INFSCI 1017
Implementation of Information Systems
Spring 2016

Time: Thursdays 6:00 – 8:30

Location: Information Science Building, Room 405

Instructor: Dmitriy Babichenko

Office Hours:

- Tuesday, 3-4PM
- Thursdays, 3-4PM
- By appointment

Contact Information: dmb72@pitt.edu

Textbook:

What's a textbook?

Overview:

This is a second JAVA programming course that develops professional software development skills. This is an active learning course where students complete a series of three projects that will result in a robust, three-layer desktop application (Model-View-Controller architecture), a web application and an Android mobile application. Key topics include GUI classes, event handling, exception handling, common algorithms, file I/O, JAVA database programming (JDBC), andAndroid mobile development. Offered Spring term.

Prerequisite: C or better in INFSCI 0017 or CS 0401 or INFSCI 0015 (at Pitt Greensburg).

Co-requisite: INFSCI 1022

Objectives:

Upon successful completion of this course, the student will be able to:

1. Develop solid understanding of 3-layer (Model-View-Controller) software architecture
2. Design and implement database-driven desktop applications using Java
3. Design and implement mobile applications for Android platform using Java and Android SDK

Course Schedule (tentative, subject to change):

Week	Date	Topic(s)
1	1/7	● Introduction ● Course overview ● MySQL Workbench overview ● Introduction to Git ● OOP concepts review ● MVC (Model-View-Controller) architecture
2	1/14	● Introduction to MySQL ● Entity relationships ● Introduction to JDBC ● Using Java to interact with MySQL
3	1/21	● Java 2D ● Graphics with Java ● Making things move

4	1/28	● WindowBuilder overview
		● GUI design for desktop applications
		● Event handling in Java
		● Error handling in Java
		  o Try/catch
		  o Exceptions
		  o Error handling
		  o Error logging
		● Debugging

5	2/4	● Interfaces ● Recursion ● Working with multiple databases

6	2/11	● Data structures
		  o Hashtable
		  o Map interface
		  o Vector
		  o Stack

7	2/18	● Data structures
		  o Graphs
		  o Trees

8	2/25	● Common algorithms

		○ Sorting ▪ Bubble sort ▪ Bucket sort ▪ Insertion sort ▪ Selection sort ▪ Merge sort ○ Eight queens ○ Tower of Hanoi
9	3/3	● Introduction to web application development with Java ● Java Server Pages (JSP) vs. Java Servlets ● Request / response
10	**3/10**	Spring break
11	3/17	● Introduction to HTML 5 ● Introduction to DOM ● JavaScript crash course ● Manipulating DOM elements ● Introduction to JSON
12	3/24	● Introduction to web services ● RESTful web services ● Working with external data ○ XML ○ JSON ○ RSS feeds
13	3/31	● Introduction to AJAX ● Introduction to jQuery ● Consuming Restful Web Services ○ Using server-side JSON parsing ● Using jQuery AJAX
14	4/7	● Menus ● Action bars ● Navigation ● Multiple Screens
15	4/14	● Data binding ● Working with raw JSON vs. using frameworks ● Introduction to Backbone.js or Angular.js
16	4/21	● Final project due ● Final team presentation

Assignments:

- All projects and assignments will be individual. However, you are allowed to collaborate with other students (see **Collaboration vs. Cheating** below).
- All assignments must be submitted via CourseWeb.
- All projects must be submitted via GitHub (https://github.com/). You will have to create a GitHub account, create a Git repository and submit a link to your repository via CourseWeb..
- The due date for all assignments and projects is the end of the day (11:59pm) BEFORE the lecture.

Late Submissions:

Projects/assignments submitted after due date will be accepted, but your overall grade for that project/assignment will be reduced by 10% of the grade for every business day after the submission deadline. For example, if you will submit your work one week late, you will lose 50% of the grade.

Collaboration vs. Cheating

Collaboration on homework is permitted to an extent. Specifically, students are allowed to discuss the possible solutions to a problem and help each other with logic errors. However, handing your work to someone so that they may see a copy of your solution, or dictating code to a person on line-by-line basis is not within the spirit of the collaboration policy or the honor code of the university.

Laptop Policy

In order to succeed in this course, you must bring a laptop with you to every class. Most lectures will contain a lab component where you will have to complete (or at least begin) a programming assignment while in class. Furthermore, having a laptop will enable you to better follow code examples and assignments instructions.

Grading Policy:

- Assignments (Mini-projects): 25%
- Projects: 45%
- Final project (including presentation): 30%

Project Grading:

Your projects/assignments will be graded on the following criteria:

1. The project compiles and executes without errors
2. The project complies with provided requirements
3. The code follows provided coding standards, formatting, and naming conventions
4. The code is well-documented using JavaDoc-style comments

5. The program has proper error handling and error logging.

If your submitted project does not compile and run, I will not grade it. You will have to fix all issues and resubmit your program. For each submission where your project does not work, you will lose 10 points.

Grading Scale:

- 93 <= A < 100
- 90 <= A- < 93
- 88 <= B+ < 90
- 82 <= B < 88
- 80 <= B- < 82
- 78 <= C+ < 80
- 72 <= C < 78
- 70 <= C- < 72
- 60 <= D < 70
- F < 60

Academic Integrity:

Cheating/plagiarism will not be tolerated. All work must be your own, unless collaboration is specifically and explicitly permitted as in the course group project. Any unauthorized collaboration or copying will at minimum result in no credit for the affected assignment and may be subject to further action under the University Guidelines for Academic Integrity (http://www.provost.pitt.edu/info/ai1.html). You may incorporate excerpts from publications by other authors, but they must be clearly marked as quotations and properly attributed. You may discuss your ideas with others, but all substantive writing and ideas must be your own, or else be explicitly attributed to another, using a citation sufficiently detailed for someone else to easily locate your source.

Disability:

If you have a disability for which you are or may be requesting an accommodation, you are encouraged to contact the Instructor and Disability Resources and Services, 216 William Pitt Union, (412) 648-7890 / (412) 383-7355 (TTY), as early as possible in the term. Disability Resources and Services reviews documentation related to a student's disability, provides verification of the disability, and recommends reasonable accommodations for specific courses.