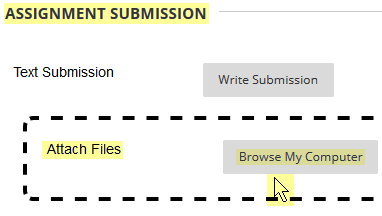
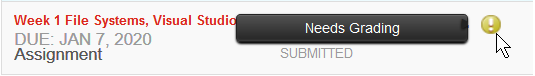
* ICT is a discipline which often needs much explanation (ICT = Information and Communications Technology) and always requires attention to detail such as reading all the documentation *carefully*. There is no [TL;DR](https://en.wikipedia.org/wiki/Wikipedia:Too_long;_didn%27t_read) in ICT. (TL;DR = Too Long; Didn't Read) **If ICT was simple, easy, and quick, no one would pay us to do it.** This course is no exception and you are being paid to do it, paid in marks, but paid nonetheless so you are now a professional ICT person.
* The School of ICT tries to be operating system agnostic. We believe in the existence of one true and [eternal](https://en.wikipedia.org/wiki/Halting_problem) [Turing Machine](https://en.wikipedia.org/wiki/Turing_machine). When it comes to implementation, faith and beliefs may vary but all are respected.
* There are times when a particular operating system is necessary and when it is, this course uses Microsoft Windows. Hello, Apple macOS people, welcome…we mean you no harm. That goes for you Linux gurus, too. We admire Apple users for their good taste in hardware and Linux geeks for their virtue of nerdiness. Windows runs at least 85% of the desktop/laptop market worldwide and, despite what you see in North America, macOS is 9% to 15%. Microsoft PCs dominate 95% of the business world's desktops. Windows PCs are more compatible with business systems (servers and multi-user software) than macOS. Why? macOS is a consumer product; there is no server macOS (Apple tried), and systems development organizations don't care that your iTunes stuff is nicely integrated across all your Apple devices.
* ***The Visual Studio Community IDE used for your C programming course runs only under a Windows operating system****. There is a "Visual Studio for macOS" but it is similar in name only; VS for macOS does not support C/C++ programming****. VS Code may be a viable option for macOs and Linux users.*** *Visual Studio IDE is the most used development environment among professional programmers.*
* You do not need a personal Windows machine to be successful at Seneca. Our programs cover all major Operating Systems (IBM, \*nix, Windows, with some Apple specific courses); Seneca labs give you access to all OS flavours. There will be times when it is necessary to work on the native OS platform or at least within a virtual Windows machine. Visual Studio IDE is one of those times as is Part 3 below.
* Ensure you are working with the unzipped files from any downloaded Blackboard zip file. Extract the files from the zip archive to a Desktop or Download folder and then delete the .zip file to avoid confusion. (Yes, you can double click to open a file within the zip archive—the OS automatically decompresses it to a deeply buried temporary work folder—but you cannot easily do the following activity with those temp files.)
* For weekly activities, copy the 🡺 *questions* and the following answer box into another Word document and answer them as best you can. Please feel free to talk about the activity with your colleagues but do not share files and use only your own words in your answers.
* The suggested format of your document’s filename is  
  *your-SenecaID*\_course\_W*nn*\_*content*.docx   
  where W*nn* is the week number and *content* describes what is in the file, e.g.  
   *tmckenna*\_CP4P\_W*01\_FileSystems-VisualStudio*.docx  
  It's a good file name if, six months from now, you don't have to open the file to know what's in it.
* **Submit only the completed activity file in *MS Word .docx format* through Blackboard via the weekly topic link in Course Documents.** Your instructor may charge you up to 20% for the effort of dealing with anything else. No need to enter any "Submission Text" or add comments...they just slow down both our processes. There is no need to also include your Visual Studio project or source code file. Your instructor already has these instructions; please omit from your submission.  
    
  Week 1 File Systems and Visual Studio **🡨 click this link and scroll down to…**  
  Click [ Submit ] and look for the success message near the top of the screen; review the contents of the submitted file. To make a correction, click [ Start New ] and resubmit. Only the most recent submission will be marked.

**Wait** until you see the Success! message near the top of the page and confirm your submission is rendered properly. A "Submission received" email is also sent. Go to **My Grades** to confirm. If you see an exclamation mark symbol, you are done; it ready to be marked by your instructor.  
  
  
If you see a blue clock icon in My Grades,  
 then it did not work usually because the tab / browser / computer was closed during the submission process. Resubmit.

**Tip: copy this arrow** 🡺 character, Ctrl+F to find, Ctrl+V to paste the arrow, and search both this activity document and your answer document to ensure you have completed all the questions.

* **Note for any course**: answers copied and pasted from Internet sites without proper citation and referencing or copied from another student will result in zero marks **FOR THE ENTIRE SUBMITTED WORK** and may be subject to Academic Integrity review. Please DO discuss details of the activity with your colleagues and instructor but create the answer in your own words according to your own understanding.   
  The rule is: you can **talk all you want but don’t copy**/paste anything without attribution.
* **So, what about the content and expression of your answers? How will your answers be evaluated?**

Straightforward answers get straightforward marks. Answering with *why*, in addition to *what* or *how*, gets more marks. In the A and A+ grade range, your instructor has found you provided responses beyond or below the surface of the questions. E.g. how to "delete a file from a PC permanently so it cannot be recovered"? "Empty the recycling bin." is one way. There is at least one more way. An A+ submission is easy to read. It communicates your answers clearly, correctly, completely, concisely, concretely, and with consideration for your reader; creativity is always welcomed.

* Keep only the 🡺questions and your answers.   
  Delete all the explanatory steps and instructions (such as this and everything above, as well as instructions between questions).

**Part 1 of 4: Visual Studio Community introduction (25%)**

Complete the Visual Studio project creation and Hello World program using the Visual Studio 2019 IDE (Integrated Development Environment) or your own code editor if you must. See the CP4P\_Week1\_VS\_2019 demo.docx within the zip file where you found this document, and **see the Getting Started page via the C programming course's home page. It contains guided videos and useful setup instructions for other utilities needed in C programming.** For diploma programs, see[**https://ict.senecacollege.ca/~ipc144/pages/startup/index.html**](https://ict.senecacollege.ca/~ipc144/pages/startup/index.html) or for the degree program, see [**https://ict.senecacollege.ca/~btp105/pages/startup/index.html**](https://ict.senecacollege.ca/~btp105/pages/startup/index.html)

Keep only the 🡺 questions and insert your answers within the boxes. Remove all instructions before you submit.  
If you copy the questions and answer box to a new document, Keep Source Formatting when pasting.  
**Delete this paragraph and all that came before it as well as instructions between the questions below.**

* Your name: Student No.: UserID: @mySeneca.ca
* What code editor / IDE did you use to create the demonstration helloWorld.c source file?   
  And what platform was that on: Windows, macOS, Linux?
* Where is your helloWorld.c source file? Find the file and paste its Full Path in the box:

*(Hints at using File Explorer to find your Visual Studio project's files are in the VS demo document.)*

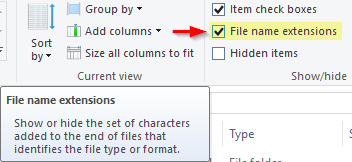
* What is the content within the helloWorld.c file? Your source code, of course.  
  *Copy the text of your customized source statements from the Visual Studio editor and paste in the box below using the Paste Option to either Merge Formatting (M) or Keep Text Only (T).*

***N.B.*** *there is no need to submit the VS project or the .c source file itself with this week's activity…just your C code above.*

**Part 2 of 4: Proper naming convention and having correct file extensions (25%)**

**Four files can be found in the “CP4P\_Week1\_Activity\_WorkFiles” subfolder. Those files all have the wrong file extension. Your task is to add the correct extension to those file names so the system can properly process those files.**

* + **IF** the filename extensions are **not** being displayed in File Explorer:

1. Press Alt-V to activate the View menu: 
2. Click to turn on the display of  
   "File name extensions"  
   

Normally, when you right-click a file, a number of options are available to process that file. E.g. Preview, Open, Open with > [optional applications]. These options are based on the file’s extension which the system relates to an application. Double clicking a file name opens it using the default application.

file**.txt ⇨** Notepad file**.html ⇨** Web Browser  
file**.bmp ⇨** Paint graphics file**.jpg ⇨** Windows Picture Viewer

If there is a problem with the data within the file, the default application may issue an error message or, as many manuals say, "results may be unpredictable".

Click and drag the file from File Explorer and drop it into a browser; any browser can render any of these file types but only if the file’s content matches its file extension. Firefox gives the best feedback when there is a problem.If nothing happens when you click and drag, you are probably dragging a compressed file from the .zip. Software applications work only with uncompressed file data.

* Describe what happens and what you see when the file is dropped into Firefox (preferred) or any other browser. It will not be as expected from the file extension.

lunamoth.html 🡪

lunamoth.jpg 🡪

lunamoth.txt 🡪

lunamoth.bmp 🡪

**To see the file's data which is causing problems, open those files with Notepad to inspect their content:**   
Start Notepad ( + “Notepad”), Open the file (Ctrl+O or File / Open) or just click and drag the file from File Explorer and drop into Notepad. This will display the file’s binary data as characters. Examine the raw data and determine what the file's extension should be.

* Text files (.txt) can contain any characters but usually contain human readable information formatted with little more than [TAB](https://en.wikipedia.org/wiki/Tab_key) and [newline](https://en.wikipedia.org/wiki/Newline) special characters.
* Web pages are text files with [**HyperText Markup Language**](https://en.wikipedia.org/wiki/HTML) (.html, .htm) that browsers use to display content. Visit <https://en.wikipedia.org/wiki/HTML#Markup> to see what HTML files look like.
* Find out what a **JPEG** (.jpg) photo file and a **bitmap** (.bmp) graphics file begin with. See <https://en.wikipedia.org/wiki/List_of_file_signatures> for data used to identify the content of a file.

Now, rename each file **adding** the proper extension until all four files are opened correctly by their default applications. e.g. rename **lunamoth.bmp** to **lunamoth.bmp.???** in order to keep track of which extension was renamed to another extension. Only the last extension on a file’s name is used by the operating system.

* What are the new names of the files?

lunamoth.html.*???*

lunamoth.jpg.*???*

lunamoth.txt.*???*

lunamoth.bmp.*???*

* What does this experience tell you about the importance of file names and their extensions? Did the renaming of these files have an effect on the data contained within the files?

**Part 3: Working with a removable USB drive and a local drive while doing common file/directory operations**  **(25%)**

* + Open File Explorer and navigate to your folder containing the above Week 1 files.

In the left hand pane within the folder tree and using right-click…

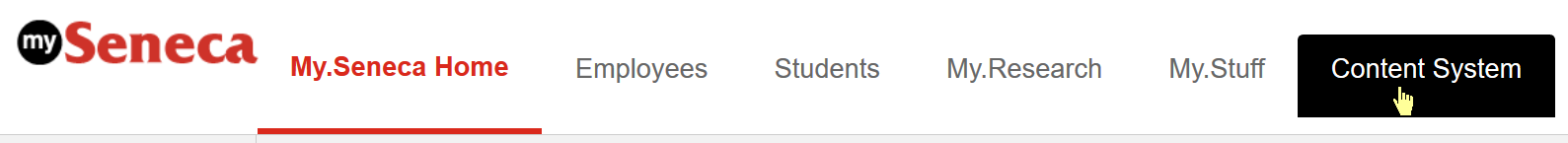
* + Create a new folder somewhere on the C: drive, e.g. under Desktop or Downloads.
  + Create a new folder on another drive, e.g. your USB drive or the D: drive on a lab PC if you don't have a USB drive (*get one soon*)
* What happens to the files (not their content) when you select the lunamoth files in your original folder, then drag and drop them in the new folder on your **USB drive or the D: drive, i.e. when the target drive is *different* from the source drive**…  
  are the files MOVED or COPIED?
* What happens to the files (not their content) when you select the lunamoth files in your original folder, then drag and drop them in the new folder on the **C: drive, i.e. when dragging to a different folder within the *same* drive**…  
  are the files MOVED or COPIED?
* What happens when you drop a file while holding the Ctrl key and releasing the Left mouse button?

Programmers almost always click, drag, and drop using the **right** mouse button.

* What happens when you drag and drop a file using **right** mouse button?
* After deleting a file from the PC's internal drive, can you restore it? If so, how?
* How can a file on the PC's internal drive be deleted permanently?
* After deleting a file from your USB drive, i.e. an external drive, can you restore it? If so, how?

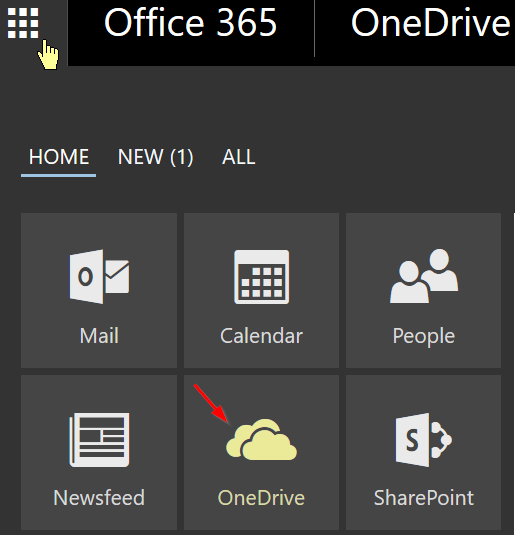
**Part 4: Backing up your files (25%)**

**A backup is two copies in separate geographic locations on independent systems.**

Use the browser to open the **Content System** in Blackboard   


It is a simple repository where you can store folders and files.

If you see this message: Sorry! We can't access your Content Collection due to a permissions issue. Please ask your administrator for help. then please go to the Service Desk in the SEQ building Learning Centre, tell them about this, and ask them to check your account's authorities.

Storage is also available by going to **mySeneca.ca** and opening Office 365's OneDrive.   
Click on the grid in the top left to open the menu and click on OneDrive.  


For the next question, if you do not have a USB drive with you, just work with OneDrive and the Content System.

🡺 Can you edit a text, source code, and/or MS Office file stored…

* + directly on your USB drive?
    - If so, how? If not, what must you do to edit a file stored there?
  + directly in the Blackboard Content System?
    - If so, how? If not, what must you do to edit a file stored there?
  + directly on Office 365's OneDrive?
    - If so, how? If not, what must you do to edit a file stored there?

You can store and work with your Visual Studio projects (in **repos** or **Projects** folder) directly on a USB drive or your Office 365 OneDrive at Seneca.

* It takes effort to copy files and directories from a USB drive or the Content System or OneDrive to the local drive, work with and save them locally, and then transfer the local files back. Is it worth the effort? Why or Why not? What are the benefits and risks in having the same file on your local system and on a removeable drive or remote system?

**Create a backup: make two copies of today's files in separate geographic locations on independent systems** both of which are not on the lab machine you might be using now. If using your own PC/laptop, you need *at least* one backup.

To back up all your Visual Studio work, compress/7zip the **repos** or **Projects** folder (with its sub-folders) into an archive and copy/move the archive file to a geographically separate system.

You can work with your Visual Studio projects directly on your own laptop, a USB drive, a personal OneDrive, or your Office 365 OneDrive. Make *one* of those your standard practice. Choose a different one for your backup. To distinguish the back up from your active version, put the repo into a zip file.

* What are the two locations of your backup?

N.B. bidirectionalsynchronization of your PC's files with a cloud data service makes your system *interdependent* with the cloud; the synchronization is convenient but the systems are not independent. Although separated by geography, you have one file coexisting in two places. That is neither a copy nor a backup until you disconnect from the cloud service – only then are the two systems independent. As soon as you reconnect, files are sync'd and you once again have neither a copy nor a backup. If a file is deleted in one system, it will be deleted from all other sync'd systems.

**Make sure you have a proper backup before restarting or shutting down a Seneca lab PC – when it starts, the PC is reset to its default state. That is, all files from the previous session are gone.** At the start of term, it is worth confirming that that the PC is correctly configured: the D drive should indeed be temporary, and C:\Users\ should have retained none of your files.

**USB flash drives are wonderfully portable which makes them easily losable.** If you do lose your drive, usually by forgetting it in the lab PC, how will it ever get back to you?

*Little Bo-Bleep  
has lost her USB-flash-drive-with-files-on-each-of-her sheep,  
And doesn't know where to find it;  
Without her name,  
Home ne'er it came,  
But would have if she had signed it.*

(Sadly, she didn't have a backup.)

* Rename your USB drive's volume label to your name.
* Put a **!!\_PLEASE\_RETURN\_TO\_!!.txt** file in the root with your email address, contact information, and a nice message promising a reward coffee.
* Put your name on the outside of the USB drive.
* And it just might come home wagging its data behind it.

After your instructor has marked your activity, see the feedback under "My Grades". Click the speech bubble beside the mark to see comments. And compare your mark with the Activity Marking Rubric in the course Announcements.

|  |  |
| --- | --- |
| cid:image002.png@01D567E4.4900C7D0 |  |

**Tip:** copy this arrow🡺 character, Ctrl-F to find, paste the arrow and search both this activity document and your answer document to ensure you have completed all the questions before submitting. It is worth rereading the preamble in the Activity document now; submission instructions are there along with other important points. There is too much any human being can remember during the first week so reviewing and retracting steps is recommended as is giving yourself a break.