

Read the case and submit the following:

1) Create an ***Extended*** Entity-Relationship CONCEPTUAL diagram in MS Visio 2010 to represent the data requirements for the ticket processing system described below. Within the document, create the Data Dictionary by assigning the appropriate data type to each attribute, including a brief description. We will check attributes for proper specification. File name should be **LastName_FirstName_EER.vsd**

2) If you make any assumptions, then you need to document your assumption so that your diagram can be graded accordingly (can use Word, but print to PDF!). Do NOT change facts that have been stated in the case. File name should be **LastName_FirstName_Assumptions.pdf**

You may use the “HW2-StatePatrol_2016_Starting_Point.vsd” as the starting point for your solution.

STATE PATROL SYSTEMS

The purpose of the State Patrol ticket processing system is to record driver violations, to keep records of the fines paid by drivers when they plead guilty or are found guilty of moving violations by the courts, and to notify the court that a warrant for arrest should be issued when such fines are not paid in a timely manner. Another system records accidents and assignation of financial responsibility (for insurance company use). A third system produces driving record reports from the ticket and accident records (also for insurance companies). Finally, a fourth system issues, renews, or suspends driver’s licenses. These four systems are obviously integrated in that they share access to the same database.

The database system needs driver data – it requires social security number, license number, name, address, date of birth, license issue date, and so on. Judge and Officer data include their state identification number, name and address. Police officers probably have partners keep track of who is partnered with whom (and for what time period). Court data includes the name of the court, address, county, etc. Drivers may or may not have tickets, but each ticket applies to only one driver. Officers write quite a few tickets. A judge can be issued a ticket and if that occurs, and they go to court, then a different judge has to oversee the case to avoid a conflict of interest.

The system keeps track of ticket number (each is unique and preprinted on each sheet of an officer’s ticket book), location, ticket date, ticket time, plea, trial date, verdict, and date paid. Each ticket is associated with a violation. Violations are classified using violation type. Each type of violation has a description, is worth a number of points and has specific penalties associated with it, such as the amount of fine, whether the license must be suspended or driving school attendance is required, its unique identifier and which section(s) of the vehicle code to which it belongs, and the number of months the points stay on the driver’s license, among other things.

During a traffic stop, the officer checks the validity and ownership of the vehicle’s plates, and insurance. Drivers must have a policy (liability, comprehensive and uninsured motorist) provided by an approved insurance company. Each insurance policy contains detailed vehicle information, coverage amount, and dates of coverage. ATVs, Snow Machines and Motorcycles require additional insurance for injuries/damages specific to each. Commercial trucks must carry environmental damage coverage. The system should record additional information about commercial vehicles, such as maximum certified weight and most recent inspection.

When an officer issues a ticket to a driver, a copy of the ticket is turned in and entered into the system. A new ticket record is created, and relationships to the correct driver, officer, and court are established in the database. If the driver pleads guilty, he or she mails in the fine in a preprinted envelope with the ticket number on it. In some cases, the driver claims innocence and wants a court date. When the envelope is returned without a check and the trial request box has an “X” in it, the system notes the plea on the ticket record; looks up driver, ticket, and officer information; and sends a ticket

details report to the appropriate court. A trial date questionnaire form is also produced at the same time and is mailed to the driver. The instructions on the questionnaire tell the driver to fill in convenient dates and mail the questionnaire directly to the court. Upon receiving this information (and recording it), the court schedules a trial date and notifies the driver of the date and time.

When the trial is completed, the court sends the verdict to the ticketing system. The verdict and trial date are recorded for the ticket. If the verdict is innocent, the system that produces driving record reports for insurance companies will ignore the ticket. If the verdict is guilty, the court gives or mails the driver another envelope with the ticket number on it for sending in the fine. If the driver fails to appear for their court date, or to pay the fine within the required period (within 2 weeks of the court date), the system produces a warrant request notice and sends it to the court. What happens then is in the hands of the court. Sometimes the court requests that the driver's license be suspended, and the system that processes driver's licenses handles the suspension, and sometimes an arrest warrant is issued. Officers are then notified about (and can look up during subsequent traffic stops) drivers with warrants.