



COMP110: Principles of Computing

# 4: Research Skills

# Research journal



# Research journal

- ▶ **Read** some seminal papers in computing (listed on the assignment brief)
- ▶ **Choose** one of them
- ▶ **Research** how this paper has influenced the field of computing
- ▶ **Present** (briefly!) your findings
- ▶ **Write up** your findings
  - ▶ Maximum 1500 words
  - ▶ With reference to appropriate academic sources

# Marking rubric

See assignment brief on LearningSpace

# Timeline

- ▶ **Presentations** in week 7 (4th and 8th November)
- ▶ **Peer review** in week 8 (14th November)
- ▶ **Deadline** shortly after (check MyFalmouth)
- ▶ Finding and reading academic papers takes time and effort — don't leave it until the last minute!

# Scholarly literature



# Scholarly work

- ▶ What is a “scholarly” work?
- ▶ How do we know if something is scholarly?

# Pyramid of sources

Scholarly journals and conference proceedings

Scholarly books and book chapters

Masters and PhD theses

Government documents, trade books and white papers

Specialised magazines

Pre-print papers (e.g. arXiv)

General interest books, magazines and newspapers

General encyclopædias

Websites, blogs, Wikipedia

Online discussion boards, personal communications



# Appropriateness of sources

It is important to question the **appropriateness** of sources you use in academic work

- ▶ **Validity:** Are claims based upon a correct interpretation of the evidence?
- ▶ **Rigor:** Was the method of collecting evidence appropriate to ensure comprehensive coverage while also avoiding bias?

# Appropriateness of sources

- ▶ **Reliability:** has the claim been replicated, or at least reviewed, by other academics?
- ▶ **Authoritativeness:** do we know who the author is?  
Does the author have enough experience in the field to present a fair and balanced argument?
- ▶ **Venue:** Is the publisher reputable and free of undue editorial influences?

# Appropriateness of sources

There are of course exceptions where sources are presented as **artefacts** and/or **archives**:

- ▶ Citing a newspaper as evidence for a claim based on the reception of a new technology
- ▶ Citing a manufacturer's technical manual when describing a technical feature of a platform
- ▶ Citing a Reddit post by a well-known industry figure as evidence for expert opinion

The **way** in which sources are **used** is therefore important

# Library resources





# Library catalogue

<http://library.fxplus.ac.uk/>

# Web proxy

- ▶ Some online resources are only available through the campus network
- ▶ If not physically on campus, you can access them via **VPN**
- ▶ `https://webvpn.falmouth.ac.uk/`
- ▶ Some resources can also be accessed by **web proxy** through the library website
- ▶ `https://library.fxplus.ac.uk/  
subject-guides/games/specialist-databases`

# ACM Digital Library

<http://dl.acm.org.ezproxy.falmouth.ac.uk/>

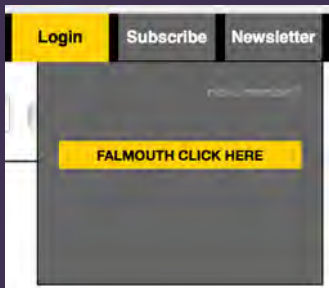


# IEEE Xplore

<http://ieeexplore.ieee.org.ezproxy.falmouth.ac.uk/>

# GDC Vault

<http://www.gdcvault.com.ezproxy.falmouth.ac.uk/>



There are only a limited number of login slots available —  
**remember to log out when you have finished!**

# How to find papers to read?

- ▶ Specialist databases: ACM Digital Library, IEEE Xplore
- ▶ Google Scholar
  - ▶ Keyword searches
  - ▶ Other work by the same author
  - ▶ Work which has cited papers you have read
- ▶ Wikipedia
  - ▶ Not a reliable source itself!
  - ▶ However most articles have good bibliographies
- ▶ Bibliographies of papers you have read

# Finding papers without paying

- ▶ Many papers are **paywalled**
- ▶ Little known fact: **none** of the money from paywalls goes to the authors of the paper!
- ▶ The university **subscribes** to ACM and IEEE to give free access to staff and students
- ▶ Many journals offer free **open access**
- ▶ Many authors put papers on their **personal websites**
- ▶ Many universities (all UK universities) have **open access repositories**
  - ▶ Falmouth: <http://repository.falmouth.ac.uk>
- ▶ Sites like **sci-hub** have sprung up, providing illegal downloads of papers

# Referencing



# IEEE referencing style

[https://ieeauthorcenter.ieee.org/wp-content/  
uploads/IEEE-Reference-Guide.pdf](https://ieeauthorcenter.ieee.org/wp-content/uploads/IEEE-Reference-Guide.pdf)

# BibTeX entry types

[https://en.wikibooks.org/wiki/LaTeX/Bibliography\\_](https://en.wikibooks.org/wiki/LaTeX/Bibliography_Management#BibTeX)  
[Management#BibTeX](https://en.wikibooks.org/wiki/LaTeX/Bibliography_Management#BibTeX)

# Writing BibTeX entries

- ▶ Some websites provide pre-written BibTeX entries for papers
- ▶ Beware of copying and pasting these as they are often incomplete, incorrectly formatted or just wrong!
- ▶ You must **always** check your bibliography in the compiled PDF and fix any errors
- ▶ You **will** lose marks on your written assignments otherwise!



# Introducing LaTeX



# What is LaTeX?

- ▶ A **typesetting** system
- ▶ A **markup language** (like HTML or Markdown)
- ▶ **Not** a WYSIWYG system

# These slides were written in LaTeX

```
\part{Introducing LaTeX}
\frame{\partpage}

\begin{frame}{What is LaTeX?}
  \begin{itemize}
    \pause\item A \textbf{typesetting} system
    \pause\item A \textbf{markup language}
      (like HTML or Markdown)
    \pause\item \textbf{Not} a WYSIWYG system
  \end{itemize}
\end{frame}

\begin{frame}{These slides were written in LaTeX}
  % Display the first few lines of this file
  \lstinputlisting[firstline=3,lastline=18]{latex.tex}
\end{frame}
```

# Why LaTeX?

- ▶ Plain text format
  - ▶ Can use any text editor
  - ▶ Can use version control (e.g. Git)
  - ▶ Can use online editors (e.g. Overleaf)
- ▶ Separates content from formatting
  - ▶ Similar to HTML and CSS
  - ▶ Unlike most WYSIWYG systems
- ▶ Produces professional-looking papers, reports, theses, books, slideshows, ...
- ▶ Excellent facilities for typesetting mathematical equations, pseudocode, source code listings etc.
- ▶ Automatically handles cross-referencing of sections, figures etc.
- ▶ Automatic tools for managing bibliographies (BibTeX)

# Getting LaTeX

- ▶ LaTeX is **free open source software**
- ▶ Consists of:
  - ▶ Several **executables** (pdflatex, bibtex, makeindex, ...)
  - ▶ A large library of **packages**
  - ▶ An **integrated development environment (IDE)** (optional)
- ▶ Distributions available for all major OSes
  - ▶ Windows: MikTeX
  - ▶ MacOS: MacTeX
  - ▶ Linux: TeXLive
- ▶ Online services e.g. Overleaf (should also work on iPad / Android)

# Workshop Activity

- ▶ Go to <https://www.overleaf.com> and sign up for a free account
- ▶ Go to <https://www.latex-tutorial.com/tutorials/> and work through the tutorials
- ▶ Please prioritise the following tutorials (look at the others afterwards if you have time):
  - ▶ 01 Your first document
  - ▶ 02 Document structure (sections and paragraphs)
  - ▶ 03 Packages
  - ▶ 05 Adding pictures
  - ▶ 07 Bibliography
  - ▶ 13 Source code highlighting
  - ▶ 16 Hyperlinks
  - ▶ 17 Lists