PROCEDURE: Setting Up Windows PC Operating System for Use by HMML

Wayne Torborg, Director of Digital Collections and Imaging, HMML
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The Hill Museum & Manuscript Library (HMML) has been using digital camera and PC computer systems to conduct manuscript preservation projects since 2003. These PC systems run the Microsoft Windows operating system, which has evolved through a number of versions starting with Windows XP.

Windows 10 is the current operating system used by HMML digitization systems—Windows 11 will be used for future systems. This document outlines some basic procedures aimed at setting up a PC to make it as easy and useful to the user as possible.

From the factory, a PC running Windows is set up to be user-friendly to the point where certain features useful for HMML's work have been hidden away as being too "advanced" for ordinary users. Other aesthetic choices made by the default Windows installation, while eye-catching, are detrimental to HMML's work.

This document is not designed to be an all-encompassing manual for the administration and use of Microsoft Windows. It will focus on issues of the most importance to computer users working on HMML digitization projects.

User Accounts in Microsoft Windows

Modern operating systems assume that a particular computer may have a number of different users. This is quite different from the design philosophy of earlier PCs, which were designed for a single "user" even though they may have been used by different people. In those days, all the people using a particular computer had essentially the *same experience*—the system was set up *one* way.

Today's computers can be set up with multiple user "accounts." Each user logs in with their specific credentials, and their user experience is tailored to their needs, with each user having their own preferences set. In Windows, there are two main types of user accounts:

`Administrator`

A user logged in on an administrator account can install software, add other users to the PC, and configure various settings related to security. By default, Windows 10 PCs arrive with one administrator account created for the computer's new user to start with.

`Standard`

A "standard" user can configure personal preferences like their desktop background color and how Windows displays things like filenames and such, but cannot install software and change critical security settings for the computer.

This document will not be dealing with the installation of software needed for HMML digitization projects—this list is available elsewhere. The important thing to know is that the computer user must be logged into an administrator account in order to install software.

Once the computer has all the necessary software installed, it is best to use the computer on a day-to-day basis as a "standard" user. From a security standpoint, it's safer to operate in standard mode so that any malicious software accidentally downloaded from the internet cannot install itself.

First Steps
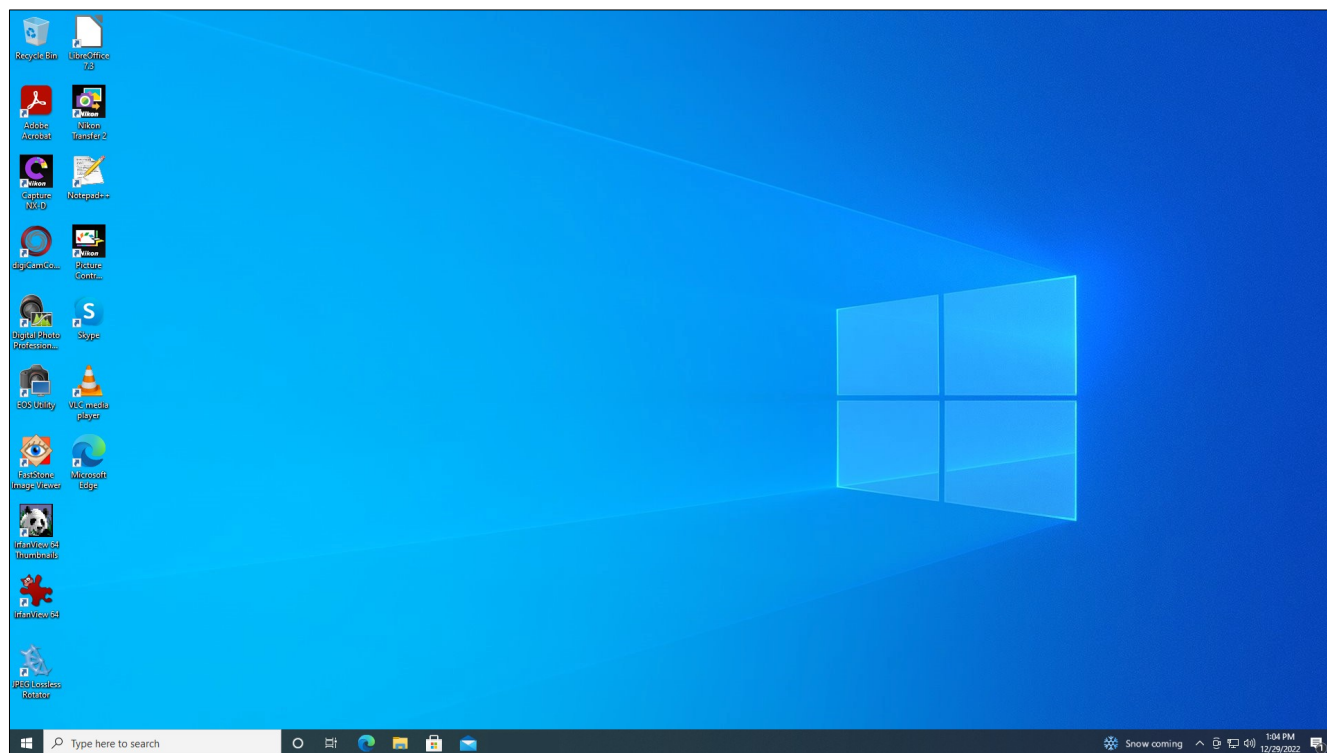
Initial Windows 10 Desktop. This shows the typical desktop environment after various software applications have been installed. There are a couple of things that are deficient with this setup: First, there is no *obvious* way to navigate the Windows file system available to the user. Second the bright blue background is not optimal for working with imaging projects. Having a blue light shining in one's face all day isn't the best way to condition your eyes to best evaluate the color and tonality of digital images.

The way Windows is configured in its default setup, the user has no obvious way to navigate the computer's file system. I find this ridiculous—users need to be able to find their work folders and the various connected memory sticks, external hard drives and such. Fix this right away by typing "This PC" in the Windows 10 search box at the lower left of the PC desktop.

This item will appear as the first item in the "results" list. Right-click on this and another window will appear. Choose "pin to taskbar." Now an icon for "This PC" will be permanently placed on the taskbar at the bottom of the screen, where the user can easily access it. Now everything on the computer is instantly accessible with one click on this taskbar icon.
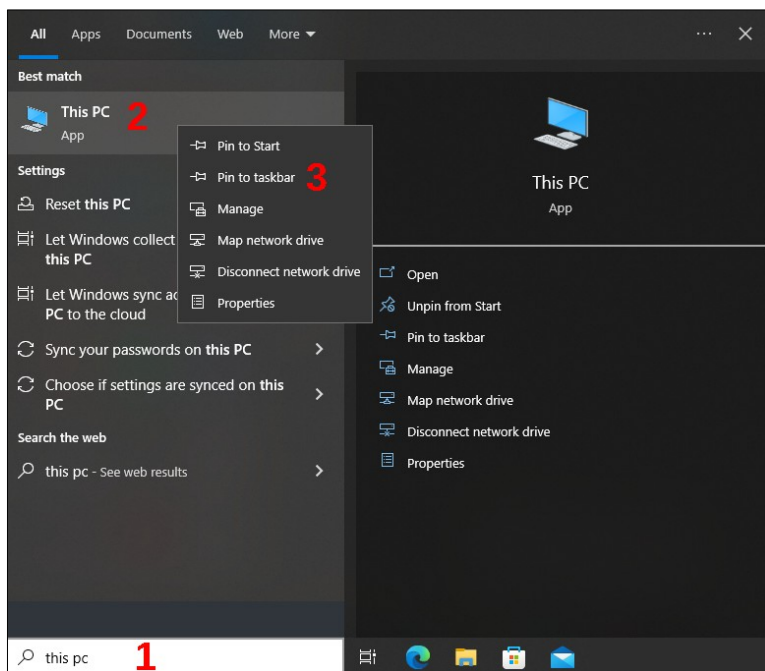
Pinning "This PC" to Windows Taskbar. 1. Type "this pc" in the Windows search box. 2. "This PC" will appear at the top of the search results. Right-click on this; a new window will appear. 3. Click on "Pin to taskbar. Now, an icon for "This PC" will be on the taskbar at the bottom of the computer screen at all times.

The next step is to right click anywhere in a blank area of the Windows desktop and select "Personalize" from the menu that appears. A settings window will appear.
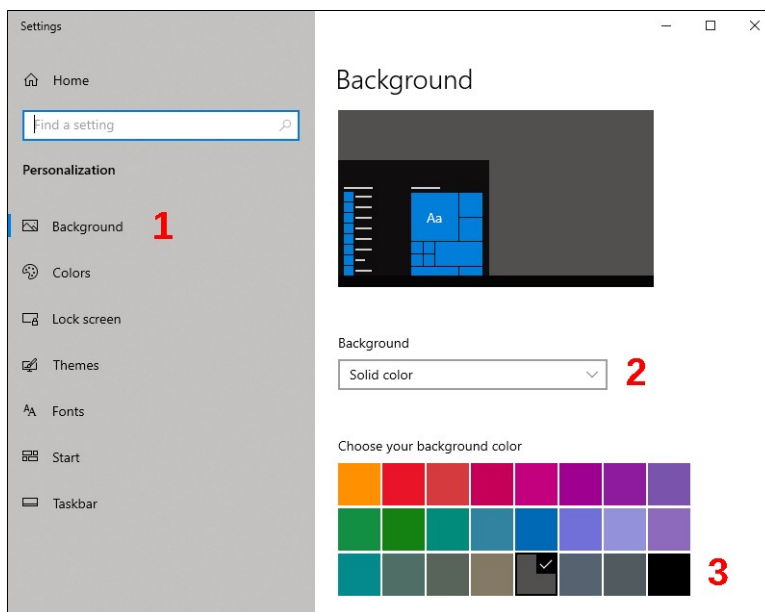
Choosing Desktop Background Color. 1. Click on "Background." 2. Choose "Solid color" from the dropdown list. 3. Select a neutral gray tone.

In this window the user can change the background from the blue Windows 10 image to a solid gray tone. Any of the gray tones should work well—avoid using solid black, as many digital imaging programs use this as their default color scheme, and it's good to be able to see the difference between applications and the desktop.

Next, click on the "Themes" menu item in this window and choose which icons you wish to have placed on the Windows desktop.
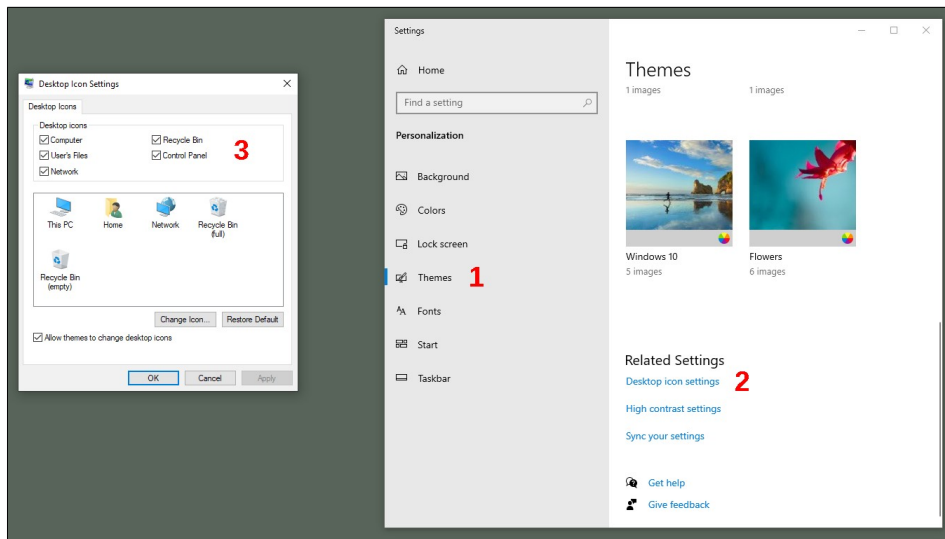

Choosing Desktop Icons from "Themes" Setting. 1. Click "Themes." 2. Click "Desktop icon settings." 3. Click the check-box next to the icons chosen to be visible on the Windows desktop. HMML generally selects all of the icons listed at the top of the "Desktop Icon Settings" window.

Choose to display the following icons permanently on the desktop:

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Computer
Recycle Bin
User's Files
Control Panel
Network
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This way, the user doesn't have to hunt around to find these resources.

By default the Windows desktop icons are rather large, and having lots of them on the desktop takes up too much space. I prefer to set these the smallest setting to keep them as unobtrusive as possible.
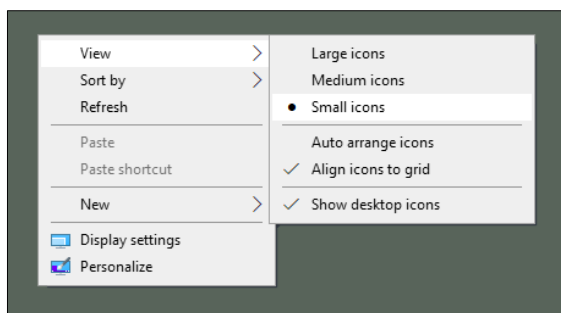
Setting Desktop Icon Size. Right-click on the Windows desktop, and under the "View" menu, choose "Small icons."

Working with Filenames

The images, text documents, spreadsheets, and other types digital objects created using computers have names. In computer-speak, this is referred to as the *filename*.

In the world of PC computers, the filename is a two-part construct. For example, a file with a name like:

    memo.doc

would be a document titled "memo," created in Microsoft Word or some other application that can produce "doc" files.

A typical image file might have a name like:

    flower.jpg

This would be an image (most likely of a flower) in the JPEG image format. This would be the sort of image taken with a digital camera.

The filename consists of an initial text portion, which is usually indicative of the file's contents or purpose. This is followed by a period. After the period there is a series of letters that make up what is called the file's *extension*. The extension indicates what type of file it is, and in some cases, the software application that created it.

The file extension can be rather generic, such as "JPG." JPEG files are created by and can be used by a number of imaging applications. Or it can be very specific, such as "CR2." This is the file extension for RAW image files created by Canon digital cameras. Knowing a file's extension gives the user instant feedback on the purpose of the file and the applications that can work with it.

The problem is, Microsoft Windows is not set up by default to display file extensions to the computer user. I guess it's assumed that this information is too confusing or complicated for regular computer users. However, HMML uses a "RAW + JPEG" workflow in its manuscript imaging projects, so two types of image files are created for every photograph taken. It's vital to be able to distinguish these types of files. You can change the filename view options using the File Explorer menu items.
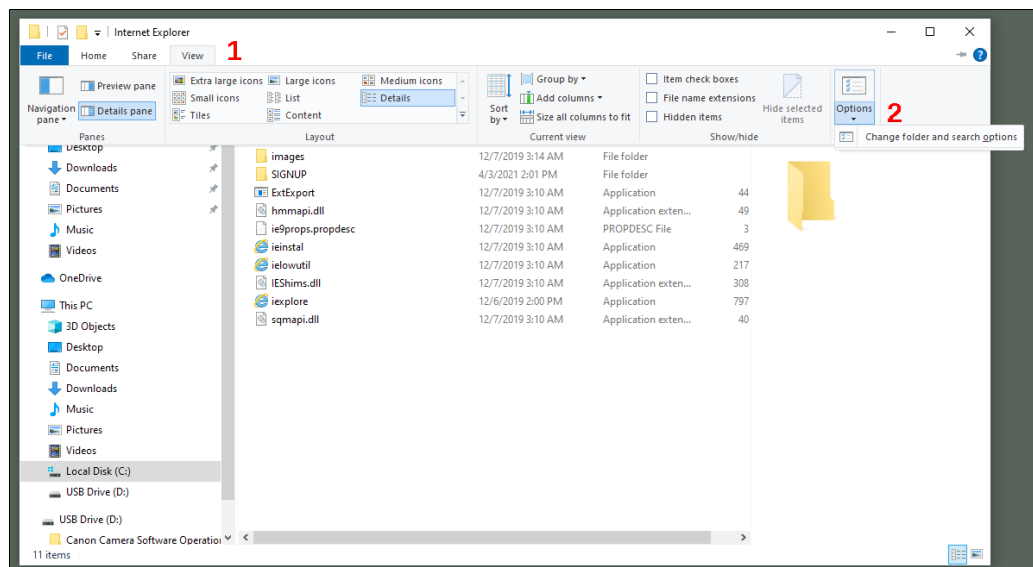
Changing the View Options for Files. 1. Click the "View" tab in a File Explorer Window. 2. Click on "Options," then select "Change folder and search options."

Clicking through the "View" and "Options" menu items will finally get the user to a window for changing folder and search options. Configure the settings according to the screenshot below.
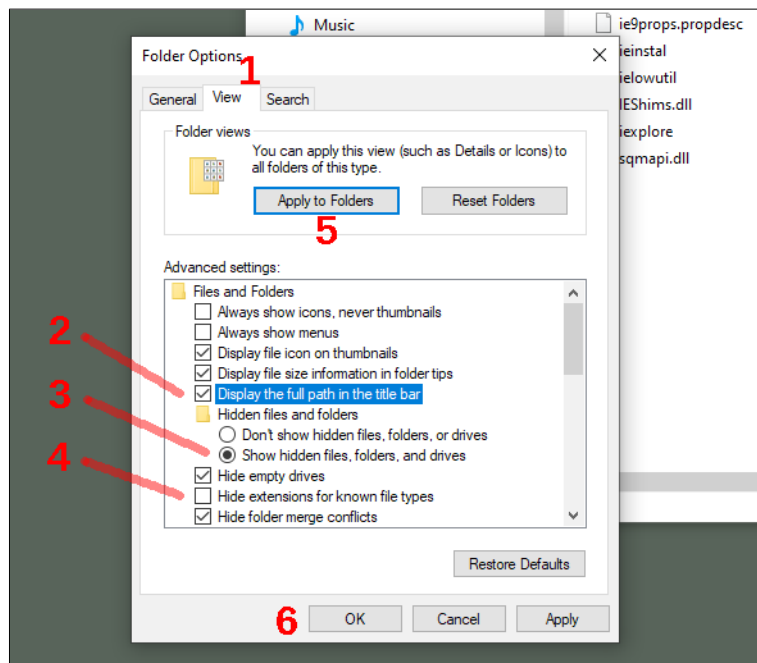
Folder Option Settings. 1. Click the "View" tab. 2. Choose to "Display the full path in the title bar" of the folder windows. 3. Choose to "Show hidden files, folders, and drives. 4. UNCHECK "Hide extensions for known file types. 5. Click the "Apply to Folders" button. 6. Click "OK."

These settings make things much easier to use and understand in day-to-day work. By having the full path listed in the title bar of work folders, the user knows where things are in the computer file system. Being able to see hidden files is useful because many programs generate hidden files that contain vital metadata that needs to accompany the (visible) files they are associated with. Finally, unchecking the box that hides file extensions means that the user can now see the difference between files such as:

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TEST_00001_001.JPG
TEST_00001_001.CR2
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With this information, the user can now organize files efficiently and in accordance with HMML guidelines.

Associating File Extensions with Applications

The file extension tells the user what the file is for, and it also tells the computer system which software application to launch if the file is double-clicked. Some file types, such as "JPG" images, can be opened in a number of applications, so in some cases the user may want to specify which app is used to open certain file types.

To change a file type's associated application, right-click the file and choose "Properties" from the context menu that appears. In the properties window that appears, under the "General" tab (the first one), there is a button labeled "Change..." to the right of the text, "Opens with:" Clicking this brings up

an application list that shows the default app at the top along with a list of other apps that can be chosen by the user.
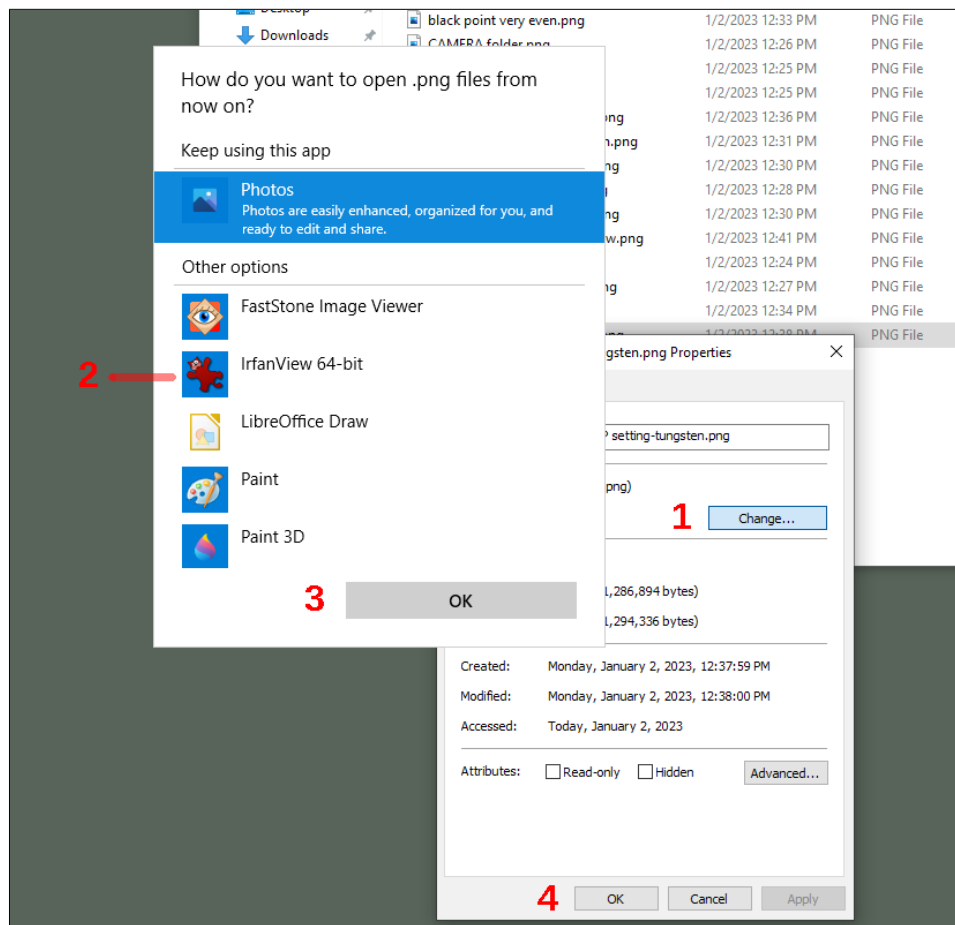
Changing the Default Application for PNG Image Files. 1. Click "Change…" from the first tab in the "Properties" windows. 2. Click on the preferred application from the list of apps that appear. 3. Click "OK" in the application list. 4. Click "OK in the properties window.