University of British Columbia, Department of Computer Science

CPSC 304

Cover Page for Project Part 1

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Group Members:

Name	Student Number	CS Userid	Tutorial Section	Email Address
Damasia Maria Correch	28649151	o2e1b	T1C	damacorrech@gmail.com
Naitong Chen	21539151	q7l0b	T1G	chennaitongubc@hotmail.com
Chloe You	11654150	i0e1b	T1D	chloeyxy@outlook.com
Christina Cheung	37405157	d8f1b	T1D	ccheung256@gmail.com

By typing our names and student numbers in the above table, we certify that the work in the attached assignment was performed solely by those whose names and student IDs are included above.

In addition, we indicate that we are fully aware of the rules and consequences of plagiarism, as set forth by the Department of Computer Science and the University of British Columbia

Project Description

LabJAM – an application for lab management of a research institute

The domain that we're going to model is lab management for a research institute.

There will be a research institute that consists of multiple labs. The aspects of each lab that we will be modeling include projects, lab members and grant distribution. Each lab is identified by a unique name. Within each lab, there will be three types of lab members, all of which could be identified by their employee id: one principal investigator (PI) who is the lead researcher and distributes grants to different projects, one lab manager who does administration work (applies for grants for each project), and lab researchers who work on the projects. The system will keep a record of each lab member's information such as name and phone number. Each lab researcher can choose to work on up to a fixed number of projects, and each project can have up to a fixed number of lab researchers working on it. The system will also keep track of study participants, as well as bookings of study participants for their corresponding projects. Participants, who are identified by their participant ID, is associated with a booking, which contains the time, date and project they were booked for. The participants' names would also be stored, although only accessible to the database administrator. Additionally, labs can have collaborators (individuals not within the research institute) who co-work on certain projects. The users of this database will include a system admin, lab managers, collaborators, researchers and principal investigators.

Database Specifications

The database provides the information about time slots to book participants, funding for each project, and who is involved in each project across all labs in the institute. This is useful especially for the PI and Lab Manager, as they are the ones in charge of booking participants (Lab Manager), distributing funding between projects (PI), supervising lab researchers working on projects (PI), and assigning collaborators to projects (PI). The database would make these activities easier by keeping track of what participants are available to be booked for studies and what time slots are available to book them into, as well as how much funding each project has (so the PI knows which projects are lacking funding) and who is working on each project (so the PI knows who could use a collaborator on their project).

The users will be: LabManager, PI, Collaborators, LabResearchers, and the system admin. LabResearchers, LabManager, and PI can all pull up the information mentioned above for their own lab. LabManager and PI can also add and remove lab members and collaborators. The PI can assign collaborators to projects and distribute grants. The LabManager can apply for grants and book participants. LabResearchers can work on projects without being assigned by the PI. Collaborators can only work on projects that the PI assigns them to, and they can only access the information (grants, participants, lab researchers working on it) for the project they are working on (not for the whole lab). System admin has access to everything in the database.

Functionality includes but is not limited to
- Query participants in each project
- Query available participants + distribute them to project - only LabManager
- Query lab researchers in each project
- Query collaborators in each project
- Query which grants each project has
- Add LabMember
- Remove LabMember
- Apply for grants - only LabManager
- Distribute grants - only PI
- Add/assign collaborators to projects - only PI
- Lab researcher chooses what projects to be on, doesn't need to be assigned by PI
- Get total # of projects
- Get total $ grant for project

Application Platforms

This project will be done using the CPSC department's Oracle database system. Java is the language that we will use to write our implementation, including the GUI. The JDBC MySQL Driver will be used to connect our relational database system to our Java application. We do not anticipate using any special software or hardware.