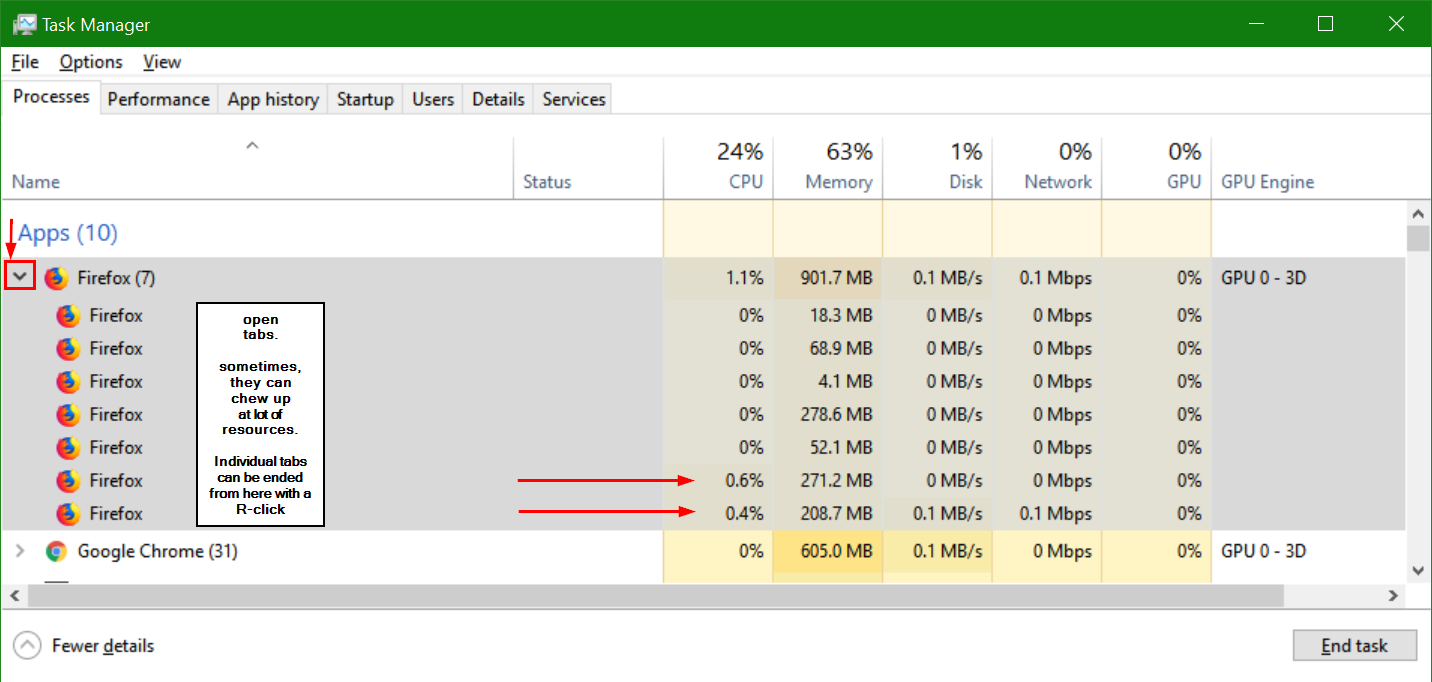
**Create a new blank Word document for your activity answers. (Ctrl-N)**As you go through this document, practice your keyboard shortcuts by selecting, copying, and pasting the paragraphs starting with 🡺 (and related text) to your new document and add your answers.

🡺 Name: Nicholas Defranco 🡺UserID: 🡺Student No:

***5 points each*** *for the following tasks/questions*

**Be the Boss of your OS** whenthings go wrong. Use Windows Task Manager or macOS [Activity Monitor](https://macpaw.com/how-to/mac-task-manager). e.g. take control of software that does not play well with others. This is becoming especially true of web apps. Don't close your browser just because of one runaway tab. E.g.   


*Sadly, the following no longer works on Seneca lab PCs.*Windows Task Manager is accessed either by Ctrl+Alt+Del (the infamous [three finger salute](https://en.wikipedia.org/wiki/Control-Alt-Delete)), Right-Clicking on the Taskbar at bottom of screen, + X, or directly by Ctrl+Shift+Esc. For macOS, it's the [Activity Monitor](https://macpaw.com/how-to/mac-task-manager).

Start PowerPoint by opening this week’s slides and then open Task Manager.

🡺 Task Manager can tell you the name of PowerPoint’s .EXE file. What is it? How did you find it?  
 … *never mind if you are working on a Seneca lab PC*. Do try it on your own machine.

**APIs**

Navigate to YouTube and watch this video about APIs (less than 3 ½ minutes)  
<https://www.youtube.com/watch?v=s7wmiS2mSXY>

🡺 An API is like… \_\_\_\_\_\_\_\_\_\_ ?

🡺 What is sent from the API to a system?

🡺 What is sent from the system back through the API?

**Try out Google’s demonstration API for language translation**.   
**Use Firefox** *(recommended)* **or Chrome. (MS Edge or IE is user focused, we need developer support.)**

<https://developers.google.com/apis-explorer/#s/translate/v2/language.translations.list?target=fr&source=en>

Enter a phrase to translate from English to French, or [another language pair](https://cloud.google.com/translate/docs/languages) (see Google’s list of language codes). Click “Execute without OAuth”. Scroll down the page to see the Request and Response.

N.B. When you click , Google will ask you to “Select OAuth 2.0 scopes”. Read the dialog box about scope; it defines the API’s level of access authorized by the user’s account. It is not necessary to sign on for this demonstration; close the dialog and click “Execute without OAuth” instead.

🡺 What was the Request displayed on the page?

*GET* URL…**?q=***text***+***to***+***translate***&target=**fr**&source=**en

This is would be the URL for the API interface to perform the translation including the query string.  
Any web query string starts with **?** and has a series of field-value pairs.   
For more info about query strings, see <https://en.wikipedia.org/wiki/Query_string>

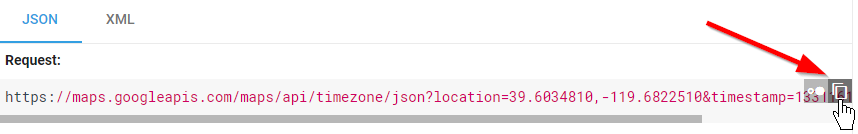
Some Google APIs require an API key to prevent abuse of their free API services or a billing linkage to the key for chargeable APIs. The above web page runs a demonstration which does not require a key. However, if you were to use the GET URL directly, it requires an API key linked to a billing account.

🡺 What was the Response to the translation request?

**Use a real API – Application Program Interface**

See<https://developers.google.com/maps/documentation/timezone/intro>for an APIto look up the timezone information for any GPS coordinate (latitude and longitude). Using this API requires an "API key". Here it is **AIzaSyBZQBnlke9vzjcTo0PL1HmggIlhNBh4chU**

The top of the documentation may look somewhat daunting. Push through. The examples further down will make it clear. Steps to create the URL to access the API:

* Click the copy icon. It makes it much easier get the whole URL rather than selecting and copying the long string of text. (It's why the icon is there.)  
  
* Open Notepad, paste the URL string there to see it all and to strip out any formatting. e.g. https://maps.googleapis.com/maps/api/timezone/json?**location**=\_\_.\_\_\_\_\_\_\_,-\_\_.\_\_\_\_\_\_\_&**timestamp**=\_\_\_\_\_\_\_\_\_\_&key=***YOUR\_API\_KEY***
* Change *YOUR\_API\_KEY* to AIzaSyBZQBnlke9vzjcTo0PL1HmggIlhNBh4chU
* Copy the URL and paste into a browser tab (Ctrl+A, Ctrl+C, Alt-Tab to browser, Ctrl-T, Ctrl+V, ⮠ )

**Once you have the sample API working, modify the URL request to return the timezone and UTC offset information for Toronto. (UTC = Universal Time Coordinated)**

* You will need Toronto’s location, i.e. its latitude and longitude. This [link](https://www.google.ca/search?sourceid=chrome-psyapi2&ion=1&espv=2&ie=UTF-8&q=how%20to%20get%20latitude%20and%20longitude%20on%20google%20map&oq=how%20to%20get%20lat&aqs=chrome.1.69i57j0l5.8600j0j7) might help.
* You will need a current timestamp. This [link](http://www.unixtimestamp.com/) might help.

🡺 What is your timezone API request for Toronto right now? i.e. **the URL with query string**

🡺 What was the JSON Response AND what does JSON mean?

🡺 What was the XML Response AND what does XML mean?   
(this requires a second API request with a slightly different parameter)

🡺 How would you convert the UTC timestamp to Toronto's local time using the information provided by the API? (the above link and a calculator will help).

**SDLC**

🡺 (25 points) Apply the SDLC to a project or assignment in IPC144 or ULI101. How will you use the steps of software development to complete your next assignment?

***What is the problem?***

**–> Determine**:

**–> Define**:

***What is the solution?***

**–> Design**:

**–> Develop**:

**–> Deliver**:

🡺 (15 points) **Many devices exist in the Internet of Things or IoT. Describe three such devices—start Googling.** (Note that modems, routers, switches, bridges, etc. are part of networking architecture that connect the Internet to Things; they are not generally considered IoT devices themselves although they are all examples of embedded devices.) An IoT device may have its own IP address but is not a general purpose computer like a server, PC, tablet, or smartphone. IoT devices are single purpose devices, many use Wi-Fi, others connect to the Internet by proxy (e.g. Bluetooth to your phone and use your phone's data connection), some IoT devices are even wearable.

🡺 (15 points) **Software Version**

Research the version of software you use, such as a game, photo editor, browser, or IDE. Usually, the version can be found under the Help menu, About…

* Software/Firmware description and version. What do the components of version number mean?
* In what way would that software be [forward compatible](https://en.wikipedia.org/wiki/Forward_compatibility)?
* What can you observe to indicate that the software is [backward compatible](https://en.wikipedia.org/wiki/Backward_compatibility)?
* Find the release notes for that software and include the
  + URL,
  + release date,
  + a description of one of the latest changes.
  + e.g   
    <https://support.office.com/en-us/article/release-notes-for-office-2016-for-mac-ed2da564-6d53-4542-9954-7e3209681a41>   
    Release Date: February 13, 2018   
    *Excel – Precision selecting: Ever selected too many cells or the wrong ones? You can now deselect extraneous cells without having to start over.*

Your operating system probably keeps its version up to date as does your anti-virus and malware protection utility. It is a good idea to check your other software and firmware to ensure you are at the most current, i.e. *secure*, level. **Have you checked that your router’s firmware is up to date? Your router can be a firewall against intrusion from the Internet but only if its firmware has been patched to plug security holes.**