# Technology and Tools

Explore the resources below that most align with your goals for IT. These resources will help you learn to describe how information technologies and tools vary based on differing professional roles and environments.

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|  | Computer-Aided Software Engineering |

Computer-aided software engineering tools may be used by a variety of professionals in the IT field, including programmers, engineers, and systems analysts.

**Reading:** [What Is Computer-Aided Software Engineering (CASE)? opens in new window](https://www.softwareengineerinsider.com/articles/case-tools.html)  
This article provides historical information about CASE tools and describes some of the applications and uses for the tools. As you read this article, consider the following:

* How might CASE tools help you in your current or prospective career?
* What are some of the differences between upper and lower CASE tools?
* How can CASE tools impact the efficiency of software development?

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|  | Software Design and Modeling Tools |

Software design and modeling tools are essential to software and mobile app developers, web programmers and developers, systems analysts, network support engineers, and machine tool operators. The following articles cover a few of the many tools available to these professionals as well as others in the IT field.

**Reading:** [6 UML Tools for Every Occasion opens in new window](https://www.ionos.com/digitalguide/websites/web-development/the-best-uml-tools/)  
This article provides detailed information and use case scenarios for a variety of Unified Modeling Language (UML) tools that are available. It also provides a comparison of the capabilities of popular free and pay/subscription UML tools such as LucidChart and Visio.

Consider the following as you read these articles:

* How do the capabilities of free UML tools compare to those of the pay versions?
* How have you seen or used modeling or diagramming tools in your current position or school experience?
* Why is a diagram a useful tool for illustrating a process or system?

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|  | Project Management Tools |

Choosing the appropriate project management tool can have a significant impact on a project. Most careers in IT use a tool like Excel to manage, but professionals such as IT managers and administrators, chief technology officers, and information security analysts do have other options available, if they choose to use them.

**Reading:** [List of 10 Best Project Management Tools opens in new window](https://financesonline.com/list-10-best-project-management-software-tools/)  
This article details the features and advantages of 10 popular project management tools. It also provides information concerning the benefits that project management tools create for remote work.

**Video:** [Project Management in Under 5: What Is the Critical Path Method (CPM?) opens in new window](https://www.youtube.com/watch?v=rxGcV0tuxRU) (5:26)  
This video provides information on the history of the Critical Path Method (CPM), explains how it compares to the Program Evaluation & Review Technique (PERT), and outlines the six steps of the method.

**Video:** [Microsoft Project Overview opens in new window](https://www.youtube.com/watch?v=7sCF6VOWX1s) (3:36)  
This video provides a concise review of the features and capabilities of Microsoft Project.

**Reading:** [Excel for Project Management opens in new window](https://www.projectmanager.com/excel-project-management)  
This article focuses solely on Excel project management. It provides examples of how Excel can be used in a variety of ways to meet the needs of various organizations.

Consider the following as you read these articles and watch these videos:

* Why do you think Excel would be a popular tool for project management?
* As an employee, how has the use of a project management tool impacted your work environment?
* How do project management tools impact team communication?

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|  | Integrated Development Environments |

**Reading:** [What Is an Integrated Development Environment (IDE)? opens in new window](https://www.veracode.com/security/integrated-development-environment)  
This article describes various types of Integrated Development Environments (IDEs), explains what they do, and identifies who would use them.

**Reading:** [A Beginner’s Guide to Integrated Development Environments opens in new window](https://mashable.com/2010/10/06/ide-guide/)  
This article provides detailed information on some of the specific IDEs that are available.

**Video:** [What Is an IDE? opens in new window](https://www.youtube.com/watch?v=0ArUv3VqkZs) (1:01)  
This video provides an introduction to IDEs that includes a demonstration of a text editor, compiler, and debugger. The narrator also provides information on a variety of IDEs that are available and how they are designed to support individual needs and preferences.

While reading these articles and watching the video, consider the following:

* Consider the IT career that you would like to have. What tools would the IDE you select have to include to meet the needs of that position?
* Are there benefits to using a text editor rather than an IDE?

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|  | Helpdesk, Tech Support, and Screen-Sharing Tools and Technology |

To effectively support the computer and information sharing needs of individuals and organizations, IT technicians and specialists, information security analysts, computer programmers, and systems administrators acting as second-level support rely on help desk, tech support, and screen-sharing tools and technology. The following articles describe some of the options available to meet these IT needs.

**Reading:** [What Is Help Desk Software? A Full Guide to Types, Features and Pricing opens in new window](https://financesonline.com/help-desk-software-full-guide-types-features-pricing/)  
This article answers a number of questions concerning the purpose, types, and issues associated with help desk software. It also provides information on the leading help desk systems currently available.

**Reading:** [The Best Remote Access Software opens in new window](https://www.pcmag.com/roundup/355572/the-best-remote-access-software)  
Being able to remotely access someone’s computer from anywhere in the world really opens up IT support opportunities. This article provides a comparison of top remote access software, describes who needs the software, and continues by explaining some of the uses, benefits, and even security issues associated with using remote access.

Consider the following as you read these articles:

* What help desk features have you used as an employee or student, and how was your experience?
* Which tools or features referenced in the readings would have improved your experience?
* How would remote access improve your experience as a student or professional?
* Can you think of any security issues that were not addressed in the articles and consider how they might be eliminated?

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|  | Security |

Security is a major focus of IT professions such as computer systems analysts, information security analysts, network systems administrators, computer support specialists, and electronic commerce specialists. The following articles provide insight into some of the tools available to support these IT professionals.

**Reading:** [Six Cybersecurity Tools and Services Every Business Needs opens in new window](https://www.globalsign.com/en/blog/six-cybersecurity-tools-and-services-every-business-needs/)  
While this article does not feature any one specific tool or technology, it does describe the importance of six tools and services that would benefit any IT professional.

**Reading:** [9 Security Tools Every Analyst Needs to Know About opens in new window](https://www.springboard.com/blog/security-tools-every-analyst-needs-to-know-about/)  
This article describes broad topics associated with cybersecurity and then provides information on specific tools and technology that may be used to help improve the security of your cyber information.

**Reading:** [Top 15 Ethical Hacking Tools Used by Infosec Professionals opens in new window](https://securitytrails.com/blog/top-15-ethical-hacking-tools-used-by-infosec-professionals)  
This article describes 15 tools that can be used to detect security issues that exist within your company. It details the uses of each tool and lists the operating systems that support them.

As you read these articles, consider the following:

* What are the main uses of network mappers?
* How has ethical hacking impacted corporate network security?
* What are some of the legal implications of ethical hacking?

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|  | Office Automation |

Office automation tools are common in business organizations. While most IT professionals will be working with office automation tools, it is almost a guarantee with positions such as desktop publisher, data entry/coder, computer service technician, and support specialist.

**Reading:** [Office Automation opens in new window](https://www.inc.com/encyclopedia/office-automation.html)  
This article provides a brief history of office automation. It then goes on to describe the main components of office automation and the factors that can impact the success of automation.

**Video:** [What Is Microsoft Office Automation? An Interview with Daryl Christie opens in new window](https://www.youtube.com/watch?v=b09iEcuw8NQ) (2:56)  
This short video interview focuses on the benefits of using Microsoft Office Automation. Improvements in time management, consistency in work, and ease of compiling and distributing reports are mentioned in the video.

As you read these articles and watch the video, consider the following:

* What areas of your current workplace do you believe would benefit from automation?
* Which aspects of office automation do you think would have the most impact on the role of an IT specialist?