Practical Workbook
CS-218
Data Structures and Algorithms

Name	: _____
Year	: _____
Batch	: _____
Roll No	: _____
Department:	_____

Department of Computer & Information Systems Engineering
NED University of Engineering & Technology

Practical Workbook
CS-218
Data Structures and Algorithms
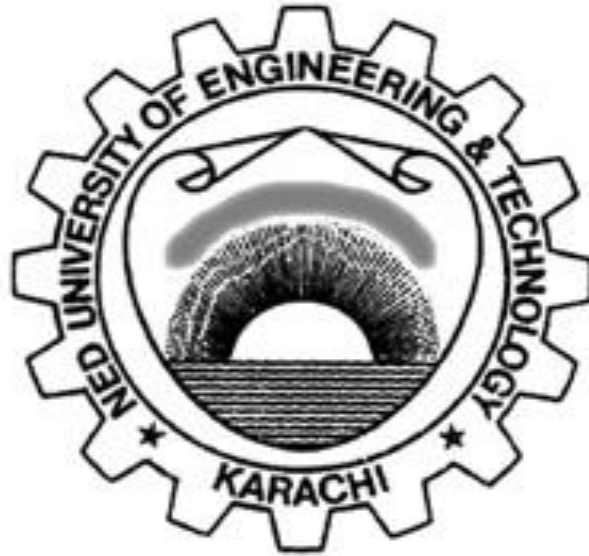
Prepared by:

Ms. Fauzia Yasir
Ms. Ibshar Ishrat

Revised in:

August 2019

Department of Computer & Information Systems Engineering
NED University of Engineering & Technology

INTRODUCTION

This workbook has been compiled to assist the conduct of practical classes for CS-218 Data Structures and Algorithms. Practical work relevant to this course aims at providing students understanding of the concepts of information organization and manipulation in order to pursue advanced courses in this discipline.

The goal of this workbook, therefore, is to present elegant, yet fundamentally simple ideas for the organization and manipulation of data.

The Course Profile of CS-218 Data Structures and Algorithms lays down the following Course Learning Outcome:

"Practice with algorithms for widely used computing operations" (C3, CLO-3)

All lab sessions of this workbook have been designed to assist the achievement of the above CLO. A rubric to evaluate student performance has been provided at the end of the workbook.

Lab sessions 1 & 2 cover basic Memory model and built-data structures along with its operations. Lab session 3 is about binary search algorithm. Lab sessions 4 & 5 discuss matrix operations, storage and retrieval. Lab session 6 deals with Linked list implementation and its operations. Lab sessions 7 & 8 covers stack data structure and its application in processing arithmetic expressions. Lab session 9 demonstrates recursive algorithms. Lab session 10 deals with sorting algorithms on list of elements. Lab session 11 discusses queue data structure. Lab session 12 explains implementation of binary trees. Lab session 13 covers heap along with its operations. Lab session 14 deals with graph and its traversal algorithms.

CONTENTS