Date: May 5th, Tuesday, 12:45 -3:00 PM

Syllabus:

- *Chapter 5 (python coding excluded), Chapter 7 and Chapter 8*

Helping materials:

- Practice some related questions given below (Please don't expect the same questions in the exam)
- Practice the old questions from Old Questions
- You can also practice exercises in the textbook. The solution of exercises can be found here

Guidelines for the exam:

- The exam will be posted on the Blackboard, in the "Final Exam" Folder
- It will be like the quizzes you have taken during the semester
- In quizzes, you have seen one question but, in the exam, you will see multiple questions, one after another.
- You will have time limitation and one-time chance to finish the exam. So,
  - Please make sure that you have uninterrupted internet connection.
  - Sit in a quiet area if possible
  - Read the materials from the mentioned chapters (only the topics covered in the class)
  - It will be like open book exams but if you don't prepare well, it might be difficult to answer all the questions within the given time.
  - The exam will be submitted automatically after the time expires.

- I will create a Blackboard Ultra Session for the exam. I will be there during the exam time. You can ask me question about the exam using the chat option.
- I also will be checking my email continuously during the exam period.

Please contact early, if you have any issues or any questions

Chapter5:

1. All the questions from the Homework4 (except the question 4)
2. Write an alternative solution of trigger.
3. What are the differences between SQL function and procedure?

Chapter 7:

1. Discuss the importance of the Entity-Relationship diagram.
2. Discuss with examples
   - entity and entity set
   - composite and multivalued attributes
3. How would you determine if a real-world thing is an entity set or relationship set?
4. How would you represent multi-valued attribute in ER diagram and relational schema?
5. All questions from the homework on chapter 7

Chapter 8

1. What is functional dependency? Why do we need to identify functional dependencies on relational schemas?
2. Identify Functional dependencies on following relational schemas.
    a. *account (*account_number*, customer_name, branch_name, branch_city, assets)*
    b. Car-sell (transactionID, customerID, CustomerName, customerAddress, carModel, MakeYear, carPrice, NoOfSeats)
    c. Employee(EID, E_name, city, state, zip)
3. How does functional dependency generalize the idea of Key? Explain with an example.
4. What are the differences between BCNF and 3NF?
5. Summarize the steps to determine if a table is in BCNF form.
6. If you decompose a relation R into R1 and R2. How would you determine if the decomposition is lossless-join decomposition (just one line answer I mentioned in class).
7. What is an atomic attribute?