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Contents

Foreword 6
How to use this book 10

1 Getting started

Computers are everywhere 14
Computing for you 16
Computing with others 18
Search engines 20
Cybersecurity 22
Fixing common problems 24

2 What is computer science?

Computer science 28
Computing before computers 30
Computing since the 1940s 32
Inside a computer 34
Peripheral devices 36
The computer chip 38
How modern computers compute 40
Processing and memory 42
Operating systems 44

3 Hardware

What is hardware? 48
Desktop computers and laptops 50
Smartphones and tablets 52
Build-your-own computers 54
Wearable computers 56
Connected appliances 58
Digital toys 60
Gaming consoles 62
Hidden computers 64

4 Computational thinking

What is computational thinking? 68
Decomposition 70
Abstraction 72
Patterns 74
Algorithms 76

5 Data

Bits and digitization 80
Binary code 82
ASCII and unicode 84
Logic gates 86
Databases 88
Encoding images 90
Encoding audio and video 92
Encryption 94

6 Programming techniques

Early programming methods 98
Analogue programming 100
Applying algorithms 102
Boolean logic 104
Storing and retrieving data 106
Program structures 108
Translation 110
Assemblers, interpreters, and compilers 112
Software errors 114

7 Programming languages

What do programming languages do? 118
Types of programming language 120
Language breakthroughs 122
Application programming interface 124
C and C++ 126
Java 128
Python 130

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Ruby 132
JavaScript 134
Scratch 136
Kodu 138
Future languages 140

8 Networks

What is a network? 144
Types of network 146
Connections 148
The internet and the world wide web 150
Cloud computing 152
Streaming 154
Malware 156
The deep web 158

9 Website and app construction

HTML 162
Cascading Style Sheets 164
Using JavaScript 166
Developing and designing 168
Planning ahead 170
Testing 172
Maintenance and support 174

10 Digital behaviours

Online and digital identities 178
Maintaining balance 180
Being a digital citizen 182
Communicating online 184
Staying safe online 186
Cyberbullying 188
Hacking and privacy 190

11 Social media

What is social media? 194
Social media platforms 196
Sharing content 198
Social media apps 200
Using social networks 202
Gaming and social networks 204
Social media bubbles 206

12 Digital issues

Digital literacy 210
Net neutrality 212
Digital divide 214
Global development 216
Equality and computer science 218
Computer science and disabilities 220

13 Future of computers

Predicting the future 224
The Internet of Things 226
Virtual reality 228
Cryptocurrencies 230
Global connectivity 232
Biological interfaces 234
Artificial intelligence 236
Thinking outside the chip 238
Careers 240

Useful links 244
Glossary 248
Index 252
Acknowledgments 256

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Computers are everywhere

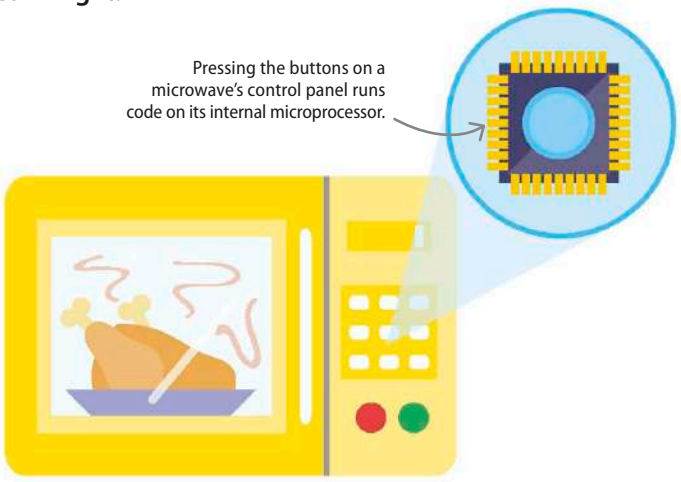
Some people feel computers are too complex for them to use without special skills and knowledge. However, they interact with computers all the time without necessarily realizing it.

SEE ALSO

Computing for you	16–17 ❯
Inside a computer	34–35 ❯
Peripheral devices	36–37 ❯
The computer chip	38–39 ❯
What is hardware?	48–49 ❯
Smartphones and tablets	52–53 ❯

Look closely

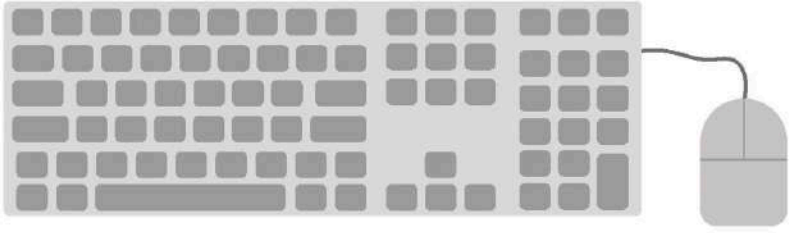
Computers are almost everywhere, not just in the conventional setup that includes a monitor, keyboard, and mouse. They are also found in everyday devices such as mobile phones, lifts, televisions, and cars. From watching movies to playing games, and even making dinner, computers can be used to do almost anything.



▷ **Household devices**
Many household devices contain computers. Selecting a program on a microwave, for example, actually runs a small program on the computer embedded in the device.

Hardware and software

The physical parts of a computer are called hardware. These include things we can see, such as the monitor and computer case, as well as things we can't see, such as the motherboard and microprocessor inside the computer case. Things like programs, the operating system, and firmware (a type of program that is embedded into the microprocessor) are called software. They allow users to access the capabilities of the hardware.



△ **Input devices**
There are a lot of ways to input information and interact with software running on a computer. The most common ways to do this are by using a keyboard, a mouse, or a touchscreen.

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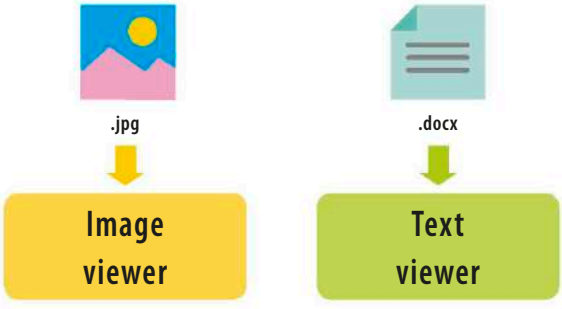
Looking for files

Searching for files on a computer is similar to finding them in a real-world filing cabinet. The file system on a computer is usually accessed using a window containing small icons of folders or documents. A folder can be opened to display the files inside by touching with a finger on a touchscreen or double-clicking with a mouse or trackpad.

△ **Searching for files**
The best way to look for a file is to find the magnifying glass icon. Then, click on it and type the filename or keywords in the search bar.



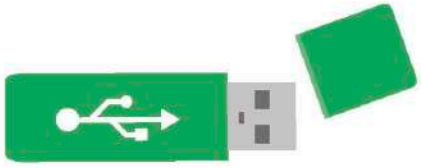
△ **Opening files**
A filename usually includes a full stop followed by some letters. This is the file extension, which identifies the type of file and tells the computer what kind of program it should use to open it.

△ **In the bin**
Deleting a file by mistake is quite common. Deleted files usually go into the recycle or trash bin, and can be restored by opening the bin and taking the file out.

Moving data

There are various ways to transfer data between computers. Emails can be used to attach pictures, documents, and other files to a message. There are also systems, such as Google Drive or Dropbox that allow people to upload large files and folders to the cloud. These can be shared with others through a link to the uploaded file, which can then be downloaded, or even edited online.

Secure Digital (SD) memory card



USB pen drive

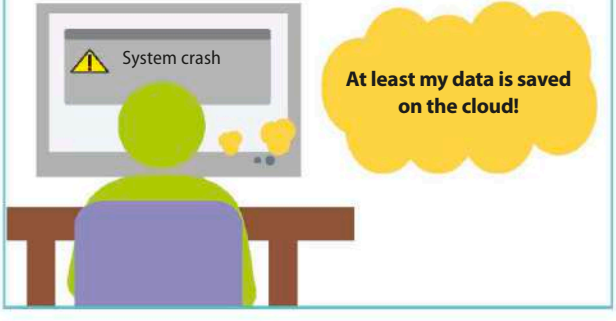
△ **Removable storage**
You can also move files between computers through storage devices such as USB pen drives and removable hard drives. Data can be stored on memory cards, which can be plugged into computers to be read.

Removable hard drive

REAL WORLD

Saving and backing up

Computers and applications can crash without warning. To avoid losing important work, it's good practice to save a file frequently while working on it. It's also useful to back up files using either a separate hard disk or an online backup service. These services are a part of cloud computing, where people use the storage facilities of a specialist provider to save data.



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Computing for you

Software is programs that allow people to use a computer's hardware. Most computers come with pre-installed software, but additional pieces of software are also widely available.

SEE ALSO
❮ 14–15 Computers are everywhere
Operating systems 44–45 ❯
Desktop computers and laptops 50–51 ❯

System software

System software allows user applications to run on the computer's hardware. The operating system (OS) – which controls the computer's basic functions – is the most common example. It makes the computer work by displaying information on the screen and getting user input from the keyboard, touchscreen, or mouse. For computer security, it's important to install any updates that become available for the OS.

▽ **Different operating systems**
There are many operating systems available. Microsoft Windows and Linux are the most commonly used ones. Apple machines use a specific operating system, called macOS.

Windows

Linux

macOS

Application software

Application software is designed to complete specific tasks on a computer. Some of these are paid, as either a one-off purchase or a monthly subscription. Others may be free to download and use. A lot of free software is also open source, which enables users to see and modify the application's code.

Email

Banking

△ **Different platforms**
Application software is available for different types of device. Those used for mobile phones and tablets are usually known as apps. Apps can perform a variety of tasks, such as sending emails, social networking, and even banking.

IN DEPTH

Icons

Small symbols representing applications or functions on a computer are called icons. They make it easier for people to use their computer. Many functions are symbolized by similar icons across different operating systems – for instance, a floppy disk denoting the save option, or a magnifying glass symbolizing the search option.

Save

Volume

Settings

Trash

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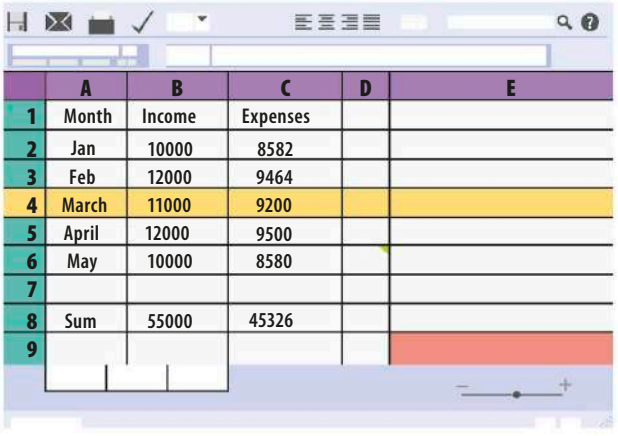
Types of application software

Modern application software comes in a variety of forms. Some popular types include software for email, word processing, spreadsheets, databases, presentations, desktop publishing, media editing, and graphics creation. Applications are sometimes combined into suites, or sets of interconnected and related programs. Many applications allow users to track changes to documents made by themselves or colleagues.

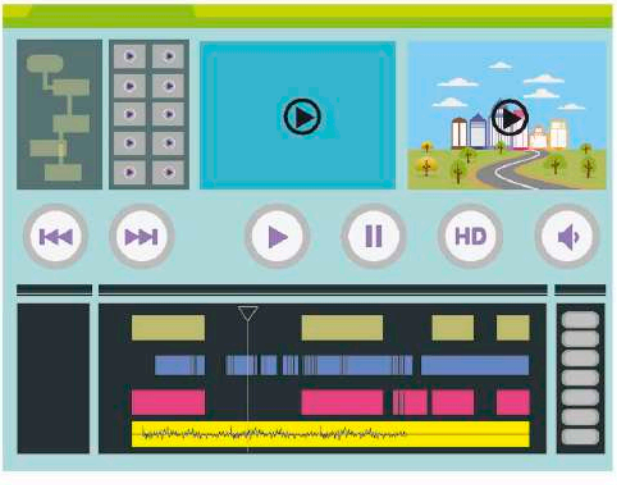
△ **Words**
Word processors are one of the most widely used applications. They can be used to create many styles of document, from a simple letter or business contract, to a complex report or even a whole book. A very simple version of a word processor is called a text editor, but this is solely for text and can't handle images.



	A	B	C	D	E
1	Month	Income	Expenses		
2	Jan	10000	8582		
3	Feb	12000	9464		
4	March	11000	9200		
5	April	12000	9500		
6	May	10000	8580		
7					
8	Sum	55000	45326		
9					

△ **Numbers**
Spreadsheets allow users to work with numbers and other data, applying mathematical and statistical formulae. They can be used for simple tasks, such as basic accounts, and also for complex analyses of data.

△ **Images**
With the spread of digital cameras, many people use computers to organize and edit pictures. Photo editing applications allow users to modify their pictures – for instance, by altering the lighting and colour.



△ **Videos**
Video applications allow users to adjust and improve lighting and colour, and add special effects. They can also edit video clips, combine clips into longer videos, and add titles and transitions – such as crossfades – between scenes.

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Computing with others

Computers are not just used in isolation. They also allow people to collaborate with colleagues, keep in touch with friends and family, and connect with the world at large.

SEE ALSO

❮ 16–17 Computing for you	
What is social media?	194–195 ❯
Social media apps	200–201 ❯
Using social networks	202–203 ❯

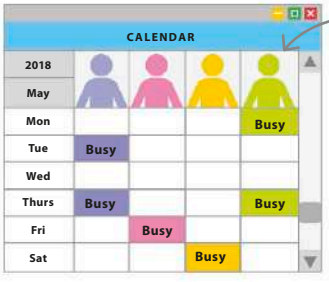
Video calling

There are several applications available that allow users to make video calls. These calls include the video as well as the sound of the callers. Most of these applications don't charge users, but it's good to check. It's also possible to have group calls with several callers in different locations. Sound-only calls are another option for people who prefer not to be seen, or if the video service is slow or jerky.

◁ **Virtual travel**
Video calls can save time and money by reducing the need to travel to another location for business meetings.

Shared calendars

Online calendars, such as ones provided by Google and Microsoft, are a useful feature for work. They make it easier to set up meetings by showing details of other people's schedules. These calendars can also be used by families to plan events, or by groups of friends to arrange a date and time to meet up.



It's possible to set a shared calendar to show when a user is busy.

◁ **Time management**
Anyone trying to plan a meeting can simply view each person's schedule to figure out the best possible day and time.

Slides

Presentation software allows users to make digital slideshows, including slide transitions and background themes, to accompany their work presentations. The slideshow can be shown by attaching the user's laptop to the screen or projector. Alternatively, the file can be transferred to a dedicated computer via a USB drive or accessed online from a cloud storage service.

◁ **Visual aids**
Digital slides can act as a prompt during a presentation, and help in displaying visual information, such as graphs.

Making websites

It's not necessary to know how to code to create a website. Many specialist websites allow users to make a site with a graphical editor, similar to a word processor. Some fee-paying sites also include these graphical editors. These sites enable users to build more involved websites with extra features, such as online stores.

◁ **Blogging**
Blogs are online journals where people write about events or topics that interest them. Other people on the web can read and comment on the articles.

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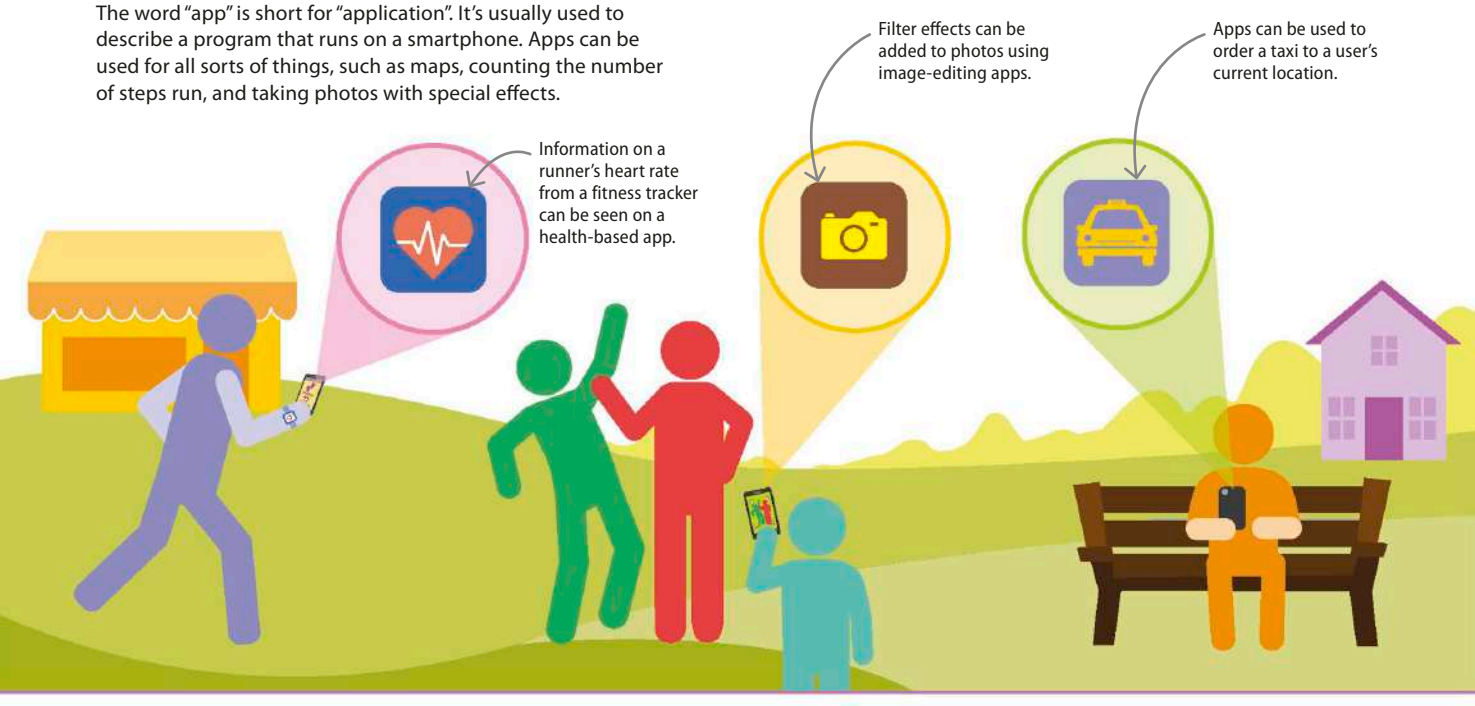
Social networking

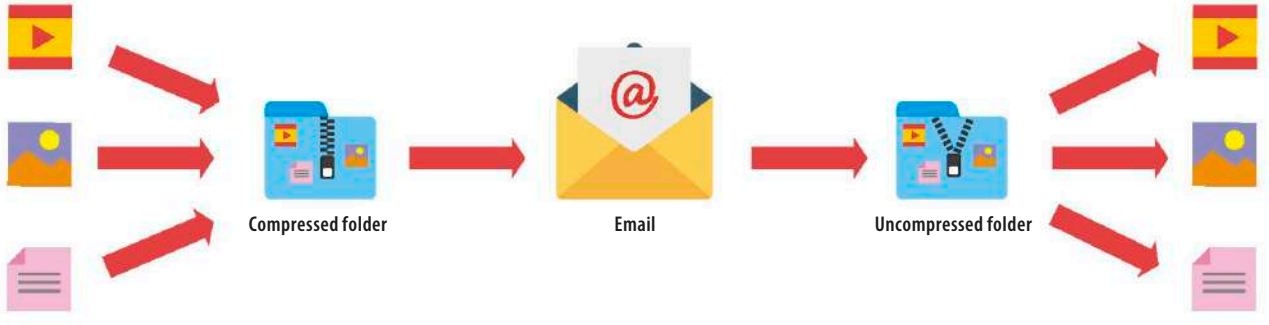
Social networking sites and applications have become increasingly popular in recent years. Facebook is typically used by people to connect with friends and family. It's also possible to restrict access to posts at different levels – for instance, they can be seen by only friends of the user. Twitter is more public and people often "follow" people they don't know. Instagram is similar to Twitter, but based on images.

> "**Technology** and **social media** have brought **power** back to the **people**."
> **Mark McKinnon (b. 1955), American political advisor and reform advocate**

▽ **Apps**
The word "app" is short for "application". It's usually used to describe a program that runs on a smartphone. Apps can be used for all sorts of things, such as maps, counting the number of steps run, and taking photos with special effects.



File compression

Compression programs, also called zip programs, reduce the size of a file in a reversible way. This allows them to be emailed and then uncompressed by the receiver. They can also be used to compress a folder of files, which can be particularly useful when emailing several photos.

▽ **Reversing the process**
The same programs that compress files can also be used to uncompress them. Many computers come complete with compression software, which is also available online.