Getting Started with Java and the Mac
CS401 Lab1

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Introduction

Tasks

1. Logging in
2. Begin to use Mac OSX
3. Try some basic commands
4. Use “pico” to edit files
5. Compile and run a Java Program
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Office Hours
13:30-16:30 on every Friday
This laboratory exercise will introduce you to the CS401 programming environment in the laboratory in 6110 Sennott Square.

- Learn to use Max OSX.
- Learn to the Java 2 Software Development Kit (SDK).
- Learn to access AFS.
Outline

1 Introduction

2 Tasks
   - Logging in
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     - Compile and run a Java Program
Log on to AFS

![AFS Login Dialog](image)

**Figure:** AFS Login Dialog
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Start a terminal Window

Figure: Terminal Window
This laboratory exercise will introduce you to the CS401 programming environment in the laboratory in 6110 Sennott Square. You will use the Mac Mini computers (with Mac OS X) and the Java 2 Software Development Kit (SDK).

Mac OS X (which is a UNIX system) and SDK are powerful systems that will take some effort to learn. Count on spending several hours becoming comfortable in this new environment. I hope that you can do this with a minimum of frustration, but you should remember that even the best programmers experience some difficulty when they move to a new programming environment.

Although this exercise might seem simple and uninteresting, you should take this opportunity to master the tools you will need to succeed in this course. Be sure to complete all the examples in this exercise. You should also experiment with modifications to the examples, and create new ones of your own.

Logging In

Log in to the Macs using your Pitt account (id and password). After a few moments you should see the Mac desktop. A lot of icons should show on the screen. Experiment with some of these if you'd like. Note that the windows that appear and the behavior of the mouse are not the same as MS Windows. Experiment with these as well so that you become familiar with the desktop and the environment.

Looking at your desktop, you should see an icon in the middle of the bottom of your screen that says OpenAFS. Click on this icon and then click on the Get Tokens button. In the Username and Password fields, enter your Pitt id and password. This will enable you to access your Pitt AFS files from the Mac Mini computers. Make sure you do this each time you log into the Macs.

Start a terminal window (which is very much like a DOS window) by clicking on the icon of a monitor on the bottom of your screen. A window with a prompt should appear.

Find and open the Safari Web Browser by clicking on the appropriate icon. Go to the CS 0401 Web page and find this lab. Follow the Mac OS X Tutorial link at the top of the page. Look over some of the basic Unix commands and get ready to try them in your terminal window.

Basic Commands

While it is possible to issue commands through icons and mouse clicks, it is sometimes more convenient to type commands into a terminal window. If you are

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**Figure: UI of Safari**

Use Safari to browse to CS401’s webpage, and see the directions of this lab on [http://www.cs.pitt.edu/~ramirez/cs401/labs/lab1.html](http://www.cs.pitt.edu/~ramirez/cs401/labs/lab1.html).
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Try some commands

- Use “pwd” to display the path to your current directory.
- Use “man” to browse manuals.
- Use “cd” to change your current directory. Type

  cd /afs/pitt.edu/home/<X>/<Y>/<yourid>

- Use “mkdir” to make new directories. use this make create “private/cs401” in your home directories.
- Other commands: date, cp, mv, rm . . .
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Tasks

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Compile and run a Java Program

pico’s screenshot

```
int intAve;
doubleAve = ((double)total)/number; // floating point division
intAve = total/number; // integer division
System.out.println("The double average is "+ doubleAve);
System.out.println("The integer average is "+ intAve);
int value1 = 3 + 4 * 5; // default precedence
    int value2 = (3 + 4) * 5; // change precedence with p$
System.out.println("Value1 is "+ value1);
System.out.println("Value2 is "+ value2);
```

Figure: pico
Use pico to input a Java program

The Java program

```java
// CS 0401 Lab1
// Practice Java program with a dual purpose:
// 1) To familiarize you with the pico editor
// 2) To familiarize you with Java syntax
public class Lab1 {
    public static void main(String[] args) {
        int total = 87, number = 10;
        double doubleAve;
        int intAve;
        doubleAve = ((double) total) / number; // floating point division
        intAve = total / number; // integer division
        System.out.println("The double average is "+ doubleAve);
        System.out.println("The integer average is "+ intAve);
        int value1 = 3 + 4 * 5; // default precedence
        int value2 = (3 + 4) * 5; // change precedence with parens
        System.out.println("Value1 is "+ value1);
        System.out.println("Value2 is "+ value2);
    }
}
```

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Compile and run a Java Program
Use the commands “java” and “javac”

Using two steps to run a program

```bash
javac ex1.java
java ex1
```

Show the version of Java

```bash
java -version
```