

Homework 08: Refactor CRUD GUI

CS 412

For this homework, you will be given Java code that (mostly) implements a GUI-based CRUD application. The program works with a SQLite database file (i.e., database.db) and provides basic CRUD functionality (Create, Read, Update, Delete) on a table named “students”. However, the provided code is buggy and is a disorganized mess. Your task is to fix and refactor the provided code to create a fully-functional GUI-based CRUD application.

REQUIREMENTS:

- must find and fix all bugs
 - focus on CRUD functionality
- must refactor the code
 - must be refactored into multiple well-organized classes
- must be able to perform all CRUD database operations:
 - Create new database records
 - Read all database records
 - Update database records (one at a time)
 - Delete database records (one or more at a time)
- must be robust and fault tolerant
 - must never crash
 - must not have any uncaught Exceptions

HINTS:

- Run the provided code first:
 - Can you Create a record containing empty values?
 - What happens when you Update two different records (one at a time)?
 - What happens when you view the Read tab after updating two records?
 - What happens when you Delete two or more records?
- Review and understand the provided code
 - What code runs when you click the “CREATE” button?
- Don’t just jump in and start refactoring
 - Make a plan.
 - What classes will you have?
 - What will those classes do?
- Model-View-Controller design pattern
 - Model: Student class
- NOTE: the provided code will create the SQLite file database.db if it doesn’t exist
- `.removeActionListener(..)`