CSCI 354 Term Project

Based on what you have learned in CSCI354 class, I want every student to carry out either a group project or an individual project. If you decided to work on a group project, please make a group with up to 4 students.

1. Individual Project
    a. Photographic Database: The idea of this database is to store photos to show growth in the transformation of the economy, government, and landscapes. You may use day and night to categorize ante meridiem and post meridiem to display descriptive data further. Additionally, the selected category is described in the descriptions section. See Figure 1 below to understand the idea of how to design, what to display, etc.

Figure 1 Example of Dubai

Based on the example above, you may come up with the following attributes:

I. Continent
    a. Asia
II. Country
    a. United Arab Emirates
III. Landscape
    a. Industrial, Coastal
IV. Landscape attributes
    a. Sky Skylines, Buildings, Ocean, Coastline, Flat (top)
    b. Skylines, Buildings, High Rises, Ocean, Coastline (bottom)
V. Year of Photos
    a. Top: 2000
    b. Bottom: 2016
VI. Time Lapse
    a. 16 years

Please find places all over the world, and you have to find at least 20 different places to implement this database.

2. Group Project
    a. **Diagnostics Database for Smart-Connected cars**: According to Klynveld Peat Marwick Goerdeler (KPMG)'s Global Automotive Executing Survey 2016, automotive trends are rapidly changing every year. For instance, connectivity and digitalization was ranked ten in 2015, but it was ranked one in 2016. This has a significant meaning due to the fact that vehicles may transform to mobile data rooms, which can lead virtual product features and services. One of the well-known technologies regarding this trend is the Tesla autopilot feature which is composed of autosteer, autopark, driver assistance visualization, etc. Especially, Tesla vehicles regularly receive over the air software updates. All these emerging technologies are core and key for smart connected cars, and Figure 2 below depicts the full range of connected car technologies and services.

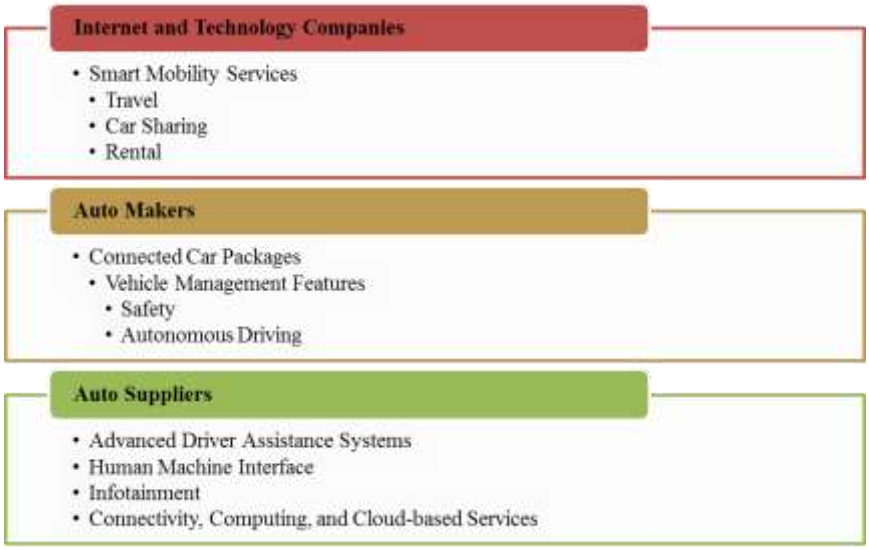

Figure 2 The range of connected car technologies and services

Among connected car packages provided by auto makers, the vehicle management feature is selected. Additionally, the vehicle management feature in terms of the smart connected car means collection and transmission of the information via wireless communications. The overall system architecture regarding this is depicted in Figure 3 below.

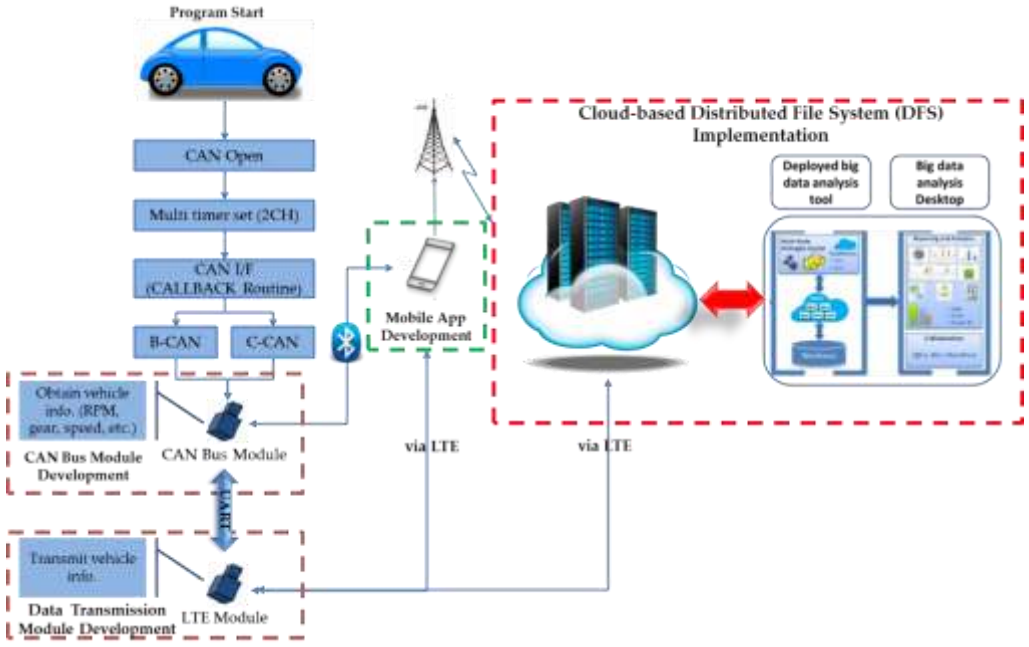

Figure 3 The overall system architecture

One of the main system components is to implement DB. Initial relational DB is designed by 3 DB tables such as driver, vehicle, and diagnostics shown in Figure 4 below.

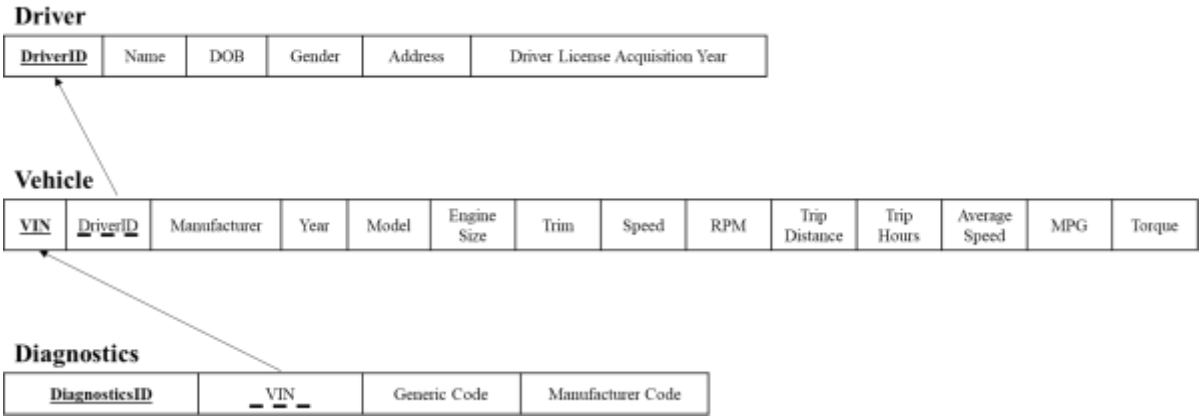

Figure 4 Initial relational DB Table

The most significant problem of the designed relational DB is that it has a high chance to cause data redundancy. Therefore, if your team chooses this topic, your team has to apply 1NF, 2NF, and 3NF to the relational DB. Moreover, diagnostic codes are classified into two types. For instance, if diagnostic codes start from P0XXXX, P0 means powertrain-related generic codes. If diagnostic codes start from P1XXXX, P1 means powertrain-related manufacturer codes. Note that there are four alphabets to indicate which part has malfunction, i.e. B for body, C for chassis, P for powertrain, and U for user network. Since there are a huge amount of diagnostic data related to generic and manufacturer codes, your team should pick 3 automakers.

3. Requirements

a. 1st Step: Each team or individual creates an ER diagram first using MySQL Workbench. After creating the ER diagram, 1NF, 2NF, and 3NF are applied to DB, so the issue of data redundancy could be avoided

b. 2nd Step: Once creating the ER diagram is completed, the next step is to create DB tables and insert data into each table. Please do this step using either MySQL Workbench or phpMyAdmin.

c. 3rd Step: Create the web page using php to retrieve data.

d. Submission: Each team or individual has to submit this project in either .doc or docx using the given template and show actual deliverables through a presentation.

e. NO LATE SUBMISSIONS ACCEPTED

f. Due date: 11:59PM, 4/29/2019