INTEGRATION PROJECT

OBJECTIVES

- Implement the "data first" database application methodology discussed in class to solve a "real world" database problem. This process should implement the following four major steps:
    - Analysis
        - Gather requirements
        - Generate an Information Flow Diagram (IFD) describing the data system
        - Summarize the requirements you have gathered into a document containing three sections that (a) defines all the business rules, (b) names and defines all data objects referred to in the business rules (data dictionary), and (c) lists any unique or special assumptions being made
    - Specification
        - Generate an EER data model that defines relevant information (data and relationships)
        - Define the tasks needed to support the data system and generate abstract code describing those tasks.
    - Design
        - Convert the EER data model to a Relational Database schema
        - Expand the abstract code to include actual SQL commands needed to implement the tasks required for the data layer.
    - Implementation
        - Generate a database implementing the relational schema using a DBMS and insert data that can be used for testing.
        - Use any language to build the data layer and provide a VERY rudimentary UI that can be used to test and/or demonstrate the functionality of your data layer.
            - Data Layer Options
                - Web API
                - RESTful web services (possibly using Node.js)
                - Other?
            - UI options….entirely up to you…but don't spend too much time here

PROJECT DESCRIPTION

You will work in teams of three or four to develop a database system per the requirements specified for the Riverside Sharing Alliance Coordination System (RSACS). No less than three persons and no more than four persons per team.

Part of the final submission will be a document from each person summarizing the work that person contributed to the project and what work the other team members contributed to the project. EVERYONE must submit this separately.

In general, all members of the team will get the same grade. However, the instructor reserves the right to adjust any student's score based on factors that the instructor may observe or learn from other team members regarding that student's contribution to the project. This adjustment could be positive or negative.

DELIVERABLES CHOICE ONE

1) Prepare a report (document) of the findings along with graphs showing results wherever possible.
2) Summarize the project in a presentation to given in-class (Alley Method?).
3) Source code for the project.
4) Submit all deliverables as defined in the course syllabus.

DELIVERABLES CHOICE TWO

1) Prepare a live demonstration showing all aspects of project outcomes
   (Be certain to summarize the project in a presentation so others can easily understand them)
2) Source code for the project
3) Submit all deliverables as defined in the course syllabus

PRESENTATION

In class on April 23. The entire team must be present.

GRADING

- One hundred and fifty (160) total points are available for this assignment.
  - Ten (10) points for **Project Proposal – DUE: 2/12** (by Noon) **(IP1)**
    - Once teams have been identified, all remaining submissions will be done as a team.
  - Twenty (20) points for **Analysis (IFD) – DUE: 2/18** (by 11:59 PM) **(IP2)**
  - Thirty (30) points for **Specification (EER and Task Descriptions (using abstract code) – DUE: 3/4** (by 11:59 PM) **(IP3)**
  - Thirty (30) points for **Design (Relational Schema, Task Decomposition (w/ SQL code) – DUE: 3/25** (by 11:59 PM) **(IP4)**
  - Twenty (20) points for **Source Code Submission (DDL, DML, data layer and UI (if applicable))**
    - Five (5) points **Initial Submission – DUE: 4/8** (by 11:59 PM) **(IP5)**
    - Fifteen (15) points **Final Submission – DUE: 4/22** (by 11:59 PM) **(IP6[1])**

    The intermediate deadline is included to keep you moving toward the final deliverable.
  - Fifty (50) points for **Complete Project Implementation (IP6[1]) – DUE: 4/22** (by 11:59 PM)
    - Deliverable Choice One
      - Project report including documentation – thirty (30) points
      - Project presentation (4/23) using PowerPoint slides – twenty (20) points
    - Deliverable Choice Two
      - Project presentation (4/23) live demonstration – fifty (50) points

[1] The final submission includes the complete project implementation AND all source code.