Database System Implementation CSCI 421 Group Project

v1.0

1 Project Description

This is a semester long group project.

Project Details:

- Group project of 4 students. Groups will not change after assigned. Cross-section groups are not allowed. Groups will be determined the second week of class.
- The goals will be to implement a database management system.

The project will be broken into 4 phases, and a group evaluation. Each phase will build on the prior phase. As basic description of each phase is outlined here. More details in the remainder of the document.

- Group selection. Will be done in class during the second week of classes.
- Phase 1: Storage Manager. Due: 2/17/2023 11:59 pm.
- Phase 2: DDL parser. Due: 3/10/2023 11:59pm.
- Phase 3: DML parser. Due: 4/07/2023 11:59pm.
- Phase 4: Indexing. Due: 4/28/2023 11:59pm.
- Group Eval: Individual peer eval. Due: 1/01/2023 11:59pm.

Feedback will be provided for each phase. Changes to prior phases may be required before moving on to a new phase.

Look ahead to future phases when designing. This will help reduce the rework required when progressing to a future phase.

The entire project will be written in Java/C/Python and must conform to the requirements provided. No external third-party packages are allowed. The project must run on the CS machines.

Any phase that fails to compile/run on the CS machines will result in heavy penalties for that phase.

You must work in groups. You cannot work alone. Failure to work in your assigned groups will result in a zero for that phase.

2 Phases

Below outlines the minimum submission requirements for each part of the project. Submissions are due by 11:59:00 pm on the day they are due. Late submissions will be accepted, but there will be a penalty as outlined in the syllabus. No email submissions will be accepted.

2.1 Group Selection

In class during the first activity groups will be created. You can select your own team of 5. If you are not in a team at the start of the first activity, you will be placed in one. The instructor will then give you a number. This number will be the group you will sign up for in myCourses.

2.2 Phase 1

During this phase you will implement a basic storage manager and some basic SQL parsing. Details can be found in the myCourses content section for the project in a pdf named `phase1.pdf`.

Your solution must be zipped, named `phase1.zip`, and placed in the Phase1 assignment box in myCourses. No emailed submissions will be accepted. Only one group member is required to submit. Only the last submission is graded.

2.3 Phase 2

During this phase you will finish implementing the DDL parser. Details can be found in the myCourses content section for the project in a pdf named `phase2.pdf`.

Your solution must be zipped, named `phase2.zip`, and placed in the Phase2 assignment box in myCourses. No emailed submissions will be accepted. Only one group member is required to submit. Only the last submission is graded.

2.4 Phase 3

During this phase you will finish implement a DML parser. Details can be found in the myCourses content section for the project in a pdf named `phase3.pdf`.

Your solution must be zipped, named `phase3.zip`, and placed in the Phase3 assignment box in myCourses. No emailed submissions will be accepted. Only one group member is required to submit. Only the last submission is graded.

2.5 Phase 4

During this phase you will implement B+Trees. Details can be found in the myCourses content section for the project in a pdf named `phase4.pdf`.

Your solution must be zipped, named `phase4.zip`, and placed in the Phase4 assignment box in myCourses. No emailed submissions will be accepted. Only one group member is required to submit. Only the last submission is graded.

2.6 Individual Peer Evaluations

This is the only part of the project that is to be completed `individually`. For this task each group member will submit a PDF evaluating the group, including them self. This is each member's chance to complain about or give praise to fellow members. These will not be shared with the other group members.

The evaluation will include the following:

- Evaluation of each group member, include them self. This includes giving details on what the group member did well and any issues with the group member. Give details.

- Divide 21 points among the group members based of effort and contributions to the project. Higher the contributions the more points awarded, lower the contributions the less points awarded. You should defend each of your point awards. The points for each team member must an integer.

There is a provided template that must be used to complete the evaluations. Failure to provided enough details or required information will result in a lower peer evaluation grade.

These evaluations will affect the final grade on the project for each member. Be fair and honest.

Conflicting evaluations will be discussed with each group member individually to gain more details.

Each member will submit their individual group evaluations to myCourses. These will be confidential and individual. Each group member must submit their own evaluation.

No late or emailed submissions will be accepted or used in individual grade adjustments.

For major issues please do not wait until this step to alert the instructor.

3 Project Constraints

This section outlines details about any project constraints or limitations.

Constraints/Limitations:

- Your project must run and compile on the CS Linux machines.
- Submit only your source files in the required structure. Do not submit IDE directories or projects. You should only submit an `src` directory with the required structure.
- Your code must run with any provided tests cases/code. Failure to do so will result heavy penalties.

4 Grading

Your implementation will be grading according to the following:

- Phase 1: 25% of project grade
- Phase 2: 25% of project grade
- Phase 3: 25% of project grade
- Phase 4: 25% of project grade
- Submission of Group Evaluation: 5% of course final grade
- Effort: +/- up to 100%. This will be determined at the end of the entire project.

Effort is based on group evaluation, instructor observations, and other factors. A member that contributes very little to the project can have their overall project score reduced. A member that contributes above and beyond, or members that contribute more to overcome the lack of effort of another member, may have their score increased.

5 Submission

Follow the submission instructions for each section of the project. Emailed submissions will not be accepted.

For all phases (not evals) there will be a 72 hour late window as outlined in the syllabus. After this window no submissions will be accepted. During this late window no questions will be answered by the instructor; no exceptions.