Apple*byte*

July 2016

FIG. 9B

Ambidextrous iPhone
It detects which hand you are using!

Convention Centre
cnr Highsted & Sawyers Arm Roads

July 27th 7:30 pm

Contents

Meeting programme

7:30 Monthly Meeting
- Welcome and News
- Bart Hanson - Lead Glasswork
- Apple's Apps - continued
- Supper

Come along and share your passion for Apple products. Learn about the latest technology, and enhance your skills. And meet with old and new friends over supper. Visitors welcome.

Submitting your article

Electronic submissions are preferred (to save wear and tear on my fingers). Just choose whatever format suits and send it to:

editor@appleusers.co.nz

One page is roughly 450 words. Most article are less than 4 pages, but longer articles may be accepted if of particular interest or relevance. Please ask in advance if you are planning a longer article.

Please write clearly; short sentences are recommended to help you do this. Use a spell-checker. If you are quoting some other article, please include an acknowledgment of your source.

Pictures can help explain your article, so by all means include one (or more) if appropriate. The format is not important - jpeg, tiff and gif are all fine, but try to provide a high quality image (300 dpi) if possible.

Next Deadline: 12 August 2016

PDF File Size

Have you noticed that after you have carefully prepared a letter / report / newsletter, and loaded it with vibrant images, the PDF file is rather large? When it is too big to email, you are faced with a choice - either remove some images, or edit all the images to make them smaller. Or perhaps you can break the file up into multiple parts and email them separately?

There is an alternative - you can reduce the size of the PDF file. Open the fie in Preview (double-clicking is usually sufficient unless you have Adobe Reader installed), and in the File menu, select 'Export' (not 'Export as PDF').
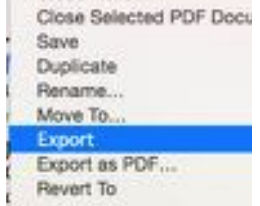
From this window, you are going to export the PDF as another PDF, but after Preview has done a little magic. At the foot of the window is the magic wand:

The Quartz Filters are various sets of parameters that tell Preview (and some other programs) how to wave their wands. One of these sets of parameters is "Reduce File Size". This will cause the file exported by Preview to be smaller than the original file, mainly by reducing the image size and quality. - this is OK if you will view it on a screen,but possibly not if you are going to print the file.

Sometimes the filter does "too good a job",particularly if you already had a low resolution image in your document,and you think it would be nice to be able to adjust the filter parameters a little. Yes, you can - but. you need the magician's assistant: ColorSync Utility.

Start ColorSync Utility (in your Utilities folder), and then open the PDF file (File menu, and Open) that you want to "adjust". (You may want to make a copy of the file first - to avoid any mistakes.) At the bottom left of the ColorSync window is a listbox labelled 'Filter:'. Click to open that, and you will see the same filters that you saw in Preview. There may be additional filters visible here, as you can have private filters that Preview doesn't see (the bottom 3 here). When you select the filter, its effect is immediately visible, so you can see if that is what you want. (ColorSync does only show you the first page of your document, so this isn't as useful as it could be.) Just select another filter, or None, to remove the first filter, and try another.
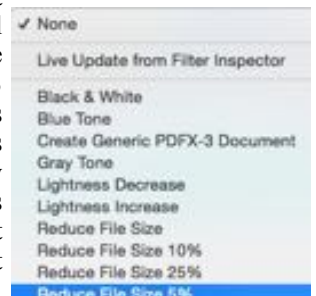
When you have a satisfactory result, click 'Apply' (in the bottom right of the window). You can then select some other effect and go through the same procedure - thus applying several different filter effects to your file at once. Save the file when you are satisfied with the result.

So far this is only marginally better than using Preview, as you can apply several filters; but what you really want is to adjust an existing filter, or to create your own filter. For this, select "Live Update from Filter Inspector"from the Filter listbox. This will open the Inspector in a separate window, with the Filters function selected, and all your filters listed.

The grey triangles on the left are ordinary open/close controls, in in the image to the right, I have opened the "Reduce File Size" filter,and its 2 subsections. You can see the parameters you can change to affect how the filter will effect your PDF file.
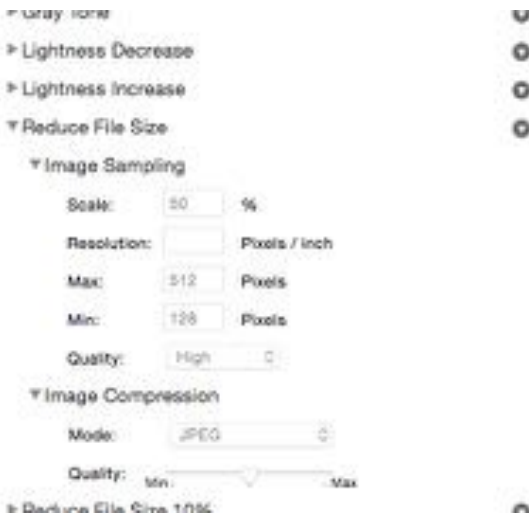
The triangle on the right provides actions: Duplicate, lock/ unlock, and other

parameter subsections that you can include in your filter. Either duplicate

an existing filter, or create your own (+/- at the bottom of the window) and see what the changes do to your document.(Remember to select the new filter in the PDF Filter listbox.)

If you really like the effect, you can save the filter (make sure that you specified a unique name in the Inspector - that is the name shown in the listbox). It will be saved as a private filter (in <user>/Library/Filters/) and will be available next time you use ColorSync Utility.

To use your new filter in Preview, you must copy it to:
        <boot-disk>/Library/Filters/
(You may need to create this folder, and enter your admin password.)

OS X & iOS Updates

In early June, Apple previewed this year's software updates, due for release in about September. The public beta releases are now available.

In the meantime the world goes on, and Apple continues to release small updates to fix serious bugs and security "situations.

First were the operating systems: El Capitan 10.11.5, iOS 9.3.2, tvOS 9.2.1 and watchOS 2.2.1. These contained few user-visible functions but numerous bug-fixes. Critically, there were among them literally scores of security improvements, making these updates essential for all users. Note that Security Update 2016-003 was also released, with separate versions for Yosemite and Mavericks.

More easily visible was the iTunes update to version 12.4. This brought back the sidebar as a component of the default window layout — a very popular reversion indeed. Some minor changes polish up the menus.

Finally, there were 'stability improvements and bug fixes' to some of Apple's productivity applications — Pages 5.6.2, Numbers 3.6.2, Keynote 6.6.2, and GarageBand 10.1.2 (which received also 'multiple enhancements to Accessibility').

On another front, while Apple hasn't supported 32-bit Macs since 2011 when Mac OS X 10.7 Lion was released, Microsoft has continued to release 32-bit Office software for the Mac. Five years later, Microsoft is finally making a 64-bit build of the productivity suite available, but only to Office Insiders for the time being. If you want to try out 64-bit Office for Mac, you need to be an Office Insider. If you already are, you'll have the option to update to 64-bit; if not, you'll need enroll through AutoUpdate, which you can find by going to Help -> Check for Updates.

And for those of us "out there", NASA has released a free Apple TV app. This version joins the app's other versions available for iOS in iPhone and iPad versions. The NASA app has been downloaded more than 17 million times across all platforms.

The NASA app for Apple TV offers several features for users:
• Watch live streaming NASA TV, and get a real-time view of the Earth from the International Space Station
• View more than 15,000 images individually or as a slideshow
• Play on demand NASA videos
• Find the next opportunity to view the International Space Station and other NASA satellites pass overhead, based on your location.
• Display 2-D and 3-D satellite tracking maps
• Discover the latest NASA mission information
• Listen to Third Rock internet streaming radio
• View the Earth as Art image gallery

Sophos Home for OS X

Unfortunately, with the growing Apple user base, we are starting to see some attention from the undesirable elements of the internet,and soon we may want to consider some third-party protection in addition to that built into our OS.

You may well be aware of 'Sophos Antivirus for Mac (Home Edition)' — a simplified free version of the well-reputed (and complex/expensive) Sophos application designed for large-scale enterprise environments.

A new version of this application, now named 'Sophos Home' was recently released — still free. The publisher states: "The same antivirus, malware protection, and web filtering technology trusted by hundreds of thousands of businesses is now yours to take home."

The user interface has been simplified to better suit the intended 'home user' profile, and there are some new features. The core function is of course virus protection, which is automatic and is said to "protect you in real time from malware and zero day attacks".

A key function of the new version is the ability to monitor and change security settings for a whole family (up to ten Macs and PCs) from any browser.

Web filtering is new and comprehensive. The access table lists subject types in categories of General Interest, Social Networking & Computing, and Adult & Potentially Inappropriate. Access to each of the defined 28 subject types can be set to Allow, Warn, or Block.

Sophos Home being free, its publisher does not offer individual support; however, the Help system has been improved and a user support forum is implemented.

For more information and to download/install Sophos Home, go to:
        <**https://www.sophos.com/en-us/lp/sophos- home.aspx**>.
Installing this download will automatically remove the earlier version, if it is found.

~ ~ ~ ~

Apparently, malware from China, Russia, Romania and elsewhere is ...well, malware. But malware from the FBI isn't ... because:
        "We're the good guys"!

Yeah, Right!

Special offers

Peter Fitchett

Note: These specials are available to all user group members. Contact Peter (web@appleusers.co.nz) for access or coupon codes.

Eltima Software Multimedia products: 20% Discount
    This offer is valid through **August 31, 2016**.

Nisus Writer Pro: 25% Discount
    This offer is valid through **July 31, 2016**.

EverWeb by RAGE Software: 50% Discount
    This offer is valid through **December 31, 2016**.

Take Control Books: 30% Discount on all eBooks
    This offer is on-going.

Opus][Complete Collection: 25% Discount
    This offer is on-going.

Joe On Tech Guides: 20% Discount on All Books
    This offer is on-going.

AgileBits 1Password 5 and more: 25% Discount
    This offer is on-going.

Eltima Software multimedia products: 20% Discount
    This offer is on-going.

TechTool Pro: 20% Discount
    This offer is on-going.

Noteboom Tutorials: 33% Off Annual Memberships
    This offer is on-going.

O'Reilly: 40-50% Discount
    This offer is on-going.

Prosoft Engineering: 25% Off
    This offer is on-going while supplies last.

Que Publishing Products: 35-45% Discount
    This offer is on-going.

SlideShark iPad PowerPoint Viewer: Free App plus Offer
    This offer is on-going.

Safari Reader

Have you ever been reading a longish article in Safari, and wished you could get rid of all the ads and other distractions? Well you can, and Apple has recently refined the mechanism by which you can do it. The Reader View is a function of Safari in both OS X and iOS, that will perform the trick for you.

Not all web pages make use of Reader — that's up to the author. If you come across one that does, Safari in OS X displays at the left hand end of the Smart Search bar a small icon comprising a number of horizontal lines. (The Smart Search bar is where the page's address is displayed.)

Click this icon and you'll be taken to a different view of the page that strips out the advertisements and other extraneous items, leaving you with just the text and required graphics — very much easier on the eye.

With the latest change to this feature you can tailor the Reader view even closer to your taste. At the right hand end of the Smart Search bar, click the icon with two A's to open a small panel in which you can choose a font, make the text larger or smaller and/or set the background colour. Click outside the panel to close it.

When you're finished with Reader view, click the 'lines' icon again or press the Escape key to exit.

On an iOS device, a message 'Reader View Available' is displayed as a suitable page is loading. Should you miss this first chance to respond to the message, swipe down to make the Smart Search bar visible again, and tap the 'lines' icon as for OS X. Proceed to set font, size and background colour in the same way. Tap outside the panel to return to Reader view, and when done, tap again on the 'lines' icon to return to the standard view.

Trashed Files

Have you ever tried to open a file that was located in the Trash?

Chances are you've seen the prompt which asks you to move the file out of the trash first.

To quickly view the contents of files in your trash, without restoring them select the file and press the SPACE bar. If the file is able to be displayed by QuickLook you will **see** its contents.

NOTE: You will still need to move it out of the trash if you want

iOS Live Photos

The iPhone 6s introduced a new photo trick — the Live Photo. When a photo is taken in this mode, the saved file actually contains two items: a JPEG still image that is displayed normally in most photo viewers, and a short MOV movie (about 2 seconds).

For various reasons you may feel the need to extract the MOV from a Live Photo imported into the OS X Photos application. This is actually not at all difficult, but it is a little obscure. It might seem that Apple didn't envisage anyone wanting to do this; they should know better.

A Live Photo imported into OS X Photos shows a small Live Photo icon (concentric circles) in the lower left corner of a full preview image, with a text label 'LIVE' alongside. The icon appears also if you request photo information (Windows > Info). If you hover over the LIVE label when viewing the full photo, you'll see the associated movie.

Still, none of this provides any indication that a MOV file exists within the Live Photo. The Info panel just says the photo is a JPEG, and if you export (File > Export > Export (X) Photo(s), only a JPEG is exported.

It's only if you Option-drag a Live Photo into the Finder, or select File > Export > Export Unmodified Original for (x) Photo(s), that both the unmodified JPEG and the associated MOV will be separately retrieved.

Another method is to use our 'old favourite' the Image Capture application on a Mac connected to the iPhone via USB. Open Image Capture, select the iPhone, choose 'Live Photos images', and then import them. This will transfer both the JPEG and MOV for each image.

The iCloud Photos application lacks even the ability to view a Live Photo, let alone separate the MOV from one; however, it does retain both JPEG and MOV components and will sync them among iOS and OS X

Use Both Eyes

Warning: Looking at your smartphone while lying in bed at night could wreak havoc on your vision. Make sure to use both eyes when looking at your smartphone screen in the dark.

In the New England Journal of Medicine, doctors detailed the cases of the two women, ages 22 and 40, who experienced 'transient smartphone blindness' for months.

Apparently, both women typically looked at their smartphones with only one eye while resting on their side in bed in the dark – their other eye was covered by the pillow. Problem solved - Use Both Eyes!

107 Best Mac Games

I wouldn't dare claim to decide which game was better than another, but Macworld is prepared to jump in and put their neck on he line with this compilation of currently available games - including a description/ review, the price,and a link to where you can get it. I am also not going to (re)publish it all - it would take too many pages (although that has its attractions!). So just the introduction from Macworld,so that you have an idea of what you are getting into, and then you can chase the link and read the original pages...

Contrary to popular belief, Mac gamers have plenty of top games titles to choose from these days - indeed, the most difficult part is narrowing down the options from all the high-quality games on offer, and then finding the money to buy and time to play them.

We can't help with the latter, but the first problem is right up our alley. We've collected the 107 best Mac games for your delectation, dividing them for the sake of convenience into seven categories:

Best role-playing games for Mac
http://www.macworld.co.uk/feature/mac-software/best-mac-games-3484158/?p=1

Best sports and racing games for Mac
http://www.macworld.co.uk/feature/mac-software/best-mac-games-3484158/?p=2

Best strategy games for Mac
http://www.macworld.co.uk/feature/mac-software/best-mac-games-3484158/?p=3

Best action games for Mac
http://www.macworld.co.uk/feature/mac-software/best-mac-games-3484158/?p=4

Best adventure games for Mac
http://www.macworld.co.uk/feature/mac-software/best-mac-games-3484158/?p=5

Best casual games for Mac
http://www.macworld.co.uk/feature/mac-software/best-mac-games-3484158/?p=6

Best puzzle games for Mac
http://www.macworld.co.uk/feature/mac-software/best-mac-games-3484158/?p=7

Good luck!

Dropbox

Dropbox enhances its productivity tools

Dropbox just dumped a ton of new productivity features on users of its file storage and collaboration service that are all aimed at making it easier for people to get work done within its applications.

Updates to the Dropbox app for iOS allow users to scan documents directly into the cloud storage service, and get started with creating Microsoft Office files from that app as well. The company also increased the ease and security of sharing files through Dropbox, and made it easier to preview and comment on files shared through the service.

These launches mean that Dropbox will be more valuable to people as a productivity service, and not just a folder to hold files. It's especially important as the company tries to capture the interest of business users, who see a wide variety of competing storage services.

Users of Dropbox's iOS app will see a big plus button that they can tap to add content to Dropbox from their phone. To help with that, Dropbox is adding support for scanning documents with the iPhone camera, and saving them as PDFs. The scanning feature lets users upload multipage documents, and gives them the ability to adjust the settings of each scan so that uploaded documents are at their most readable.

Users can also upload photos from their phone using a new photo upload workflow that will let them add individual images and also all of the pictures taken on a particular day. The service will use machine learning to try and recognize when documents are the subject of uploaded photos and offer to convert and process them to scans.

Dropbox Business customers will be able to search for text inside those scanned documents, thanks to new optical character recognition functionality that the company made available for its top tier of paying customers. It builds on full-text search capabilities that Dropbox already has available for digital documents uploaded to its service.
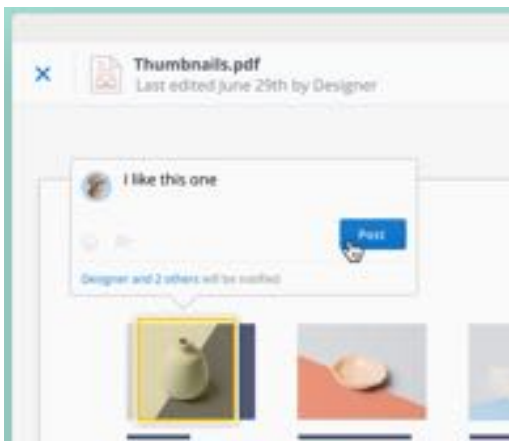
Using the plus button, people can also start Microsoft Office documents from the Dropbox iOS app. First, users select the document type, where they want to save it, and give it a file name, all inside the Dropbox app. After that, they'll be sent out to one of Microsoft's mobile apps to edit the file they just created, with all the changes being saved back to Dropbox.

People who want to use Dropbox to share files will have an easier time doing so. The Dropbox apps for Mac and Windows now let users access detailed file sharing settings from the Mac Finder (or Windows Explorer). That means users can set granular permissions for sharing documents without having to use the Dropbox web interface.

On top of that, all users can now share single files with specific people, rather than having to provide open access to everyone with a link or giving a list of people specific access to a folder. Users of Dropbox's free tier will also be able to share folders in read-only mode, something that was previously only available to paying customers.

After sharing files, users will now be able to comment on specific parts of a file from their Web browser. Previously, Dropbox comments weren't able to reference a specific part of a file—now users can highlight an area and discuss it in particular.

In the future, Dropbox will also allow users to attach Dropbox comments to Office files within Microsoft's desktop productivity apps. It's planning an update to the Dropbox badge that will let people make live comments on a PowerPoint presentation that show up in Dropbox, without having to leave the file they're working on.

Dropbox also gave business users a new security-focused feature. Dropbox Business administrators can now access a new audit log, which provides a record of everyone who interacted with a particular file. Those logs can be viewed through an online administrator console, but are also accessible through the company's API.

That means companies can choose to work with partners like Splunk and Domo to monitor those audit logs and generate notifications if something weird is going on.

The news comes a week after Drew Houston, the company's co-founder and CEO, revealed at a conference that Dropbox is operating cash flow positive. It's a positive sign for the company, which hasn't been much for announcing new, shipping features over the past year. These announcements may signal a change for the company going forward— it'll be interesting to see what comes next.

Automate Your Browser

One of the most under-appreciated tools on your Mac is Automator. It can take a while to get the hang of, but once you have an idea of how to use it, you can automate all kinds of useful tasks, from cleaning folders to creating voice commands. One of my personal favorite ways to use Automator is with its browser commands, which can help you save a lot of time with regular actions in Safari or any other browser.

We'll take a look at some ways you can use Automator with your browser.

Open a Webpage at a Specific Time

For this, we'll need to create a Calendar Alarm. Open up Automator and fire up a new project, then select **Calendar Alarm**.

Now, select **Internet** from the left sidebar and drag the **Get Specified URLs** action to the workflow on the right. Remove the default URL and add the page that you'd like to open (in this example, we've used http://www.makeuseof.com/).
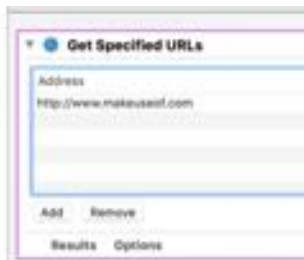
This will get the correct URL into the workflow, and now we'll need to do something with it. Drag the **Display Webpages** action into the workflow and place it below the previous action. You'll see that one produces output and the other takes input, so they're connected.

When you save the project, Calendar will open with a new event (in this case, it's called "Display MakeUseOf"). You can now edit the event so that it repeats whenever you want it to.
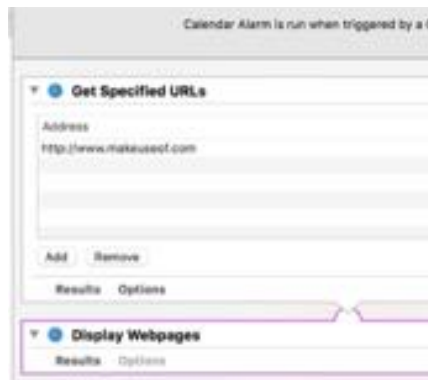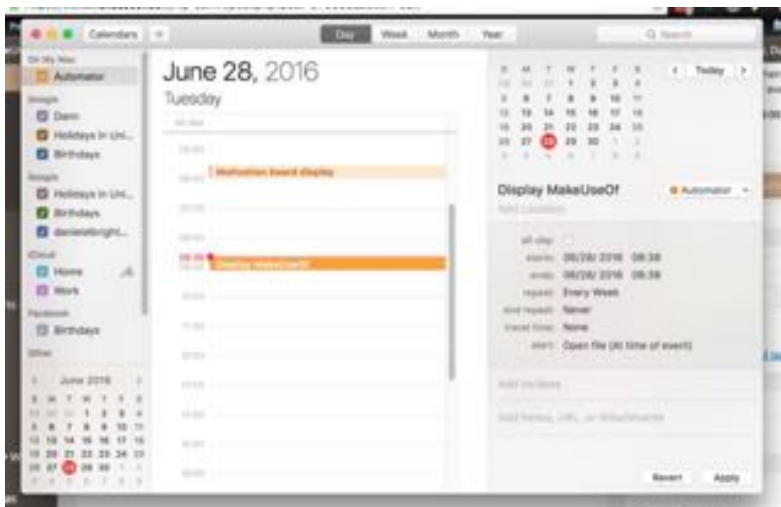
In the example above, MakeUseOf will open every Tuesday at 08:38. Just make the changes here so your page displays at your preferred days and times.

Open a Specific Set of Webpages

Maybe you use the same pages every morning, but you don't want to have them open manually. Why not create a small application that opens them all in your default web browser?

This time, you'll want to select **Application** as the document type when you open a new project. Again, go to **Internet** and drag **Get Specified URLs** into the workflow, then add your links:
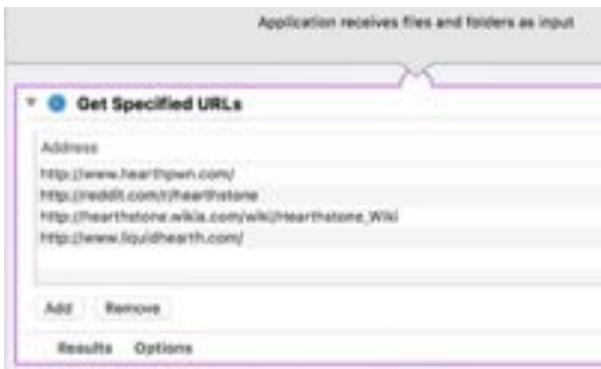
Next add the **Display Webpages** action below the previous one, and you're set. Give the application a name when you save it; then when you launch it, your default browser opens all four URLs in different tabs.

Download All Images on a Page

This automation will be created as a workflow, which means you need to run it from within Automator; even though it might seem like it would take a long time, this can be a great way to get things done.
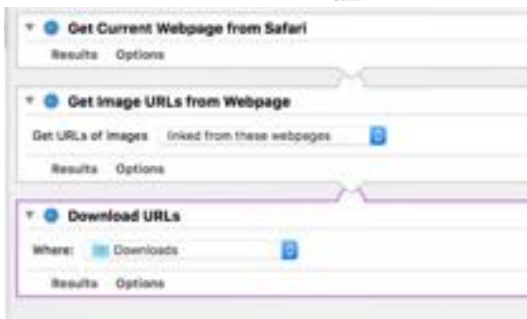
Let's create a new workflow; open a new document and select the **Workflow** option:

Again, go to the **Internet** category; this time, add **Get Current Webpage from Safari** to the workflow (unfortunately, this means this workflow will only work with Safari but ...). Add **Get Image URLs from Webpage** below that.

Set the **Get URLS of images** dropdown to **linked from these webpages**, and add the **Download URLs** action to the workflow. Set the download location to wherever you'd like the images to download to (in this case, the Downloads folder).

Now, to download all of the images from a specific page in Safari, you just need to open that page in Safari and run the workflow from Automator.

What Could You Automate?

It's a bit esoteric at first, but Automator can be a hugely useful tool for making your Mac more efficient. It takes a while to get used to the app, but after spending some time with it, you should be able to create all sorts of useful workflows, services, and apps for helping you do the things you need to accomplish every day.

Why not try something yourself, and share your results at a meeting?

Movie Time

What do you say to a free movie for a bit of entertainment? Here are a few sites that you may find something to fill the spare moments

http://free-classic-movies.com

Reportedly the LARGEST PRIVATELY OWNED website in the world, with 4 terabytes of movie files, all shared freely with every visitor world-wide. The classic movies are organised by date, from 1897 (*L'auberge ensorcelée* (*The Bewitched Inn*)) to 1979 (*Concrete Cowboys*). There are quite a few that I have never heard of before (but that wouldn't be hard), however, this is somewhere to bookmark and revisit - some of the titles look quite interesting.

For each movie, the release date is shown (where known) along with the title, the movie type, and the leading actors, so searching is as easy as doing a find in the web page. There are also a few Star biographies, and fan pick-lists if you are stuck for a choice.

You are free to watch them on your computer screen, or download them for watching offline (either large format, or podcast sized).

https://archive.org

Internet Archive is a non-profit library of millions of free books (10 million text files), movies (2.6 million videos), software (141 thousand), music (3 million audio files and 166 thousand concerts), websites (491 billion web pages in the *WayBackMachine*), and more.

In the movies,films and videos section, this library contains digital movies uploaded by Archive users which range from classic full-length films, to daily alternative news broadcasts, to cartoons and concerts. Many of these videos are available for free download.

The library is probably lacking a little in organisation - but then, you are probably going to find some unexpected gems while you are hunting around. I'm not sure why Sci-Fi and Horrors are grouped together in one sub-collection!

https://www.youtube.com/results?search_query=Full+Public +Domain+Movies

Yes, YouTube now also has full public domain movies available. The usual YouTube organisation means that if you know what you want, you have a change of finding it, and then you have all their suggestions of what to watch next to distract you.

Enjoy.

Unlocking Mac (Sierra)

You will be able to unlock your Mac using your Apple Watch once the next Mac OS is installed. macOS will 'recognise' your watch and automatically bypass the login screen to enable you to start work immediately. But can someone gain access by faking your presence?

Craig Federighi, Apple's senior VP of Software Engineering, doesn't think so ...

> It's a continuation of the work we did with continuity to develop really low-power BTLE based discovery protocols so that your devices could discover each other continuously with acceptable overhead from a battery point of view. And also, all the authentication mechanisms we put in place as far as having your devices know that they're your devices. So that's kind of a foundation.

> The unique challenge with auto-unlock is that you don't want a kind of relay-attack, where Phil is actually far away from his office and someone basically has a bluetooth listener that will forward a signal to you, because you're now by his Mac, and this Mac is having a conversation with Phil's watch over a very long distance. And so, we're actually able to do time of flight calculations using peer-to-peer Wi-Fi where we literally can measure how long at the speed of light it's taking for the signal to travel from your Mac to your watch and back.

> And because of that, if you interposed any kind of relay, it would introduce a delay that would immediately tell us that there are hijinks afoot. So that piece is critical.

Now measuring the difference between the WiFi signal being returned from say 1 meter away, compared with 5 meters away is rather fancy, I'm sure that you have to admit. (That is about 27 nano-seconds.)

On a similar topic:

I see that the Mac can also use use your iPhone's Apply Pay to make purchases.I'm just wondering whether I can sucker someone to link their iPhone to my computer to demonstrate something quite innocent, and then make a purchase when they are not paying attention ... sort of an early Christmas present, you could say :-)

The more that we enable machines to link together and help each other out, the more there will be "*unintended consequences*". I suspect that we will have some "*interesting times*" ahead.

APFS

Among the tidbits Apple revealed to its developer audience at the recently completed Worldwide Developers Conference was a new file system for the whole range of its products (from the Mac to the Apple Watch). Dubbed "APFS" (an acronym that Apple doesn't completely spell out even in its developer documentation), the file system is meant to replace the 1998 HFS+, the file system that in turn replaced 1985's HFS (Hierarchical File System). (At least we knew what that acronym stood for!)

Changing the default file system for an operating system is a big deal, since the file system is responsible for keeping track of all of the data on the device. But what does such a change mean for users?

Firstly, Finder is not a File System; it merely presents a view of your files and folders for your use. The real file system, or file systems - yes, there can be many - is hidden from your normal gaze. Probably the only time that you need to know about the file system is when you select which file system to use when you format a disk (a hard disk, a SSD, a memory stick, etc) in Disk Utility.

The file system works behind the scenes, providing information to the Finder and to applications about the files and directories that are stored in some fashion on a device connected to your Mac — whether in magnetic fields recorded on a spinning platter or charged cells in a solid-state device. The file system keeps track of how much storage capacity files take up on the device, where on the device the data that make up the files are stored, and all sorts of metadata about those files, such as their names, when they were created and last changed, which users are allowed to open them, and a great deal of other stuff.

APFS is designed to understand nearly all of the same instructions and information requests that the Finder, or any other Mac application, issues regarding storage devices managed by HFS+. You'll still be able to move files, rename files, copy files, open files, delete files, tag files, and so on just as you always did.

But You Will Notice Some Differences

APFS provides built-in support for large data volumes, encryption, flash drives, and virtual memory - developments that were bolted onto HFS+ as the technology developed.

Things that you may notice include:

Faster file copying and saving: Saving files and duplicating them on the same device will happen much more quickly and without using as much space. That's because APFS has been designed to reduce data duplication by sharing data between files as necessary. When you copy a

file to another folder in APFS, no data is moved. Instead the copy points to the original file's data on the device. If one of those copies is later changed, only the changes are stored: APFS handles which bits belong to which files. APFS's capability to change only parts of files also speeds up file saving, and, especially, automatic saving using versions. Viewing and restoring from a previous version in an app should be faster too.

al, but on a spinning disk, file fragmentation reduces performance by forcing the read/write heads to seek more in order to access the widely separate parts of the file. On a spinning disk, the shared data approach will mean more disk fragmentation.

But fragmentation on an SSD does not affect speed nearly as much. On an SSD, rewriting memory cells is much more costly, both in terms of speed and in terms of the cells' usable life: rewriting SSD cells gradually wears them out. Writing just the changed file contents, and doing so in scattered physical locations on an SSD, is an efficient way to increase wear-leveling as well as to reduce the number of write operations. That's a win-win now that most Apple devices, including Macs, rely on flash storage.

However, APFS is designed to work with spinning disk drives as well and should be smart enough to take disk location and rotational latency into account when choosing locations to store file changes on such devices.

Snappier backups and restores: APFS can create read-only snapshots of a volume's file contents. Once again, this capability comes courtesy of the shared data approach. Since file changes are scattered in different locations on a device, APFS can keep track of the data locations that comprise a file at any given time and make sure they are preserved. New versions of Time Machine, as well as other backup utilities, should be able to take advantage of APFS snapshots, making incremental backups that much more snappy.

Flexible partitions: APFS creates physical *containers* on a device, which can then be subdivided, or partitioned, into individual storage volumes. Unlike the partitions managed by HFS+, APFS partitions share their space with each other within the same container. This means that if you have a 500 GB APFS container, you can create multiple volumes within it that each will show up in the Finder as having 500 GB capacities. As a consequence, the amount of free space shown for each volume reflects the free space available in the container, not the individual volumes.

Although this approach could lead to user confusion, it might be mitigated by one other APFS feature: fast directory sizing. Under APFS you will no longer have to wait for seconds or even minutes while the Finder shows you the exact amount of storage used by a folder in a Get Info window. Fast directory sizing makes that information much more

quickly available — useful if you want to know if your photo library will fit on the portable drive you're bringing on your vacation.

More encryption options: macOS Sierra, like versions of OS X since 10.7 Lion, offers full disk encryption via FileVault 2. Similarly, although this isn't obvious to the user, iOS has offered individual file encryption since iOS 4 and has encrypted all user files created by third-party apps since iOS 7. APFS provides both full-volume and individual file encryption: you can use full volume encryption on one volume in an APFS container and use individual file encryption on another volume in the same container.

In addition, APFS provides not only single-key file encryption but multi-key encryption, allowing a file's data and its metadata to be encrypted separately. For example, you could have a volume that allowed a file cataloging utility to decrypt metadata about a file, such as its name and creation date, but not to decrypt the actual file contents.

Regardless, although it's difficult to know how Apple and other developers will take advantage of these capabilities, it's safe to say that you'll have more encryption options available to you when APFS is in charge of your device storage. Plus, since Apple built encryption into APFS, encryption should be snappy.

Transition to APFS

Apple intends the transition to be as painless as possible. When you buy a new Mac once APFS is the default file system, you should have no transition hassle at all: Setup Assistant should move your data from your old Mac to the new one pretty much as it has all along. And, since macOS will continue to support HFS+ as well as APFS (just as it supports other file systems), you'll be able to mount and use older HFS +-formatted external drives with no problems.

Apple also plans to provide an in-place APFS migration utility for users who upgrade older Macs to a macOS version that uses APFS as its default. Most likely, the migration process will take some time (minutes or hours) to convert an existing HFS+ device to APFS, but Apple's goal is to make the process as simple and as safe as possible.

And remember, Apple's aim is that APFS will be the default file system by the end of next year - not so far away!

Historic note

Apple has previously attempted to replace HFS+; the most notable being development of a version of ZFS, a combined file system and logical volume manager designed by Sun Microsystems. There were reported to be legal issues involving the use of this software, and the development was abandoned (much to the dismay of some rather enthusiastic fans).

Around, About

Peter Fitchett

New Disks

Seagate has announces 3 new hard disks, so if you are running a bit short of disk space, there new 10TB (that is TeraBytes,or 10,000GB). That should be big enough for a while. One reader commenting on the announcement wonders how much disk you would need to back that up? My best guess would be another 10TB, but my bigger concern would be how long it would take to do the backup, particularly using USB 2 that many of our slightly older Macs still use - probably about 100 hours, or 4 days. (USB3 is about 10 times faster).

Western Digital is expected to announce a similar sized disk 'shortly'.Their current maximum is 8TB.

Old Technology

Rumour has it that Apple will abandon the 3.5mm headphone jack on the next iPhone model. (Support for headphones over its Lightning cable was introduced in 2014, but of course, you can't charge your phone if using headphones.) More than 300,000 people have signed a petition urging Apple not to ditch the headphone socket. I'm sure that a small adapter will become available for those who really want to keep their old headphones - but 30000 is a pretty small market to design a product for.

Remember back to 1999 when Apple removed the floppy disk drive from your Mac? Sony – a pioneer of the floppy disk – has announced it was killing off the storage device.

And the world is still turning!

Legal

When the Chinese company, Shenzhen Baili Marketing Services Co., took on Apple in December 2014, telling Chinese regulators that the Cupertino, Calif., company's new models infringed on its smartphone design patents, it had bold aspirations, a big-name investor in Chinese internet giant Baidu Inc. and a team of experienced executives. By the time regulators reached a decision this year (against Apple!), the company had collapsed, brought down by buggy products, mismanagement and fierce competition, according to former employees and investors. (The company has been absent from China's mobile-phone market for at least a year.) Former employees said the lawsuit with Apple was always more a marketing ploy than a serious court case, so what now? Apple is appealing.

Meanwhile on the home front, Florida resident Thomas S. Ross has filed a lawsuit against Apple recently, claiming that the iPhone, iPad, and iPod infringe upon his 1992 invention of a hand-drawn 'Electronic Reading Device' (ERD). The patent application was declared abandoned in April

1995 by the U.S. Patent and Trademark Office after he failed to pay the required application fees!

While the plaintiff claims that he continues to experience 'great and irreparable injury that cannot fully be compensated or measured in money,' he has demanded a jury trial and is seeking restitution no less than $10 billion and a royalty of up to 1.5% on Apple's worldwide sales of infringing devices.

Yes, that would cause me a few sleepless nights as well!

Incompetent?

Since the 'release' of the developer and public beta versions of the nest macOS, Sierra, there has be an almost endless parade of reports of '*Hidden*' features discovered in the software. All I can think is that Apple must be totally incompetent for so many feature that it went to the trouble to hide, have been so readily found. And by reporters, even!

Come on folk, just because Apple didn't hi-light it for you in keynote speech, or hand feed you with prepared press releases for a pre-view version of their software, it does not mean that the features are *hidden*.

What else?

What else can I complain about? I think that is enough for now - the rest of the space is for you to start writing something for the next **Apple***byte*.

SeniorNet Mac

Computer Training Lessons: Two-hour sessions, once a week for four weeks. Course notes are provided. Classes are small with a maximum of six students and two tutors per lesson.

Social Events: Held on the fourth Tuesday of the month.
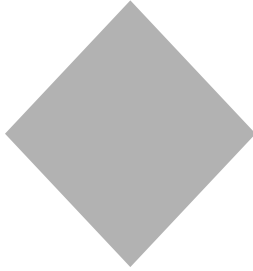
Newsletter: Supplied every two months.

We are now located at: 190 Worcester Str, Christchurch.

Contact: If you would like to join SeniorNet Mac and are in the 55-plus age group, please contact Allan Rutherford at (03) 352-4950, or email:
ajmr@xtra.co.nz,

About the user group

Aims

Canterbury Apple Users is a non-profit subsection of SeniorNet Mac (Christchurch) that exists for the purpose of exchanging ideas and expertise about the use of Apple computers, the Macintosh operating systems, and related hardware and software.

Meeting venue

Meetings are held on the last Wednesday of each month (except December) beginning at 7:30pm, at the Convention Centre, corner Highsted and Sawyers Arms Roads.

Drinks, and maybe a snack, are available while we all calm down after the excitement of the meeting.

If you find it difficult to get to meetings, please contact an organizer to see how we can help.

Group contacts

Website	**http://www.appleusers.co.nz**	
Mailing Lists	**Peter Fitchett**	(3) 960 8189
	listadmin@appleusers.co.nz	

The HELP email list is open to all Mac users who wish to give or receive assistance. See our website for instruction on how to subscribe/unsubscribe.

 Apple User Group