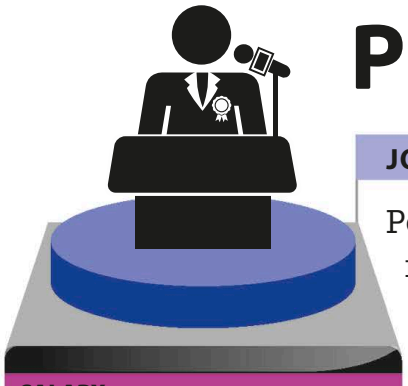


POLITICIAN

SALARY

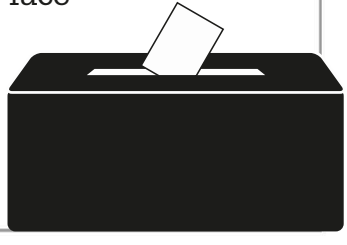
Political aide ★★☆☆☆
Politicians' salaries vary

INDUSTRY PROFILE

Entry into the field is competitive • Opportunities to work at a local, state, and/or national level • Career prospects and pay rates vary depending on the role

JOB DESCRIPTION

Politicians are public servants elected by voters to make decisions that shape society and affect their communities on all levels—local, state, and national. They aim to improve citizens' lives by pressing for changes in society and the laws that govern it. In this role, you will hold face-to-face sessions in your community, debate and vote on issues, and campaign for yourself and your political party.



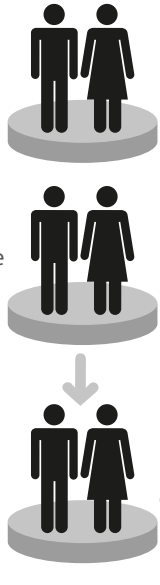
CAREER PATHS

Entry into—and advancement within—this career is largely down to self-motivation. Some politicians work in local government, while others represent their voters at the state or national levels. In politics, perhaps even more so than in other fields, career paths vary according to the type of politician you want to be.

NON-GRADUATE You can run for office as long as you meet certain basic qualifications, such as age and residency.

GRADUATE You can earn a degree in political science or public administration. Experience working for political campaigns or interning with an elected official's office is helpful.

LAWYER Though it is not a requirement, many politicians at the higher levels of government hold law degrees.





DIPLOMAT Represents the United States in foreign affairs. Job responsibilities vary from negotiating treaties to managing staff at an overseas embassy.



POLITICIAN As a politician, you work at every level of government, from town council membership all the way up to the presidency. Once elected, you can choose to focus on specific areas of policy. There are a vast amount of career options and specializations for you to choose from.

SKILLS GUIDE

- Excellent public speaking skills for presenting political arguments and winning support for policies.
- The ability to work as part of a team in order to reach a consensus on legislation and policies.
- Interpersonal skills for relating to members of the public and understanding their concerns.
- Good problem-solving skills for devising political solutions to economic and social problems.
- Perseverance and integrity to press for political change and inspire others to adopt the party's cause.



MAYOR Leads a town or city council and presides over local government, taking responsibility for its major departments—including police, fire, housing, education, and transportation.



GOVERNOR Serves as a state's chief executive officer, ensuring all state laws are implemented properly by the state's executive branch. The responsibilities of a governor vary from state to state.



SENATOR Represents his or her state in the senate. This job is part of the legislative branch of government, and it includes writing and voting on bills. State senators serve six-year terms.



PRESIDENT Leads the US government. Serves as Commander in Chief of the federal armed forces, travels extensively to represent the US around the world, and has the power to sign a bill into law.

RELATED CAREERS

- **CHARITY FUNDRAISER** *see pp. 90–91*
- **LAWYER** *see pp. 110–111*
- **POLITICAL SCIENTIST** Uses expertise in areas such as law, politics, and history to research and advise on public policy. Political scientists must stay up to date with political ideas and trends.

In 2021, a record 143 women served as members of US Congress, an increase of 13 percent from 2019.

AT A GLANCE

YOUR INTERESTS Politics • Political science • Debating • Current affairs • Law • Economics • Business studies • Sociology • History • Public relations

ENTRY QUALIFICATIONS Evidence of past political activity is vital. Many politicians hold advanced degrees in law, economics, or political science.

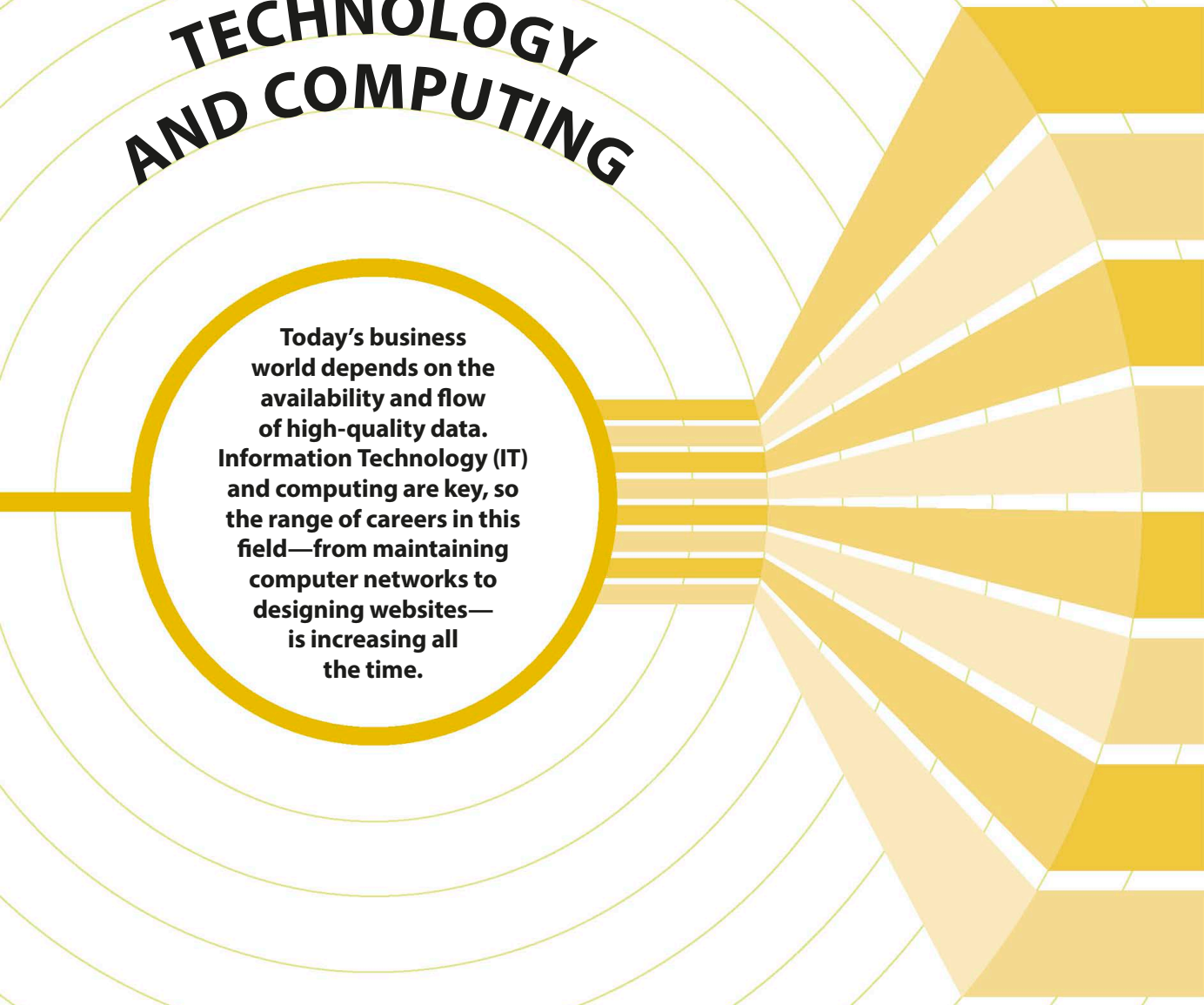
LIFESTYLE Long working hours are common. Debates and campaigning or networking events are often held during evenings. Privacy is difficult.

LOCATION Politicians typically work out of an office in their community, but national—and, sometimes, overseas—travel is required.

THE REALITIES Campaigning during elections can require frequent overnight stays away from home. Politicians' lives are often very public.

INFORMATION TECHNOLOGY AND COMPUTING

Today's business world depends on the availability and flow of high-quality data. Information Technology (IT) and computing are key, so the range of careers in this field—from maintaining computer networks to designing websites—is increasing all the time.





SOFTWARE ENGINEER
Page 118

Computerized devices are the tools of the electronic age. Software engineers provide the link between user and machine, writing the code that brings devices to life.



SYSTEMS ANALYST
Page 120

Virtually every business or organization relies upon the efficient flow of data, so the systems analysts who examine and improve IT systems are critical to today's economy.



DATABASE ADMINISTRATOR
Page 122

Working across every industry and sector, database administrators ensure that electronically stored information is accurate and protected from hackers.



NETWORK ENGINEER
Page 124

Computer and communications systems rely on electronic networks. Engineers in this field work on a range of computer networks, such as fiber-optic or wireless systems.



IT SUPPORT EXECUTIVE
Page 126

Drawing on a detailed knowledge of computer systems and software, IT support executives offer help and advice to users who encounter technological problems.



WEB DEVELOPER
Page 128

Shaping the look and feel of the Internet, web designers and developers use their skills to bring websites to life for businesses, organizations, and individuals.



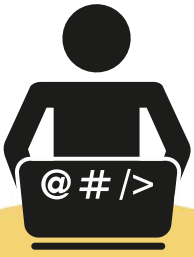
GAME DEVELOPER
Page 130

Growing in popularity year by year, the computer gaming industry relies on innovative and creative developers to produce the code that drives the games.



CYBERSECURITY ANALYST
Page 132

As IT security threats become more frequent, cyber-security analysts are the guardians of computer systems, using technical skills to protect against data attacks.



SOFTWARE ENGINEER



JOB DESCRIPTION

Software engineers plan, analyze, design, develop, test, and carry out maintenance work on a wide variety of computer software products. These can range from games, apps, and home entertainment systems, to programs that run a computer's operating system or control network communications between computers.

SALARY

Junior engineer ★★☆☆☆
Senior engineer ★★★★★

INDUSTRY PROFILE

High demand • Many jobs in software and telecommunication companies • Highly paid contract-based roles available for experienced engineers

AT A GLANCE

YOUR INTERESTS Computer science • Information Technology (IT) • Mathematics • Physics • Engineering • New technologies

ENTRY QUALIFICATIONS A degree or a postgraduate qualification in software engineering or a related discipline is the best way to get a job.

LIFESTYLE Working hours are flexible, but tight deadlines demand long hours. Work is usually office-based; travel to meet clients is possible.

LOCATION Most jobs are office-based, but many people work remotely from home or take a hybrid approach so that they can minimize distractions.

THE REALITIES The market is highly competitive. However, it is very well compensated and there are many opportunities for job advancement.

CAREER PATHS

Software engineers start their careers supporting a team that is developing or modifying computer code. After gaining experience and knowledge of multiple computer systems and languages, they can progress to lead their own development teams or enter specialized areas of the industry.

GRADUATE You will need a degree in an analytical or technical subject—but not necessarily in computer science or Information Technology (IT)—and some experience in computer coding.



POSTGRADUATE If you hold a degree in a nontechnical discipline, you may take an IT conversion course at postgraduate level. It is increasingly popular to learn to write software through online and independent study.



SKILLS GUIDE

- Good team-working skills and the ability to work with people from all over the globe.
- Strong analytical and problem-solving skills to work through the many challenges of a project.
- A creative approach to solving what can often be extremely complex problems.
- Excellent computer skills and the resourcefulness to stay up to date with new technologies.
- Attention to detail and the patience to code and test new software products.

RELATED CAREERS

- **SYSTEMS ANALYST** *see pp. 120–121*
- **FULL STACK DEVELOPER** Handles databases, servers, and clients. This professional must be highly skilled in a wide range of computer software development.
- **MACHINE LEARNING ENGINEER** Performs sophisticated programming—working with complex data sets and algorithms—to train Artificial Intelligence (AI) machines and systems that can learn and apply knowledge.

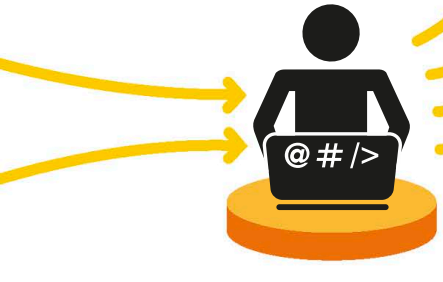
From 2017 to 2026, there is expected to be a 24 percent increase in software jobs.

LEAD SOFTWARE ENGINEER Runs a team and sets the specific project requirements. This person requires experience in order to mentor new recruits and manage their development of technical skills. This is a common role for someone who wants to become a Chief Technology Officer (CTO).





QUALITY ASSURANCE TESTER Tests software to understand the quality of a potential product. A person may take on a role as a software tester before becoming a software engineer in some companies.



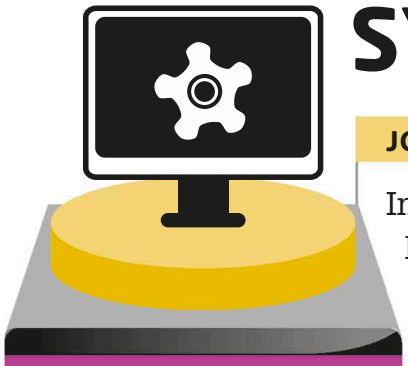


GAME DEVELOPER Writes and tests the code used to run games on computers, consoles, and handheld devices, such as tablets and mobile phones.



SOFTWARE RESEARCHER Conceives new ideas, individually or for a company, and develops them as software prototypes. Coding skills are required for this role.

SOFTWARE ENGINEER Experienced software engineers have numerous options for career development. You can progress to a lead engineer or specialize in a variety of areas.



SYSTEMS ANALYST

SALARY

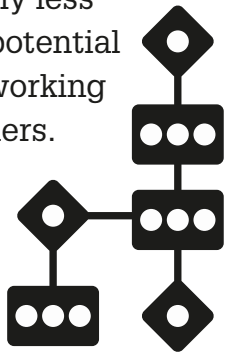
Junior systems analyst ★★☆☆☆
Senior systems analyst ★★★☆☆

INDUSTRY PROFILE

Healthy jobs market • Employers range from large corporations to small enterprises • Growth in employment in the public and financial services sectors

JOB DESCRIPTION

Information Technology (IT) lies at the heart of most businesses and organizations, so a poorly designed computer system can make a company less efficient. Systems analysts identify potential problems in a computer system by working closely with its users and programmers. They provide recommendations for how the system may be redesigned, and plan and manage ways of achieving these goals.



AT A GLANCE

YOUR INTERESTS Information Technology (IT) • Computer science • Business information technology • Electronic engineering • Mathematics

ENTRY QUALIFICATIONS A degree in a computing-based subject is preferred. A postgraduate degree (MBA) in business administration is desirable.

LIFESTYLE Systems analysts usually work regular hours, but they may have to work overtime to meet project deadlines.

LOCATION The work is usually office-based, but employees are increasingly adopting hybrid working practices using online technologies.

THE REALITIES The fast-paced nature of work and tight deadlines can be stressful. Systems analysts need to keep up to date with fast-evolving technology.

RELATED CAREERS

- **SOFTWARE ENGINEER** *see pp. 118–119*
- **DATABASE ADMINISTRATOR** *see pp. 122–123*
- **NETWORK ENGINEER** *see pp. 124–125*
- **DATA SCIENTIST** Analyzes the huge volume of computer data companies collect to identify patterns that may help make a business more profitable. Data analysts then present these findings to senior management.
- **IT RISK MANAGER** Scrutinizes a company's IT systems, and identifies and fixes security weaknesses that could lead to the theft or damage of computer-based information.

Systems analysts are increasingly involved in setting up cloud storage technologies for companies.

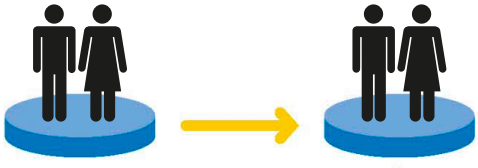


CAREER PATHS

Once qualified, systems analysts can specialize in a particular type of computer system, such as an accounting or health-care system. If they work for a big company, they may be able to move into management or a strategic planning role.

TRAINEE After graduating high school, you can become a trainee IT technician while studying part-time or via distance learning for a relevant degree.

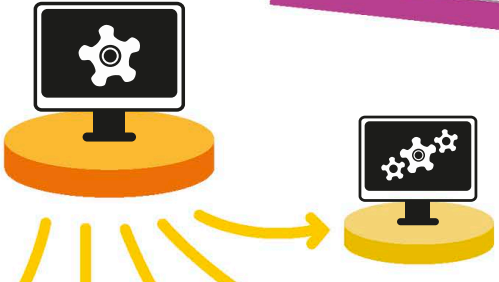
GRADUATE To become a systems analyst, you need a degree in computer science, mathematics, business studies, or a related area.



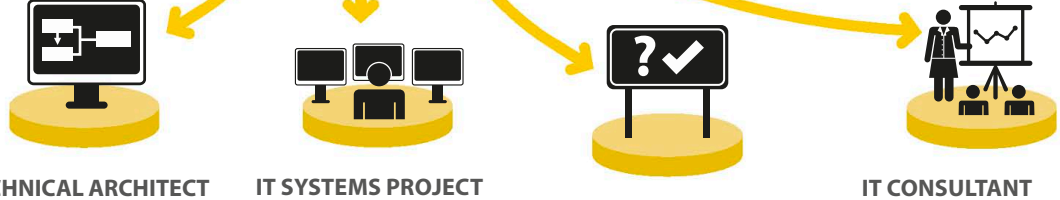
SKILLS GUIDE

- Good team-working skills, and the ability to work with people in all parts of a company.
- Strong leadership skills to motivate technicians, instruct developers, and influence managers.
- An analytical and logical approach to designing and testing complex systems.
- Highly developed IT skills across a wide range of hardware, software, and networks.
- Sound commercial awareness to provide clients with cost-effective system solutions.

SYSTEMS ANALYST
Analysts work closely with business managers to develop effective IT systems. As an analyst, you may recommend and install new hardware or software, test the system, and teach staff how to use it. With experience, you may choose to specialize.



SENIOR ANALYST Heads up a team of IT professionals or takes on a management role, advising the directors of a company on IT strategy, such as implementing the use of databases.

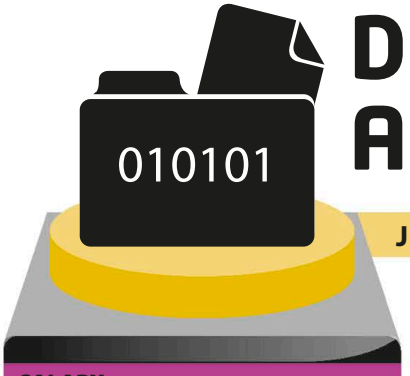


TECHNICAL ARCHITECT
Makes decisions about the types of hardware and software products to be used. A technical architect is sometimes called a systems designer.

IT SYSTEMS PROJECT MANAGER Oversees an IT project from start to finish. You will develop plans, manage teams, study risks, and track project budgets.

SOFTWARE ANALYST
Diagnoses problems with business software. May develop and write code for new applications when necessary.

IT CONSULTANT
Provides advice on IT matters to a range of businesses and government bodies for a management consultancy firm.



DATABASE ADMINISTRATOR

SALARY

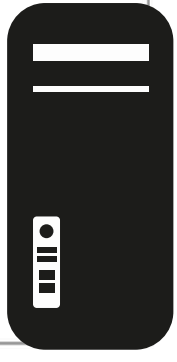
Graduate ★★☆☆☆
Experienced DBA ★★★★★

INDUSTRY PROFILE

Worldwide job opportunities • Possibility of working in a variety of sectors, from publishing to finance • Linking smart devices using cloud technologies is an ongoing challenge

JOB DESCRIPTION

Companies in almost every sector, from engineering to marketing, rely on accurate data to make business decisions. Database administrators (DBAs) store and organize data in databases that recognize patterns in the information. They ensure that the databases run efficiently, providing users with data when they need it.



SKILLS GUIDE

- Good communication skills to understand and supply accurate data as it is requested.
- Efficient time management skills for dealing with constant data-processing requests.
- Problem-solving skills to ensure that data is backed up reliably, easy to retrieve, and secure.
- A strong interest in, and a good understanding of, software and coding.
- Attention to detail to fix—or avoid—computer bugs that can cause problems in a database.

RELATED CAREERS

- **SOFTWARE ENGINEER** *see pp. 118–119*
- **SYSTEMS ANALYST** *see pp. 120–121*
- **NETWORK ENGINEER** *see pp. 124–125*
- **WEB DEVELOPER** *see pp. 128–129*
- **FINANCIAL PROGRAMMER** Combines finance and technology to write programs and develop software for banks and financial institutions to offer mobile banking apps, trade cryptocurrencies, or design chatbots in a growing sector called "Fintech."
- **INFORMATION SCIENTIST** Manages an organization's information resources, such as databases, online services, books, and paper-based records.
- **IT CONSULTANT** Advises a business on how to improve its IT infrastructure. They must have a good knowledge of databases, networks, and all different kinds of software.

AT A GLANCE

YOUR INTERESTS Computer science • Coding • Information Technology (IT) • New technologies • Data security • Mathematics

LOCATION Work is office-based. Some administrators may be able to work from home, even though they deal with staff from all parts of a company.

ENTRY QUALIFICATIONS A technical degree, such as in software engineering, computer science, or mathematics, is desirable but not required.

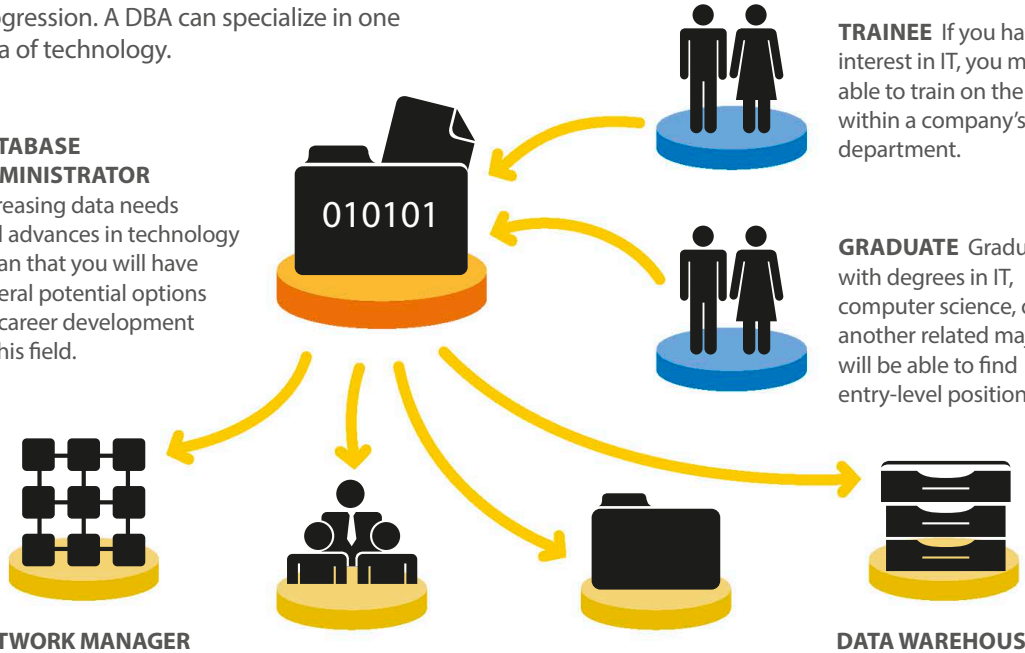
THE REALITIES This is a high-pressure role. DBAs are expected to respond quickly and accurately to all sorts of problems, from hard-drive failure to servers not functioning.

LIFESTYLE Working after-hours is likely. You may be expected to field round-the-clock requests from members of your company.



CAREER PATHS

Large companies with complex data requirements provide the best opportunities for career progression. A DBA can specialize in one area of technology.



TRAINEE If you have an interest in IT, you may be able to train on the job within a company's IT department.

GRADUATE Graduates with degrees in IT, computer science, or another related major will be able to find entry-level positions.

DATABASE ADMINISTRATOR Increasing data needs and advances in technology mean that you will have several potential options for career development in this field.

NETWORK MANAGER Ensures that networks are secure and synchronized across the globe, and also implements the latest technologies.

PROJECT MANAGER Oversees a project from start to finish, liaising with a range of people across the business.

DATABASE ARCHITECT Designs the underlying structure of a database, based on the client's needs and goals.

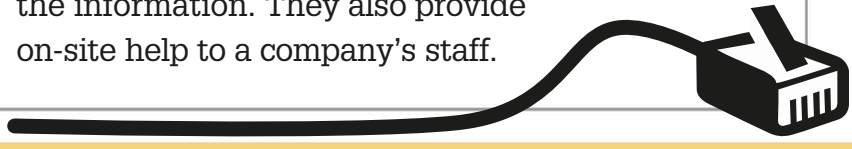
DATA WAREHOUSE SPECIALIST Manages and analyzes data (both current and historical) collected from different parts of an organization.

NETWORK ENGINEER



JOB DESCRIPTION

Network engineers set up and maintain the networks that carry information between computers. These networks use a range of technologies to work. They may connect computers located either in a single office or computers separated by huge distances. Network engineers also diagnose and fix problems with network software and check the cables, radio links, and even satellites that carry the information. They also provide on-site help to a company's staff.



SALARY

Junior network engineer ★★☆☆☆
Senior network engineer ★★★★☆

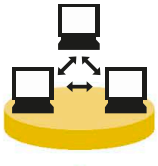
INDUSTRY PROFILE

Growing job market • Opportunities available in almost every area of business or industry • Growing number of opportunities in healthcare information technology

CAREER PATHS

Career progress as a network engineer depends on the type and size of the company you work for. If the company is small, you will be called upon to deal with a variety of computer issues, from slow Internet speeds to virus infections. However, if you work for a large global company, you are more likely to specialize in one particular area, such as network architecture or cybersecurity.

NETWORK ARCHITECT Designs an organization's computer network. This involves analyzing how the business works and planning a network that can meet its needs both now and in the future.



TRAINEE A person with a good general education and strong Information Technology (IT) skills may find work as a trainee technician. On-the-job learning and taking college-level courses may put you on the path to becoming a network engineer.





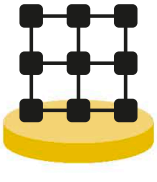
GRADUATE If you have an undergraduate or graduate degree in computer science or systems engineering, you can find work with companies that run large and complex networks.



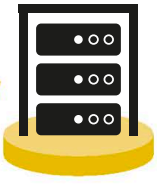
NETWORK ENGINEER The role requires continual learning to keep up to date with changing technologies. Many companies require you to learn and be certified in the products they use, such as Microsoft or Cisco. With experience, you can move into a number of different roles.

SKILLS GUIDE

- Excellent communication skills to be able to work with non-technical staff in an organization.
- The ability to work as part of a team of software developers and other IT professionals.
- The efficient management of IT technicians and an ability to support senior managers.
- The ability to identify and solve technical problems within urgent time frames.
- Patience and perseverance to resolve problems and restore a company's network function.
- Knowledge and expertise across a wide range of IT software, hardware, and networks.



NETWORK CONTROLLER
Manages the staff who maintain the network, and ensures the network operates reliably.



IT CONSULTANT Works for an IT consultancy or sets up their own business to provide networking advice and services to a range of clients.



HELP DESK PROFESSIONAL
Provides telephone and online support and advice to a company's network users.

AT A GLANCE



YOUR INTERESTS Information Technology (IT) • Computer science • Electronic or electrical engineering • Computer networks • Mathematics



ENTRY QUALIFICATIONS
A technical degree in computer-systems engineering or another related subject is useful but not required.



LIFESTYLE Network engineers work shifts or are on call to resolve issues outside normal hours, as companies rely on their networks 24 hours a day.



LOCATION Much of the work is office-based, but some network engineers operate remotely from home, depending on the type of project.



THE REALITIES Technological advances mean this is a growth area with many new fields of work opening up. Skills need to be regularly updated.

RELATED CAREERS

- **SOFTWARE ENGINEER** *see pp. 118–119*
- **SYSTEMS ANALYST** *see pp. 120–121*
- **DATABASE ADMINISTRATOR** *see pp. 122–123*
- **CYBERSECURITY ANALYST** *see pp. 132–133*

Network engineers are in high demand in the United States, with a projected growth rate of 6½ percent through 2030.

IT SUPPORT EXECUTIVE

JOB DESCRIPTION

Information Technology (IT) support executives provide technical assistance or help to computer users in an organization. They aim to solve common problems, such as forgotten passwords or lost data, maintaining computer hardware and networks to ensure that they work efficiently and function continuously.



SALARY

Newly qualified executive ★☆☆☆☆
Experienced executive ★★★★☆

INDUSTRY PROFILE

Varied opportunities with a wide range of employers, from large corporations to small firms • Growing demand for IT support in public and financial services sectors

AT A GLANCE

YOUR INTERESTS IT • Mathematics • Physics • Business studies • Business information technology • English • Computer programing

ENTRY QUALIFICATIONS A degree in an IT-related subject is desirable, but entry with suitable vocational training is also possible.

LIFESTYLE Most IT support companies operate 24 hours a day, so shift work is common. Part-time opportunities are offered by many employers.

LOCATION Increasingly, the work can be performed remotely via online technologies. Hybrid working is common, with occasional travel to work sites.

THE REALITIES This work can be fast-paced and target-driven, with pressure to resolve calls quickly. Dealing with clients can be stressful.

CAREER PATHS

IT support jobs are found across a wide range of industries, in public sector organizations, and in IT consultancies providing support services to clients. Support executives are computer "all-rounders" with a good knowledge of hardware and software, and so may move into related IT jobs, such as network engineering or database administration.

HIGH SCHOOL OR SOME COLLEGE You can enter IT support by studying for certifications from technology companies such as Microsoft, CompTIA, or Cisco. This will qualify you to maintain their systems or software products.



GRADUATE You need a degree in a subject such as business information technology, systems engineering, or software engineering to apply for graduate IT support jobs.

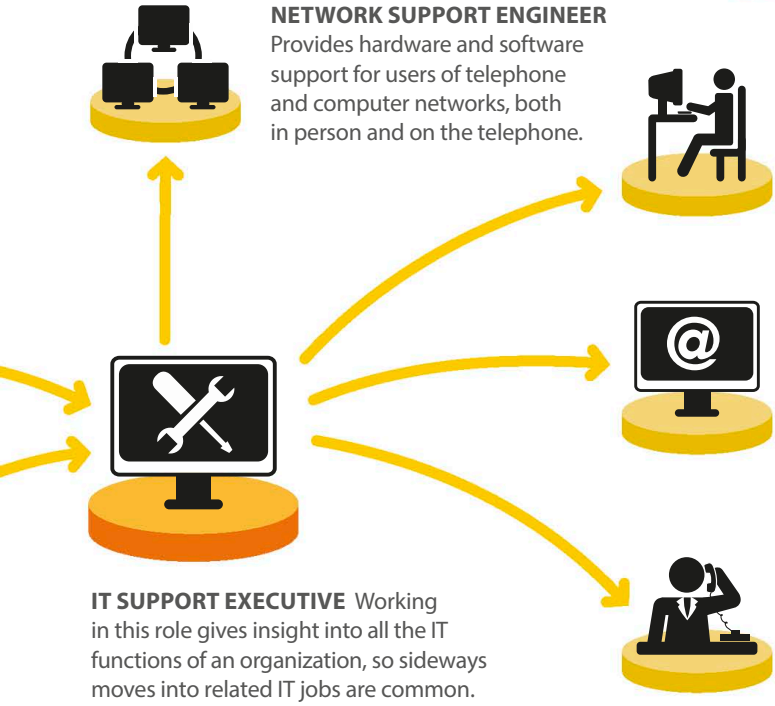


RELATED CAREERS

- **PROJECT MANAGER** *see pp. 82–83*
- **SYSTEMS ANALYST** *see pp. 120–121*
- **DATABASE ADMINISTRATOR** *see pp. 122–123*
- **NETWORK ENGINEER** *see pp. 124–125*
- **CALL CENTER MANAGER** Manages the daily operation of telephone call-center staff, who deal with client and customer queries and complaints, and sell products or services over the telephone.
- **SOCIAL MEDIA MANAGER** Creates and leads an organization's social media strategy by producing good content, managing online campaigns, and analyzing user data.

SKILLS GUIDE

- Excellent communication skills to ensure problems are understood and resolved efficiently.
- The capacity to work well in a team and identify serious issues for managers and IT specialists.
- Good management skills to guide IT support staff, and the ability to influence senior managers.
- The application of technical skills and a logical approach for effective problem-solving.
- Expertise in IT programs, systems, and networks, and the capacity to learn quickly on the job.



NETWORK SUPPORT ENGINEER Provides hardware and software support for users of telephone and computer networks, both in person and on the telephone.

DESKTOP SUPPORT EXECUTIVE Delivers IT user support across a particular business area, such as retail or banking, to resolve systems faults and user problems.

WEBSITE HOSTING EXECUTIVE Works for a website hosting firm, providing 24-hour IT support for users who have purchased server space from the company for their website or email services.

SERVICE DESK MANAGER Manages a team of staff who are responsible for delivering support for IT applications and business services, ensuring that targets and client expectations are met or exceeded.

IT SUPPORT EXECUTIVE Working in this role gives insight into all the IT functions of an organization, so sideways moves into related IT jobs are common. You can also specialize in a technical area, such as network support, or industry.

WEB DEVELOPER



JOB DESCRIPTION

Building an effective website requires a blend of technical and creative skills. Web designers take into account the appearance and usability of the website as well as its back end—the software that delivers the information to the user and makes the site run smoothly. Web designers also build apps for organizations, so consumers can view and buy products or services using their mobile devices.



SALARY

Junior web developer ★☆☆☆☆
Experienced web developer ★★★★☆

INDUSTRY PROFILE

Fast-moving environment • Opportunities in small or large development and design agencies • Freelancing common • Global market

CAREER PATHS

Web developers and designers typically work as part of a team, developing or testing a website. With experience, they may progress to leading a team or working with clients through a website-creation agency.

ASSISTANT If you have strong computer skills, you may be able to find work with an agency as an assistant. You will need to prove yourself on the job to progress.



GRADUATE You can become a web developer or designer if you have a bachelor's degree or a master's degree in IT or web design, along with a good knowledge of current web technologies.





WEB DEVELOPER
You will continue to update your skills and adapt designs to new technologies such as mobile apps and websites with animation and video, as well as keep up to date with emerging design trends.

WEB PROGRAMMER
Specializes in writing the code that makes a website work. Code is written using languages, such as HTML, Javascript, and PHP.



SKILLS GUIDE

- Creativity and innovation to stay ahead in the competitive world of website development.
- Clarity of thought and strong analytical skills to handle complexities in the design.
- The ability to analyze the design of a website, then identify and solve problems with it.
- Confidence with technology and a willingness to keep up to date with new software developments.
- An eye for detail when planning and/or designing the content of complex websites.



GRAPHIC DESIGNER With a focus on design, uses images, colors, and type to create layouts to express information and messages for print or electronic media in a visual way.



USER-EXPERIENCE DESIGNER Specializes in improving the function and layout of a website to make it as user-friendly as possible.



CREATIVE DIRECTOR Combines extensive design experience and excellent organizational skills to manage a team. Responsible for the overall look and feel of the website.

RELATED CAREERS

- **SOFTWARE ENGINEER** *see pp. 118–119*
- **DATABASE ADMINISTRATOR** *see pp. 122–123*
- **GAME DEVELOPER** *see pp. 130–131*
- **MULTIMEDIA PROGRAMMER** Creates interactive features for products, such as websites, using photographs, animation clips, sounds, and text.
- **SEO SPECIALIST** Combines technical and marketing skills to generate extra traffic to websites. This can increase sales and raise the profile of brands.
- **VIRTUAL REALITY DESIGNER** Exploits cutting-edge virtual reality (VR) technologies to simulate the real environment. They create applications for many industries, from gaming to aeronautics.

AT A GLANCE

YOUR INTERESTS Information Technology (IT) • Computer science • Design • Internet security • New technologies • Multimedia • Graphics

ENTRY QUALIFICATIONS A degree in computer science or graphic design is useful, but many web developers are self-taught.

LIFESTYLE Working hours are flexible, but tight deadlines often mean working into the evening or weekend. Freelance contracts are common.

LOCATION Hybrid working approach and remote working are becoming common. Clients can discuss work and see designs via online platforms.

THE REALITIES A web developer's reputation is the key to success. It is essential to ensure you keep up to date with regularly changing technologies.

GAME DEVELOPER



SALARY

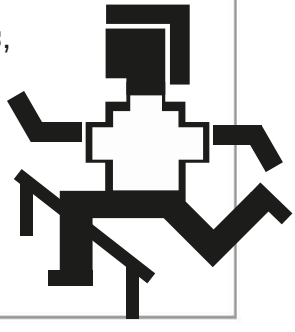
Junior developer ★★☆☆☆
Lead developer ★★★★☆

INDUSTRY PROFILE

Huge expansion in recent years, and set to grow further • Many freelance contracts available • Growing market in Virtual Reality (VR) and Augmented Reality (AR) games

JOB DESCRIPTION

A game developer produces games for different platforms, including personal computers (PCs), game consoles, smartphones, tablets, and websites. As a game developer, you could be involved in a variety of roles, from developing the game's initial concept or writing the code for it, to creating audio and video files, to writing instructions for animators and other members of their team.



AT A GLANCE

YOUR INTERESTS Computer science • Graphics • 3-D design • Animation and illustration • Gaming • Coding • Mathematics • Physics

ENTRY QUALIFICATIONS A degree in computer science or a media-related discipline is useful, although not required, for becoming a developer.

LIFESTYLE Teams are close-knit and may work extra hours together to prepare a new game for an upcoming launch date.

LOCATION Game developers work mainly in an office, where the atmosphere is informal and creative. Some do operate remotely from home.

THE REALITIES Entry to the field is highly competitive. Strict deadlines drive the work, and spending long periods on a computer can be tiring.

CAREER PATHS

There is no formal career structure for game developers. Progress depends largely on which path is taken—for example, focusing on programming graphics or the user interface. In this young and dynamic industry, success depends on performance, and on the sales and critical acclaim of the games.

PLAY TESTER You may be able to find work with a gaming company testing their products for playability and flaws (bugs). This can provide an entry route into the industry.



GRADUATE Having a degree in computer science gives you the best chance of employment. Some colleges offer specialty game-programming courses or modules.



RELATED CAREERS

- **SOFTWARE ENGINEER** *see pp. 118–119*
- **WEB DEVELOPER** *see pp. 128–129*
- **ANIMATOR** Brings to life the characters in cartoons, advertisements, and video games by modeling the movement of a character or object on-screen. An animator needs good artistic and design skills.
- **FORENSIC COMPUTER ANALYST** Investigates computer hacking and other illegal computer-related activities. Forensic computer analysts may be hired by the police or large companies.
- **STORYBOARD ARTIST** Illustrates how a character progresses in a computer game using a series of drawings or animations. Storyboard artists have good storytelling and drawing skills.

SKILLS GUIDE

- Good cooperation skills to work smoothly with people from all different educational backgrounds.
- Imagination to develop new products, and the flexibility to handle a wide range of tasks.
- A logical approach to problem-solving and strong mathematical and analytical skills.
- An in-depth knowledge of computer games and excellent computer skills.
- Attention to detail to ensure bug-free codes; the ability to work under pressure and meet deadlines.

SENIOR DEVELOPER
Leads a team of specialists to complete an entire game or part of a larger digital product. This role could go to a person with either a programming or design background.





PROJECT MANAGER
Oversees a project, ensuring that all of the resources and personnel required to complete the work on time are in place.



GAME DEVELOPER Can follow one of two routes: programming (building the game) or designing (creating the graphics).



GAME DESIGNER Devises the look of the characters, levels, and the game's storyline. Some may have a programming background, but many come from a design discipline.

