## COP 5725 SUMMER 2020 GROUP PROJECT INSTRUCTIONS

**Goal**: Design a complete database structure that meets all of the requirements described below.

**Scenario**: The state of Alabama needs to have a criminal justice system to manage all of the prisoners who are or have been incarcerated in any of their state prisons. Requirements include:

* Ability to identify every prisoner who has been incarcerated in any of the state prisons, when admitted, when released, and the release status (from a list of predetermined values, e.g., sentence completed, paroled, pardoned, died, etc.). Each prisoner is given a unique justice system ID number that is unique to that person and does not change throughout their lifetime.
* Ability to identify every case in which the prisoner has been involved, the offenses committed in each case (from a list of predetermined values), the status of the case (from a list of predetermined values, e.g., in progress, adjudicated, in appeal, etc.), the legal firm representing the prisoner in each case, and the attorney within the firm who is handling this case. Each case is given a unique case ID number and may include a number of offenses. Offenses are grouped into a list of predetermined offense categories.
* Ability to track court hearings for each case to which each prisoner must attend, including which court, the court’s location, which case, the date and time of the hearing, and the legal representation.

**Assumptions you must use include:**

* 1 prisoner associated with a single case, and a prisoner may be involved in multiple cases (sequentially or concurrently).
* There is a single attorney assigned to a prisoner for a case.
* An attorney cannot change law firms.
* A prisoner cannot represent himself in court hearings (i.e., he cannot act as his own attorney)/
* A prisoner can be re-incarcerated if future crimes are committed, in the same or a different prison.
* A legal firm has only one address.
* Attorneys will stick with one case throughout the entirety of it.
* A single hearing will consist of one prisoner, one case, and one attorney.
* One incarceration will go to one prison, but a prison can have multiple incarcerations.
* A prisoner can be incarcerated multiple times, but an incarceration can go to only one prisoner.
* Case can consist of multiple offenses, and an offense can be in multiple cases.
* An offense can apply to one offense category, but an offense category can apply to multiple offenses.
* A case can have multiple hearings and a hearing applies to one case.
* A hearing is done in one court, but a court can have multiple hearings.
* Multiple incarcerations can be held in a prison, and an incarceration is held in one prison.
* A case can change status over time.

**Phased Approach:**

* **Phase 1**: Create a document for this phase, containing the items noted below. Instructor will review your document with groups on Wed. June 10 during class. Make necessary revisions, then download your document and submit into the Phase 1 link in Canvas by June 11. Phase 1 requirements:
  + List all of the assumptions that must be met, based on this real-world scenario.
  + Determine the data fields that will be needed, grouped into the tables you think you will need at this point in the process.
* **Phase 2** Continue working on your group document, by adding the requirements noted below. Instructor will review with groups on June 15. Make necessary revisions, then download your document and submit into the Phase 2 link Canvas by June 16.
  + Design tables and normalize the design. You do not have to show the normalization process
  + Create an ER diagram with Chen notation. Show the tables, their attributes, indicating PK and FK fields and cardinality (not min-max). Test that all of your assumptions are met by your design.
* **Final project**: Complete and submit into Canvas by June 18.
  + Create the database using SQL statements.
  + Finalize deliverables (see below).
  + One team member will submit the complete project. Each team member will submit an assessment form.

**Final Deliverables**: Completed project is due on Thursday June 18.

* **Assumption list**, in Microsoft Word using the group collaboration document in Canvas.
* **ER Diagram** using Chen notation, showing cardinality only, and notating which fields are PKs or FKs. Your design must be in 3NF, but you do not need to show the normalization process.
* **A text file of SQL statements** (file type of .txt or .sql) that will successfully create this database in SQL Server, including any required FK constraints, using SQL Server syntax. Statements must be in the correct order to allow the error-free creation of the database by running a query in SSMS containing all of the statements in your file.