**Assignment 1**

**CIS355** – Spring Term 2018

**Point Value**: 100 points

**Assignment Due Date**: **In class Thursday, Jan 25, 2018**

**Submission Instruction**

Please write your answers to those questions on a Microsoft Word document. The name of the file should be HW1\_YourLastname\_YourFirstnme.docx. Please 59pm submit a hard copy of the file to the instructor in class and submit the file on Schoology by 11:59.

**Short answers**

1. **What is Operating System (**5 points**) and its main purpose?** (5 points)
2. **What is a program** (5 points)**? What is a process** (5 points)**? Please give a creative/funny analogy to distinguish between a process and a program**. (5 points)
3. **What is the purpose of system calls (**5 points**)? Please give two examples of system call and describe their purposes.** (5 points)
4. **What is a monolithic system (**5 points**)? What is a layered system?** (5 points)
5. **What are the advantages of a layered approach (**6 points**)? What are the disadvantages?** (4 points)
6. **In OS implementation, what are the advantages of using Assembly language (**5 points**)?** **What are the advantages of high level language such as C++**? (5 points)
7. **What are the advantages of using Loadable Kernel Modules?** (10 points)
8. **What are the design goals of Operating System from a user view (**5 points**)**? **What are the design goals of Operating System from a system view?** (5 points)
9. **What is the difference between 4 processors (each has one core) and 1 processor with 4 cores? (**10 points**)**
10. **Please describe the procedure of booting a system?** (5 points)

**Hint:** starting with CPU fetch the memory location of a bootstrap program/loader.