Introduction

This course covers the following basic operating system management functions.

- process management
- memory management
- file management
- I/O and disk management

Apart from learning the underlying concepts in the lectures, you can also learn these functions by studying the system utilities that come with the operating system. Knowing how to use operating system utilities and understanding the management of the system help identify and troubleshoot system problems much easier.

Intended Learning Outcome

Investigate system management functions based on popular operating systems, e.g., Windows 10, Android, macOS, and Linux. For the illustration purpose, we choose Windows 10 in this document, while you are free to choose your favorite operating system in your submission.

Study Tasks

In this assignment, use Windows 10 as a case study to find out the following for any **two** of the above four management functions in Windows 10.
- What utilities* are available in Windows 10 for performing the function?
- How to access these utilities?
- What information is provided by the utilities?
- What operations can be performed with the utilities?
- What are the OS concepts related to the utilities?

(* Only Windows built-in utilities are considered in this assignment)

A Highly Simplified Example^ for Process Management in Windows 10

- The Task Manager utility can be used to show the processes on a computer.
- The Task Manager can be accessed by pressing Ctrl+Alt+Delete and click Start Task Manager.
- In the Task Manager, we can find process name, PID, amount of CPU utilization for a process, amount of memory that is being used by a process, etc.
- In the Task Manager, we can view information of a process, end a process, end a process tree, set the priority of a process etc.
- A process may be "suspended" when the application has been minimized by the user for sparing more resources to the new foreground applications.

(^ This is just a highly simplified example. You need to cover details and related OS concepts in the report.)

Reporting and Submission

- The report should be organized in two sections, **one** section for **each** management function. Clearly state the name of the management function in the section title.
- In Windows, there could be more than one utility for each management function. On the other hand, one utility may support multiple management functions. So, you need to organize the materials such that each section covers **only** materials related to the corresponding management function.
- We prefer quality to quantity, so, the number of utilities should be **at most three** for **each** management function.

- You may include some screen captures if they can help readers follow the report.
- The report contains *a maximum of 6 pages*.
- ***This is an individual work. Each student has to search for information and write a case study report on his/her own.***
- This is a **Turnitin** assignment. Canvas will perform a plagiarism check on your submission.
- The submitted file must be either .docx file or .pdf file.
- Use your student ID(s) to name your submitted file, such as 5xxxxxxx.docx or 5xxxxxxx.pdf.
- Submit the files to Canvas. As far as you follow the above submission procedure, there is no need to add comment to repeat your information in Canvas.
- The deadline is **11:00am, 26-April-2021 (Mon)**. Late submission will **not** be accepted.

Assessment

- **Technical Merit: 80%** (40% per management function)
  - Informative
  - Detailed
  - Comprehensive
  - Relate to OS concepts
  - Demonstrate good understanding and knowledge
- **Presentation: 20%**
  - Clear
  - Well-organized
  - Good use of examples and illustrations
  - Good use of language
  - Good writing style and format

Note

- Information on popular operating systems can be found from many sources such as Internet, magazines and reference books, etc.   If you cite these sources in the report, you **must** include them in the list of references. However, you **must not copy** their content (even a few sentences or examples). You have to write the report in your own words.