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Setting up your machine for this class is not difficult but will require some time. This document discusses how to set up your machine for this course and provides some suggestions for simplifying the work you will do in this class. The screenshots are from Windows 10 and Visual Studio 2015. Your screen may vary.

# Prerequisites

Before you begin note the following prerequisites for your environment.

1. Windows 7 SP1 or higher or Windows Server 2008 R2 SP1 or higher
2. 1 GB memory
3. 4 GB hard drive space
4. 1.6 ghz or faster processor
5. Fast internet connection for downloading software
6. Additional requirements may be found [here](https://www.visualstudio.com/en-us/downloads/visual-studio-2015-system-requirements-vs.aspx#1). Note that older operating systems may require additional Windows updates to be installed.

Special note: Mac, Linux and Android are not supported operating systems. These platforms are not supported and no assistance can be given if you choose to use them. Visual Studio Code is a beta product that does run on some Linux and Mac systems. You may be able to use it however most of the tools discussed below will not work and no support can be given for its use. You are responsible for ensuring any labs completed using Visual Studio Code work correctly in VS 2015 as well.

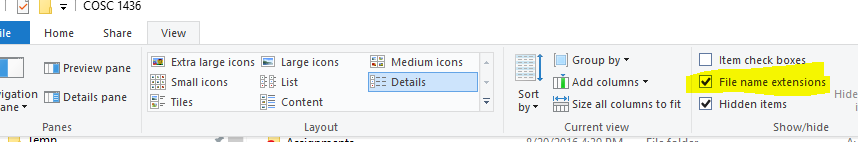
If you are unable to meet the above requirements then you will need to use the Computer Lab available on campus.

# Recommended Windows Programs and Features

Windows is designed for a novice user. Programming is considered advanced user tasks and therefore the default Windows settings and programs are not ideal. The following are recommended changes you make to your computer to simplify your programming efforts.

### Show real filenames

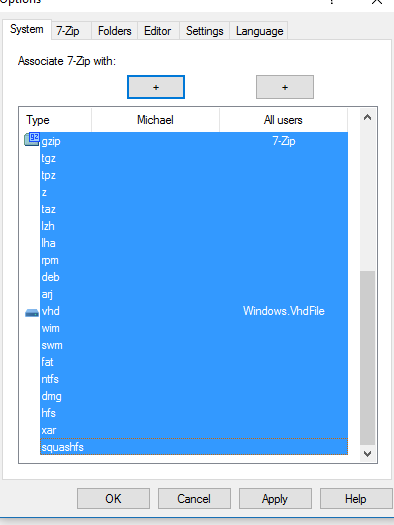
Out of the box Windows does not show you the real name of files. Most files have a file extension that help identify the type of file but users are generally not concerned with this. We will be and therefore showing the full filename is important.

1. Open Windows Explorer (not Internet Explorer).
2. For Windows 10
   1. Go to the View tab
   2. Check the option for *File name extensions*
3. For older Windows versions
   1. Press the Alt key to bring up the menu for Explorer and select Tools\Options
   2. Go to the View tab
   3. Uncheck the option to *Hide file extensions for known file types*
4. All files shown in Windows Explorer will now show the (generally 3 letter) file extension after the file name (ex. Explorer.exe).

### Install an Archiving Program

Windows ships with built in support for archive (.zip) files but there are several problems with it. For one it is really slow even for small files. Secondly it shows the file as a folder which gives you the illusion of it actually being a folder in which you can double click files. But this rarely works and more likely will cause errors so replacing the standard Windows archive program with a better one is recommended.

One freely available and solid program is 7-Zip. I recommend that you install it (or another tool).

1. Download the [program](http://www.7-zip.org/). For most computers the 64-bit exe version is the correct version.
2. Run the setup program to install it. (Warning: Free programs tend to offer additional software during their installation. Read each screen carefully and only install the core program. Do not install additional software such as Yahoo Toolbar or Bing, etc.)
3. After installation start the program as an administrator (right click the icon and select *Run as Adminstrator*).
4. Go to Tools\Options.
5. Select all the files in the list (click the first item, hold down Shift and click the last item) and then click either the option to associate all files just for you or for all users. Then click Apply.  
     
   
6. Now when you are working with any .zip file it will use 7-zip. To extract a .zip file right-click and select one of the Extract menu options.

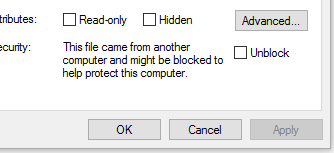
### Install a Text Editor Program

Windows ships with a couple of text editors and you likely also have Word but they are either too simple or too complex. There are many freely available text editors but I recommend Notepad++.

1. Download the [program](https://notepad-plus-plus.org/).
2. Run the setup program. (Warning: Refer to the warning earlier about setup programs) You don’t need to install anything other than the core program files but you may want to review what other options are available.
3. Now you can right-click any text file and select the option to open in Notepad++. It is recommended that you set Notepad++ as the default program for most text files.

### Blocked Files

Windows is designed to be secure by default. When downloading a file from the Internet Windows may mark the file as blocked. This is to protect you from running dangerous files. In general, trying to access a blocked file will fail. To check whether a file is blocked or not do the following.

1. Open Windows Explorer and locate the file.
2. Right click the file and select Properties.
3. On the General tab, if the file is blocked you will see a message about it being blocked and an option to unblock it.  
     
   
4. Click the option to unblock the file.

### Setting Up a Project Folder

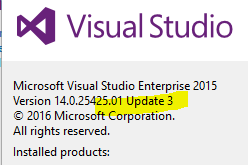
Most programs in Windows limit how long file paths can be. Visual Studio can easily test those limits. To prevent this from happening and to make it easier to find your labs it is recommended that you create a new folder in your Documents folder for labs.

1. Go to Windows Explorer.
2. Go to the Documents folder.
3. Right-click and select New\Folder.
4. Name the folder ITSE1430 or similar. Remember this path as you will need it later. The easiest way to do this is to click in the address bar (to the right of any text) and select the entire path.

# Setting Up Visual Studio 2015

Setting up Visual Studio will take a while and involves many steps.

### Install Visual Studio

1. Download Visual Studio 2015
   1. Community Edition is freely available. A link is available in the Files and Links section of MyTCC.
   2. Alternatively you can download the Professional edition of VS through Dreamspark when it is available. There is no difference between the 2 editions.
2. Install Visual Studio
   1. Run the setup program.
   2. Be sure that, during setup, you select the Customize option.
   3. Under the Features settings ensure the following are selected. Failure to do so will require a reinstall.
      * Windows and Web Development
        + Microsoft SQL Server Data Tools
        + Microsoft Web Developer Tools
   4. You may optionally install other components as well. If you intend to go forward in programming then consider installing the following additional features:
      * Other languages under Program Languages
      * Windows and Web Development
        + Microsoft Office Developer Tools
        + Universal Windows App Development Tools (if you are interested in Windows 10 applications)
      * Cross Platform Mobile Development (if you are interested in non-Windows tools)
      * Common Tools (if you are interested in Git)
   5. Finish the installation. This will take a while as most files will need to be downloaded.
3. Run Visual Studio for the first time.
   1. Start Visual Studio. This will take a while the first time.
   2. When prompted for a profile choose Visual C# for this course.
   3. Once Visual Studio has started then everything should be working correctly.
4. Ensure the latest update is installed (this should occur naturally during the installation above).
   1. Go to Help\About in the menu and verify the version number mentions Update 3.  
        
      
   2. If the update is missing then go to Tools\Extensions and Updates in the menu or click the flag in the top right of the main window.
   3. Go to the Updates\Product Updates tab, select the Visual Studio Update option and install it.   
        
      
   4. Install the update. This will take a while to run.
5. (Optional) Apply any additional updates.
   1. Using either Tools\Extensions and Updates or the flag in the top right corner of the main window go to the Extensions and Updates dialog.
   2. Go to the Updates tab and update any items that are listed.
   3. Restart Visual Studio as needed.

### Apply Class Settings (Optional)

For this class I am providing a set of default settings for Visual Studio to save you from having to configure everything.

1. Go to Files and Links in MyTCC.
2. Download the *ITSE1430 Settings.zip* file.
3. Extract the file to your Documents\Visual Studio 2015\Settings folder.
4. Start Visual Studio.
5. Go to Tools\Import and Export Settings menu.
6. Select the *Import selected environment settings* option and click *Next*.
7. Select the *No, just import new settings* option and click *Next*.
8. If the settings were placed in the correct folder then they will appear under *My Settings* otherwise browse for the .vssettings file and select it. Then click *Next*.
9. Ensure that all check boxes are checked and click *Finish*.
10. Visual Studio should now be set up to simplify your programming.
11. To save you time later you may want to have Visual Studio automatically save to the project folder you created earlier.
    1. Go to Tools\Options in the menu.
    2. Go to Projects and Solutions\General.
    3. In the *Projects location* field put the path to the labs folder you created earlier (the path you copied from Windows Explorer).
    4. Click *OK* to save the changes.

### Install VSCommands

To submit your labs you will need to archive your solution. This is not a trivial process as Visual Studio requires certain files be included, but not all of them. Furthermore the folder structure must remain intact. VSCommands will make this process easier. We use a modified version of VSCommands available in the Visual Studio Gallery.

Important: Submitting labs without properly archiving them will cause you to lose points. Ensure you are following this process carefully.

1. Go to our Files and Links section in MyTCC.
2. Download the *COSC 1436 VSCommands.vsix* file.  
     
   Note: Ensure that you save the file to the file system as a .VSIX file, not a .ZIP. DO NOT extract the file or open it using any archiving program. You will not be able to install it if you do.
3. Close Visual Studio.
4. Double click the .vsix file to start the installation.
5. Click through the installation to add it to Visual Studio.

### Using VSCommands

To use the command open any solution. Then do the following.

1. Right-click the solution node in Solution Explorer.
2. Select Zip Solution.
3. In the dialog box leave the defaults.
4. Optionally add the .vs folder as an exclusion (only needs to be done once).
5. Click OK.
6. The solution structure gets archived into a single file. A new Explorer window is opened where the .zip file is stored.