

'396' Undergraduate Research Project Application Form

Office for Undergraduate Research in Science
www.mcgill.ca/science/ours/
victor.chisholm@mcgill.ca
Dawson Hall, Room 211
tel 514-398-5964, fax 514-398-8102
Form version 200603

Instructions for students

- *All fields are required, unless indicated otherwise.*
- Download and print this form. Complete Section 3 and sign.
- See “How students can apply” instructions in Section 2.10.
- Your supervisor or department will tell you if you are selected for this project. If so, you will receive permission to register for a ‘396’ course on MINERVA.

1 Supervisor Information

Name: Prof. Bettina Kemme
Email: kemme@cs.mcgill.ca
Phone: 514-398-8930
Website: www.cs.mcgill.ca/~kemme
Department or Unit: Computer Science
Course number: COMP396

2 Project Information

2.1 Term:

Winter 2007

2.2 Project start & end dates:

January 3 - April 13, 2007

2.3 Project title:

Fault-tolerant JDBC driver

2.4 Project description:

The goal of this project is to extend the existing JDBC driver of a middleware-based replication tool to support fault-tolerance. The existing replication tool allows several users to use several database replicas transparently. A client will be connected to one replica through the middleware. If the client performs updates, the middleware transparently forwards the updates to other replicas. However, currently, when the middleware crashes, the client simply receives a failure exception. In this project, the task is to make the JDBC driver, the component that connects client and middleware, fault-tolerant. For that, the driver has to catch the failure exception and connect to another replica. Also, it has to make sure that execution remains consistent, even if the failure occurred in the middle of a transaction.

2.5 Prerequisites:

1 term completed at McGill + CGPA \geq 3.0; or permission of instructor.

2.6 Grading scheme:

Design, implementation and demonstration: 40%; Presentation: 10%, Final Report: 50%.

2.7 Other:

2.8 Status:

This project is:

- Open to applicants
- Already taken; no more positions available this term
- Taken, but contact me for other possible projects this term

2.9 Ethics, safety, & training:

Which of the following, if any, is involved?

- Animal subjects
- Human subjects
- Biohazardous substances
- Radioactive materials
- Handling chemicals
- Using lasers

For undergraduate students, ethics and safety compliance is the supervisor's responsibility.

2.10 How students can apply:

This project is taken.

3 Student Information. (1) Print legibly and sign. (2) See ‘How students can apply’ in Section 2.10.

Name:

McGill ID:

Email (first.last@mail.mcgill.ca):

Phone:

Program (e.g., B.Sc. Maj. Chem. Minor
Biology):

Level: (circle one) U0 / U1 / U2 / U3

I have not applied for another 396 course this term.

Student signature:

Date:

4 Approvals. (1) Print names and sign. (2) Notify Office for Undergraduate Research in Science. (3) Give student code to register for course on MINERVA.

Supervisor: Bettina Kemme

Date: 7-Dec-2006

I certify that this project conforms to departmental requirements for 396 courses.

Unit Chair, Director, or designate

Date:
