

## **CS5322 Database Security Project**

The project aims to equip students with knowledge and hands-on experience of the security features of commercial DBMSs, as well knowledge of the latest development in database security technology.

There will be two team-based projects and one team-based presentation.

Each project is open-ended. You are to hypothesize an application, construct a database for the application, populate the database with some dummy data, and then design and implement access controls for your database. Two simple examples of applications are:

- A Hospital Information System manages data on patients, doctors, nurses, lab results, appointments, payment/bills, etc.;
- A University Information System manages data about students, professors, courses, administrative officers, results, school fees, loans, etc.

### **Project I**

Implement a Virtual Private Database (VPD) to support your application. You may use Oracle VPD or any commercial DBMS.

You are to submit a report that describes the application, the security policies, the queries, etc. The report should include a statement of each team member's contribution to the project. (Members that do not contribute a fair share will not receive the same mark as other members.) The report should not be more than 10 double-column pages, excluding the report cover and contribution statement.

In addition, you are to demonstrate your implementation to Xiaokui.

### **Project II**

Implement a MAC-based access control to support your application. You may use Oracle OLS or any commercial DBMS.

You are to submit a report that describes the application, the security policies, the queries, etc. The report should include a statement of each team member's contribution to the project. (Members that do not contribute a fair share will not receive the same mark as other members.) The report should not be more than 10 double-column pages, excluding the report cover and contribution statement.

In addition, you are to demonstrate your implementation to Xiaokui.

## **Evaluation**

Your project will be evaluated based on (a) the report (its presentation, organization, content), (b) the comprehensiveness and complexity of the application/system, (c) security features, and (d) demonstration of the system.

## **Paper Presentation**

Give a 20-minute presentation of a research paper on database security. The paper will be assigned by Xiaokui.

## **Project Schedule**

- Project I report due: Oct 15, 11:59pm
  - Reports should be submitted to Canvas
- Project I demonstration: In Week 9
  - Each project team needs to demonstrate Project I implementation to Xiaokui
- Research paper presentation: During the lectures in Weeks 10-12
  - The presentation slot for each project team will be decided later
- Project II report due: Nov 12, 11:59pm
  - Reports should be submitted to Canvas
- Project II demonstration: In Week 13
  - Each project team needs to demonstrate Project II implementation to Xiaokui

## **Plagiarism**

You are reminded that plagiarism is a very SERIOUS offence, and disciplinary action (including possibility of expulsion from the university) will be taken against any individual or team found plagiarizing. The individual or team that is being plagiarized will also be punished if it is found to have allowed the work to be plagiarized voluntarily.