



## ALG0183 Algorithms & Data Structures

Assignment 2 Value **5%**

Deadline: 12:35 pm Thursday, November 26th  
Eindagi: 12:35 e.h. Fimmtudagur, Nóvember 26.

Late assignments will not be marked.

### **Real Application**

To assist with achieving the ALG0183 course objectives “demonstrate a knowledge of algorithms and data structures to be found in a range of existing applications” and “make appropriate choices of algorithm and data structure for an application” you are to prepare a presentation on the real application assigned to you (see the ALG0183 website). Try to identify the algorithms and data structures in use in the product or part of the product. Should your research fail to uncover sufficient detail, you may describe algorithms and data structures you suspect of being in use. In the presentation, describe one algorithm and one data structure in some detail. Each presentation will last 15 minutes and 3 minutes will be allowed for questions.

**Real Application** The presentation should have the following slides:

Each slide of the presentation should include some “Notes” . These “Notes” should represent what you might say while the slide is on display. Keep each note to 120 words or less. Each slide should be numbered, dated, and have your name.

**Title** (-1% if not present)

The title should be “name of application”. The title slide must contain your name, the name of the course (ALG0183 Algorithms & Data Structures) and the following statement: “This assignment is all my own work. This work has not been submitted for assessment in any other context. I have not knowingly allowed others to copy my work.” By including this statement, you are agreeing with it. If you plagiarize material your degree will be at risk.

**Specific product** (0,5%)

Describe what the product does and provide company or author details.

**Product success** (0,5%)

Describe, for example, awards received, sales figures, patents, reliability and performance measures, and standards compliance (providing interoperability).

**Product Overview** (0,5%)

Provide a block diagram which shows the main sub-systems (the high-level architecture).

**Algorithms** (1,0%)

List the algorithms in use, or suspected of being in use, in the whole product or a subsystem of the product (0,5%). Give the Big-Ohs of the algorithms (0,5%).



**Algorithm description** (1,0%)

Provide a description of one algorithm using for example, pseudocode, a flowchart, or screen shot of an algorithm visualization tool. (**possibly 2 slides**)

**Data structures** (0,5%)

List the data structures in use, or suspected of being in use, in the whole product or a subsystem of the product.

**Data structure description** (0,5%)

Provide a description of one data structure.

**Conclusions** (0,5%)

State any conclusions you reach about the product. For example, could better algorithms and data structures be used? Would it be useful to perform an experiment to measure performance (time and space complexity)?

**Appendix: Sources** (-1% if not present)

Provide a list of your sources of information: articles, urls of websites, etc. (**possibly 2 slides**)

Note: you do not need to discuss this slide during your presentation.

**Submission instructions**

Submit a paper copy of your real application report. In PowerPoint select to print “Notes Pages”. Print 2 logical slides and notes to each physical page. One corner should be stapled. Do not enclose your submission in any folder or binder. Submit your paper copy at the start of the lecture hour 12:35 pm, Thursday, November 26th (or before). Also submit electronically via e-mail to [andy@unak.is](mailto:andy@unak.is) a copy of your real application report (Powerpoint). The header of your e-mail message must be: “ALG0183 Assignment 2 <your name>”.

**Assessment**

The breakdown per slide is indicated above. Attendance at the presentation session is compulsory. A student scores zero if he/she does not present. There is a 0,2% deduction for missing another student’s presentation. There is a 0,2% deduction for any slide missing some notes. Marks will also be lost for (i) failing to keep to slide order and content, or (ii) failing to keep to time.

**Advice**

Find out what you can about the product. You can make use of an existing block diagram or algorithm/data structure description, but please remember to cite your source.

Check if there is an evaluation copy of the product that can be downloaded and run.

If the product is big, focus the presentation on an interesting sub-system.

A talk about bubble sort on a 1-D array is unlikely to score well.



## ALG0183 Algorithms & Data Structures

Use the Resources link on the ALG0183 website to help you locate information.

<http://staff.unak.is/not/andy/Algorithms0910/resources.htm>

Use <http://www.google.is/> and <http://scholar.google.is/> to help you locate information. Has someone written a review of the product?

If there is an e-mail address for product enquiries, make use of it if you are having difficulty locating useful information.

You are permitted **one** e-mail or phone or office consultation with the teacher.

Expect to work at least two hours for every 1% value of this assignment, i.e. 10 hours.

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mánudagur, 16. nóvember 2009

<http://staff.unak.is/not/andy/Algorithms0910/algorithms.htm>