

# Assignment 13

Due Date: Sunday, December 24, 2017, 11:59pm

Up to one-day late submission without penalty

Up to one-week late submission with 20% penalty

Submit electronically on iLMS

What to submit: One zip file named <studentID>-hw13.zip (replace <studentID> with your own student ID). It should contain four files:

- one PDF file named **hw13.pdf**. Write your answers in English, and elaborate in order to receive full credit. Check your spelling and grammar. Include your name and student ID! Elaborate in order to receive full credit.
- No programming for this assignment.

## [100 points] Problem Set

1. [20 points] What are the main differences between capability lists and access lists?
2. [20 points] Consider a computing environment where a process is given the privilege of accessing an object only  $n$  times. Suggest a scheme for implementing this policy.
3. [20 points] Capability lists are usually kept within the address space of the user. How does the system ensure that the user cannot modify the contents of the list?
4. [20 points] **14.3** Consider a computer system in which computer games can be played by students only between 10 P.M. and 6 A.M., by faculty members between 5 P.M. and 8 A.M., and by the computer center staff at all times. Suggest a scheme for implementing this policy efficiently.
5. [20 points] **14.8** Discuss the need for rights amplification in Hydra. How does this practice compare with the cross-ring calls in a ring-protection scheme?