**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
* Mac OS
* Linux
* iOS
* Android

A concept map can be created using the “Smart Ideas” application or PowerPoint or other applications.

**Level 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, Entertainment & Other Software Applications

Topic B – User Interface (Window Management & Input Devices)

Topic C – Memory Allocation, Management,& Devices

Topic D – Process / Task Scheduling and Management (System Startup)

Topic E – Software Security, Updates & System Tools

Topic F – File System & User Accounts

Topic G – Special Features of your OS

Topic H – Limitations of your OS

Topic A: <https://itunes.apple.com/ca/genre/ios-entertainment/id6016?mt=8>

* Netflix
* Cineplex Mobile
* Ticketmaster
* Colorfy: Coloring Art Game
* Flixster - Showtimes + Tickets
* TimePlay
* iTunes Remote
* IMDb Movies & TV
* CTV
* Global Go
* Crave
* Talking Tom Cat
* Amazon Prime Video
* Talking Tom Cat 2
* CBC Gem
* Bell Fibe TV
* PlayStation App
* Gmail - Email by Google
* Pages
* Dropbox
* Keynote
* Numbers
* Google Drive – online backup
* Microsoft Outlook
* Google Docs: Sync, Edit, Share
* Microsoft Word
* Yellow Pages Canada
* Google Sheets
* Microsoft Excel
* Google Slides
* Microsoft OneDrive
* iTranslate Translator
* Google Calendar
* Microsoft PowerPoint
* HotspotShield VPN & Wifi Proxy
* Yahoo Mail - Organized Email
* Facebook
* Messenger
* Pinterest: Lifestyle Ideas
* WhatsApp Messenger
* Skype for iPhone
* LinkedIn
* Viber Messenger: Chats & Calls
* Kik
* Tumblr
* Hangouts

Topic B: OS (formerly iPhone OS) is a mobile operating system created and developed by Apple Inc. exclusively for its hardware. ... The iOS user interface is based upon direct manipulation, using multi-touch gestures. Interface control elements consist of sliders, switches, and buttons

Topic C: <https://stackoverflow.com/questions/6044147/ios-memory-allocation-how-much-memory-can-be-used-in-an-application>

Blocks from separate memory allocations are not allocated contiguously (separate calls to alloc, malloc, new, etc.). Otherwise they are allocated contiguously(from the same call to malloc, ex. new float[30]). According to Apple your app risks being shut down for memory usage when you use more than 20mb of ram. In practice however, you can get to about...

* iPhone6: 645MB/1024MB/62% (iOS 8.x)
* iPhone6+: 645MB/1024MB/62% (iOS 8.x)
* iPhone6s: 1396MB/2048MB/68% (iOS 9.2)
* iPhone6s+: 1195MB/2048MB/58% (theoretical, untested)
* iPhoneSE: 1395MB/2048MB/69% (iOS 9.3)
* iPhone 6s+: 1392MB/2048MB/ 68% (iOS 10.2.1)
* iPhone 7+: 2040MB/3072MB/66% (iOS 10.2.1)
* iPhone X: 1392/2785/50% (iOS 11.2.1)
* iPhone. ...
* iPad. ...
* iPod. ...
* **Apple** TV. ...
* **Apple** Watch. ...
* HomePod. .

Topic D: <https://developer.apple.com/documentation/foundation/nsbackgroundactivityscheduler>

Use an NSBackgroundActivityScheduler object to schedule an arbitrary maintenance or background task. It’s similar to an [Timer](https://developer.apple.com/documentation/foundation/timer) object, in that it lets you schedule a repeating or non-repeating task. However, NSBackgroundActivityScheduler gives the system flexibility to determine the most efficient time to execute based on energy usage, thermal conditions, and CPU use.

For example, use an NSBackgroundActivityScheduler object to schedule:

* Automatic saves
* Backups
* Data maintenance
* Periodic content fetches
* Installation of updates
* Activities occurring in intervals of 10 minutes or more
* Any other deferrable task

Topic E: A smaller update releases every few months and a major update release every year.

Topic F: APFS is the main **file system** in macOS, **iOS**, watchOS, and tvOS.

Topic G: FaceTime, Touch ID and, etc

Topic H: https://thetechhacker.com/2015/01/08/advantages-disadvantages-apple-ios/

Not flexible only supports iOS devices. The iOS is not Open Source. The main disadvantages of using iOS are costly Apps and no widget support. You cannot change your ringtone but there are many alternatives to do that. Apple restricted the connectivity with iTunes, luckily we have the best iTunes alternatives.

**Level 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, Entertainment & Other Software Applications
  + Sub-Topic 1
    - Fact 1
    - Fact 2
    - …
  + Sub-Topic 2
    - …

Topic A – Productivity, Entertainment & Other Software Applications

- Productivity Applications

* Gmail - Email by Google
* Pages
* Dropbox
* Keynote
* Numbers
* Google Drive – online backup
* Microsoft Outlook
* Google Docs: Sync, Edit, Share
* Microsoft Word

- Entertainment Applications

* Netflix
* Youtube
* Spotify
* Soundcloud
* Bell Fibe TV
* PlayStation App
* IMDb Movies & TV

-Other Applications

* Facebook
* Messenger
* Pinterest: Lifestyle Ideas
* WhatsApp Messenger
* Skype for iPhone

Topic B – User Interface (Window Management & Input Devices)

(formerly iPhone OS) is a mobile OS created and developed by Apple Inc. solely for its hardware. ... The iOS interface relies upon direct manipulation, using multi-touch gestures. Interface management parts contain sliders, switches, and buttons

Topic C – Memory Allocation, Management,& Devices

Blocks from separate memory allocations aren't allocated contiguously (separate calls to alloc, malloc, new, etc.). Otherwise they're allotted contiguously(from an identical decision to malloc, ex. new float[30]). consistent with Apple your app risks being stopped working for memory usage when you use over 20mb of ram.

Topic D – Process / Task Scheduling and Management (System Startup)

Use an NSBackgroundActivityScheduler object to schedule an absolute maintenance or background task. It’s similar to an Timer object, in that it helps you to schedule a continuance or non-repeating task. However, NSBackgroundActivityScheduler provides the system flexibility to work out the foremost efficient time to execute supported energy usage, thermal conditions, and CPU use.

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Topic H: https://thetechhacker.com/2015/01/08/advantages-disadvantages-apple-ios/

Not versatile, solely supports iOS devices. The iOS isn't Open source. the main disadvantages of using iOS are pricey Apps and no gadget support. you can't modification your ringtone however there are several alternatives to do that. Apple restricted the property with iTunes.

**Level 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

A concept map can be created using the “Smart Ideas” application or PowerPoint or other applications. A concept map template can be downloaded from the “Topic A” folder on the class GitHub repository

