UNIVERSITY OF COLORADO
Microcomputer (Java) Applications in Economics ECON4838
Summer 2010

Jay Kaplan
Office: Economics Room 4C
Office Telephone: 492-2651

Office Hours: By appointment.

e-mail: kaplan@Colorado.edu

Web Link for Course Materials

Class Introduction

This class assumes that students have no prior computer programming experience. By the end of the class, the student should have a good concept of programming basics using the Java language and the ability to code complex programs in Java. This class will not make the student an expert programmer in Java, but students will gain enough knowledge to build on if they desire.

Fundamentally, this is a programming class and to learn programming, you should expect to spend the majority of time writing computer programs for a PC. Lectures will be minimal and used to cover the basics that can then be used to develop functional programs. Economic theory will be integrated into the class as students will develop Java programs that relate to topics presented in
other Economics courses.

Course Materials

The course textbook is:

- Java How to Program, 7/E by **Deitel & Associates,** Publisher: Prentice Hall.

Useful Links

Eclipse - Java programming environment. Choose **Downloads** and then **Eclipse Classic**.

Grading

There are no exams.

The student's grade will be based on the effort put into the class throughout the semester, the ability to learn basic programming (in Java) concepts and programming assignments, including a final project.

The final project requires each student to program a detailed economic model in Java. The model can be based on theory learned in Macro and Micro theory courses, International Trade, Money and Banking, or any other class in economics that the student is familiar with.

You may work individually or in pairs on this project. The first step is to identify the economic or financial market theory that

you want to cover. It is best to select a theory that you can represent with a fairly simple mathematical model. Examples include a stock valuation model, a game theory model of the interaction of two parties, the HO model from international trade, the IS/LM model, an options pricing model and many others of course.

Give me a brief description of your project for approval. I am expecting something fairly complex but also practical. I want you to demonstrate that you can work with the basic elements of Java programming that we covered in the class. Feel free to add bells and whistles as you want once you have the program completed.

Program the model.

The due date is the last day of classes. I expect an e-mail containing your code and a short description of your project.

Grade Determination:

C - a student must complete all required class assignments (units 1 through 9). In addition, the class project will use basic programming concepts . The project will cover a simple economic model and this can be a variation of a model covered in the nine class units.

B - a student must complete all required class assignments based on the schedule shown in the course outline. In addition, the class project will use more advanced programming concepts. The project will cover a model consistent with an intermediate macro or micro class or an advanced theory class.

A - a student must complete all required class assignments based on the schedule shown in the course outline. In addition, the class project will use advanced programming concepts including an interactive model that requests and responds to user input, uses graphs to help present the model results and is available on the Web. The project will cover a complex model consistent with an intermediate macro or micro class or an advanced theory class.

Class Outline

Java basics. Each day we will cover a basic concept of Java programming. Class materials will be complemented with short programming applications.

Applications. This will emphasize the development of more complex programs that relate specifically to Economic materials. Some class time will be used to discuss Java and Economic concepts. Students will work on relatively small projects dealing with statistical, financial and other applications.

Student Project. The emphasis will be on a single project that each student will work on. Students are required to select their own projects (and it should relate to Economic theory or applications) and program it through to completion. Some class time may be used to discuss Java and Economic concepts. Students should expect to spend the majority of their class time programming and helping each other work through problems.