HOT KEY

January 2023
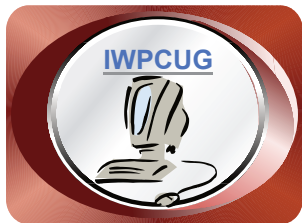
In November David Groom gave a talk on how online maps such as Google and OpenStreetMap are produced.

In this issue   Pages

The Isle of Wight Personal Computer User Group

IWPCUG

We welcome anyone who has an interest in computers and related technology and what you can do with them.
We are a group which seeks to exchange ideas and new information.
Membership is £12 per annum

Our meetings are normally held on the first Wednesday of each month from 7.00 to 9.00 pm. Until further notice these will be held online via Zoom.
Visitors are always welcome.

If you would like to know more about us, you are most welcome to come along to one of our meetings, or you can contact one of our Committee Members listed on page 3.

The Club web site address is **www.iwpcug.org**
We also have an e-group discussion area on
Groups.io: **https://groups.io/g/iwpcug**
Details of how to join are on page 4.

FUTURE MEETINGS

Date	Subject	Speaker
1 February	AGM followed by Q & A session	
1 March	NFTs & Blockchain	Jonathan Burt
5 April	TBA	
3 May	Spreadsheets	Jonathan Burt

ISLE OF WIGHT PC USER GROUP COMMITTEE

Chairman : David Groom

Secretary : Susanne Bone

Treasurer : Mike Hoar

Membership and Database Secretary : Roger Skidmore

Committee Member : Steve Sutters

Treasury Supervisor : Phil Rogers

Note:

Contact details removed prior to publishing on the internet.

Suggestions for new events, topics or speakers for talks are always welcome.
Please contact Steve Sutters, or any committee member, with your ideas.
If necessary we may be able to find a speaker for your subject.

Chairman's Report

Our AGM is next month, and Su Bone will be stepping down as Secretary, a position she has been in since 2006, although she will remain on the committee. I'd like to thank Su for her commitment to the role. It does mean that we need another member to come forward to put their name forward for election to the position of Secretary. The main task is to attend committee meetings (currently held via zoom) eight or so times a year and to produce the minutes of those meetings.

After the AGM we will be having a question and answer session, as in the past it will help this part of the evening flow smoothly if, in advance of the meeting, you can think of some questions to ask the panel.

If you look at the calendar on page 2 you will note that for our April meeting we currently have no speaker(s). Please do consider if there is something you might talk about, even for 30 minutes as part of a "mini-talks" session.

Once again I have to apologise that this edition of HotKey is a couple of weeks late. It has been difficult to find content to fill the magazine, and at one point I thought it would go to press with only 12 pages. Part of the problem seems to me that the pace of change in desktop / laptop computing has slowed down, which means there are less new things to write about.

David Groom

Joining the Email Discussion Group

Send an email to: **iwpcug+subscribe@groups.io**, you will receive a confirmation email, follow the instructions in that email, and then wait for your approval request to be approved by one of the moderators.

All members are encouraged to join this group (it's free and private to club members) so you can keep in touch with events and join in with the discussions.

You can also keep in touch by regularly visiting **www.iwpcug.org**

NOTICE OF AGM

Notice is hereby given that the Annual General Meeting of the Isle of Wight PC User Group will be held on Wednesday 1st February 2023 at 7:00 PM via Zoom.

Nominations are requested for the positions of: Chairperson, Treasurer, Secretary, Membership Secretary, and up to eight other committee members.

Please send your nominations to the Secretary, Su Bone. Seconders are not necessary at this stage.

ISLE OF WIGHT PC USER GROUP ANNUAL GENERAL MEETING AGENDA

1. Consider matters arising from the previous AGM, held on 2nd February 2022, (**https://www.iwpcug.org/secure/minutes/AGM22v1.2.pdf**).
2. Receive reports:
    2.1 Chairman
    2.2 Treasurer, including approval of the Club Accounts
    2.3 Secretary
    2.4 Membership Secretary
    2.5 Other activities: Computability, HotKey, Website, Egroup, Facebook
3. Elect a Chairperson, Treasurer, Secretary, and Membership Secretary.
4. Elect other Committee members (up to a maximum of eight persons).
5. Set the Annual Subscription.
6. Appoint an Independent Examiner.
7. Any Other Business.

Kotlin

Kotlin is one of the newest programming languages you may never have heard of.

It is a cross-platform, multi-purpose modern programming language. Kotlin is developed by JetBrains and open-source contributors. Its development is secured by the Kotlin Foundation which is sponsored by JetBrains and Google. Development lead Andrey Breslav has said that Kotlin is designed to be an industrial-strength object-oriented language, and a "better language" than Java, but still be fully interoperable with Java code, allowing companies to make a gradual migration from Java to Kotlin

Programmers are using Kotlin for mobile — both Android and iOS, server-side and client-side applications, and data science. With Kotlin/Native, the support extends to other platforms like embedded systems and macOS.

The development of the language started in 2010. By February 2016, Kotlin 1.0, the first officially stable version was released. In May 2017 Kotlin was officially supported by Google as a language for development on Android, and two years later they announced that the Kotlin programming language was now its preferred language for Android app developers. Google itself has 60 apps written in Kotlin, including Maps and Drive. Many Android apps, such as Google's Home, are in the process of being migrated to Kotlin, and so use both Kotlin and Java. Kotlin on Android is seen as beneficial for its null-pointer safety as well as for its features that make for shorter, more readable code.

For more information on the language see **https://kotlinlang.org** or **https://en.wikipedia.org/wiki/Kotlin_(programming_language)**

How I Choose High Tech Equipment

Part of the fun of building computers, choosing DAB radios, cameras etc. is taking my time and comparing specs. reading reviews, in short thoroughly researching what I'm going to buy. That way I am most likely to be satisfied with my purchase and least likely to think 'Wish I'd bought another model with x y and z'. What I often do is on one of my screens I will have a Wordpad doc. (anything to make notes) and as I am researching will make a list of all the desirable attributes in the product I'm after. If it's on a word processed doc it's easy to amend and save.

Years ago a headmistress I was working for said she had bought a new digital camera. I asked her how she choose it. I was amazed when she said she walked into a camera shop saw one she liked the look of and just bought it. No comparing the number of pixels or focusing range etc. compared to other cameras? No she said again "I saw one I liked the look of and bought it". Sure it looked neat and was compact so easy to carry. Also any £100 + digital camera will probably take good pictures and if it doesn't can be taken back. Surprised me how different her approach was to mine but of course we are all different.

Stephen Sutters

Quick Tip

Sometimes the program you want to open a particular file type is not the one chosen by Windows. For instance I use "RTF" format text files when writing articles for HotKey, and Microsoft Word was the default application to open these, but I prefer LibreOffice Writer. You may have a number of programs which open image files, and it may be that the default program is not your preferred choice. You can however change the default choice in Windows.

In Windows 10 open settings (Click or tap the Start button and then the Settings shortcut, on the left. It looks like a cogwheel). Then in the search box start typing 'default' and then select "Choose a default app for each type of file". A window will appear with file extensions on the left and the current default program on the right. Scroll down to the filetype to want to change, then click the default program and you will then get a selection of installed programs which open that file type, click the one you want to use.

David Groom

Quick & Cheap Upgrade

I just made a good upgrade to my Notebook. It has been complaining of being almost out of space lately and I've had to even keep the 'recycle-bin' empty.

So I Googled, "Which is the fastest flash drive?" and came up with one of these comparison sites where they try out 10 favourites and report back. Their top one was the Samsung FIT Plus (USB 3.1 – and I chose 256GB). It was £45, which I thought was pretty reasonable. (Advertised as 'up to' 400MB/S – but you never expect anything like that).

After a 10-day delay beyond the delivery date (postal strike), and much frustration as I wanted to get my hands on it, it came the other day It's a very short one that can be plugged into a spare USB slot and left there. It works fine, and I immediately transferred about 120GB of my memoirs (Covid project!) onto it. They are also stored upstairs on my main PC. The transfer speed varied and hardly got above 100MB/S but I was happy. It took 20 minutes. Now there is plenty of space and I can breathe again.

It's a very simple upgrade, and gives me half-as-much-again of storage. I thought I'd mention it in case somebody else is running low and hasn't thought of doing this.

Ron Keeler

What's New(ish) in WiFi

So, first a disclaimer – the title to this article uses the word "New(ish)" rather than "New" because some of what will be discussed is strictly not new, but it may be new to you as it is only now starting to get adoption in the consumer realm.

Mesh WiFi

Mesh WiFi is a whole home WiFi system built to eliminate dead zones and to provide uninterrupted WiFi throughout your home.

Traditional WiFi routers have a limited range, and because of this they are often unable to fully cover multi story or large homes. Prior to mesh WiFi you would either need multiple wireless access points ("WAPs") connected via ethernet cable, or a range extender (a unit that broadcasts your existing WiFi signal into an area with bad signal) in order to provide adequate WiFi coverage in those sort of homes. If you were trying to connect multiple WAPs

via ethernet cable then you obviously have to provide the physical cable link, which might involve lifting floorboards, drilling through walls, or simply have the cable visible throughout the home. Installing a range extender is simpler, but still involves some setup of each individual device. Most times whether you were using multiple access points or a range extender the units would usually have a different network name to the main network, and any device connecting to the network would not necessary switch between the fastest network point. For instance if your laptop had connected to the main WiFi router when it was in one room, and you then moved the laptop to another room, as long as it could still connect to the main WiFi router, it would still use this connection even if another faster connection were now available.

Mesh WiFi makes everything a lot simpler. It works by using two or more mesh WiFi devices or "nodes" to create a mesh WiFi network (see image on back page). One node is connected to the main router (which is then connected to the wider internet), while the rest of the nodes connect to each other. The other nodes can be placed throughout your home to create a powerful wireless network. Higher specified models will use a dedicated radio link to connect between the mesh devices, allowing all of the bandwidth on the WiFi radio link to be used for client devices.

Unlike traditional routers, these nodes are all part of the same network and share the same SSID and password. You get seamless roaming allowing you to stay connected to your network no matter where you go in your home. Switching from one mesh node to another is so smooth that it's unnoticeable even when you're streaming, and your device will automatically pick the strongest signal it can find.

Mesh nodes are made up of very smart technology. They use adaptive routing or dynamic routing to map the most efficient route when transferring information. They are also self-configuring, meaning that the networking system won't slow down if one route is jammed, or if one node stops working. In fact, the system will register the congestion or the unresponsive node and re-route all traffic to travel through a different path, avoiding speed slow-downs in the process.

Even though mesh networks and WiFi extenders both improve your wireless coverage, mesh networks are a lot smarter, work a lot better, and can expand your WiFi signal much further than extenders. If you live in a home that's 3,000 sq. ft., has two stories or more, interior brick walls, or an unusual layout, then you might well benefit from a mesh WiFi router.

WiFi6

Apparently most home routers now being sold meet this standard. WiFi6 (also known as the IEEE 802.11ax specification) is the newest currently deployed WiFi specification, and has a theoretical maximum link rate of 9.6Gbits/s, significantly faster than the previous specification's limit of 3.5Gbits/s. Devices using this standard operate in the 2.4 and 5 GHz spectrum. The main goal of this standard is enhancing throughput-per-area in high-density scenarios, such as corporate offices, shopping malls and dense residential apartments. This specification also utilises WPS3 security, which makes further security improvements over the previous WPA2 scheme, that make it harder to break into networks by guessing passwords. One further improvement, which is particularly useful for lower powered Internet of Things devices, is that devices using this standard are more power efficient.

WiFi6 has been improved upon with the WiFi 6E specification. This means WiFi 6 extended to the 6 GHz band. WiFi 6E works with the same standard as WiFi 6 but with an extended spectrum. 6 GHz is the new frequency band ranging from 5.925 GHz to 7.125 GHz, allowing up to 1,200 MHz of additional spectrum. Note however that in the UK the band is restricted to use between 5.925 GHz to 6.425 GHz. The upper part of the band (6.425GHz – 7.125GHz was not released for use in the UK as mobile phone companies were concerned it might interfere with 5G networks). Unlike the existing bands on which channels are currently crammed into the limited spectrum, 6 GHz band exists without overlap or interference. Access to the 6 GHz frequency brings more bandwidth, faster speeds, and lower latency and is particularly useful where a large number of users might be sharing the same access point such as in an office or public space.

WiFi7

WiFi 7 is the newest WiFi standard, also known as IEEE 802.11be. It is expected devices based on this standard will start to be launched in 2024. WiFi 7's goal is to deliver astounding speeds (up to 46Gbits/s for every device with greater efficiency. As it is not yet available I will leave further discussion until a later edition of HotKey.

David Groom

Phone and Broadband Cost

In the December talk Denny said I could save on my internet costs by going over to Shell Energy which only charge £18 for their cheapest broadband deal. His money saving tips got me thinking about my total IT expenses. I pay WightFibre £32.80 phone and broadband. (I also get a discount with them) Also pay £3.45 a month for my mobile. (A superb O2 deal now no longer available).

Back to Shell...They call it 'FAST BROADBAND: Average download speed 11Mb/sec. Average upload speed 1Mb/sec. Maximum download speed 17Mb/sec. Maximum upload speed 1Mb/sec.' Turned out to be £18.99 a month so a lot closer to £19. My present ISP is WightFibre. I have their 'Full Fibre 100 (60+ Mb/s download 40 Mb/s upload). Would I not notice any difference in internet performance if I changed to a cheaper slower deal or would it be like having a Ferrari and swapping it for a Morris Minor?

I live on my own and don't need much bandwidth. The max download I need is 5Mbs/s for 1080p video and my webcam needs 2.6 Mb/s for uploading Zoom video. So my webcam video would not be so good with just 1 Mb/s with online meetings. New line Installation and router fee of £65 would bump the 18 month contract cost up to £22.60 a month. Not far off my present WightFibre charge of £24.95. It seems that around £18 per month is the starting price of broadband and 'Now' broadband charges just over £18 with only a £5 router fee for an 18 month contract. What about quality of service though? Both Shell and Now ISP's have roughly over 20% dissatisfaction ratings from review sites whereas WightFibre has less than 10%. Does seem in general the cheapest ISP's have the worst reviews.

Denny also suggested losing the land line (and losing its anytime calls boost) and this could save me about £8 a month by making all calls on the mobile but I generally prefer to use it rather than my mobile as:

- The sound quality is better
- The connection never drops
- It's more comfortable to hold
- It's faster to dial on than my mob.
- Just 6 key presses for someone on the Island to ring me (rather than 11 for my mob. number)
- Always in the same place so never lose it

- If I lose my mobile in my house I just ring it from the landline
- Had it for years so a lot of people are used to it and it would mean a fair amount of work informing all my contacts that I only had a mob. phone from now on.

All analog landlines are to be phased out and replaced by a digital network in 2025. The Public Switched Telephone Network (PSTN), which uses copper cables will no longer be used. The present handsets will still be able to be used with digital internet connections. I'm using one now with WightFibre. Same landline number and good call quality.

To sum up I could save £7 ish a month by going to a cheaper, slower and possibly less reliable ISP deal. I would probably hardly notice a difference in the connection speed. My mums new quad core faster computer loads web pages faster than my old dual core PC despite having a much slower TalkTalk connection so the PC spec. makes a big difference with internet performance. So far WightFibre has been 100% reliable. If I have a query I ring a local number and straight away get through to someone who speaks good English. I am happy to pay more for such a good service but if I was to become hard up I could save £15 ish a month on phone and bb. So I hope I can continue to afford my present £36.25 per month IT expense!

Stephen Sutters

Quick Access to Folders

By default, Windows File Explorer opens to Quick Access (see image on back cover). To speed up finding a folder you might be using often you can set it to show up in Quick access so it'll be easy to find. Find the Folder using Explorer and then just right-click it and select "Pin to Quick access".

For instance I create a new folder for every issue of HotKey, and while I'm working on that issue I'll pin it to Quick Access, and remove it once the issue has gone to the printers.

If you want to unpin it when you don't need it there then just right-click it and select "Unpin from Quick access".

David Groom

SQLite

SQLite is probably the database engine that all of us use the most without even realising it! It is the most widely deployed database engine, as it is used by several of the top web browsers, operating systems, and mobile phones. By using the SQLite engine for storing data the program developers don't have to "re-invent the wheel" when writing code to store and access data used by the software they are writing.

SQLite was designed to allow the program to be operated without installing a database management system. SQLite stores the whole database (definitions, tables, indices, and the data itself) as a single cross-platform file on a host machine, allowing several processes or threads to access the same database concurrently. It implements most of the standard features of the SQL database query language.

The first version of SQLite was released in August 2000, and the codebase is opensource.

Where do Firefox and Microsoft edge store cookies and your browsing history? In SQLite files on your hard drive.

It's not just web browsers which might use SQLite, any software which needs to store data might make use of the SQLite engine. I remember that one of the radio amateur software programs my father used stored all its data this way. Apparently several well known software packages such as Adobe Photoshop Lightroom, Apple photos, Skype, along with several satellite navigation systems all use SQLite engine for storing data. Because it is used by so many familiar programs it is the most widely deployed database in the world.

What are the benefits of using SQLite to store data rather than a simple text file? SQLite will probably be substantially faster if you only want to access certain bits of data in your datastore - since doing that with a flat-text file is challenging without reading the whole file in. Also it's much easier to write more complex queries to find data in something which understands SQL rather than a simple text file

One of the easiest ways in Windows to create, design, and edit database files compatible with SQLite is to download DB Browser for SQLite available from: https://sqlitebrowser.org/dl
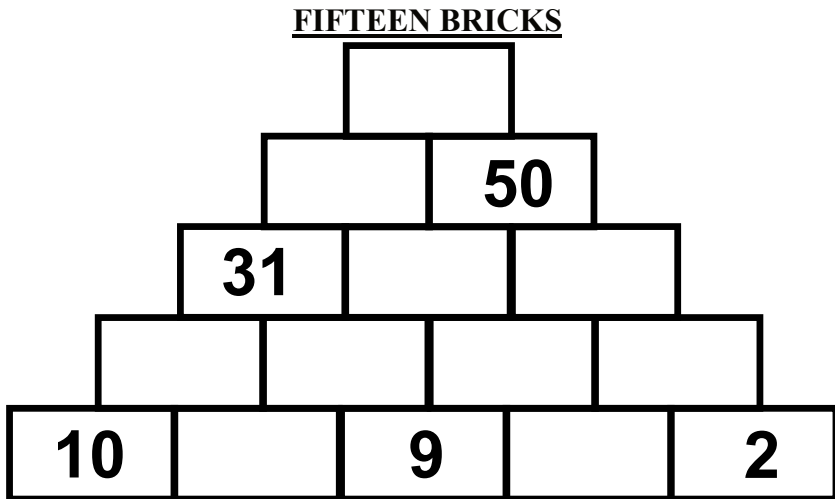
David Groom

Puzzle From The Past

Longer standing members may well remember the puzzles which former Chairman David Broughton used to contribute to HotKey.

Puzzles from November 2002 to November 2009 can be found on the club web site at **https://www.iwpcug.org/davidbro/**.

The puzzle for August 2009 is repeated below.

FIFTEEN BRICKS

Each of the 15 bricks shown in this diagram has a number. Only five of the numbers are shown. Except for the five bricks in the bottom row, each brick has a number that is the sum of the numbers of the two brinks upon which it rests. For example, if the brick between the '9' and the '2' bricks was 21 (which it is not) then the brick above it to the left would have the number 30 and the brick above it to the right would be 23. What should be the number of the top brick?

The answer can be found at **https://www.iwpcug.org/davidbro/puz0908.htm**

Congratulations to Roger Skidmore, who over the past few months has had a number of letters published in various computing magazines regarding the Laptops for Ukrainians project. He even made it to "letter of the month" in Issue 298 (February 2023) of Linux Format magazine.

» LETTER OF THE MONTH

Laptop drive

Over the last few months, the Isle of Wight Linux User Group (www.iwlug.org.uk) has supplied over 80 laptops to guest Ukrainian refugees. It is a joy to equip laptops with 128GB SSDs and bring them back to a new lease of life. We use Linux Mint Cinnamon by default, enabling Ukrainian and Russian languages, and stick on Cyrillic key tops.

Most Ukrainian guests are mothers arriving with mobile phones, backpack luggage and children, staying with generous hosts across the Isle of Wight. A mobile phone is never sufficient for children's online education at home or necessary complex form-filling.

We only ever just get by with donated laptops, so more are always welcome. We'd also love to hear of any similar activity on the mainland. Especially in the Linux community, because Linux is a total gift for an activity such as this. Please get in touch via our website contact form (**https://laptops-for-ukrainians.weebly.com**).
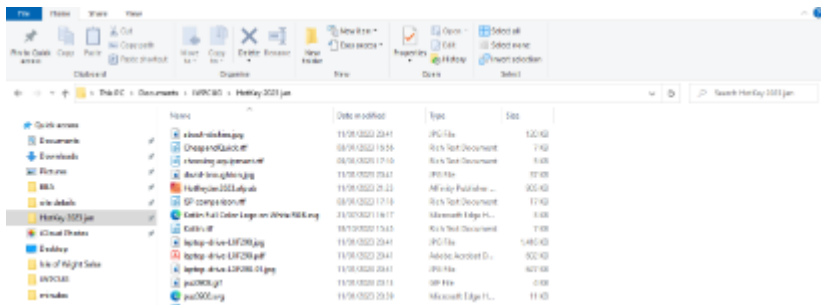*Roger Skidmore, Isle of Wight*

Neil says...
What a fantastic project to undertake and well done for helping so many people. If anyone is interested in donating equipment or creating something similar in their area, Roger is more than happy to help with advice, so do get in contact with him.
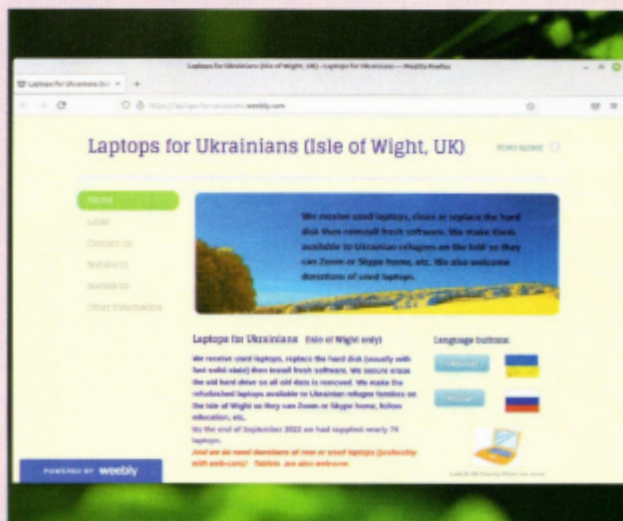
Linux can help refresh ageing hardware, so it can go on to have a useful second life.

Quick Access section of Windows Explorer, see page 12.
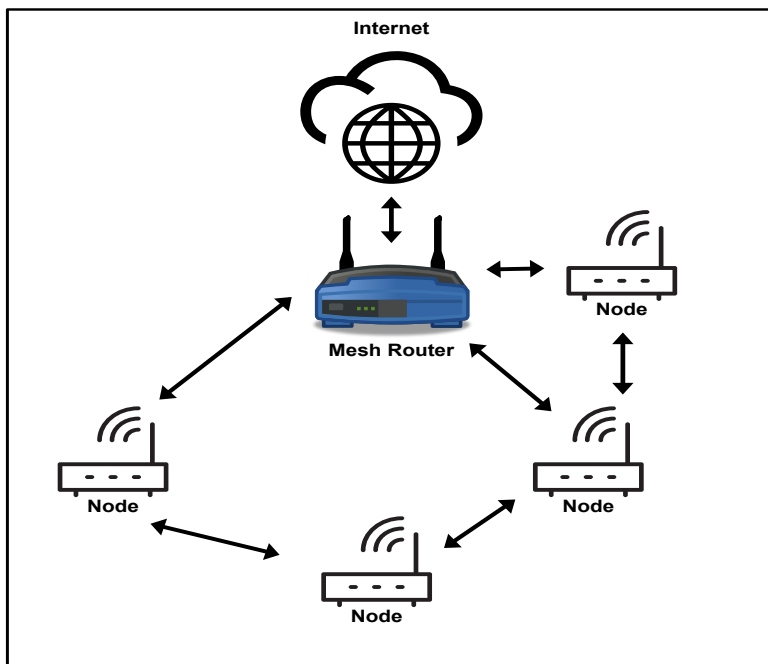
Depending on their physical location, determining which other devices they may see, "nodes" in a mesh network may connect to each other and/or to the main router. See article on page 8.