# 

# 

# 

# 

# 

# 

# **Final Group Project**

# Databases & Distributed Systems

Section A

Group 8

Hakob Janesian, Liana Darbinyan, Aram Adamyan

13.05.2022

**Hotel Reservation System**

In order to attain the project, we started by understanding the basic needs of real-world cases of hotel reservation systems. Thus, in the first phase, we came up with the possible entities and attributes (with the constraints). We understood, that there are mainly three stakeholders for this database - the potential customers who book a hotel room from a specific hotel chain in a particular city, the hotel accountant can do a financial analysis, and the manager of the hotel can identify the most common trends in the hotel (use of services, nationality, and age of their customers, can also identify the tendency in booking cancellations, and analyze the customer feedback about the experience).

Based on our information from the lectures and problem solving sessions, we created the Entity-Relationship Diagram (ERD), which was a practical experience. This helped us better understand the types of relationships, the idea of participation(total, partial), etc. The problematic part at this stage was the ERD’s conversion process. We created the actual tables, defined the primary keys by the rules of conversion, and gave the right references. Consequently, we populated the proper amount of data in the tables in order to have decent results when doing the queries.

A really small part of the populated data was created by Python functions, and the majority was created manually, because of the serious logical complications, and that no random population would satisfy the constraints.

Nextly, we wrote the queries trying to analyze and answer the specific questions based on the generated data. We designed our queries, such that the output would satisfy our stakeholders.

**Group member participation**

### Hakob Janesian

Writing the description of the Database in the first phase,

Choosing the proper attributes for the entities in the first phase,

Designing the ERD in the second phase,

Giving ideas about queries in the third phase,

Conversion of strong, weak, and one-to-many entities,

Data population,

Writing queries.

### Liana Darbinyan

Writing the description of the Database in the first phase,

Designing the ERD in the second phase,

Giving ideas about queries in the third phase,

Conversion of strong entities, many-to-many relationships,

Data population,

Writing queries.

### Aram Adamyan

Writing the description of the Database in the first phase,

Coosing proper attributes for the entities in the first phase,

Designing the ERD in the second phase,

Giving ideas about queries in the third phase,

Table Creation