**Database Systems Assignment 3**

**U00839259 (syrrmlla)**

1. **Download/install the MySQL Workbench. If you already have it, that is great. Just include the screenshot(s) as a proof. [20 pts]**

**Graphical user interface, text, application

Description automatically generated**

1. **Using the MySQL Workbench, draw the ER diagram (Figure 3.2) of the COMPANY database. Include the screenshot of your whole ER diagram. [20 pts]**

A screenshot of a computer

Description automatically generated

1. **MySQL Workbench provides a powerful feature called forward engineering that allows   
   the database designer to convert the ER design into a schema generation SQL script for   
   one or more target relational databases. Using forward engineering and generate the SQL script. Include screenshots of each step of the forward engineering process. For more information about forward engineering, please take a look at this video: https://www.youtube.com/watch?v=1sqhDJae-xY [20 pts]**

A screenshot of a computer

Description automatically generated

A screenshot of a computer

Description automatically generated

A screenshot of a computer

Description automatically generated with medium confidence

1. **Create a database called COMPANY using those generated SQL scripts in MySQL database. Show the screenshot of your database and tables in MySQL. [20 pts]**
2. Cardinality ratios often dictate the detailed design of a database. The cardinality ratio   
   depends on the real-world meaning of the entity types involved and is defined by the   
   specific application. For the binary relationships below, suggest cardinality ratios based   
   on common-sense meaning of the entity types. Clearly state any assumptions you make.   
   [20 pts]

|  |  |  |  |
| --- | --- | --- | --- |
|  | **Entity 1** | **Cardinality Ratio** | **Entity 2** |
| **1** | **Student** | **1:1** | **SocialSecurityCard** |
| **2** | **Student** | **m:n** | **Teacher** |
| **3** | **Classroom** | **1:n** | **Wall** |
| **4** | **Country** | **1:1** | **CurrentPresident** |
| **5** | **Course** | **m:n** | **TextBook** |
| **6** | **Item that can be found in an order)** | **n:1** | **Order** |
| **7** | **Student** | **m:n** | **ClASS** |
| **8** | **Class** | **m:n** | **Instructor** |
| **9** | **Instructor** |  | **Office** |
| **10** | **E-bay Auction item** | **1:n** | **E-bay Bid** |