

# Arab Academy for Science, Technology, and Maritime Transport

College of Computing and Information Technology – CS322

College of Engineering and Technology – CC418

## Operating Systems

Summer 2012

### Section Assignment #2

**Date Assigned: Week of Sunday July 15<sup>th</sup> 2012**

**Date Due: Week of Sunday July 22<sup>nd</sup> 2012. Late assignments will not be accepted.**

**Submissions should be typed. Be sure to write your name, registration number, assignment number, and course code.**

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The following problems are taken from Chapter 2 of "Operating Systems: Internals and Design Principles" by William Stallings (7<sup>th</sup> Edition).

2.2) An I/O-bound program is one that, if run alone, would spend more time waiting for I/O than using the processor. A processor-bound program is the opposite. Suppose a short-term scheduling algorithm favors those programs that have used little processor time in the recent past. Explain why this algorithm favors I/O-bound programs and yet does not permanently deny processor time to processor-bound programs.

2.3) Contrast the scheduling policies you might use when trying to optimize a time-sharing system with those you would use to optimize a multi-programmed batch system.

2.4) What is the purpose of system calls, and how do system calls relate to the OS and to the concept of dual-mode (kernel-mode and user-mode) operation?

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