UDACITY

PROJECT SPECIFICATION

Designing an HR database

Data Architecture Foundations

CRITERIA	MEETS SPECIFICATIONS
Gather business requirements for a new database request and create a non-technical proposal document.	• Complete “Data Architect Business Requirement ” section in step 1 in the starter template • Identify the business purpose for creating the database • Outline data to be stored • List estimate size of the database and growth rate • Identify who will own/manage data • Identify who will be able to access the data • Identify sensitive/restricted data • Outline data retention and backup requirements
Translate a non-technical proposal into a technical proposal document.	• Complete “Data Architect Technical Requirement ” section in step 1 in the starter template • Provide **at least 2** justifications for creating a database • Define data elements to be stored • List database objects to be created (Students may wish to return to database objects section after completion of logical ERD) • Define proposed data ingestion method • Define who has data ownership • Define user access recommendations • List **at least 2 examples** of considerations taken to ensure data scalability and flexibility and provide an explanation • Defined proposed storage method and provided an explanation • Identify data retention requirements • Propose a backup schedule and provide an explanation

Relational Database Design

CRITERIA	MEETS SPECIFICATIONS
Develop a conceptual ERD using Lucidchart.	• Complete the “ERD conceptual” section in step 2 in the starter template • Create at least 3 objects and show their relationships through connection lines • This should be a first step towards 3NF, so chose attributes that will likely become future tables • Follow the visual requirements listed in the instructions • Use Lucidchart's built-in template for DBMS ED Diagram UML • No attributes should be named and Crows foot notation is not required • Consider an entity for any secure / restricted data
Develop a logical ERD using Lucidchart.	• Complete the “ERD logical” section in step 2 in the starter template • Normalize the data to the 3NF • Create an entity for each table • List Attributes • Add relationship lines connecting entities • Follow the visual requirements listed in the instructions • Use Lucidchart's built-in template for DBMS ED Diagram UML • Entity and attribute names can still be plain English
Develop a physical ERD using Lucidchart	• Complete the “ERD physical” section in step 2 in the starter template • Tables and attributes should be given database friendly names now (think underscore or camel case) • Attribute data types need to be defined • Primary keys should be bold • Relationship lines need to line up with PK / FK pairings • Cardinality is required on this ERD • Follow the visual requirements listed in the instructions

Create A Physical Database

CRITERIA	MEETS SPECIFICATIONS
Develop DDL code to create a database in a SQL environment.	• Complete the "DDL" section in step 3 in the starter template • Create scripts (`.sql` file) to build tables with attributes as defined in the physical ERD • Primary and foreign keys must be included in the code
Populate the database and demonstrate a working database by completing CRUD commands.	• Complete the "CRUD" section in step 3 in the starter template • Screen shots should be taken of all SQL commands showing **code and results** • Following commands like update/delete/insert, run a `select *` on the table affected to show results

Suggestions to Make Your Project Stand Out!

1. Create a view that returns all employee attributes; results should resemble the initial Excel file.
2. Create a stored procedure with parameters that return current and past jobs (include employee name, job title, department, manager name, start and end date for the position) when given an employee name.
3. Implement user security on the restricted salary attribute.