

Introduction to Database Systems

Spring 2019

Project

Groups

- 3 people
- Post 1 message/group @ moodle forum
 - discussion thread “Project groups”.
- Each group will get access details to an account on Oracle DBMS
 - Details will be shared via the Moodle Forum
 - **Using Oracle is optional**

Dataset: Airbnb listings

- For Berlin, Madrid and Barcelona
 - Listings
 - Calendar
 - Reviews
- Data stored in CSV files

Structure of files does not infer an E-R schema!

Project Milestones

- Milestone 1:
 - Given dataset
 - Understand the data and design E-R schema
 - Translate E-R schema to Relational, Write DDL statements
- Milestone 2:
 - Load data into a DBMS
 - Write a series of queries
 - Start designing an interface
- Milestone 3:
 - More queries, query optimization
 - Finish implementing interface

Milestone 1: ER modeling

- Upload a project pdf which describes:
 - ER model
 - Relational schema and constraints
 - SQL DDL statements which create the database in Oracle RDBMS

Milestone 2: Data import, basic SQL

- Extend the project pdf with info about:
 - Data import
 - Simple queries
 - Simple interface for data import and querying

Milestone 3: Interesting SQL queries

- Extend the project pdf with:
 - Complex queries and their performance
 - Physical design choices
 - Interface for complex queries

Presentations

- At the end of semester
- Before class: send us project reports
- In class (only the members of your group and a TA will be present):
 - Prepare 5 minute overview of your project
 - Demo your application for us
 - Answer a few questions about the application and the report
 - All team members must participate

About the course – Tentative Schedule

18 th February	Introduction to course
25 th February	ER Models
4 th March	Relational Model
11 th March	Rel. Algebra / Hierarchies
18 th March	Storage, Files, Indexing – pt1
25 th March	Storage, Files, Indexing – pt2
1 st April	MIDTERM
8 th April	Sorting
15 th April	Query Operators – pt1
22 nd April	Easter Holiday – No Lecture
29 th April	Query Operators – pt2
6 th May	Query Optimization
13 th May	Transaction Management & Concurrency Control
20 th May	Concurrency Control & Eventual Consistency
27 th May	Parallel & Distributed Databases
3rd June 2019 – 7th June 2019: Project Presentations	

**Project
Milestone 1** ➔ **25/03/
2019**

**Project
Milestone 2** ➔ **29/04/
2019**

**Project
Milestone 3** ➔ **31/05/
2019**

Questions

- We have a FAQ part in the project description
- Your frequent questions will be added to moodle