Database Outline

The following is a detailed description of the various elements within the Bridge Inspection Database.

Employee:

* Description: This entity are the people at the company that will take part in managing the program, inspecting the bridges, and writing the reports.
* Properties:
  + Employee ID Primary Key
  + First Name
  + Last Name
  + Hourly Rate
* Relationship:
  + Has – a Inspection Assignment (many-to-many): Each employee can be assigned to an inspection. An inspection means the person is either planning or going out to the bridge. Within the inspection assignment, the employee will have a role, such as team leader, inspector, inspection manager. Employees are not required to be assigned to any inspections.
  + Has-a Report Assignment (many-to-many): Like the inspection assignment, each employee can be work on a report associated with a report associated with an inspection. Each employee will be associated with a task within the relationship
  + Has-a Classification (many-to-one): Describes his or her general role within the program. These classifications are used for billing purposes for the client. For example, all Team Leader bill at the same rate, regardless if the employee actually gets paid for that rate. All employees must have a classification, and they cannot have more than one. Classification types are listed below:
    - Inspector
    - Senior Inspector
    - QA Manager
    - Project Manager
  + Has-an Employee ID (one-to-one): Each employee has one employee ID

Office:

* Description: Each office locations where the employee works.
* Properties:
  + ID (Primary Key)
  + Name
  + Zip Code
* Relationship:
  + Has employees (one-to-Many): Has at least one employee who works there

Bridge:

* Description: Each bridge to be inspected.
* Properties:
  + Bridge ID
  + Type
  + Span
  + Length
  + Zipcode
* Relationship:
  + Has a report (one-to-one): Each bridge has only one report.
  + Has an inspection (one-to-one): Each bridge has only one inspection.
  + Is associated with an LOA (Many to One): Each bridge is only associated with one LOA

Report:

* Description: The report that are associated with the bridges
* Properties:
  + Budget
  + Status (text)
  + Percent complete
* Relationship:
  + Has a bridge (one-to-one): Each bridge has only one report.
  + Many employees work on it (one to Many)

Inspection:

* Description: Inspection associated with the bridge
* Properties:
  + ID (Primary Key)
  + Type
  + Budget
  + Status (text)
  + Percent complete
* Relationship:
  + Has a bridge (one-to-one): Each bridge has only one report.
  + Many employees work on it (one to Many)

LOA (Letter of Authorization):

* Description: The LOA is the overall section of the project that the bridges are associated with. It is at this level that Project Managers mostly see if a project is over budget or not.
* Properties:
  + Status (text)
  + Percent complete
* Relationship:
  + Has a bridge (one-to-one): Each bridge has only one report.
  + Many employees work on it (one to Many)