Data structures and Algorithms
Problem Set 1

September 20, 2016

Abstract

In this problem set you will develop the web interface for your data structures and algorithms design project using your general background in using a computer, managing files, and a basic knowledge of the Internet.

- HTML web page elements,write HTML, Javascript, PhP code etc
- Apply some web design principles
- Enhance web pages using text formatting, color, graphics, images, and multimedia
- Incorporate forms into web pages where necessary
- Apply CSS to format web page elements
- Plan, design, and publish a multi-page website where possible

1 The Problem

In this problem set: You will design a website that will host your data structure and algorithms project. The input of the website will be the course content as provided at the begining of the course unit. Every time a topic is covered in a lecture, you will be required to go provide the call backs of the contents of your site and analysis of algorithms using data provided by your lecturer or randomnly generated depending on the data structure. This should cover the following:

- Basic data structures i.e arrays, queues, stacks, lists
- Linked lists, priority queues, heaps
- Trees
- sorting(all algorithms) and searching(linear and binary)
- Basic graphs

2 WHEN IS IT DUE?

2 Weeks from the day handed out

3 Problem set Assessment

Grades will be based on:

- **Content layout** : shows knowledge of specific audience and meets needs of the audience whow will be browsing your site, All text is well-organized, uses paragraphs and contains effective transitions, Blog introductory post makes a strong brand statement, highlights what is unique about this site compared to its competitors.
- **Interface Design**: Layout maximizes impact of "first screen view," minimizes scrolling, uses wrapped text and proportional sidebar length, customized design enhancement
- **Navigation Design**: Organization of web site is logical, shows understanding of what audience expects to do when visiting, Hyperlinks are obvious and contexualized so user can understand where they will go, that clicking will add valuable content, Navigation buttons don't require interpretation, Links to samples, external sites, multimedia load in new window, Widgets show knowledge of audience needs, meet requirements
- **Technical Aspects** : Demonstrates mastery of software techniques taught to date, graphics display correctly, are of sufficient quality and size, multimedia/interactive elements work correctly and are of good production quality, All website element requirements are included, meet deadline and turn-in instructions All instructions are interpreted correctly
- **Creativity and Complexity** : Design is expressive and unique, yet appropriate for the audience

4 Ethical Conduct

All problem sets are group assignments. You may discuss approaches to problems among yourselves; however, the actual details of the work (problem sets coding, answers to concept questions, etc.) must be group effort. Problem sets that are judged to be the result of academic dishonesty will, for the student's first offence, be given a mark of zero with an additional penalty equal to the weight of the problem set also being applied. You are responsible for reading and respecting the Makerere University's policy on pragiarism.