Project 0—OS Project Warm-up
(**Due date: Thursday, 9/18/2008**)

Your name:	Date:

Practice with Open Source Operating Systems (Ubuntu) and Virtualization Appliances (VMware Player):

1. (Before you start, check your computer system configuration. You need at least 6 GB on your hard drive to install the application packages on your computer with at least 512 MB or 1 GB memory).
2. Download the VMware Player at **http://www.vmware.com/download/player/** . (I use the latest version 2.0.5. Before going to download, you need to fill in a General Info form which will take about 2 minutes).
3. Download a virtual machine containing Ubuntu. You can find hundreds of virtualization appliances at **http://www.vmware.com/appliances/** .
   a. **Ubuntu 8.0.4 Desktop** is at
      i. **http://www.vmware.com/appliances/directory/1224**
   b. Read the webpage (or print that page) description about this appliance:
      i. The most important: write down Username and Password (which are *user* ; if you download different package, it may have different ones).
      ii. You need them after you have installed and booted Ubuntu on your computer!
   c. You may need to fill in another registration form.
   d. If you do not use Bittorent, you have to use HTTP to download.
   e. Ubuntu 8.0.4 Desktop is a **7-zip file of nearly 1 GB**.
   f. (save this file on a drive that have at least 6GB free space and don't move it to another place; otherwise, when you boot this Ubuntu/VMware appliance, you are asked to answer some questions.)
   g. (Extract the zipped file).
4. Install the VMware Player.
5. **Boot the virtual machine (Ubuntu) within VMware Player.**
   a. Now you have Ubuntu OS running on your PC as a **virtual machine**!
   b. All the operations related with this project should be done on the Ubuntu OS unless you take some screenshots and work on your project write-up. (Of course, you can use your host OS for your assistance.)
   c. Learn how to use software packages within the Ubuntu, such as:
      i. Internet browser, Firefox,
      ii. OpenOffice Write (Word), Presentation…
      iii. Graphics tools, i.e., Gimp,
      iv. Games,
      v. And particularly, **Command Line Interface (CLI)—Terminal**:
         1. Click on the **Applications** (UpperLeft corner);
         2. Select **Accessories**;
         3. Select **Terminal**.
6. Open a CLI/Terminal and get the Ubuntu Linux Kernel version number
   a. Using command "uname –a"
   b. (I got the following from my machine with "**uname –a**":)
      i. "Linux ubuntu8041 2.6.24-19-generic #1 SMP Fri Jul 11 23:41:49 UTC 2008 i686 GNU/Linux"

7. Get the source code of the kernel release of the your Ubuntu version (or the closest version to your Linux kernel; you may have different one than mine.) from the Linux Kernel webpage (**http://www.kernel.org/pub/linux/kernel/**):
    a. You can use Firefox (inside the Ubuntu) or use wget command to download the source code file.
        i. A good idea: use Firefox to find its path and then try to use wget.
        ii. If using Firefox, the downloaded file will be on the Desktop (you can access this directory from your User-root place); if using wget, the downloaded file should be in the place where you issued the command wget.
    b. For example, on my computer:
        i. I created a "temp" dir by using "mkdir temp"
        ii. And then enter that dir by using "cd temp"
        iii. Then I typed command "wget **http://www.kernel.org/pub/linux/kernel/v2.6/linux-2.6.24.7.tar.bz2**" To download that kernel (compressed in bz2) file.
        iv. To decompress/extract this file, I used the following commands:
            1. "bunzip2 linux-2.6-24.7.tar.bz2" to get a tar file
            2. "tar xf linux-2.6.24.7.tar" to extract

8. Explore the source code of the Ubuntu kernel you just extracted:
    a. I entered into kernel dir with "cd linux-2.6.24.7/kernel/"
    b. And then I display the file "configs.c" by typing "less configs.c"

Project Submissions—Only one electronic copy for a group by email:

1. A cover page with group leader's name, group members' names, project title, complete date, and anything that you think is funny/good …
2. A screenshot showing that you are using OpenOffice Word.
3. A screenshot of any game(s) you are playing with the Ubuntu.
4. A screenshot showing you are using Gimp.
5. A C++ programming running result:
    a. Open a CLI/Terminal
    b. Create a hello.cpp file with the following contents:

```
// This program justs displays a string and exits
#include <iostream>

int main()
{
  std::cout << "Hello World!";
  std::cout << std::endl;

  return 0;
}
```
    c. Type "g++ hello.cpp" and then "./a.out" to display the result.
    d. Type "ls –l"
    e. **Take a screenshot of this CLI/Terminal that shows all the above 2 steps**.
6. For **bonus**:
    a. Using "**vi**" to create/edit the "hello.cpp"
    b. Successfully compiling and running any C/C++ program that **has at least 1** page (you can download any such code and change at least one place of it)—take a screenshot showing the result and include the source code in your submission.