East West University

Department of Computer Science and Engineering

Course: CSE246 Algorithm Topic: Dynamic Programming (Part-02) Lab: 06

1. LIS: Given an array of integers, your task is to find the length as well as the sequence of the longest increasing subsequence within the array.

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| Sample input | Sample output |
| 8  5 2 8 6 3 6 9 7 | 4  2, 3, 6, 9 |

1. LCS: You are given two strings, and your task is to find the length of the longest common subsequence (LCS) between them. Also print the LCS.

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| Sample input | Sample output |
| string1: "ABCDGH"  string2: "AEDFHR" | 3  “ADH” |

1. Longest Common Substring: You are given two strings, and your task is to find the length of the longest common substring between them. Also find the substring itself.

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| Sample input | Sample output |
| string1: "ABCDGH"  string2: "ACDGHR" | 4  “CDGH” |

1. Longest palindromic subsequence: You are given a string, and your task is to find the length of the longest palindromic subsequence (LPS) within the string.

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| Sample input | Sample output |
| string: "BBABCBCAB" | 7  “BABCBAB” |