**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 below. 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.
4. Your concept map can be created using: Smart Ideas, Prezi, PowerPoint or other similar applications.

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**Step 1 – Organized Research**

Research information about 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.

https://searchmobilecomputing.techtarget.com/definition/QNX

http://www.qnx.com/developers/docs/6.5.0/index.jsp?topic=%2Fcom.qnx.doc.momentics\_welcome%2Fwhatis.html

Topic A – Application Software

Provide a summary of most important user application software targeted by this operating system and how it is similar to and deferent from standard PC software. Suggested sub-topics include:

* User (client) or network (server) applications
* Batch (run without user input) or interactive (user focused) processing
* Off-the-shelf (purchased) or custom developed applications
* Programming environment and languages supported

QNX is a mobile operating system that was originally developed for embedded systems. The operating system’s developer. When blackberry phones first came out with their OS it was more towards user interface and it still is but now they open their doors to using the QNX OS for vehicles, by trying to make vehicles self-driving. QNX is a custom OS because it can’t be found just in best buy or in other retail stores. It has special requirements because how complex the OS can get. For example, if my cars OS (QNX) broke down I wouldn’t take it to the source it would have to be taken back to the dealer for them to fix it or they would ship it back to a team of experts. Choice of development language (C, C++, Embedded C++, Java).

http://blackberry.qnx.com/en/news/release/2008/3268

Topic B – Hardware

Provide a summary of the hardware targeted by this operating system and how it is similar to and deferent from standard PC hardware. Suggested sub-topics include:

* Speed of processors / memory
* Capacity of memory / attached disks
* Is it designed for home / office / corporate data center / industrial use
* Is it designed for client / server / network use

Smartphones and tablets, as well as cars like, Audi, BMW, Ford, KIA, Porsche, and Volkswagen. The vehicle UI in the cars is similar to a PC’s application bar. And the screen in the car is different from PC’s because it is a touch screen.

Topic C – User Interface

Provide a summary of the user interface and input devices targeted by this operating system and how it is similar to and deferent from a standard PC. Suggested sub-topics include:

* Does it support a windowed environment, command line, or network users
* Does it support multiple users at a time or single users
* Does it support multiple applications or a single application at a time
* Does it get rebooted (powered on / off) or is it always on

The interface displays of a car that uses QNX OS is touch screen and activated when the is car is powered on unlike PC’s that is powered on when a button is inputted.

The QNX OS UI has touch-screen capabilities an example of this is their phones. The UI for their recent phones is meant to be used for touch-screen uses. The UI is similar to PC’s UI because there is a lock screen then a hub where all your apps are. A deferens in the UI is that there is a Search on top of the hub screen a PC has a search bar but it is hidden in the bottom left screen.

<http://www.qnx.com/developers/docs/7.0.0/#com.qnx.doc.neutrino.sys_arch/topic/proc_MMUs.html>

http://www.qnx.com/developers/docs/6.5.0SP1.update/com.qnx.doc.neutrino\_user\_guide/fsystems.html

Topic D – Device Management

Provide a summary of the devices (disks, printers, etc.) and memory managed by this operating system and how it is similar to and deferent from a standard PC. Suggested sub-topics include:

* What types of disk drives and file systems does it support?
* What type of input devices does it support?
* What type of output devices does it support?

This file system is implemented by the fs-qnx4.so shared object same disk format as the file system under QNX 4; support for files up to 2G − 1 byte in size Since hardest disk drives implement track caching.

Topic E – Security

Provide a summary of the security features provided by this operating system and how it is similar to and deferent from a standard PC. Suggested sub-topics include:

* What types of user accounts and user permissions does it support
* How does it protect against conflicts / interference between legitimate application processes
* How does it protect against malicious software
* How does it support software updates and security updates

QNX adaptive partitioning technology guarantees system resources for applications while preventing rogue software from denying resources to other parts of a system. Under this system, every driver, application, protocol stack, and file system runs outside the kernel in the safety of memory-protected user space.

Topic F – Network Connectivity

Provide a summary of the network connectivity provided by this operating system and how it is similar to and deferent from a standard PC. Suggested sub-topics include:

* Is the computer stand-alone or part of a larger network
* What type of network and internet connections does it provide
* Does it provide other services such as backup, firewall, etc.

A Neutrino-based TCP/IP network can access resources located on any other.There are two types of TCP/IP hosts: clients and servers. You normally access a TCP/IP or Internet host with a textual name (e.g. www.qnx.com) and use some for a host on your local network to a gateway that provides access to the Internet.

**Step 2 – Concept Map**

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

* Use the diagram in the introduction as a starting point.
* You should have six (6) first level topics from “Application Software”   
  to “Network Connectivity”
* Each first level topic should have at least three (3) sub-topics
* Each sub-topic should be supported by a number of facts / items of interest

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

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

Upload your Research Notes and Concept Map to your GitHub Repository

* Your concept map can be created using: Smart Ideas, Prezi, PowerPoint or other   
  similar applications.
* Option1: Create and upload a PDF of your concept map
* Option2: Include a link to your Concept Map in your Student Questions
  + Make sure that your link is Sharable so Mr. Nestor can open your map

<https://app.creately.com/diagram/vETuIJRJksr/edit>

**Appendix A**

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| **Operating System** | **Student 1** | **Student 2** |
| Ubuntu  (Linux) |  |  |
| z/OS  (IBM) |  |  |
| Solaris  (Oracle) |  |  |
| HP-UX  (Hewlett Packard) |  |  |
| Windows NT  (Windows Server) |  |  |
| Red Hat Enterprise (IBM Summit) |  |  |
| QNX  (Blackberry) |  |  |
| VxWorks  (Wind River) |  |  |
| AOSP  (Android Alphabet) |  |  |
| Ubuntu  (Linux) |  |  |
| z/OS  (IBM) |  |  |
| Solaris  (Oracle) |  |  |
| HP-UX  (Hewlett Packard) |  |  |
| Windows NT  (Windows Server) |  |  |
| Red Hat Enterprise (IBM Summit) |  |  |
| QNX  (Blackberry) |  |  |
| VxWorks  (Wind River) |  |  |
| AOSP  (Android Alphabet) |  |  |
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