Installing Linux Mint 18.3 “Sylvia” - Xfce in a VM (virtual machine)

first, install VirtualBox for your system
    https://www.virtualbox.org/wiki/Downloads
if you are already using Linux (e.g., Ubuntu or Linux Mint)
    use the package manager to install VirtualBox (e.g., via the terminal)

```
sudo apt-get update
sudo apt-get install virtualbox-4.3
```

download the Linux Mint ISO (drive image)
    64-bit: https://linuxmint.com/edition.php?id=249

run VirtualBox
create a new VM
    call it something like cyberstorm
    its type is Linux
    its version is Ubuntu (64-bit)

    give it about 25% of your system's RAM; e.g.,
        4 GB: 1024 MB (1 GB)
        16 GB: 4192 MB (4 GB)

    how can you tell how much RAM your system has?
        on Windows, probably at the control panel
        at the Linux terminal, several methods:

```
free -gh
cat /proc/meminfo | grep MemTotal
```

    create a virtual hard drive (VDI)
    make it dynamically allocated so that it only uses up as much space as it needs
    make it sufficient in size (say 100 GB)

edit the VM
    click on Settings
        click the General option
            select the Advanced tab
            set Shared Clipboard to Bidirectional

        click the Storage option
            select the Empty CD/DVD under Controller: IDE
            click the CD icon in the Attributes section
                select Choose a virtual CD/DVD disk file...
                find the Linux Mint ISO that you downloaded

        click the Network option
            in the Adapter 1 tab, make it attached to Bridged Adapter
            select the proper network adapter to “connect” the virtual adapter to
    click OK

start the VM
once the Linux Mint ISO has booted, click on the Install Linux Mint icon
when prompted for the installation type, select Something else

your hard drive should be referred to as something like /dev/sda

it should be empty
if not, select partitions and remove them (this will destroy all data on the drive!)
a new drive will need a new partition table

then, add the following new partitions to the free space

1: size=2048 MB
type=primary
location=beginning
use as=ext2
mount point=/boot

2: size=RAM size if RAM size >= 4 GB; 2x RAM size otherwise; e.g.,
2 GB RAM: 4 GB swap
4 GB RAM: 4 GB swap
but no more than 8 GB
type=primary
location=end
use as=swap area

3: size=~35% of space left
type=primary
location=beginning
use as=ext4
mount point=/

4: size=~65% of space left
type=primary
location=beginning
use as=ext4
mount point=/home

/boot: stores the Linux kernel images
swap: memory swap space (also used for hibernation)
/: stores the OS, OS configuration files, and applications
/home: stores your files (application configuration, settings, pictures, etc)

the strategy is that updating the OS means wiping /boot, /, and swap
/home won't be touched
updating then takes little time (~30 minutes)

the Chicago timezone is fine (for Central)

set the user; mine is

name: jgourd
computer name: jgourd-cyberstorm
username: jgourd
password: something fairly strong
require my password to log in

**don't** encrypt my home folder

reboot into Linux Mint
play around!

Things to Install and/or Perform After Installing Linux Mint

these all happen in the terminal
click on the monitor icon at the bottom-left of the desktop
or click on the “start button” (the LM logo at the bottom-left of the desktop)
then, click on System and scroll to Terminal Emulator

make sure that you are connected to the Internet!

update the Linux Mint system

```
sudo apt-get update
sudo apt-get upgrade
sudo apt-get dist-upgrade
```

install Google Chrome (only for 64-bit OS)
the process is to first get the signing key that Google puts out for their repository
for authentication
then, we add the Google repository and update the list of packages available
finally, we install Google Chrome

```
wget -q -O - https://dl-
ssl.google.com/linux/linux_signing_key.pub | sudo apt-key add -
sudo sh -c 'echo "deb [arch=amd64]
http://dl.google.com/linux/chrome/deb/ stable main" >>
/etc/apt/sources.list.d/google-chrome.list'
sudo apt-get update
sudo apt-get install google-chrome-stable
```

install Microsoft core fonts (for compatibility across systems)

```
sudo apt-get install ttf-mscorefonts-installer
```

install essential build tools (for programming)

```
sudo apt-get install build-essential
```

install Vim (the ubiquitous text editor)

```
sudo apt-get install vim
```

next, do yourself a favor and add my Vim run commands
these customize Vim in a way that I like
if you wish, grab my `.vimrc` from the web site and place it in `~`
it usually downloads in `~/Downloads`; therefore,

```
mv ~/Downloads/.vimrc ~
```

cleanup the system

```
sudo apt-get autoremove
sudo apt-get clean
sudo apt-get autoclean
```

set the autorun script when opening up a terminal

we'll first copy the default provided by the OS
then, we ensure that we own it (more on this later)
finally, we'll load it into the current terminal

```
sudo cp /etc/bash.bashrc ~/.bashrc
sudo chown $USER:$USER ~/.bashrc
source ~/.bashrc
```

add my useful aliases to the autorun script (i.e., add these to ~/.bashrc)

first edit via on of the following text editors:

`vim ~/.bashrc` (text-based)
`nano ~/.bashrc` (text-based)
`gedit ~/.bashrc` (GUI)

then, add the following at the end of the file:

```
alias c='clear'
alias df='df -Th'
alias h='history'
alias h2='history | awk '"'"'{ CMD[$2]++; count++; } END
{ for (a in CMD) print CMD[a] " " CMD[a] / count * 100 "% " a; }'"'"'
| grep -v "./" | column -c3 -s " " -t | sort -nr | nl | head -n25'
alias j='jobs'
alias ls='ls -CF --group-directories-first --color=auto $*'
alias lss='ls -Alh $*'
alias m='more'
alias netstat='netstat -lnp | grep " LISTEN "'
alias p='ps -ef'
alias rm='mv -f -t $HOME/.local/share/Trash/files $*'
alias rmdir='mv -f -t $HOME/.local/share/Trash/files $*'
alias ~='cd ~'
```

finally, load them into the current terminal via

```
source ~/.bashrc
```