Principles of Data Management – Exam Information

Exam 3  Tuesday, December 19, 2017  GOL 2590 / 12:30 PM – 2:30 PM

0) Our third exam will be held during final exam week on Tuesday, December 19. This would be a good time to review the document Supplementary Information for Students, focusing on sections that pertain to learning, grading, and other relevant matters.

Since I do not yet have ALL of the materials related to the learning module assignment, there is always a slight possibility that events could change my outlook on the exam. If that happens, I will update this document and notify students via email to check the updated document, no later than 10:00 AM, Monday, December 18; otherwise, assume this document accurately describes the exam.

Plan on taking the exam as scheduled, with the exam starting at 12:30 PM and ending at 2:30 PM. Note, *we meet in our usual classroom, but NOT at our usual class time*. If you complete the exam early, you should leave the room so as not to disturb students still taking the exam. "*When the class is told that the exam is over, it is my expectation that you will turn in your exam promptly and without delay."

1) *The exam will be closed books and closed notes.* You are NOT permitted to use calculators, computers, or similar devices during the exam. During the exam, do not wear hats or headphones. Plan to either turn off (or set to vibrate) cell phones, pagers, and other similar devices. Just for the record, *the work you submit on an exam should reflect your efforts and yours alone*, so even though you are sitting close to someone else during the exam, be careful not to reveal your exam answers to others and make an effort not to look at someone else's exam. During exams, try to sit facing forward, with your exam paper directly in front of you and squarely on the table. If you have to take a moment to rest or think about a question, do so without staring to your left or right. Our classroom is crowded, but to the extent possible, be prepared to sit apart - I will try to facilitate that prior to the start of the exam. If students must sit next to one another, I will indicate which rows to fill up first.

2) *You must use PEN for the exam.* When you first get your exam, be sure to read all directions. Develop your own strategy ahead of time for how you want to proceed through the exam and then be prepared to modify that strategy once you actually get to see the exam. Be aware of the fact that I cannot read your mind when I grade an exam, only what you have written on the exam itself. Make sure your answers are legible. Questions are often phrased in specific ways and call for specific answers. Don't be surprised if there are questions that specifically direct you to provide answers found in your textbook or in some other document, rather than just asking for answers in general. Plan to review questions before
you turn in your exam to make sure you have answered questions appropriately and completely (but, just as importantly, if a question calls for three responses, for example, there's little benefit to you to offer more than three responses). Make every effort to answer every question, even if only partially. If you make a mistake, neatly cross out the answer and write elsewhere on a page or in some other simple way, identify what you want me to consider as your answer.

**Why think in terms of a strategy** when preparing for and then taking an exam? It deals with what you find once you actually receive the exam. How many questions that are factual and how many questions that are problem oriented is only “part of the story”. How many questions are there in total? You should also look at how many points are associated with each question and you should also think in terms of how much time it might take you to complete any particular question or set of questions. All of this should be done almost subconsciously and perhaps within the first few moments of receiving the exam.

**There is a unique aspect to this exam** and that stems from the fact that many of the questions used have been taken from study guides submitted by students. There is a **tacit assumption** that we all have to make at this juncture which is that content, questions, and suggested answers to questions contained in study guides is correct! Clearly some individuals may have been familiar with topics or parts of topics before. It’s possible that they might realize that there could be incorrect material in a particular study guide or some people just might spot errors (for example, an obviously wrong answer was nonetheless marked as the correct one for some question). Given the limited time we have, we may not be able to identify those inaccuracies and make sure the entire class is aware of the correct information prior to the exam. The implication of this is that **students should assume for the purposes of exam 3** that the correct answers to questions used from study guides would be the answers as given in the study guides. The only exceptions to this would be if we were able to identify inaccuracies **and** post corrections prior to the exam with enough time to also notify the entire class.

3) **Missing an exam is a serious matter.** Should something happen that prevents you from being at the exam, make every effort to contact me PRIOR to the exam. Send me email (to hae@cs.rit.edu), call my office number (475-2097) and speak to me directly or leave me a voice mail message, call the CS office, send a friend to contact the office or me, or do something similar. If it is not possible to contact me prior to the exam, contact me as soon as possible after the exam (the sooner you contact me, the more options are often available). It is my responsibility to decide whether you have a valid reason for missing the exam. If you do have a valid reason, I will make arrangements with you regarding the missed exam; otherwise, you will receive a zero for the exam.

*I will point out the “obvious”* which is that we have even fewer options than usual when we deal with an event such as an exam at the end of a term. This places an even greater premium than usual on prompt communication from you,
prompt responses to questions I may ask, and persistence on your part until we resolve the matter. *Treat missing the exam as urgent* and actively work with me until we come up with a satisfactory plan for dealing with that.

4) **It might be useful if you thought of this exam as consisting of questions drawn from three areas.**

4a) **The first area consists of questions from the topics of study covered since the second exam** (these topics correspond to items listed under lecture topics on the course web page):

a) storage and indexing
b) transactions

You are responsible for relevant material on these topics found in your textbook, comments made by the instructor in class on these topics, and documents posted by the instructor (including homeworks and homework model solutions/further notes) on these topics.

*On the course web page, for each topic, you will find a document posted that deals with learning outcomes for that topic.* Review these documents to see what you are expected to know and what you are expected to know how to do on the exam. As you know, I have tried to categorize the learning outcomes from several different perspectives. The scheme of marking outcomes as low-level, medium-level, or high-level is designed to give you a quick view of whether the kind of knowledge I'm looking for you to have is more along the lines of just memorization or basic understanding or whether you need to know the material more deeply. You can translate the level of learning expected into the kinds of questions that might be asked. I've also marked some learning outcomes as central to what we've been doing. *In case you have limited time to devote to preparing for the exam, focus what time you do have on learning outcomes marked as central to maximize your level of preparedness.*

The exam will include a mix of question types. Some questions are designed to test basic knowledge and often take the form of fill-in-the-blanks, true/false, brief answer or questions that require definitions, descriptions, examples, lists, advantages or disadvantages, or other similar responses. Some questions are more problem oriented - homeworks often offer good examples of what to expect in this regard, but may not illustrate all forms of problems that you could encounter. Again, try to use the learning outcome statements to your advantage as you prepare for the kinds of questions that may show up.

4b) **The second area consists of questions drawn from the six topics covered by coalitions as part of the learning module assignment.** Those areas included:

a) Query Processing and Query Optimization
b) Big Data or Data Analytics

c) Online Analytical Processing (OLAP) and Data Warehouses

d) Database Security

e) XML

Materials associated with the learning module assignment are or will be posted on the course web page. Within some of these materials you will find statements that guide your efforts in terms of mastering the material associated with a specific topic and you should also find references to supporting material as well.

**Somewhere between 60 and 80% of the points on the exam will come from topics covered by the learning module assignment.** I will choose questions from study guides for each of the six topics and include those questions on the exam. I have indicated previously that I reserve the right to edit or reformat questions from study guides. In constructing the third exam, I also have to balance other factors, such as providing students with what I consider to be adequate time to answer all questions on the exam. Thus, while I will consider to be adequate time to answer all questions on the exam. Thus, while I will allocate the same number of points on the exam to each of the six topics covered in the learning module assignment, I may not always choose to include the same number of questions from each topic.

**4c) The third area consists of questions drawn from material covered earlier in the term,** but it should be stressed that this exam is not meant to be comprehensive. If such questions are included, they would represent key ideas that have been reinforced over time. Hence, you should NOT plan to spend considerable time reviewing earlier material - one hopes that you have mastered this material by this point in time. Just as a reminder, topics covered earlier in the term included:

a) introduction to data management
b) introduction to the relational model
c) formal relational query languages (relational algebra; relational calculus; QBE)
d) SQL
d) Entity-Relationship (E-R) modeling
f) mapping an E-R model to an initial set of relations
g) normalization and database design

5) Do not wait until just prior to the exam to start asking questions regarding the exam itself or specific topics. There are no planned practice or review sessions scheduled for this exam. I realize you have only limited opportunity to pose questions, but take advantage of what you do have. Also, consider turning to your coalition partners as you review and study for the exam. If you have specific questions related to a topic covered under the learning module assignment, you might consider contacting someone from the coalition that was responsible for that topic. And certainly you can try emailing me. As always, I believe model solutions and further notes for relevant homeworks contain discussions that should prove particularly helpful to review.
To follow up on one point just made, many students are probably aware of the concept of study groups. *Your coalition could serve as one such study group!* Here are some thoughts, tips, and suggested activities that you and your coalition partners could consider (these ideas are based on a short blog entry by Maryellen Weimer titled “What Happens When Students Study Together” that appeared in *Faculty Focus* on September 21, 2016). Clearly, these guidelines have to be adapted to our situation, but that should not be that difficult. For example, one person could take one of the six topics and make a list of the ten most likely questions from the associated study guide that might appear on the exam.

**Activities that students might do together when studying for an exam:**
- Each member generates potential exam questions (and answers) for a selected topic that is shared within the coalition
- Each member leads the coalition in discussing a topic (or set of documents on that topic) or one or more lectures or one or more homeworks, identifying the most important points, concepts, techniques, etc. or reviewing model solutions to problems
- Each member tries to determine what’s likely to be on the exam and then the coalition merges all of the ideas to form a comprehensive list

**Guidelines that may make study sessions more productive:**
- It’s helpful to think of study sessions as specialized forms of meetings
- With all meetings, it’s more helpful when members arrive on time and meetings start and end on time, with minimum time spent on “off-topic” activities
- With all meetings, having an agenda (i.e., knowing what you want to accomplish) helps; sticking to the agenda (i.e., not getting off track) helps; having all members come prepared helps

**Possible outcomes from studying together:**
- Individuals may come to understand that they had overlooked some essential aspects of the course to prepare for
- If people treat each other with respect and engage in a genuine spirit of sharing, that strengthens the cohesiveness of the coalition
- Members can challenge and encourage one another to do well on the exam

6) I would like to return graded exams to students, but that is more complicated in this case. I will hold onto these exams for some period of time. If you are on campus during the spring term, feel free to contact me and we’ll arrange for you to pick up your exam. If you will not be on campus during the spring term, we’ll see what other arrangements can be made. I realize that when students see their final course grade, there can sometimes be questions. I ask for a bit of patience in that regard until I can at least communicate a number of things to the class as a whole. *There will be separate communications toward the end of the term regarding the database project, the learning module assignment, the third*
exam, and the course as a whole. You can also expect that once the third exam is graded, I will post a similar document as I have done for previous exams, with global information regarding how the class performed and some brief observations on selected questions. This document will also contain some additional suggestions for how I can return your exam to you via email.