CS 330 Management Information System
Fall 2017
Assignment #2

Due Friday, October 20, 2017
Late work will NOT be accepted!

Prepare a report to answer the following questions. I don't expect the body of the report will be more than 6 pages but you will not be penalized if you have more. Also be sure to format your report properly: number the pages and use appropriate font (for example: Cambria, or Arial), spacing (single line), alignment etc. Keep in mind that we are visual beings. Appearance gives first impression. So do spend some time to make your report look good. Further, you are encouraged to use bullet point, numbered list, table or diagram wherever appropriate. Your report should at least contain the following items:

Cover page

- At the minimum, include a report title, student name and ID, student section, e-mail address and date of the submission.
- To make it easy to sort and record grades, please write your name in the format of "**Last Name, First Name**" and use your official name (the one recorded by the University).

Part 1: Information Systems in Global Business Today

Case Study: IT and Geo-Mapping Help a Small Business Succeed

IT is not just for huge, multinational companies. Small business entrepreneurs use a variety of information technologies to do all the things much larger firms do, but on a much smaller budget. IT allows small firms to act and look like much larger firms, amplifying the power of entrepreneurs, and creating the conditions for sustained and rapid growth. The Tea Collection (teacollection.com) exemplifies how entrepreneurs can use inexpensive but powerful information technologies to create a successful business.

The Tea Collection was founded by Emily Meyer and Leigh Rawdon in 2002 in San Francisco with just three pima cotton baby sweaters and a vision of bringing the fusion of worldwide cultures and modern design to fashion. Emily Meyer grew up in Texas and started sewing when she was 3 years old. Growing up, her mom introduced Emily and her sister to the languages, arts, and cultures around the

world. To follow her love of fashion, Emily left Texas to study fashion design at Parsons in New York. After spending a year living in Paris, she returned to New York to design menswear for top designers Ralph Lauren, Perry Ellis, and Alexander Julian. Lured to San Francisco by love, she spent days and nights designing childrenswear at Gymboree and Esprit.

Leigh Rawdon has a complementary but very different background. Leigh's dad taught her to spell entrepreneur when she was in second grade. She was always recruiting her neighborhood friends for door-to-door bake sales or an afternoon of playing shopkeeper. In high school, she had her first business license to sell balloons for parties. After studying English at Davidson College, she returned to the business world but quickly realized she couldn't work for someone else.

While attending Harvard Business School, she continued to search for the big idea. It didn't arrive until she had moved to San Francisco to work in Silicon Valley. Leigh got to know Emily socially through their husbands' friendship. "Emily and I could talk for hours—over coffee, at parties— about her idea for a children's clothing company inspired by cultural traditions around the world. The mission of making the foreign familiar and the importance of bringing the world into the home and family resonated with me, and my priorities in life." The idea was right for both of them.

Nearly ten years later, the business is going strong with their leadership, ranked on the Inc Magazine list of fastest growing private companies five years in a row. The firm has expanded into women's clothing. Leigh's passion for entrepreneurship continues at Stanford's business school where she is a lecturer, teaching a new generation of aspiring consumer and retail entrepreneurs.

Introduction

One paragraph to provide a summary about the case. Make sure to write it in your **own words**.

Questions about the case

1. (5 marks) Identify the key software applications used by The Tea Collection.
2. (10 marks) How does the geo-mapping software help the company grow? Explain how sales representatives use the results of the geo-mapping system.
3. (10 marks) What is the main technology challenge identified in the case study video? How would you suggest this challenge should be addressed?

Note: answer the questions using your own words.

Conclusion

One or two paragraphs to restate the main idea of the case study summarize your findings and leave the reader with an interesting final impression, all in your **own words**.

Part 2: IT Infrastructure

Question #1: (15 marks) Express in a couple sentences what technologies/tools to use to address each of the following scenarios:

1. Our organization IT infrastructure becomes very complicated and expensive to maintain;
2. We need to analyze a significantly large amount of customer data, but we have neither enough computing power on our current server machine nor a budget to outsource.
3. This system controls the municipal water supply. It needs to be available all the time;
4. Our sales fluctuate a lot through the year. How do we build a cost-effective online sales system to handle that?
5. A customer asks me to print a file for him. But I am not sure whether the file he has sent me is infected with a computer virus.

Question #2: (16 marks) Identify at least 8 mistakes in the following conversation took place between a business owner David and self-taught IT geek Jack.

David: I have just read an article explaining different storage devices for a computer. Holy cow, there are many, like register, RAM, ROM, cache, hard drive, SD card, etc. Why make it so complicated? Can they just make up their mind and use one of them, say the hard drive?

Jack: They are indeed the same thing. But different people have different preferences. So, they build everything into one machine to satisfy different needs.

David: We had a hard drive failure last year and lost lots of data. What do you recommend we do?

Jack: You should try something called RAID technology. It combines multiple hard drives into one storage unit and improves storage reliability and performance. There are different RAID levels. You should consider RAID 0 as it provides a good performance and good failover handling.

David: I heard about mainframe and supercomputer. They are very expensive. Do you think I would need a supercomputer?

Jack: Not quite. The mainframe is designed for multi-tasking, to support many applications and users at the same time. The supercomputer is for large-scale and complex computations. For business computing, the mainframe is more appropriate.

David: The other day, I went to Canada Computer Inc. They recommended tower server. Its price is very affordable. Do you think a tower server would be sufficient to run my e-mail, website and accounting software?

Jack: It depends on what operating systems these services require. If they run on the same type of operating system, it should be fine. But if some run on

Unix, some run on Windows, you will need multiple tower server machines as a server machine can only install and run one operating system at any given moment.

David: We had a problem in the past to find suitable shipping company or alternative supplier when the original not working. Is there something out there can help us?

Jack: Most definitely. You need a Supply Chain Management System. It could help you streamline your suppliers, transportations, and warehouse and make them more efficient.

David: Really? That is fantastic. Ok, right now, we have 5 Intel Pentium PCs with Windows 98 preinstalled. Each is running some accounting software and MS Office 2000. We occasionally use Gmail. We want to replace them. We also like to have a website for the company, some program to keep track of inventory. How much would it cost?

Jack: 5 PCs, each costs $600; 5 copies of accounting software, say Microsoft Money, each is about $100; 5 copies of MS Office 2013, each is approximately $300; 5 copies of Excel-based inventory system starting from $500; building a website costs about $1,000 and up. So you are looking at $8,500 and up.

David: Ok. This estimation is not as expensive as I expected. But once we build it, how long can it last before upgrade?

Jack: It depends on its usage. The more often you use it, the more likely it will break down sooner. On average, I would say about ten years.

David: Ok, then, what should I do with the old machines?

Jack: You can either recycle them or give them away. But make sure you delete all your data and files before you do that. You can do that by deleting the data and files under Windows, and then empty the recycle bin.

Part 3: Databases and Information Management

Question #1: (30 marks) a restaurant chain has several store locations in a city (with a name and zip code stored for each), and each is managed by one manager. Managers manage only one store. Each restaurant location has its own unique set of menus. Most have more than one menu (e.g., lunch and dinner menus). Each menu has many menu items, and items can appear on multiple menus. Represent this situation of restaurants with an E-R diagram.

A. Based on the information provided in the previous scenario, what entities will a restaurant need to store information about?
B. For the entities identified in previous part, identify a set of attributes for each entity. Highlight the Primary key for each entity.
C. What rules did you apply when selecting the Primary key?
D. Draw the entity relation diagram and be sure to specify the cardinality/modality for each relationship.

Bibliography (Optional)

- In this section, list all the papers, reports, textbooks, web sites you have read and/or used in order to prepare the report. Make sure to include proper citation in your answers.
- In your reference, if you use material from a paper/report/textbook, you should use standard citing/referencing formats. More information can be found at http://www.ieee.org/documents/ieeecitationref.pdf

Appendix (Optional)

- If you have more to add, include them here by all means.

Visual Design

Also be sure to format your report properly: number the pages and use appropriate font, spacing, alignment etc. Keep in mind that we are visual beings. Appearance gives first impression. So do spend some time to give your report a professional look.

Remember

- Use proper font and font size (2 marks)
- Use consistent style for the report (2 marks)
- Alignment and layout (2 marks)
- Correct grammar (2 marks)
- Pages are numbered and cover page is not numbered (2 marks)
- Report Cover and Introduction (5 marks)
- Conclusion (5 marks)

Good Luck