CS 2300 Assignment #1

Total points possible: 100 points

Practical Outcomes

- Demonstrate a good understanding of the fundamental design principles of a DBMS
- Be familiar with the various kinds of users of a DBMS, including workers behind and front of the scene. Understand the role of Computer Science in DBMS design and planning, both practically and professionally.
- Explore the different kinds of database design due to the advances in technology and new application usage.
- Demonstrate a good understanding of basic DBMS concepts and architecture

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Instructions

- Upload your answers in a single file to Canvas
- Your solution must be properly typed, not handwritten.

Assigned Problems

1. Discuss/list the core capabilities that should be provided by a DBMS. [20 pts]

2. Discuss the differences between the database approach and the traditional file system processing method. [20 pts]

3. Give examples of systems in which it may make sense to use traditional file processing instead of a database approach. [20 pts]

4. In class, we discussed that different DBMSs exist because some applications may have special needs that a universal DBMS could not fully support. Compare and contrast at least two different types of DBMS that are developed based on different data models by doing some research, one example would be a traditional relational database system with an object-oriented database system (OODS). Clearly elaborate on the main motivations of why they are created for each DBMS that you found. [20 pts]

5. In class, we briefly discussed about the types of data processed by DBMSs. Compare and contrast "structured data", "unstructured data", and "semi-structured data" by doing some research on the web. Which one is usually well-accommodated by a relational DBMS? Why? [20 pts]