**IST 659 – M002 – Fall 2018 Lab 1**

In this lab, you need to use MS Visio to create relational data models for the following two business rules. Remember to declare **necessary assumptions** **(business rules)** for the entities, if they cannot be presented in your E-R diagram. If you think the business rules are not sufficient for your diagrams, please add comments to your diagram.

If you find the following description is not sufficient, please feel free to **clarify your assumptions by providing your revised business rules along with the ER Diagram (ERD) in your lab report.**

**Business Rules (Questions):**

1. *Each company hires at least one employee; and an employee cannot work for more than one company. Each company must have at least one project; a project must be organized by at least one company. An employee may or may not work in several projects; each project must have at least one employee.*
2. *Please create your own business rules for a one-to-many relationship. Make sure your business rules are clear, concise, accurate, and completed for you to draw the ER diagram.*

**Create ERDs using Visio according to the following instructions for (1) and (2) above:**

1. Create necessary entities, and give appropriate names to them.
2. Add attributes to the entities. Make sure the attributes are at atomic level using good naming conventions (no composite attributes, no multi-value attributes).
3. Establish relationships between entities and give the relationships appropriate names.
4. Mark correct cardinality of the relationships.
5. Articulate any additional business rules which could not be articulated via the ERD.

**Submission instruction**

Please submit your lab report (including the ERDs and screenshots) in **one** **WORD** file to BlackBoard. Name your file in this format “IST659- lab1-Lastname-Firstname”.

**Due date** The lab report is due on **Friday 9/14 at midnight**.

**Grading Criteria for Lab 1:**

* Appropriate assumptions 0.75pt
* Correct cardinality according to the assumptions 2pt
* Correct relationship and names based on the assumptions 1pt
* Correct required/optional attributes 0.75pt
* Understandable font and clear ERD screenshot 0.5pt

**Total: 5pt**