

### 3 Replication of this must be produced

**LaTeX** is a word processor and document markup language. It is distinguished from typical word processors such as Microsoft Word and Apple Pages in that the writer uses plain text as opposed to formatted text, relying on markup tagging conventions to define the general structure of a document (such as article, book, and letter), to stylise text throughout a document (such as **bold** and italic), and to add citations and cross-referencing. A **TeX** distribution such as **TeXlive** or **MikTeX** is used to produce an output file (such as PDF or DVI) suitable for printing or digital distribution. **LaTeX** is used for the communication and publication of scientific documents in many fields, including mathematics, physics, computer science, statistics, economics, and political science. It also has a prominent role in the preparation and publication of books and articles that contain complex multilingual materials, such as Sanskrit and Arabic. **LaTeX** uses the TeX typesetting program for formatting its output, and is itself written in the TeX macro language.

**LaTeX** is widely used in academia. **LaTeX** can be used as a standalone document preparation system, or as an intermediate format. In the latter role, for example, it is often used as part of a pipeline for translating DocBook and other XML-based formats to PDF. The typesetting system offers programmable desktop publishing features and extensive facilities for automating most aspects of typesetting and desktop publishing, including numbering and cross-referencing of tables and figures, chapter and section headings, the inclusion of graphics, page layout, indexing and bibliographies.

Like **TeX**, **LaTeX** started as a writing tool for mathematicians and computer scientists, but from early in its development it has also been taken up by scholars who needed to write documents that include complex math expressions or non-Latin scripts, such as Arabic, Sanskrit and Chinese.

**LaTeX** is intended to provide a high-level language that accesses the power of **TeX**. LATEX comprises a collection of TeX macros and a program to process **LaTeX** documents. Because the plain **TeX** formatting commands are elementary, it provides authors with ready-made commands

for formatting and layout requirements such as chapter headings, footnotes, cross-references and bibliographies. **LaTeX** was originally written in the early 1980s by Leslie Lamport at SRI International. The current version is LaTeX2e. **LaTeX** is free software and is distributed under the **LaTeX** Project Public License (LPPL) (**Source Wikipedia**).