Edan Uccetta, Jake Gridley, Lex Castaneda

12/5/2023

CSC 460

Program 4 Design Specifications

1. Conceptual Database Design

A screenshot of a computer

Description automatically generated

We chose to implement most constraints in the Java side rather than the SQL side, so implementation of the tables was relatively straightforwards. The first attempt at an ER diagram didn’t have Subscription, but we quickly ran into the necessity to link members to packages for querying and adding purposes, so it was added.

2. Logical Database Design

A screenshot of a computer screen

Description automatically generated

3. Normalization Analysis

All our tables adhere to Third Normal Form. No attribute besides the primary key functionally determines another attribute in any table in any case.

4. Query Description

Our custom query joins nearly every table in the database to tally up the total amount a member, chosen by the program user, has spent on each individual trainer (I.E. the total of all transactions paying for courses staffed by that trainer). This query could be used in aggregate to see which trainers tend to succeed most, or so a member could use the program to better understand where their own money is going (and check their total spending over a duration).