## Lab-2 ER Diagram Exercise – CAR\_RENTAL Database

Your group should confer to complete the following lab parts initially on the whiteboard. Get instructor approval for each part before moving on. You will need to capture your solution for each part for submission later.

A small local car rental agency needs to have a database designed for them. They have a fleet of cars which can be rented out on a daily or hourly basis. Each car routinely needs service (a maintenance event), during which a maintenance procedure may be performed. Develop an ER diagram for each of the scenarios described in Parts A through C below, using these data items:

* Autos data items: AutoID, Make, Model Year, CurrentMiles, DailyRate, HourlyRate, Available
* Customer data items: CustID, LName, FName, MI, Address, Phone, Email
* Maintenance Event data items: MaintID, MaintDate, which auto, which mechanic, HoursBilled, which procedure(s)
* Mechanic data items: MechanicID, LName, FName, MI, Address, Phone, HourlyRate
* Procedure data items: ProcedureID, PName, PDesc, HoursReqd
* Rental Event data items: which auto, which customer, OutDate, InDate, OutTime, InTime, MilesOut, MilesIn, TotalRentalCost

**Part A**: Assume that only one procedure is performed by a single mechanic during a single maintenance event. Draw the basic ER model for the CAR\_RENTAL database using Chen notation, ~~with cardinality~~ and (min, max) notation.

**Part B**: Using your solution to Part A, revise it to support the assumption that multiple procedures are possible during a single maintenance event, all of which are performed by a single mechanic. Draw the basic ER model for the CAR\_RENTAL database using Chen notation, ~~with cardinality~~ and (min, max) notation.

**Part C**: Using your solution to Part A, revise it to support the assumption that multiple mechanics may work together on a maintenance event containing multiple procedures, with each mechanic performing one or more of the procedures in that event. Draw the basic ER model for the CAR\_RENTAL database using Chen notation, ~~with cardinality~~ and (min, max) notation.

**Submission:**

One group member should reproduce each of the group’s complete ER models for Parts A through C in a digital form (using any drawing tool you wish) and embed the image in a Word document. List all group member names at the top of the diagram. Submit the Word document into the Canvas lab submission link.





