



## Database Design

### Sponsored by: *Open Systems Technologies*

#### Contest Overview and Components

Teams will be given the problem statement at the beginning of the contest time. Time will be allowed to read the problem statement and ask any questions in a common session. Once the question & answer time has closed, no further questions will be answered. At the end of the contest period, each team will submit their solution for judging.

The problem statement may consist of activities and questions dealing with database design, database concepts, Structured Query Language (SQL), data definition (DDL) and data manipulation language (DML).

Teams may use software such as Microsoft VISIO or Visible Analyst to create any appropriate diagrams. All SQL must be written using standardized SQL with Oracle, MySQL, or SQLServer. Each team is required to bring their own laptop/notebook PC, with their own software. (See Resources below) They may also bring any written reference material.

The competition may contain some or all of the following components:

- (1) Database Design: With this, teams will submit a database design based on the given problem statement. The design will consist of an ERD with entities, relationships, attributes, keys, cardinality, and optionality, a relational schema normalized to 3NF, with all keys indicated.
- (2) Data Definition Language (DDL): For this component, students will be required to write the SQL code to instantiate a components of their ERD into a physical database, including all keys. A partial SQL script may be provided and students will have to complete the script to create the working database.
- (3) Data Manipulation Language (DML): This part of the competition will require the students to write one or more DML statements, including SELECT.

\*Please Note: only standard SQL commands may be used. Application specific commands, those unique to Oracle, SQL Server, or MySQL, if used, will result in lost points.

*Contest Note:* students must be capable of saving their submissions on a USB flash drive from their personal computers.

## Team Composition

Individuals or teams of 2 students can register for this competition.

## Skills

Database Design, Entity-Relationship Modeling, Structured Query language (SQL), Data Definition Language (DDL), Data Manipulation Language (DML)

## Scoring

A scoring rubric will be distributed with the problem statement at the beginning of the contest time slot.

## Schedule

See contest schedule for contest time and place. The time will include contest overview, contest work and turn in.

Check in will begin 20 minutes before the contest begins.

## Resources

Each team must have at least 1 computer to complete your project

Students may utilize Oracle, MySQL, or SQL Server. MS Access is not allowed and development suites that support drag and drop are also not allowed.

MySQL:

[www.mysql.com/](http://www.mysql.com/)

Oracle 11g Express:

[www.oracle.com/technetwork/database/database-technologies/express-edition/downloads/index.html](http://www.oracle.com/technetwork/database/database-technologies/express-edition/downloads/index.html)

Microsoft SQL Server Express:

<https://Microsoft.com/en-us/SQL-server/SQL-server-downloads>