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## **Programming Exercise Guidelines**

According to a study, students in programming courses learn much more by building large-scale exercises instead of many small-scale test programs.

This course is programming intensive and several programming languages and tools need to be used to complete the programming exercises. The guidelines of exercise requirements and evaluation are as follows:

- The following three exercises will be assigned:
  - I. An electronic commerce system using LAMP,
  - II. A mobile commerce system using Android Studio, and
  - III. An electronic commerce system using AJAX.

They are individual exercises instead of team exercises.

- All students have to finish implementing the three programming exercises, but more requirements are for graduate students. If an undergraduate student finishes all requirements, no extra credits will be given to him/her.
- The weights of all exercises are the same, 12% each.
- An e-commerce or a mobile-commerce system involves a wide variety of software and languages. Exercises have to strictly follow the specifications for the reason of fairness.
- Exercises have to be located at the URLs:

## http://people.aero.und.edu/~userid/457/

and redirection (HTTP-EQUIV="REFRESH") to the pages not hosted by http://people.aero.und.edu/~userid/ is prohibited. That is, you can only use the facilities provided by the public Unix servers at the Aerospace School to complete your exercises.

- Students have to post their Exercises I and III code online, so the instructor can download and execute it on his own computer if any suspicion. Exercise II also includes web code, but it is only for data input and checking and is trivial.
- Each student has to submit the printouts of the source code.
- Students have to demonstrate their exercises to the instructor individually, so misunderstanding would be minimized. The instructor will prepare a set of test data to be used by all students. An appointment is needed in advance.
- For Exercise II demonstrations, students may save the whole app in a flash drive and demo it at a classroom or conference-room machine. The labs have Android Studio installed, but they are very slow. Therefore, students had better have the Android Studio installed on their own machines.
- Absolutely no extra points will be given after grading.

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