**Saturday 28th November, 2020 7pm --> Everyone present(6) (Notes taken by Heesun)**

***Agenda*:** Clarify tasks to do for project 3

* **Clarifying**

*Data is given, design the columns in the way we see fits it.*

* + Column names are different
  + Figure out how to get the keys so it follows the rules
  + Use SQLDBM to design the database figures
  + Create tables as well as stored procedures to load tables
  + Every table needs to have (Similar concept to project 2)
    - Authorization key
    - Date added
    - Date of last update
  + ACCT – Column name(?)
  + Department
    - Create all the department key
  + Anything that is blank needs to be fixed
  + All surrogate will use identity keys for all tables
  + Ignore Spring, All the ones we do need to have “Fall2020”
  + Limits on data to make sure it’s good data.
  + Column names should be atomic
  + Hours and credits are different
  + Section should be a key to all the other stuff
  + Constraints-> Enrolled can never be more than the limit
    - Waitlist, derived column
  + Course department-course #-hours-credits-description
  + Class->section-code-date-time-instructor-location-enrolled-mode of instruction
* **To-Do Due *Tuesday 1st December:***
  + ***The tables from number 4 in the instructions:*** 
    - A&B/Department (***Heesun***)
      * Number is automatically generated
      * Figure name in course name
      * Instructor in one or more, add department key from department to instructor
        + Ex. AACT peter-heller->Next column- Peter Heller->DK #1
    - C&D (***Nabila***)
    - E&F(***Andrew***)
    - G (***Richie****)*

-**Andrew** will also do TruncateData, AddForeignKeys, DropForeignKeys by 12/2/20.

**-Richie w**ill also create workflowsteps and userauthorization tables by 12/1/20

-**Shohum** will write 5 queries. The 5 propositions for them are due 12/1/20. He will also do the Trackworkflo**w and ShowWorkFlowSteps stored procedures by 12/1/20.**

-**Richie and Alex** will design database on 11/29/20.

* **Questions**: *Asking in class* 
  + How do we fix the blank parts./anomalies -> some don’t have a values
    - Add a constraint for those columns (?)
    - Do we put “unknown”
  + Mode of instruction table is supposed to consist of what?
    - Some identity key for the options, each class will have a mode of instruction
  + How to define your input source on the target table
    - Define a function that returns a procedure table G2.Loadsemesters, stored procedure, calls it and then loads it unto table. Calling function in stored procedure?
  + Class should only have section numbers-> Section #s = key to other info
  + Location table -> Location name?

**Meeting ended 7:56pm**

**Group leader:** Isakhar (Alex) Aminov

**Back-up Group Leader:** Richie Budijino

**Group secretary:** Heesun Arthur

**Notes taken by Alex on 12/1/20 regarding questions we had about the project (asked in class and during office hours):**

-What exactly does “must be persisted” mean? Right click on table, design, column properties, computed column specification, formula (e.g. concat), “is persisted” yes.

-What exactly is an anomaly and how should they be handled? Anomalies include both blank data and the things you noticed where there is a duplicate (for example, where everything is the same except the classroom). You can handle these situations however you want. So for example, in the situation where everything is the same except 1 thing, you can just delete the duplicate one. If something is blank, can either put some default value or put “unknown” or “to be determined,” but it should be descriptive (so it is better to have multiple kinds of unknowns – e.g. “Time unknown” or “Location unknown.”

-What if the enrolled is already higher than the limit, which is already violating a logical constraint? It is up to us how to handle this stuff, but a good idea would be an “overtally” column.

-How do the inline TVF work exactly? Definite a function to wrap the input that is used in the stored procedure.

-Can schemas be plural names (like academics or locations)? Yes, they can be plural.

-For section numbers should we treat 01 and 1 as different things? So need to format it? Or varchar instead of int? It’s our choice to treat 1 and 01 as different things. Make sure section isn’t alphanumeric. He suggests a string with leading 0s, so you would change 1 to 01 in your code when loading the section number.

-Should all bookkeeping information like authorization keys and date updated be user-defined datatypes too? Yes, everything, including the bookkeeping information, is a UDT.

-Should we be using identity keys instead of sequence objects everywhere now, including the bookkeeping information things like authorization keys? It is up to us whether we want everything to be a sequence object or an identity key.

-Feedback from the professor on our database design: We should put a bridge table between mode of instruction and course. So for example, you would have a list of all modes of instruction that the classes of that course has. Also add a bridge table between instructor and department so you know which instructor teaches in which departments, and which departments have which instructors teach in them (keep in mind they are a many to many relationship).

Other things the professor mentioned about the project:

-Make sure the final tables do not have more rows than originallyuploadeddata.

-Make sure counting the data adds up with the new loaded data.

-Make sure you show the counts of the rows of each table.

-Need equivalent of loadstarschema.

-Show the taxonomy you are creating with the UDTs and how you are re-using them.

**Tuesday December 1, 2020 7pm -> Andrew, Alex, Richie, Nabila, Shohum (5/6) (everyone present except Heesun) (Notes taken by Andrew)**

***Agenda:*** Discuss the objectives of project 3

* Discussed what propositions to make for the tables
* Discussed the design of the database
  + Make bridge tables to connect tables together
  + Find out what bridge tables are and how to use them
* Creating UDTs
  + Make UDTs for all the data that’s being used
* Questioned what a surrogate key is and its relationship with identity key
* Make inline table value functions for each procedure
* Decide what to do with anomalies and constraints
  + Constraints are limitations for the data
  + For the blank data, replace them with “To be determined”
  + Problem with blank data, if we replace them with “To be determined”, do we use NVARCHAR instead of INT
  + Make an overtally/overflow for classes that went over the limit in capacity
* “Is Persisted” - makes data static instead of dynamic
  + Have to use this for database

TO DO DUE December 2, 2020

* Figure out keys
* Figure out bridge table
* Do the tables

**Meeting ended: 7:51pm**

**Notes taken by Alex on 12/3/20 regarding questions we had about the project (asked in class):**

**-**Should the user authorization key be a foreign key to the user authorization table? It is up to us – it can either be a foreign key or it can just be loosely coupled and then you can do a join to get the name of the group member.

-We can make the diagrams either through sqldbm or through SSMS. SSMS might be better since apparently there are some issues with the sqldbm website.

-What exactly is an alternate index? Is that the same thing as an alternate key? Yes, they are the same thing.

-When the instructions mention creating primary keys, is he referring to the identity keys we are using? Yes.

-How exactly do you make something an alternate key? Just make a UNIQUE constraint? Yes.

-What is the relationship between primary key, surrogate key and identity key. Can the surrogate key be a primary key? Identity key or sequences objects are both kinds surrogate keys, that can be primary keys but don’t have to be.

**Wednesday 9th December, 2020 10am --> Everyone present(5/6) Except Shohum (Notes taken by Heesun)**

***Agenda*:** Checking in on progress to plan the next step

* **Clarifying** 
  + Checking to make sure stored procedures are completed together with the functions.
  + Richie wrote a function - that will convert the columns into 4 different columns because:
    - Right now in the database every thing about a course: department, course#, credits #, number of hours are all in one single table
    - To convert the one column we have into 4, difference between them is the same
    - The stored Procedure for classes are different for each class and are all part of the course.
  + Comments within the code -> placed after “drop” and before “create”.
  + Change credits of course. It can’t be an int value, in the case of 0.5.
  + Looking through the department function to check if it works.
  + Is Courses under Department table
  + Join original table with separate course,
  + Adding a constraint to make something unique -> Alternate key
  + Academic.class
    - Going to need a lot of tables joined.
  + How to model bridge tables
    - Take an instructor and return the departments they teach
    - Take a course and return the mode of instructions that course has
  + Class table has specific default values or specific constraints depending on the column
  + Room location has to have building key as part of its table
  + Discussing the bridge table
    - What instructors teach and what department.
  + Finish stored procedures and functions so we could get started on the five queries
  + Add constraints and alternate keys to tables
  + Finish bridge tables

**Meeting ended: 11:40am**

**Group leader:** Isakhar (Alex) Aminov

**Back-up Group Leader:** Richie Budijino

**Group secretary:** Heesun Arthur

**Other discussion that happened between official meetings, through a group chat (notes taken by Alex):**

-Alex and Richie met on 11/29/20 and again on 12/2/2020. During these 2 sessions: We created the diagram through SQLDBM.com, created the UDTs, schemas, and tables. We did a couple of default values and constraints and told the rest of the group members that they had to finish it themselves. We scripted everything we did in SQLDBM into SSMS and we provided the group with a new .bak backup file to restore, including changing the name of the original data table and the database to reflect the Fall2020 semester. Alex also provided the group with a to-do list of rules for their stored procedures and functions.

-We realized for Nabila’s stored procedure to load the course table, we need to split up the single column from the original table that has DEPT+COURSE NUMBER+HOURS+CREDITS, and split it up into 4 pieces of data, 4 separate columns. Then we have to put those 4 back together into 1 column in the course table. Nabila had some difficulty doing this, so Richie made the function for her to use in the procedure.

-On 12/8/2020, Richie agreed to do the 2 bridge tables that the professor asked us to do in office hours. They are due 12/11/2020.

-We realized no one was assigned a stored procedure to print the row count. Andrew was assigned it on 12/11/2020 and finished it the same day.

-Andew realized that the foreign keys provided by sqldbm.com are not descriptive (e.g. FK\_47). So he wrote code to rename the foreign keys so that they are more useful.

-Nabila agreed to do the PowerPoint on 12/2/2020 but she was not assigned a due date since we were not sure when all the other tasks would be finished. They were not finished until 12/12/2020 so she was told to finish the PowerPoints by the end of the day.

-^For the same reason, everyone was told to record their audio recordings on 12/12/2020 and to finish them by the end of the day.

^Likewise, specific due dates were not made for post-completion things such as creating redgate sqldoc, database backup, diagrams, and the VHDX file. We did not know when everything else would be done.

-Alex and Richie met multiple times during the week of 12/7/2020 to troubleshoot everyone else’s code and make sure everything worked properly, and that all project requirements were met. We did not finish until 12/12/2020.

-Shohum volunteered to do the 3 queries for the 3 propositions provided by the professor on 12/10/2020.

-Shohum was told to start on the 5 queries that are up to us on 12/10/2020 despite the database not working properly yet.

-On 12/11/2020, we realized that credits can be 0.5, so we had to change the datatype from an int to a decimal.