INF 202
Intro to Data and Databases

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Course Description

from the Undergraduate Bulletin

This course introduces students to data and databases. It covers both long-standing relational (SQL) databases and newly emerging non-relational (NoSQL) data stores. The nature of data, Big Data, intellectual property, system lifecycle, and development collaboration are also explored. This is a hands-on course utilizing various technologies.

What is data?

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- Data is distinct pieces of information.
- Data can exist in a variety of forms — as numbers or text on pieces of paper, as bits and bytes stored in electronic memory, or as facts stored in a person's mind.
- In computing and information disciplines, the word data is often used to mean computer information that is transmitted or stored, usually formatted in a specific way.

What is a database?

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- A database is a collection of data organized in such a way that a computer program can quickly search for and retrieve desired pieces of data.
- There are many different types of databases, using different methodologies for storing and accessing the required data.

Course Objectives

from the Undergraduate Bulletin

- Recognize the importance of data and its organization and manipulation in business, government, and society.
- Model and design a relational database for a segment of a business system. Demonstrate the model by means of Entity Relationship Diagram, and the design by the database schema script
- Distinguish between types and forms of databases, and the types of data problems such databases are useful (and not so useful) in addressing.
- Develop queries that will produce results from the data stored in a relational database

Course Objectives

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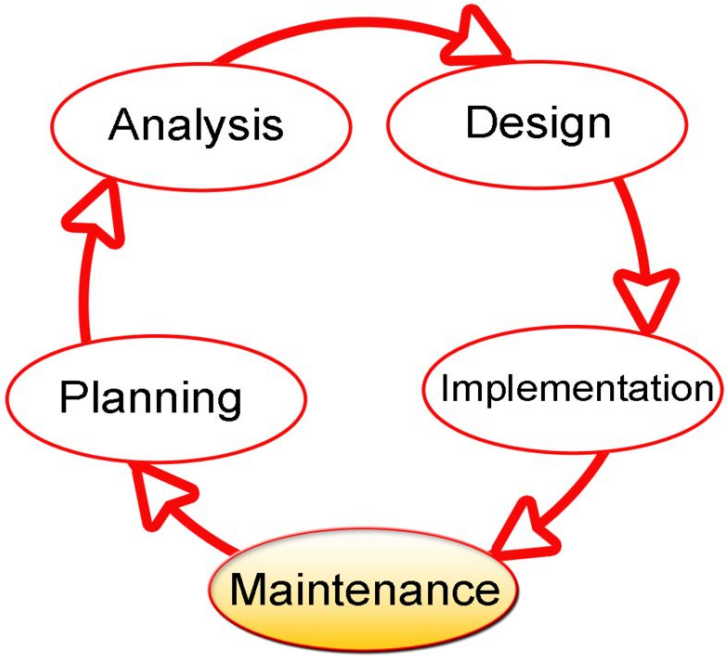
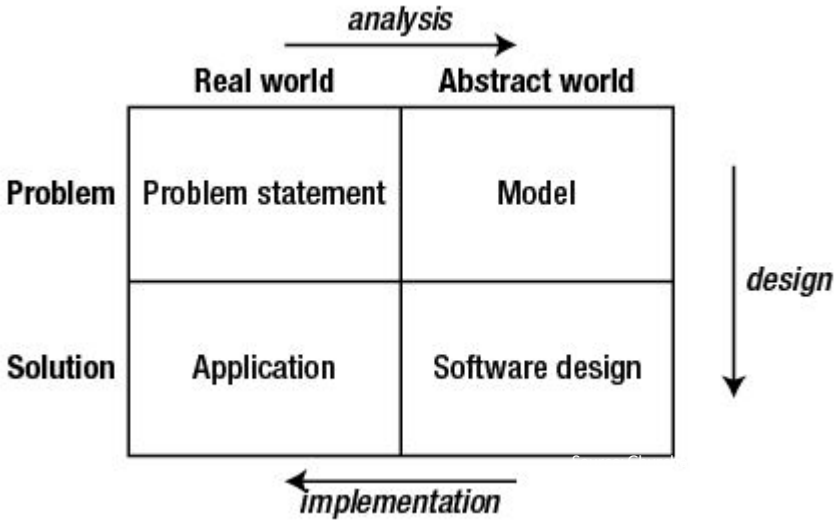
- Explain the differences between structured and unstructured data. Given a dataset, identify whether it is structured or unstructured
- Identify one or more database solutions to address a given data collection/discovery/extraction problem.
- Design, in the broadest terms, a database solution, once identified.
- Query, at a basic level, a database solution once implemented.
- Distinguish between types and forms of data, and the potential uses of that data.
- Compare “Not Only SQL” databases available in industry today for their applications to specific problems

System Lifecycle



System Lifecycle



Database System Lifecycle

- Analysis of Use Cases
- Simple Data Model
- Iterate Until Requirements are Set
- Design
- Implementation
- Maintenance
- Repeat

Database Options