CISC 3115 TY2
Programming Environment

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Outline

- Get around in Operating Systems
  - Unix-like: Unix, Linux, OS X
  - Windows
- Terminal and command line
- JRE and JDK
- Authoring Java programs
- Compiling and running Java programs
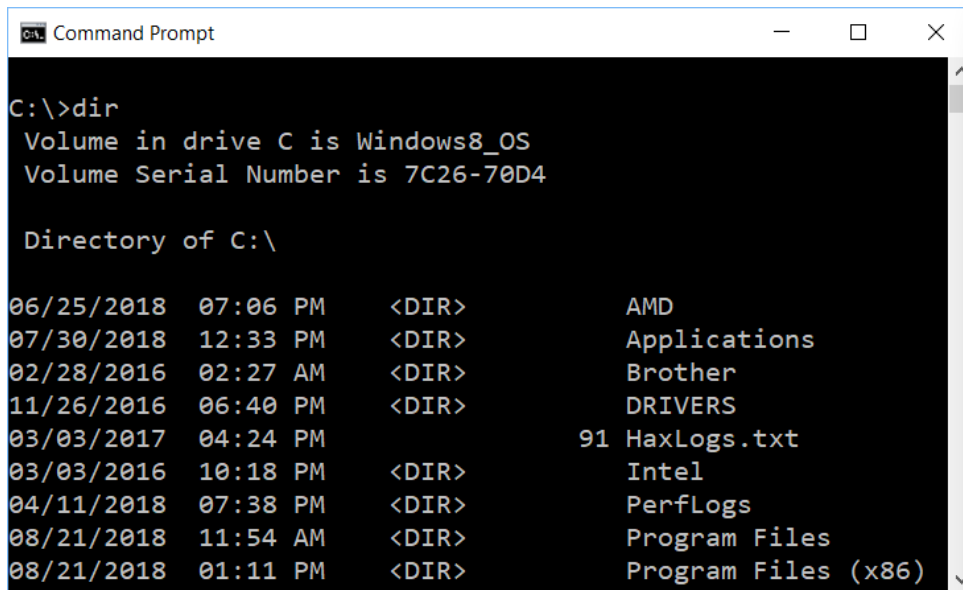
Question?

- Do you have a computer that you can use for the class?

- It is necessary to have a computer for this class. What if you don't?

Operating Systems

- Do you know the answers to the questions:

  - Where are my files?

  - What is a folder or a directory?

  - How do I install an computer application?

  - How do I open a terminal window?

  - How do I copy/delete/rename a file, or a folder/directory. How about several files or folders/directories?

- To learn programming, it is necessary to be proficient in using your computer. Minimally, you need to know the answers to the questions like these.

  - If not yet, no sweat, we will get there this semester.
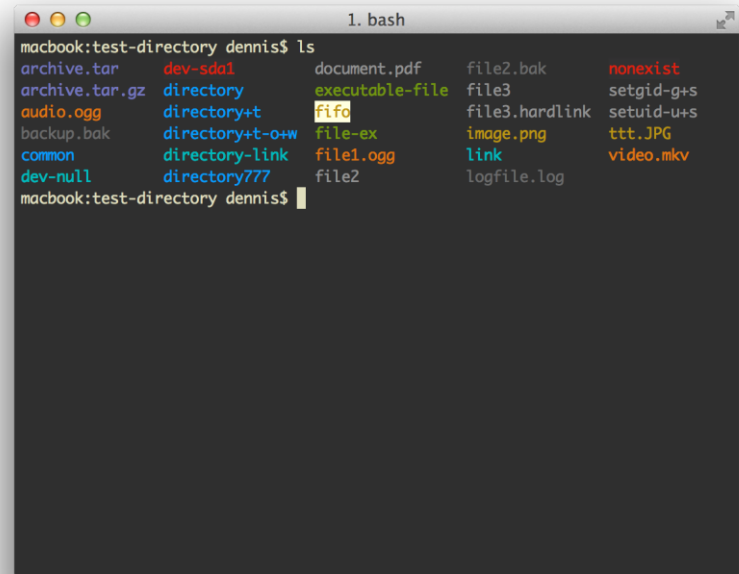
Terminal and Command Line

- Use a Command Line

- Why?

Common Tasks on Command Line

Windows

- Display working directory: cd

- Display content of a directory: dir

- Change directory: cd directory_to_go

- Make directory: mkdir dir_to_make

- Move files: move this_file   to_dir

- Delete file: del file_to_delete

- Delete directory: rmdir dir_to_delete

Unix-like

- Display working directory: pwd

- Display content of a directory: ls

- Change directory: cd directory_to_go

- Make directory: mkdir dir_to_make

- Move files: move this_file   to_dir

- Delete file: rm file_to_delete

- Delete directory: rmdir dir_to_delete

JRE and JDK

- JRE: Java Runtime Environment

  - Required to run a Java program

- JDK: Java Development Kit

  - Required to author a Java program

    - Compile and run Java programs

- Have you had JDK installed/set up in your system?

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Oracle JDK vs Open JDK

- Java
  - A specification. There are more than one implementations and packagings.
  - https://docs.oracle.com/javase/specs/index.html
- Oracle JDK
  - https://www.oracle.com/java/technologies/javase-downloads.html
- Open JDK
  - https://openjdk.java.net/

Verify JRE is Present

- On Command Line

  - java -version

Verify JDK is Present

- On Command Line

  - javac -version


```
Command Prompt                              —    □    ×
C:\>javac -version
javac 1.8.0_251

C:\>_
```

```
Command Prompt                              —    □    ×
C:\>javac -version
'javac' is not recognized as an internal or external comman
d,
operable program or batch file.

C:\>_
```

Verify Versions of JVM and Java Compiler

- On command line

Trouble with JDK?

- "I have installed JDK, but still I got this!"

- You need to set up the search path for JDK's executables (such as, javac)
  - System specific, but we will do it via the user profile of "Git Bash"

Journal Exercise

- Let's complete the following tasks

  - Open a terminal

  - Show working directory

  - Display content in the working directory

  - Switch to a different directory

  - Create a directory

  - Delete the directory

  - Verify if JRE is present

  - Verify if JDK is present (if inaccessible on command line, it is OK for this exercise; we shall address this in a little while)

  - Write a short manual about the steps in the journal in directory C0826

Required Class Journal

- You must maintain a working journal, and submit it to the instructor later. Below is how you do it.

1. Create a folder (i.e., directory) called "journal" somewhere on your computer

2. In the "journal" directory, create a subfolder (i.e., subdirectory) named after the class day, e.g., for today, create the "C0827" folder.

3. Go to the directory ("cd C0827")

4. Create a batch file (on Windows systems)/shell script (on UNIX systems)

   - Windows

     echo java -version > checkjava.cmd

     echo javac -version > checkjavac.cmd

   - UNIX

     echo "java -version" > checkjava.sh

     echo "javac -version" > checkjavac.sh

Questions?

- Do you have any questions?

- Is there any tasks you wish to do, but not introduced in the class?