

CS 223

Laboratory Assignment #4 (8 marks)

Due: at the end of the lab in Week 12 (April 3, 09)

The Problems

1. Hoffman Codes

(1.1) Design a class for Hoffman Codes which supports the first 12 upper case characters from A to L, each character is associated with one frequency. You should output the codeword for each character.

(1.2) Test your program with the following input and hand in the corresponding output.

character	A	B	C	D	E	F	G	H	I	J	K	L
frequency	10.1	8	18	11.1	6.6	1.2	4.4	9.2	13.5	2.1	10.3	5.5

2. Longest Common Subsequence

(2.1) Write a Java program to compute a longest common subsequence Z of two given sequences X, Y with length m and n respectively. You need to return not only the length of Z , but also the actual sequence of Z .

(2.2) Test your program with the following input
 $X=ACGTGACTACTGAG$ and $Y=CATGTAGTCAGAGC$. Hand in the corresponding output.