

## CSCI UA.0060 Fall 2025

### Group Project – Create a Hotel database

#### Deliverables

Upload the following to your group GitHub repository.

- 1) A PDF of your Entity Relationship Diagram
- 2) A Data Export of your database (as you did in Assignment 4)
- 3) A Word document describing your analysis
- 4) The PyCharm project folder
- 5) Team Evaluation Word document (optional)

Filenames should reflect your Group Name. For example, the ERD should be named GroupName.pdf

#### Overall Requirements

As can be seen from the included description of the Last Resort Hotel (LRH) business, hotels can be fairly complex and that makes it challenging for a company's management to have a reliable picture of how well they are doing.

Your mission is to design and develop a database containing data about the hotel and then create a simple web interface that will help the company's management to understand how well their business is doing.

The starting project can be accessed from Github, using this link:

[https://github.com/markr-nyu/Hotel\\_Last\\_Resort](https://github.com/markr-nyu/Hotel_Last_Resort)

One student from each group should fork the repository on GitHub, naming the repository with their group name and then the other students in the group should request to join their group.

#### Specific Requirements

- 1) Analyze the included business description of LRH and generate an ERD.
- 2) You might find that the business description has conflicting information or missing information. This is normally what happens when you talk to people in companies about their business. You have two options for dealing with this:
  - a) Ask for more specific information or clarification

b) Decide how you are going to deal with the anomaly and include your decision in your analysis report.

3) Obviously, it would be best if every detail in the business description were reflected in your ERD, but, as you will see, that is a tall order. Therefore, you have to decide what are the most important aspects of the business and model them well. You should include in your analysis report all the details that you choose to defer to a later phase of the project (should that ever happen!).

4) To be clear, the expectation is that all the details in the business description are accounted for – either in the ERD or in the analysis report. To be considered B level work, there should be at least 15 tables, reflecting the key aspects of the business. For A level work, there should be at least 20 tables.

5) The analysis report must include a section that describes the role that each team member played, i.e. how the work was allocated.

6) Once you have created your ERD, you will construct the database and then populate it with enough data to generate meaningful queries. For example, showing one room and one reservation would not be enough. Conversely, you don't need to show every reservation for 5 years of a 5,000 room hotel that is sold out almost every night! As a general guideline, to be considered B level work, there should be at least 50 customers and at least 100 room reservation records that span at least one quarter. For A level work, there should be at least 75 customers and 150 reservations spanning at least one quarter. A reasonable number of records for other tables depends upon your model. If you have any doubt or questions about this, please ask.

7) The database should be optimized for transactional use. In other words, all tables should be normalized to 3NF.

8) Next, you will produce some queries to produce useful management information. These will include summarized information regarding occupancy or revenue or whatever you think will impress the management. Note that providing a list of records in a table does not fulfil this need. Showing how revenue has changed over time or the top revenue producing customers, or the changing occupancy rate would all be examples of useful information for management. You must generate at least 5 different queries that each provide a different perspective of the business. Just changing the WHERE condition between queries doesn't qualify. As a guideline, 5 queries that use some combination of GROUP BY and functions and multiple tables is considered B level work. 8 or more queries with that level of complexity is considered A level work.

9) Finally, you will produce one or two web pages that will show the results of the queries. You do not have to make the queries dynamic (meaning that the queries do not need to change based upon user input). You can choose whether to simply show some numbers that are

retrieved from the database or to display the information in tables or charts. Similarly, you can decide whether to display the results of all the queries on one web page or ask the user which information they want and display the result on a second page or to have a different page for each piece of information. A website that would be considered B level work would be totally functional, but with minimal graphical enhancements and/or functionality. In order to be considered A level work, some form of enhancement must be done, whether it be introducing more functionality or more sophisticated graphics or some other feature that you are interested in and can implement.

## Grading Rubric

Scores will be allocated as follows:

- ERD - 25%
- Database Implementation – 25%
- Queries – 25%
- Web page(s) – 15%
- Analysis Report – 10%

For each of the above, the following rubric will be used:

B level work – Reflects course learning. Meets basic functionality needs – 80-92%

A level work – Demonstrates thoroughness, creativity and mastery of the course material – 92-100%

Please note that you are not expected to develop a public-facing website to market the hotel. The web component of this project is only intended to make sure that you can connect a website to the database. Therefore, you do not need to worry about things like images and branding. Of course, if you have the skills and enjoy this kind of work, then feel free to create!

All the grading rubrics from your homework assignments will be considered during the grading process.

Groups may be given extra points for delivering outstanding work that goes beyond the stated requirements.

## Project Milestones

There will be two project milestone deliverables. These are intended to make sure that progress is being made on the project during the semester and allow for interaction with the instructor regarding requirements, design and implementation.

Milestone deliverables will not be graded. It is expected that the project content will change during the implementation. Hopefully, with guidance from the instructor, this process will help to make the final project submission a better solution.

Project Milestone 1 due on Thursday, October 16<sup>th</sup>

Database ERD (PDF) should show all tables and relationships

The Draft Analysis Report should show an understanding of the whole business and indicate team assignments.

Project Milestone 2 due on Tuesday, November 11<sup>th</sup>

Proposed information for management.

Wireframe (mockup) of website.

Final Project due on Thursday, December 4<sup>h</sup>

The specified files should be uploaded to GitHub by the cutoff date/time.

Milestone deliverables will not be graded. However, not submitting the specified deliverables by the deadline will result in a 5 point penalty for the project.

Instructor feedback will be provided for all milestone deliverables. Hopefully, this will improve the end result and reduce any uncertainty about what is “good enough”.

Just to emphasize this point, for this project, you should think of me as a combination of a user and coach. In terms of being a user, I can help to refine requirements, resolve conflicts and help you prioritize. In terms of coaching, I can help you to see how to go about accomplishing technical aspects of the project that are new to you or that appear to be too challenging. There are no penalties for asking questions. On the contrary, asking questions will lead to a better product!