# **Report for Project 1 COMP 7500 Advanced Operating systems**

By using Oracle VM VirtualBox, I installed CentOS7 to work on project 1 but after finishing the project I couldn’t transfer the files from virtual machine to host machine. Upon referring Piazza, the instructor mentioned we could use CentOS9, so I completed my project using CentOS9.

All the commands below work in root only. By using script command to create a typescript, I created a typescript (update.script) to log to check if the packages are updated. Here is the result: -  
Text

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Using script, I created a typescript (packages.script) to log all the packages that we need to install for the project. The installed packages are:-   
yum -y install gcc   
yum -y install gcc-c++   
yum -y install vim-enhanced   
yum -y install emacs   
yum -y install gdb   
yum -y install ethtool   
yum -y install pciutils   
yum -y install file

Here's the snippet of the log: -

Text

Description automatically generated

Also scripted(system.script) information about CPU frequency, cache size, memory size, the list of PCI devices, hard drive, network MAC address and link speed, and the devices generating interrupts by using the commands: -

more /proc/cpuinfo   
more /proc/meminfo   
/sbin/lspci   
/sbin/ethtool eth0   
/sbin/ifconfig eth0   
more /proc/interrupts

Here is the snap of the script: -

Text

Description automatically generated

Using vim editor, created a c program (project1.c) which takes 10 numbers from the user and calculates the average of the square root of the array.  
  
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Further used gcc from GNU collection to compile and execute the c program which is logged in exec.script. Used ldd project1 command to get familiar with the libraries used for program execution which is logged in lib.script

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To familiarize with GNU gdb debugger, I created a. gdbinit file with the following content.

Set auto-load safe-path /  
file simple   
break main   
break sqrt   
info registers

GDB provides the ‘set auto-load safe-path’ setting to list directories trusted for loading files not explicitly requested by user. Each directory can also be a shell wildcard pattern. Without this command warnings would be generated by the debugger. Debugged the program and used run, step, next and continue. The debugging process is logged in a script (gdb.script). Here is a snapshot of the script: -   
Text

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