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**UNIVERSITY OF GHANA**

**SCHOOL OF PHYSICAL & MATHEMATICAL SCEINCES**

**DEPARTMENT OF COMPUTER SCIENCE**

**CSCD 603 – DATA STRUCTURES AND ALGORITHMS**

**RICHARD ASIAMAH**

**10937891**

**ASSIGNMENT 1**

**8TH MARCH, 2022**

1. Determine an LCS of and

|  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  |  |  | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |
|  |  |  | **0** | **1** | **0** | **1** | **1** | **0** | **1** | **1** | **0** |
|  |  | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1 | **1** | 0 | 0 | **1** | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| 2 | **0** | 0 | 1 | 1 | **2** | 2 | 2 | 2 | 2 | 2 | 2 |
| 3 | **0** | 0 | 1 | 1 | 2 | 2 | 2 | **3** | 3 | 3 | 3 |
| 4 | **1** | 0 | 1 | 2 | 2 | 3 | 3 | 3 | **4** | 4 | 4 |
| 5 | **0** | 0 | 1 | 2 | 3 | 3 | 3 | 4 | 4 | 4 | 5 |
| 6 | **1** | 0 | 1 | 2 | 3 | 4 | 4 | 4 | 5 | **5** | 5 |
| 7 | **0** | 0 | 1 | 2 | 3 | 4 | 4 | 4 | 5 | 5 | **6** |
| 8 | **1** | 0 | 1 | 2 | 3 | 4 | 5 | 5 | 6 | 6 | 6 |

The LCS of and is 6 with the string being “100110”

1. Give pseudocode to construct an LCS from the completed c table and the original sequences and in time, without using the table.

