



Computer Science Department
CSC 3300 Database Management Systems
Project3 (11/05/2025; Fall 2025)
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What to submit as a solution to Project4?

Document in a pdf, doc or jpg format and sql script with the schema of the database.

Where to submit this file?

The dropbox in iLearn named Project3. The due date for this assignment is 11/19/2025 (Wednesday) at 11:59pm.

Rules

You may discuss on Teams what has to be done (clarification of the assignment's specification).

How this assignment will be graded?

Your submission has to meet the requirements to be given max number of points.

Read the following case study, which describes the data requirements of a DVD rental company. The company runs several branches throughout the United States. The data held on each branch is the branch address made up of street, city, state, and zip code, and the telephone number. Each branch is given a branch number, which is unique throughout the company. Each branch is allocated staff, which includes a Manager. The Manager is responsible for the day-to-day running of a given branch. A branch has to have a manager. The data held on a member of staff is his or her name, position, and salary. Each member of staff is given a staff number, which is unique throughout the company. Staff member can work for many branches. Hire and end dates should be recorded to signify the beginning and termination of a staff member's employment at the branch.

Each branch has a stock of DVDs. The data held on a DVD is the catalog number, title, category, daily rental, status, and the names of the main actors and the director. The catalog number uniquely identifies each DVD. However, in most cases, there are several copies of each DVD at a branch, and the individual copies are identified using the DVD number. The DVD number is unique throughout the company. A DVD is given a category such as Action, Adult, Children, Drama, Horror, or Sci-Fi. The status indicates whether a specific copy of a DVD is available for rent. Every DVD copy must belong to a branch, although some DVDs may exist in the company catalog without any physical copies currently available at branches.

Before borrowing a DVD from the company, a customer must first register as a member of a local branch. The data held on a member is the first and last name, address, and the date that the member registered at a branch. Each member is given a member number, which is unique throughout all branches of the company.

Once registered, a member is free to rent DVDs, up to a maximum of ten at any one time. The data held on each DVD rented is the rental number, the full name and number of the member, the DVD number, title, and daily rental, and the dates the DVD is rented out and returned. Each rental is uniquely identified by a rental number.

1. Represent in an ER diagram: **40 points**
 - (a) Entity sets — **8 points**
 - (b) Relationship sets — **8 points**
 - (c) Multiplicity constraints for each relationship set — **8 points**
 - (d) Attributes of entity sets and relationship sets, if any — **8 points**
 - (e) Primary key attributes for each strong entity set, discriminator attributes for each weak entity set, if there are any — **8 points**
2. Create the Relational Diagram on the basis of the ER diagram created in the earlier exercise — **30 points**
3. Create a MYSQL script that will create a database on the MYSQL server that captures all user requirements — **30 points**

State any assumptions necessary to support your design decisions.

Adapted from the DVD Rental case study in Connolly & Begg, Database Systems: A Practical Approach to Design, Implementation, and Management (6th ed.), Pearson Education, 2015.