This handout assumes that you are new to the Macintosh and CodeWarrior. It contains enough information for you to get started on the Mac and to do CS 113 programming assignments. Most of the instructions apply to all Macs, but there is some specific information about the CIT labs where you will be working. You will probably find it easiest to follow this handout if you try things out on a Macintosh while you are reading.

1 Macintosh Basics

The Macintosh is actually very easy to use, although it may seem like a lot to learn all at once. Almost everything is done in two steps: first *select* something, usually with the mouse (e.g. a file, a folder, a window, or an application program), then do something to it with a *command* (e.g. print it, move it, run it, or delete it).

1.1 Getting Started

To turn on most Macintosh computers, press the ◀ key on the upper right corner of the keyboard. When you turn it on, the Mac starts up using the system files on its hard disk.

1.2 The Mouse and Pointer

The mouse controls the pointer on the screen. The pointer is usually an arrow, but it also can be an I-beam (when it is placed over text that can be edited) or a wristwatch (when the machine is busy doing something). The mouse is used all the time. You should practice until you are comfortable with it.

To move the pointer around, simply roll the mouse on a flat surface, keeping the mouse cable directed away from you. If you run out of room on the surface, pick up the mouse and place it where you have more room; the pointer only moves when the mouse is rolled on the surface. Hint: the mouse often moves more smoothly if it's rolled on a pad of paper or a notebook rather than on a table top.

To *select* something with the mouse, move the pointer until it is on top of the thing you wish to select then *click* on the mouse button once.

1.3 The Desktop

Three types of items appear on the screen: *menus* (the words along the upper edge), *windows* (the large boxes on the screen), and *icons* (the small pictures initially along the right side of the screen and inside windows).

The screen is set up as a "desktop", with the windows acting as sheets of paper and file folders on a desk. As with a desktop, you can move things, keep many papers around, and view whatever is on top.

At the top of each window is a *title bar* showing the window's name. One of the windows on the desktop is the *active* window, indicated by several horizontal lines through its title bar. Menu commands and input from the keyboard affect the active window. To change the active window, select the window you wish to make active using the mouse (click on it).

1.4 Windows and Icons

To *move* icons on the screen, position the pointer over the icon, press and hold the mouse button, move the pointer to the new location, and release the button. (You see a dotted outline of the icon move as you do this.) This is called *dragging* the icon.

Windows can be moved the same way. Position the pointer on the title bar at the top of the window and drag it (move the mouse with the button down) to the new location.

To change the size of a window (how much is visible at a given time), drag the *size box* (the little box in the lower right corner of the window) until the window is the desired size and shape.

*Thanks very much to Hal Perkins and David Pierce who originally created this document for CS 100.

When a window is not large enough to show the entire folder or document, you can usually *scroll* the window to view further up, down, left, or right. Position the pointer over the correct arrow on the *scroll bar* (the bar with arrow buttons along the bottom or right side of the window) and hold the button until the window has scrolled as far as you want. You can scroll up or down a window-full at a time by clicking in the scroll bar above or below the *scroll box*. You can also drag the scroll box to move directly to any part of the window.

To *close* a window when you are finished with it, click once on the *close box* (the small box in the upper left corner of the window).

1.5 The Keyboard

The keyboard is used to enter text: term papers, C programs, and everything else. To enter text, click the mouse at the point where you want to put it and type. Replace text by selecting it with the mouse (drag over it), then type the new text. To move a section, select it with the mouse, select CUT from the EDIT menu, click the mouse at the location where you want it, and select PASTE from the EDIT menu.

In addition to the regular keys, there are four modifier keys: Shift, Command, Option, and Control. The Shift key is used to enter upper-case letters and punctuation as on a typewriter. The Option key can be used to enter special symbols that don't appear on the standard keyboard. For example, holding down Option and pressing m produces μ; Option-f produces *f*. Some additional uses of the modifier keys will be explained below.

1.6 Menus

Commands are selected from *menus*. The available menus are listed in the *menu bar* that appears across the top of the screen.

To open a menu, move the pointer over the menu name and hold the button down. To choose a command from a menu, continue holding the button down and move the pointer to the desired command. When the command you want is highlighted, let go of the mouse button to select it. If you decide you don't want to select a command, move the mouse away from the menu and release the button. You can only choose menus and commands whose names are shown in dark writing; commands that are not available for some reason are dimmed out.

The Command key (the key with an apple or cloverleaf symbol on it) can be used to execute many menu commands from the keyboard. For example, you can usually save a file by selecting SAVE from the FILE menu, or you can hold down the Command key and press the s key. (This combination is often written Command-s.) These *keyboard shortcuts* are shown in menus next to the corresponding command names.

The Shift and Option keys are sometimes used to modify a command in a menu. For example, in CodeWarrior, pressing and holding Shift changes FIND NEXT to FIND PREVIOUS in the SEARCH menu.

1.7 Files and Folders

Programs and documents are stored in *files* on the disk. A *folder* is a place where you can put one or more files and folders (just as a file folder can hold one or more pieces of paper and other folders). Folders are used to organize your files (place related ones together) and to reduce the clutter on the desktop.

To *create* a new folder, select NEW FOLDER from the FILE menu. New files are usually created by applications like CodeWarrior, Microsoft Word, and hundreds of others.

To *rename* a file or folder, click the mouse over the name of the file or folder. A vertical editing pointer will appear after a short pause and you can edit the name the same way you edit any text.

To *open* a folder to see its contents, select the folder with the mouse and choose OPEN from the FILE menu. Shortcut: You can open any folder or icon by moving the mouse to the item and *double-clicking* on the mouse button (press the button twice quickly). To open a folder while simultaneously closing the folder it is contained in, hold down the Option key and double-click.

To put a file or folder *inside* a folder, place the mouse pointer over the file, hold the button down, and drag the file to the folder icon. When you let go of the button the file will be placed in the folder. If the folder has an open window on the screen, you can also drag the file icon into the folder's window.

To get a file or folder *out* of a folder or to move it around, first open the folder containing the thing you want to move. Move the windows around until you can see the location where you want to put it. Then drag its icon out of the folder window to the new location (into a new window, on top of a folder icon to put it in a folder, or onto the desktop).

To move something into a folder that isn't visible (perhaps hidden by other windows), you can first move its icon to the side of the screen outside of any window (onto the desktop). Then rearrange the screen so you can see the icon's destination and move it there.

To make a *copy* of a file or folder, select its icon and choose DUPLICATE from the FILE menu. Once the duplicate is created you can edit its name and change it to whatever you like.

To *delete* (get rid of) a file or a folder (and its contents), move its icon onto the TRASH icon (usually found in the lower right corner of the screen). When you select EMPTY TRASH from the SPECIAL menu everything in the trash is discarded (you will usually be asked to confirm that you really want to do this before the files are permanently lost). This frees up space on the disk so it can be used for something else. The trash can is a regular folder (you can open a window for it and move things to and from it). If you accidentally trash something that you decide you want to keep, open the trash icon (double-click) and move the items you want to keep somewhere else. **Don't Delete Files Or Folders You Didn't Create!**

1.8 Floppy Disks

Floppy disks were named years ago when they were large (8 inches across) and came in a soft, floppy case. They didn't hold very much information, made good targets for spilled beverages, and wrinkled easily when stuffed into backpacks.

The 3.5 inch disks used with the Macintosh have a hard plastic case and are much smaller, more reliable, and hold more data than the original floppies. There are two main kinds. DD (double density) disks hold about 800 KB (kilobytes—1 KB is about 1,000 bytes). HD (high density) disks are a little more expensive but hold about 1,440 KB (1.4 MB). Almost all Macs can use either kind. Some very old Macs can only use DD disks.

To *insert* a 3.5 inch floppy disk, push the disk metal-end-first, label-side-up, into the thin rectangular slot on the machine. This slot is called the *disk drive*. The disk should click in place. Push gently; don't force it.

If the disk is new or the Mac cannot read (or understand) it, you will be asked whether you want to *format* it. If it is a HD (1.4 MB) disk, answer Yes. For a DD (800 KB) disk, click on Two-Sided to use both sides of the disk. You can format an old disk by inserting it and selecting ERASE DISK from the SPECIAL menu.

Warning: Formatting a disk erases everything on it. Be sure you really want to do this. ■

Once a disk is inserted or formatted, its icon will appear in the upper right part of the screen below the hard disk icon. You can move this icon around, open it, and rename it just like any other disk, file, or folder. If you open the disk (double-click on the icon) the disk's contents will appear in a window with the disk name in the title bar.

To temporarily *eject* the disk from the disk drive, select EJECT from the FILE menu. If you are done using the disk, drag its icon to the trash can to eject the disk so the Mac won't ask for it again. This does **not** erase any files on the disk.

To *copy* folders or files from one disk to another, open the disk containing the file. Drag the folders or files you want to copy to the destination disk's icon and release the mouse button. If there's enough room on the destination disk for the files, you will see a dialog box on the screen showing the progress of the copying operation.

You can *duplicate* the entire contents of one floppy disk onto another one. Insert the destination disk into the disk drive. Then eject this disk (EJECT from the FILE menu) and insert the source disk that you want to copy. Drag the source disk icon on top of the destination disk icon and release the button. You will be asked to confirm that you want to completely replace the contents of the destination disk.

IMPORTANT: We **STRONGLY RECOMMEND** that you make a **BACKUP COPY** of any disk that contains important information. Disks (both floppy and hard disks) are reliable but they can be damaged and floppy disks can be lost. Having a backup copy can save you hours of retyping when trouble strikes. ■

IMPORTANT: The hard disks on CIT public machines are cleaned every night to remove all files that have been added by users. You **MUST** keep any files you want to save on your own floppy disks. ■

1.9 Shutting Down

When you are finished working you should quit any applications you are using (like CodeWarrior), and empty the trash. Then select SHUTDOWN from the SPECIAL menu.

On CIT's public machines, SHUTDOWN runs a program that cleans up the disk and restores any files that have been accidentally erased or changed. On other Macs, SHUTDOWN will either turn the computer off or display a message that tells you it's OK to turn off the machine with the power switch. Be sure to use SHUTDOWN; don't just pull the plug.

1.10 For More Information...

There are many sources of additional information about the Macintosh (in fact there is a whole industry producing Macintosh books). A good way to learn the basics is to run the "Macintosh Basics" tutorial program that is supplied with every new Macintosh and is installed on the Macs in the CIT labs. Double-click on the hard disk icon to open it if needed, double-click on the Applications folder to open it, double-click on the Macintosh Basics folder, and, finally, double-click on the Macintosh Basics application to run it.

The Macintosh User's Guide that is included with most new Macs has both tutorial and reference information and is very good. CIT also offers short courses and has additional information about Macs, all of which is available to Cornell students.