**Objectives**

1. Research information about software for a specific operating system (OS) environment. You will be assigned one of the operating systems form the list of: Windows, Mac OS, Linux. You will also be provided with a list of topics to investigate.
2. Organize your rough research information into a list of topics, sub-topics and facts. This process will involve identifying sub-topics, rearranging your rough research notes, and selecting (or highlighting) interesting facts.
3. Report a summary of your research in the form of a “concept map”. Use the PowerPoint template provided as a starting point. The concept map should only include the best and most interesting information from your organized research notes.

Your assigned operating system is:

* Windows (safe marking)
* Mac OS (bonus marking)
* Linux (double bonus marking)
* IOS
* Android

The concept map template can be downloaded from the “Topic A” folder on the class GitHub repository.

**Step 1 – Rough Research**

Research information about the software for your assigned operating system (OS) environment.

* Guide your research according to the suggested topic list below
* Feel free to copy-and-paste as long as you keep track of your bibliographic references.
* Do not be too picky or concerned about formatting as you will organize this information later in step 2
* Select things that look interesting and don’t forget to include graphics images as well
* Upload your rough research notes to your repository when you are done.

Topic A – Productivity & Application Software

Topic B – Entertainment & Media Software

Topic C – Programming Tools & Environment

Topic D – System Tools

Topic E – Software Security & Updates

Topic F – File System & User Accounts

Topic G – Special Features of your OS

Topic H – Limitations of your OS

Productivity: applications that are used for work.

ONLYOFFICE Desktop Editors is a free office suite that combines text, spreadsheet and presentation editors allowing you to create, view and edit documents stored on your computer without an Internet connection. It is fully compatible with Office Open XML used in Microsoft Office products

Mozilla Firefox is the second most used web browser in the world, having usage share of about 30%.

Mozilla Thunderbird is a [cross-platform](https://www.webopedia.com/TERM/C/cross_platform.html), [open source](https://www.webopedia.com/TERM/O/open_source.html) [e-mail](https://www.webopedia.com/TERM/E/e_mail.html) client that competes with the likes of [Microsoft Outlook](https://www.webopedia.com/TERM/M/Microsoft_Outlook.html) and Eudora Mail.

Mozilla Thunderbird originated as an offshoot of the [Mozilla Firefox](https://www.webopedia.com/TERM/F/Firefox.html)[Web browser](https://www.webopedia.com/TERM/B/browser.html) project and was developed by the same team until Mozilla Corporation released development to an independent organization in order to focus efforts on Firefox.

Thunderbird is an email software

Founded by a developer company named Mozilla

From the guys that brought us Firefox, Thunderbird is Mozilla’s email client.

One of the key extensions available for Mozilla Thunderbird is Mozilla Lightning, an extension that adds calendar and [personal information manager (PIM)](https://www.webopedia.com/TERM/P/personal_information_manager.html) capabilities to

Firefox is a Web [browser](https://searchwindevelopment.techtarget.com/definition/browser) that is smaller, faster, and in some ways more secure than the [Mozilla](https://searchmicroservices.techtarget.com/definition/Mozilla) browser from which much of its code was originally derived.

 As of November 2008, Firefox had about 20% of the market share for browsers, worldwide.

 As of 2017, it is the fourth-most popular browser after Google [Chrome](https://www.computerhope.com/jargon/c/chrome.htm), Apple [Safari](https://www.computerhope.com/jargon/s/safari.htm), and UC Browser.

Firefox features [tabbed browsing](https://www.computerhope.com/jargon/t/tabbrows.htm) with individual [processes](https://www.computerhope.com/jargon/p/process.htm) per tab, [popup](https://www.computerhope.com/jargon/p/popup.htm) blocking, [private browsing](https://www.computerhope.com/issues/ch001378.htm), [phishing](https://www.computerhope.com/jargon/p/phishing.htm) detection, and a [sandbox](https://www.computerhope.com/jargon/s/sandbox.htm) security model

Darktable is an open source photography workflow application and raw developer. A virtual lighttable and darkroom for photographers, it manages your digital negatives and lets you view and enhance them.

darktable has built-in [ICC profile](http://www.defaultlogic.com/learn?s=ICC_profile) support for [sRGB](http://www.defaultlogic.com/learn?s=SRGB), [Adobe RGB](http://www.defaultlogic.com/learn?s=Adobe_RGB), [XYZ](http://www.defaultlogic.com/learn?s=CIE_1931_color_space) and linear [RGB](http://www.defaultlogic.com/learn?s=RGB_color_space) color spaces

Rather than being immediately applied to raster data of the image, the program keeps the original image data until final rendering at the exporting stage (the adjustment parameters made by a user are however visible in real-time).

Shotcut is a free, open source, cross-platform video editor.

* 3-way (shadows, mids, highlights) color wheels for color correction and grading

Trimming on source clip player or timeline with ripple option

VLC is the def-facto video player to unwind with your downloaded video content.

With hardware accelerated decoding to take the load off your CPU and extend your battery life, VLC is the best way to watch content offline.

VLC is a media player that can play a number of video formats, like MPEG-1, MPEG-2, MPEG-4, DivX, and WMV files.

Bluefish is one of the most popular IDEs for Web development available. It can handle programming and markup languages, but it focuses on creating dynamic and interactive Web sites.

Like many Linux applications, Bluefish is lightweight (using about 30% to 40% of the resources that similar applications use) and fast. Bluefish can open multiple documents at once (up to 3,500 documents, if needed).

It includes project support, remote file support, search and replace (including regular expressions), unlimited undo/redo, customizable syntax highlighting for many languages, anti-aliased text in windows, and multiple encodings support, among other features.

Anjuta is a free, open source IDE for the C and C++ languages. It's easy to install (urpmi anjuta on Mandriva, for example) and offers such features as project management, application wizards, an interactive debugger, and a powerful source code editor (with source browsing, code completion, and syntax highlighting)

Anjuta has a flexible and powerful user interface that allows you to drag and drop the tools in the layout to arrange the GUI nearly any way you like.

Anjuta also enjoys a powerful plug-in system that allows you to decide which plug-ins are active and which are not for each project.

Kdevelop was created in 1998 to be an easy-to-use IDE for the KDE desktop.

It's plug-in based, so you can add and remove plugs to create the exact feature set you need.

Kdevelop supports 15 programming languages, with each having language-specific features.

Kdevelop also offers an included debugger, version control system (Subversion), application wizard, documentation viewer, code snippets, Doxygen integration, RAD tools, Ctags support, code reformatting, QuickOpen support, and dockable windows and toolbars.

Cockpit is software developed by Red Hat that provides an interactive browser based Linux administration interface. Its graphical interface allows beginner system administrators to perform common sysadmin tasks without the requisite skills on the command line.

Red Hat Enterprise Linux 7 includes a program called Performance Co-Pilot, provided by the PCP RPM package. Performance Co-Pilot, or PCP, allows the administrator to collect and query data from various subsystems.

Additionally, the machine will also have various command line tools for querying system performance data.

The pcp package provides a variety of command line utilities to gather and display data on the machine.

Puppet allows the systems administrator to write infrastructure as code using a descriptive language to configure machines, instead of using individualised and customised scripts to do so.

Puppet’s domain-specific language is used to describe the state of a machine, and Puppet can enforce this state.

Puppet uses a server/client model. The server is called a Puppet master and it stores recipes and manifests for the clients.

Nmap is an open source port scanner that is provided by the Red Hat Enterprise Linux 7 distribution. It is a tool that administrators use to rapidly scan large networks but it can also do a more intensive port scan on individual hosts. Nmap uses the raw IP package in novel ways to determine what hosts are available on the network, what services those hosts are offering, what OS they are running, what type of packet filters/firewalls are in use and dozens of other characteristics.

ClamAV

My favorite antivirus software for Linux is Sourcefire's ClamAV, a free, open source package designed to detect Trojans, viruses, malware and other malicious threats. Included in the software, which now comes preinstalled in several Linux distributions, are a multithreaded scanning daemon, command line utilities for on-demand file scanning, and an intelligent tool for automatic signature updates.

Snort

Also offered by Sourcefire is Snort, an open source network intrusion prevention and detection system that combines the benefits of signature, protocol and anomaly-based inspection. With millions of downloads and more than 300,000 registered users to its credit, Snort is the most widely deployed such technology worldwide, Sourcefire says.

John the Ripper

John the Ripper is a free and open source password cracker that can help you detect weak passwords. It's distributed primarily in source code form, but native "pro" versions are available for both Linux and Macs as well; the prepackaged Linux version is priced starting at $39.95. Another similar tool, incidentally, is THC Hydra.

1. / – Root

Every single file and directory starts from the root directory.

Only root user has write privilege under this directory.

Please note that /root is root user’s home directory, which is not same as /.

2. /bin – User Binaries

Contains binary executables.

Common linux commands you need to use in single-user modes are located under this directory.

Commands used by all the users of the system are located here.

3. /sbin – System Binaries

Just like /bin, /sbin also contains binary executables.

But, the linux commands located under this directory are used typically by system aministrator, for system maintenance purpose.

Special features of Linux:

<https://itsfoss.com/review-onlyoffice-desktop-editors-linux/>

<https://blog.ubuntu.com/2018/07/17/get-productive-on-the-linux-desktop-with-7-essential-apps>

<https://www.pcmag.com/encyclopedia/term/49780/productivity-software>

<http://www.linuxandubuntu.com/home/50-essential-linux-applications>

https://www.webopedia.com/TERM/M/Mozilla\_Thunderbird.html

<https://www.quora.com/What-are-some-important-facts-about-Mozilla-Firefox>

<https://searchmicroservices.techtarget.com/definition/Firefox>

<https://www.computerhope.com/jargon/f/firefox.htm>

<http://www.defaultlogic.com/learn?s=Darktable>

<https://shotcut.org/features/>

<http://www.filefacts.com/vlc-media-player-info>

<https://www.techopedia.com/definition/8996/programming-tool>

<https://www.techrepublic.com/blog/10-things/10-linux-and-open-source-developer-tools-you-should-not-overlook/>

<https://www.pcmag.com/encyclopedia/term/52979/tool>

<https://opensourceforu.com/2018/03/top-10-open-source-tools-linux-systems-administrators/>

<https://www.techopedia.com/definition/24866/software-security>

<https://searchstorage.techtarget.com/definition/file-system>

<https://www.pcmag.com/encyclopedia/term/53549/user-account>

<https://www.pcworld.com/article/224955/7_free_security_tools_for_linux.html>

<https://www.thegeekstuff.com/2010/09/linux-file-system-structure/?utm_source=tuicool>

<https://www.linuxchange.org/5-best-features-of-linux-operating-system-that-you-need-to-know/>

**Step 2 – Organized Research**

Organize your rough research information to provide more stricture and meaning.

* Re-read your rough research to identify (highlight) important sub-topics and facts
* Rearrange (cut–and-paste) your rough research so that related sub topics and facts are next to each other.
* Your finished organization should look like the template provided below.
* Upload your rough research notes to your repository when you are done.

Suggested organization template:

* Topic A – Productivity & Application Software
  + Sub-Topic 1
    - Fact 1
    - Fact 2
    - …
  + Sub-Topic 2
    - …
  + …
* Topic B – Entertainment & Media Software
  + …

OnlyOffice Desktop Editors:

Includes a document editor

Includes a spreadsheet option

Can be used for presentations

**Step 3 – Concept Map**

Create a “concept map” as a final report of your organized research.

Use the PowerPoint template provided as a starting point.

You can use PowerPoint or another concept mapping tool of your choice.

Select the best and most interesting information from your organized research.

Summarize and edit your information to fit on the concept map.

Share your finished concept map with Mr. Nestor at p0079141@pdsb.net

The concept map template can be downloaded from the “Topic A” folder on the class GitHub repository

