

One of the latest “hot” areas of technology is “the internet of things”. This is where devices have embedded “smart” computation technology and are connected to the internet. Examples include “smart” heating or lighting systems, where heaters or light bulbs are connected to the internet so they can be programmed and controlled from a smart phone; fitness trackers where watches or other fitness devices track your exercise or the “smart” energy grid, where internet connected electricity generation systems connected to gather and can be managed automatically based on moment by moment energy needs.

Choose and research an “internet of things” application or system, use it as an example to explain the computer science concepts in this course. Use these concepts to explain how the system works. For example:

Data Representation: what data does the internet of things system use? How is it collected, represented and used?

Computer Architecture: What is the hardware used by the internet of things application? How does the device hardware work? What about any mobile phones or computers also used? How do the various parts communicate and work together?

Operating Systems and Applications: How do any applications used in the system work? What operating system services are used?

Networks and the internet: How do devices connect to the internet? What data do they transmit and what computers do they connect to?

NB you do not have to include every element in your discussion, it is better to focus in detail on about 3-4 computer science concepts.

You will be marked on your knowledge of the computer science concepts and not on the exact details of how files and applications work. It is fine to make a plausible suggestion of how something might work if you cannot find the exact details.

Upload your response in PDF file format. It should be 3 pages or less with a maximum font size of 11pt and maximum margins of 2cm on each side. You may include additional images or references on separated pages that do not count towards the page limit.

Please note that you must include references for any material that does not come from the course materials. References are not included in the page limit. Any un-referenced materials may count as plagiarism and could result in a penalty.