Jeremy Neal
CMSC 461 - Databases
12/8/2014
Sleeman

Final Project Report

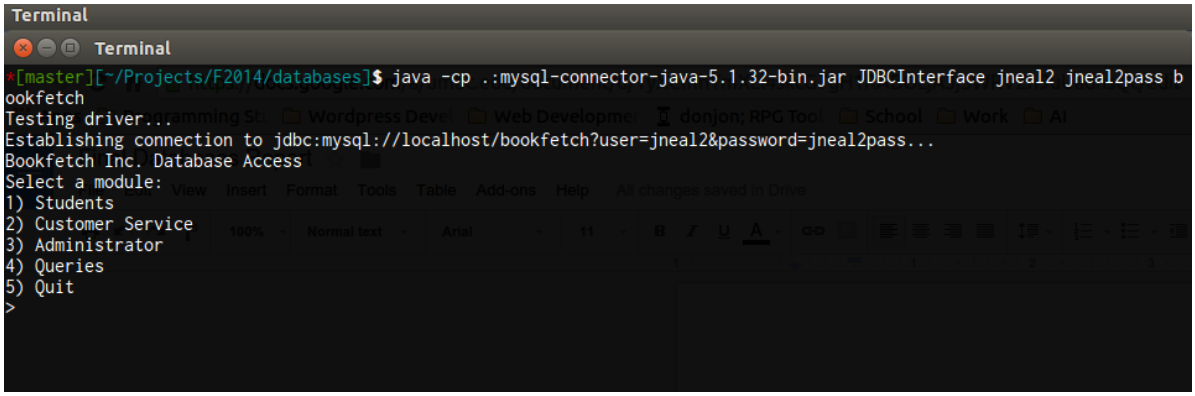
For the application portion of this project, I created a simple CLI application for interfacing with the database. MySQL is the underlying database, so the MYSQL-JDBC Driver is necessary. No additional libraries are included beyond the MySQL Driver. I considered using ncurses to provide a more robust interface while still staying on the command-line. However, no available bindings seemed to be well documented enough for the time table.

I did not change my previously created indices, though I did change some parts the database. Mostly, I changed fields that were being treated as numerics into varchars, primarily to maintain the proper number of zeroes. This is especially important in phone numbers, credit card numbers, SSNs and any other data that can have important leading zeroes. Some variable names were changed for ease of use, or to eliminate conflicts with keywords and any ambiguity.

The interface is a simple command line interface. If this were an actual application that would be distributed, additional work would have been put into packaging it into an executable, and providing more direct feedback from the command line.

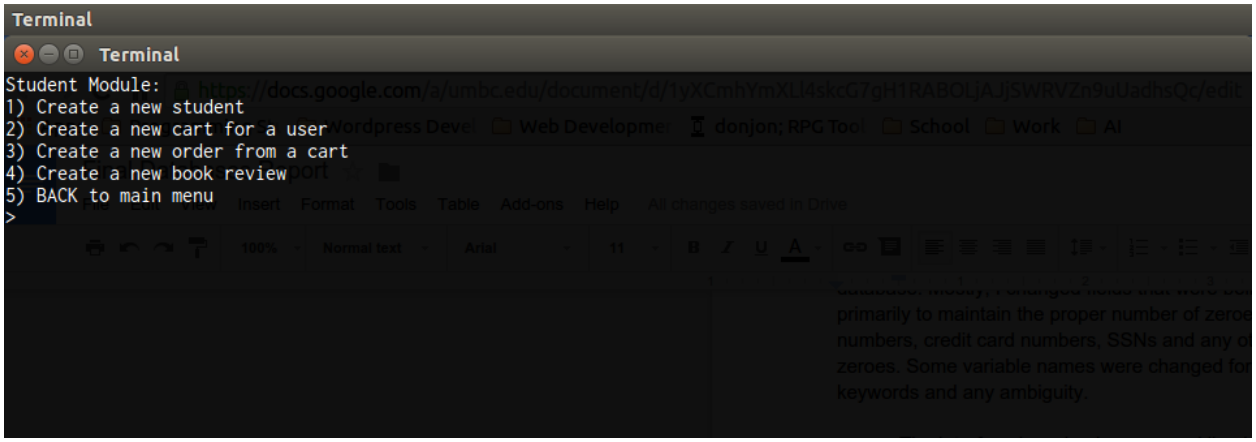
The application is called with: `java -cp .:mysql-jdbc-connector-5.1.32-bin.jar JDBCInterface username password database_name`. The class path may vary depending on where the .jar file is stored. Upon execution, the application first checks the command line arguments and, if they are sufficient, attempts to connect to the database.

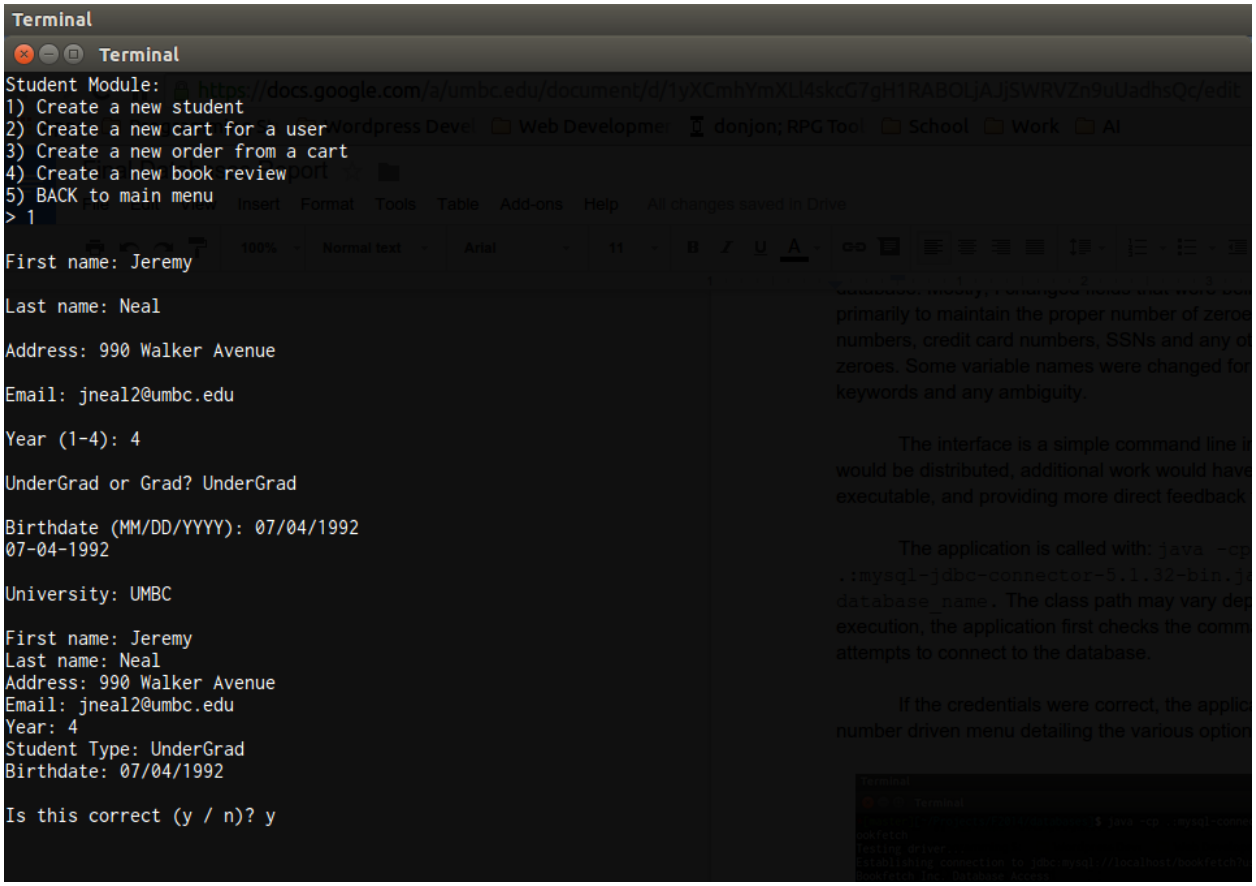
If the credentials were correct, the application will connect and present the user with a number driven menu detailing the various options they have.

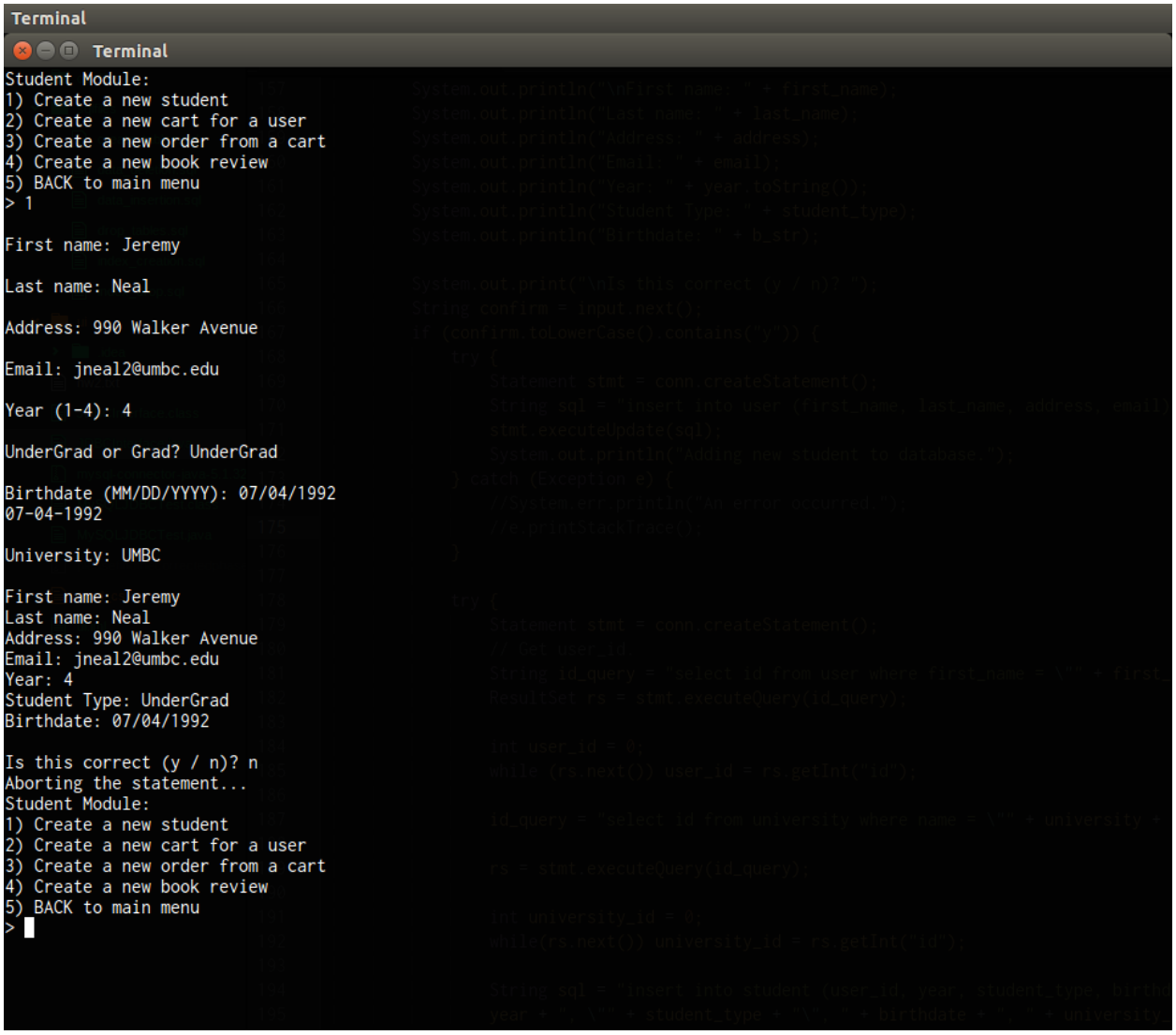


The first option contains the student module and requisite functionality. The second contains the customer service module, third is the administrator module, and so on. Within each module, there is another menu with the functions displayed.

Within the student module, the user (the person using the application, just to be clear), has the ability to create a new student add a new cart to a student, create an order from a cart, create a new book review, or go back to the main menu. With the exception of going back to the main menu, each option will ask for the required information to complete the given task. For example, to create a new student record, the user will be asked for a first name, last name, address, email, year, student type, birth date and university. This information will be used to query the database to see if the user already exists, and if not, create the user record to create the student record on top of. Other functions, like creating the cart, ask for a first name and last name to query for the user. The success or failure of certain functions is based off of the information given. For example, creating a new cart will fail if the student doesn't already exist in the system. It is considered beyond the scope of that particular function to generate a student record as well.




Terminal
Terminal
Student Module:
1) Create a new student
2) Create a new cart for a user
3) Create a new order from a cart
4) Create a new book review
5) BACK to main menu
> 1
First name: Jeremy
Last name: Neal
Address: 990 Walker Avenue
Email: jneal2@umbc.edu
Year (1-4): 4
UnderGrad or Grad? UnderGrad
Birthdate (MM/DD/YYYY): 07/04/1992
07-04-1992
University: UMBC
First name: Jeremy
Last name: Neal
Address: 990 Walker Avenue
Email: jneal2@umbc.edu
Year: 4
Student Type: UnderGrad
Birthdate: 07/04/1992
Is this correct (y / n)? y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Year: 4
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Birthdate: 07/04/1992
Is this correct (y / n)? n
Aborting the statement...
Student Module:
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