**CSIS2270 - Lab #7**

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***Installing Oracle Virtual Box, Creating Virtual Machine,***

***Installing Windows 10 on the virtual machine, Cloning the virtual machine***

**Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Student No.: \_\_\_\_\_\_\_\_\_\_\_\_\_\_**

**Introduction:**

Oracle Virtual Box is a general-purpose virtualization open source software application for x86 hardware. It is used to create virtual machines that can run various operating systems. Virtual Box categorized as type 2 hyper visors which runs as an application on over the operating system. In this lab, you will install Oracle Virtual Box on your computer and use it to create a virtual machine then to install Windows 10 EDU on this virtual machine, after that you will clone this virtual machine to make a replica of it (exact copy). Your computer must meet the minimum hardware requirements listed below in the Equipment Required.

**Objectives:**

1. To get familiar with Oracle Virtual Box Virtualization software.
2. To create a Virtual Machine using Virtual Box
3. To install a guest OS on a Virtual Machine.
4. To clone the virtual

**Equipment Required:**

1. Your own home computer (PC or Mac) which must have at least the following minimum  
   specification (very important):  
   **a. RAM memory 8GB (or preferably more, 16 GB if possible)  
   b. Fast Quad-core CPU with virtualization capabilities enabled   
   c. 512 GB HDD (or SSD preferably)**
2. Windows 10 EDU installation image file (.iso) and product key   
     
   you can get for free your copy of Windows 10 EDU , (i.e the image file (.iso) of the Windows 10 EDU operating system and the product key) from Microsoft Azure portal web site, <https://azure.microsoft.com/en-ca/account/> after you sign in with your Douglas College email, click ***Portal*** and then click on Explore in Access student benefits section then click on software under learning resources on the left pane and you will find all the free for students software provided by Microsoft

Special Information how to enable Interl-VTx technology

<https://2nwiki.2n.cz/pages/viewpage.action?pageId=75202968#:~:text=ON%20the%20System.-,Press%20F2%20key%20at%20startup%20BIOS%20Setup.,changes%20and%20Reboot%20into%20Windows>.

1. **Downloading and Installing Oracle Virtual Box** **[\_\_\_\_\_/5]**

Go to <https://www.virtualbox.org/wiki/Downloads> and download the installer file and the Extension Pack of the latest edition of Oracle Virtual Box that is suitable for your computer platform. Run the installer file, go through the installation wizard which enables you to choose where to install Oracle VM VirtualBox, and which components to install. Accept all the default settings, click yes on the network interface warning and let the installation continue until the end. After the installation finish, you will see the Virtual Box icon on the desktop of your computer. Download and read the Virtual Box manual or Visit the following link <https://www.virtualbox.org/manual/ch02.html> for more details about Virtual Box installation

1. **Creating Virtual Machine on the Oracle Virtual Box [\_\_\_\_/5]**
2. Start the Virtual Box and click on ***Machine*** menu and select ***New*** to begin ***Create Virtual Machine*** dialog. Give the name (VM1 Win 10) to the virtual machine, specify the main folder where to save the VMs (keep the default settings , take note about the location of this folder), select the type (Microsoft Windows) and version of the operating system that you will install on this machine (Windows 10 64-bit) and click Next.
3. Specify the memory size for your machine to be 2GB (2048 MB) and click Next.
4. In the Hard disk page, select ***Create a virtual hard disk now*** and click ***Create***.
5. In the Hard disk file type page, select VDI (Virtual Disk Image) and click Next.
6. In the ***Storage on physical hard disk*** page, select ***Dynamically allocated*** and click Next
7. In the ***File location and size*** page, keep the default settings (take note about the location and size of the file) and click ***Create***.
8. The name of your created virtual machine will appear on the left pane (with the other VMs which may exist or created earlier) and its settings will be displayed on the right.
9. To modify the settings of your VM select it from the left pane click on ***Settings*** at the top of right pane to start the ***Setting*** dialog for your VM.
10. Select ***General***, and click on ***Advanced*** tab. From the drop menus select ***Bidirectional*** on both ***Shared Clipboard*** and ***Drag’nDrop***
11. Select ***System***, on the Motherboard tab you can increase the VM Memory size if your host memory size big enough to do so., don’t change the other default settings. Click ***Processor*** tab and increase the number of processors to 2 and leave all the other settings on default.
12. Select ***Storage***, click on the CD icon under Storage Devices, on the right under the Attributes click on the CD icon (with the small black triangle) and click on ***Choose a disk file*** from the drop down menu and browse to where you save the image file of the operating system you want to install on this VM and select the (.iso) file and click ***Open***
13. Select ***Network***, make sure that Enable Network Adapter is checked. From the dropdown menu select ***Internal Network.***
14. Select ***User Interface***, and make sure that both ***Show in Full-screen*** and ***Show at top of*** options of the ***Mini ToolBar*** are checked.
15. Click Ok and now your VM is ready to run
16. In the Oracle VM VirtualBox Manager window, click on ***File*** menu, then click on ***Preferences.***and select ***General***, what is the ***Default Machine Folder*** **﻿/Users/leandro/VirtualBox VMs**
17. In the Oracle VM VirtualBox Manager window, click on ***File*** menu, then click on ***Virtual Media Manager***, select Hard disks tab.   
     What is the name of your VM? **VM1 Win 10**   
     What is the Virtual size of the hard disk? **50.00GB**  
     What is the actual size of the hard disk? **2.00MB**  
     Where is this hard disk is stored﻿ **/Users/leandro/VirtualBox VMs/VM1 Win 10/VM1 Win 10.vdi**  
     What is the name and the type of the hard disk file **VM1 Win 10.vdi**
18. **Installing Windows 10 OS on the guest VM hosted by Virtual Box [\_\_\_\_\_/5]**
19. In the Oracle VM VirtualBox Manager window. Click on your VM name (VM1 Win 10), the VM is supposed to be ***Powered*** ***Off*** now, and then click on ***start*** (the green arrow at the top of the right pane)***.*** The VM will show ***Running*** status.
20. Follow the steps to install the Windows 10 operating system. Use your product key if prompted.   
    Use Custom: Install Windows only (advanced) to install a new copy of Windows. If there exist any partition delete it.
21. Agree on the region and keyboard language, skip the addition of second keyboard, skip connecting to a network. Do not connect to internet and don’t log in using Microsoft account if asked and instead select offline account or joining a local domain.
22. Set your first name to who’s going to use this PC (as administrator), Assign a password to the account, do not make Cortana as your personal assistant (click Decline)
23. Set No for any other option offered during the rest of the installation process.
24. Wait until the installation process completes all the steps and allow the VM to restart as needed.
25. After Windows 10 has been installed successfully and restarted, open Control Panel of the VM PC (start 🡪 Windows System 🡪 control panel 🡪 View by 🡪large icons) and click on ***System.*** Write down the following information:
    1. Processor ­­­­­­­­­­­­­­­­­­**Intel(R) Core(TM) i7-9750H @ 2.60GHz 2.59GHz.**
    2. How much RAM installed on your VM1 Windows10? **2.00GB**
    3. What is your system type? **64-bit operating sytem, x64-based processor**
26. Click ***Advanced system settings*** on the left of the ***System*** window. From the pop-up window, select the ***Advanced tag***, and click ***Settings*** under ***Performance***. Select ***Advanced*** on the new pop-up window. Look under ***Virtual memory***   
    What is the Total paging file size on your system? **1152MB**
27. Close all the pop-up windows and shut down the VM1 Win 10.
28. Finish all the steps and answer all the questions then save the lab report file (without the screen shots) as instructed in the submission instructions below.
29. **Cloning the VM1 Win 10 virtual machine hosted by Virtual Box [\_\_\_\_\_/5]**
30. Start the Oracle VM Virtual Box Manager and select VM1 Win 10 virtual machine
31. Click on Machines menu and click on Clone (press Ctrl + O)
32. In the ***Clone Virtual Machine*** dialog, type VM1C Win 10 in the ***Name*** space and leave the other settings as set by default and click Next
33. Keep the ***Clone type*** default settings (Full clone) and click ***Clone***
34. Wait until the Cloning process ends and you will get an exact copy of your VM appears in the right pane.
35. Click on the cloned VM and review its various settings

What is the size of the memory in the cloned VM **2.00GB**  
What is the number of the processors in the cloned VM **1**  
What is the type of the Network Adapter attached to the cloned VM **Intel PRO/1000 MT Desktop (NAT)**   
Run the cloned VM 🡪 Control Panel 🡪 System and Write down the following information:

* 1. Processor ­­­­­­­­­­­­­­­­­­**Intel(R) Core(TM) i7-9750H @ 2.60GHz 2.59GHz.**
  2. How much RAM installed on your VM1C Windows10? **2.00GB**
  3. What is your system type? **64-bit operating sytem, x64-based processor**

Finish all the steps and answer all the questions then save the lab report file as instructed in the submission instructions below.

**Lab Submission instructions:**

1. Save your report file as yourFirstnameLastname\_yourID\_Lab7.docx.  
    (example: RupaManabala\_1234\_Lab7.docx)
2. Send the file to your instructor not later **11:59 pm Friday, March 12th via Blackboard** strictly (do not send labs by email please. Any lab submitted by email will be ignored).
3. Late submissions will not be marked and the student will lose the mark of that lab.
4. Students who don’t save lab files with proper names as indicated in 1,2,3 above, will lose 50% of the lab’s mark.