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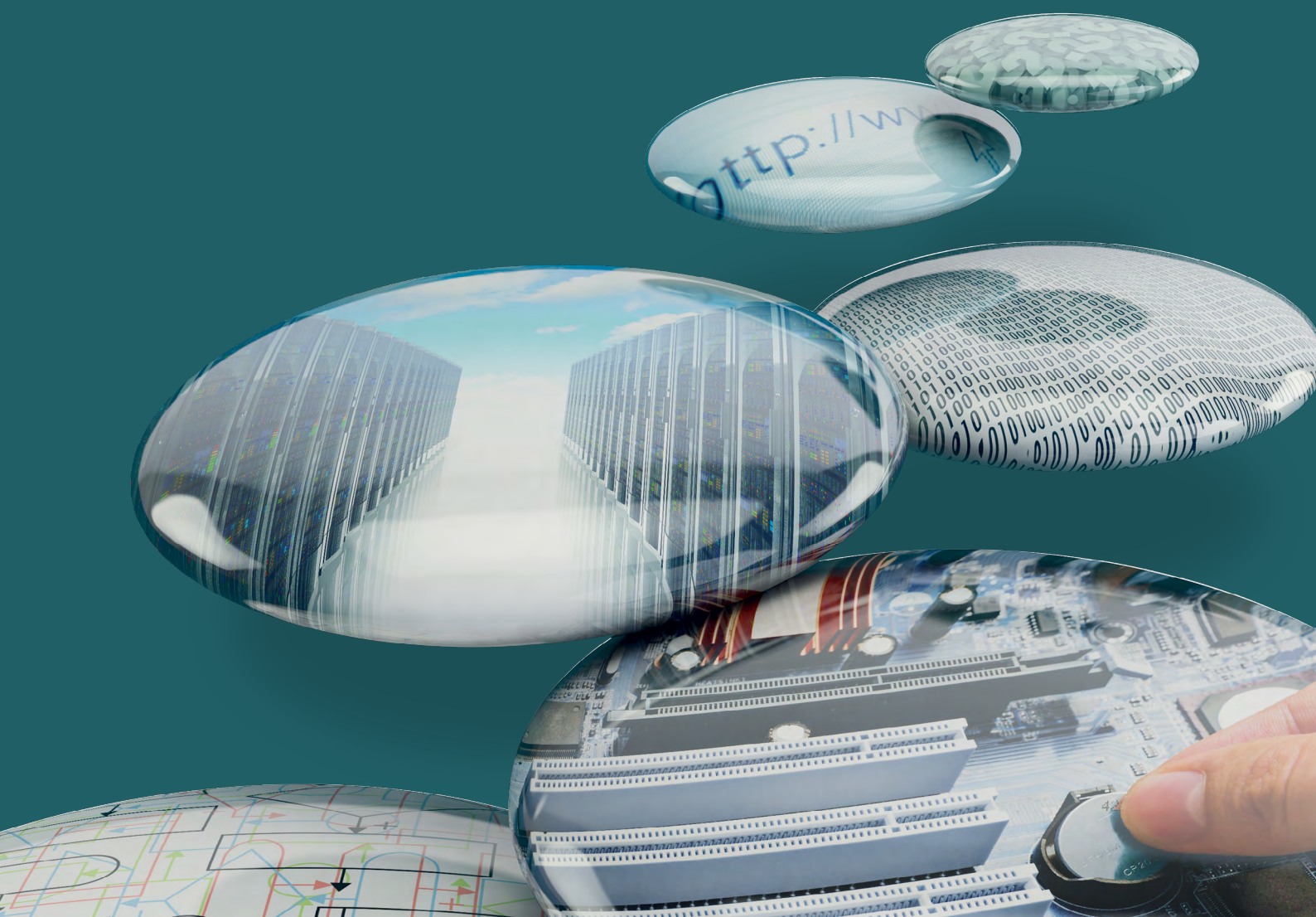
Topic Exploration Pack

H046/H446

COMPUTER SCIENCE

Theme: Applications Generation

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This Topic Exploration Pack should accompany the OCR resource 'Applications Generation' learner activities, which you can download from the OCR website.



*This activity offers an
opportunity for English
skills development.*



Applications Generation

There is almost never a 'best application' in general; they all are best for a particular user or purpose. An application running on a low-power computer by an advanced user will have a more obscure interface but will allow scripting to handle repetitive tasks, while another application running on the latest desktop can throw a lot of 'eye candy' and easy wizards which will please beginners and frustrate advanced users. Not all software is for creating documents; utilities are universally used to maintain systems in good shape and enhance computer system's capabilities. In the age of the Internet, there is almost always a choice between open source and closed source software with advantages and disadvantages for both. Learners will understand that despite being free, open source software suffers from a lack of technical support, incomplete documentation and not such good integration into an operating system.

Recent developments with the Heartbleed and Shellshock bugs make us question one of the premises of open source software: that any mistakes can be found by thousands of scrutinising eyes of dedicated programmers contributing to the software for fun. It is also important to stress that sometimes the boundaries between open and closed source software become blurred.

Android and Mac OSX are built on open source foundations but the proprietary layers added to these systems by their owners make this less of a clear-cut case. The complex nature of modern operating systems which use a lot of code created for a different purpose and different systems is made easier with the use of libraries – pre-compiled 'black box' programs that save a lot of time in developing new features. These libraries often have complicated licensing issues further blurring the line between open source and proprietary. A good example of this is a freeware audio recording package Audacity, which has a capability to generate MP3s but requires a separate download to achieve that.

It might be worth investigating why, as well as reading the history of the MP3 format

(<http://www.npr.org/blogs/therecord/2011/03/23/134622940/the-mp3-a-history-of-innovation-and-betrayal> and <http://internethalloffame.org/inductees/karlheinzen-brandenburg>).



It is also interesting to investigate how some programmers find their hobby product so successful that they can quit their jobs and support it full-time, either through donations or via venture capital financing in anticipation of them taking its 'closed source' at a later time.

Just like there is no 'best application', there is no 'best programming language'. Each language has its uses and here the interpreted vs compiled vs assembled nature of languages can make a difference. Learners need to appreciate applications and the general advantages and disadvantages of each application, for example assemblers are more efficient with CPU resources but inefficient with programmers' time, both in longer coding without the benefit of modern prototyping and object-oriented techniques, and having to change programs to run on different CPUs.

The stages of compilations is a theoretical concept with a fair bit of memorisation involved at first, but practicing past questions will bring better understanding of the process.



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