# EASTERN UNIVERSITY, SRI LANKA

## DEPARTMENT OF MATHEMATICS

## EXTERNAL DEGREE EXAMINATION IN SCIENCE-2005/2006

## SECOND YEAR FIRST SEMESTER (MARCH/MAY -2010)

## EXTCS251- PRACTICAL WORK ON DATA STRUCTURES AND DESIGN OF ALGORITHM

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Answer all question  Time allowed: 02 Hours

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1.

i. Write a c++ code to implement the **LL (linked list)** and **Node** classes in a file called **LL.cpp.**

ii. Test your **LL** by writing appropriate c++ statements for the following operations in the main function :

a) Insert the items whose values are **"HAI","MY","DEAR"** and **"FRIEND"**.

b) Print this list in first to last order **(HAI MY DEAR FRIEND)**.

c) Delete the node containing **"HAI"**, and print the list again **(MY DEAR FRIEND)**.

d) Insert the string **"HOW","ARE"** and **" YOU"** after the **"FRIEND"** node and print the list again **(MY DEAR FRIEND HOW ARE YOU)**.

e) Delete the node containing **"DEAR"**, and print the list again **(MY FRIEND HOW ARE YOU)**.

f) Insert the string **"OLD"** after the **"HOW"** node and print the list again **(MY FRIEND HOW OLD ARE YOU)**.

2

Write the c++ function to implement the selection sort algorithm; you should include the following,

i. A main program

ii. An array **m=[25,12,10,47,45,5,14,21,32,10,12,14,56,78,85,14,78,90,100,18].**

iii. Output the sorting result for the array in ascending and descending order.