in a given text.

orrect Answer

- [ ] $next(j) \in 0..(j-1)$ $(j \in 1..m)$

orrect Answer

The asymptotic order of the minimum running time of algorithm Brute-Force is the same as that of algorithm KMP, provided that $n>>m$ (n is much greater than m, for example, $n>2*m$).

Among the string matching algorithms learnt, only Quick-Search does not go back in text T.

next(j+1) < next(j)+1 (j ∈ 1..m-1)

orrect Answer

$P[1..h+1]\supset P[1..j+1] \Leftrightarrow P[1..h]\supset P[1..j] \wedge P[h+1]=P[j+1]$

Question 2

0 / 9 pts

We run the **Quick Search** algorithm with alphabet {*A, B, C, D*}, and we search for pattern *P* = ***ADABABA*** in text *T* = ***ADABACACACABADABABADABABA***. Present the following values.

If an answer consists of a sequence of numbers, the numbers must be separated with commas, with no blank. No sign is to be put at the ends of the sequence. (For example:0,1,2)

- Present in order the *shift* values. SHIFT:
- Present the set of valid shifts in increasing order. S={ }
- How many character comparisons were done -- between the characters of *P* and *T* -- during the run of the main procedure of algorithm **Quick Search**?

Answer 1:

ou Answered

(You left this blank)

orrect Answer

1,2,8,6

Answer 2:

ou Answered

(You left this blank)

orrect Answer 12,18

Answer 3:

ou Answered (You left this blank)

orrect Answer 24

Question 3

0 / 9 pts

We search for pattern P = ***BABAABAB*** in text T = ***ABABABAABABAABABABAABABBABA*** with algorithm **KMP**. Present the following values.

If an answer consists of a sequence of numbers, the numbers must be separated with commas, with no blank. No sign is to be put at the ends of the sequence. (For example:0,1,2)

- Present in order the values of array *next*. NEXT:
- Present the set of valid shifts in increasing order. S={ }
- How many character comparisons were done -- between the characters of P and T -- during the run of the main procedure of algorithm KMP?

Answer 1:

ou Answered (You left this blank)

orrect Answer 0,0,1,2,0,1,2,3

Answer 2:

ou Answered (You left this blank)

orrect Answer 3,8,15

Answer 3:

ou Answered (You left this blank)

orrect Answer 31