As a software engineer, you'll work in a constantly evolving environment, due to technological advances and the strategic direction of the organisation you work for. You'll create, maintain, audit and improve systems to meet particular needs, often as advised by a systems analyst or architect, testing both hard and software systems to diagnose and resolve system faults.

The role also covers writing diagnostic programs and designing and writing code for operating systems and software to ensure efficiency. When required, you'll make recommendations for future developments.

Job titles and descriptions in IT are not standardised. Instead of a software engineer, you may be called a systems/software/database/web programmer, engineer or developer, depending on the system you're developing. Alternatively, the programming language you use may become part of your title, such as Java or C# developer. The work of a software engineer can also form part of a multimedia programmer role.

Depending on the organisation you work for, you may have a more defined role and work within a group of IT specialists which can include systems analysts, systems designers and systems testers. Nevertheless, as software engineers often manage the support systems required to effectively run an organisation, the role can also require you to communicate effectively and translate the needs of different teams into systems developments.

Responsibilities

As a software engineer, you'll need to:

- analyse user requirements
- write and test code, refining and rewriting it as necessary and communicate with any programmers involved in the project
- research, design and write new software programs (e.g. business applications or computer games) and computer operating systems
- evaluate the software and systems that make computers and hardware work
- develop existing programs by analysing and identifying areas for modification
- integrate existing software products and get incompatible platforms to work together
- create technical specifications
- write systems to control the scheduling of jobs or to control the access allowed to users or remote systems
- write operational documentation with technical authors
- maintain systems by monitoring and correcting software defects
- work closely with other staff, such as project managers, graphic artists, UX designers, other developers, systems analysts and sales and marketing professionals

- consult clients and colleagues concerning the maintenance and performance of software systems, with a view to writing or modifying current operating systems
- investigate new technologies
- continually update technical knowledge and skills by attending in-house and external courses, reading manuals and accessing new applications.

Salary

- Typical graduate software engineer salaries start from £18,000 a year.
- The average annual salary for a software engineer is between £25,000 and £50,000.
- At senior or management level, software engineers can earn £45,000 to £70,000 or more per annum. Bonus schemes may be available.

The exact salary you'll receive is dependent upon the company, location and nature of your employer's business. The highest salaries can be found in the finance, pensions and telecoms sectors in London and the South East.

Income figures are intended as a guide only.

Working hours

Working hours are typically 9am to 5pm. However, longer hours are often necessary towards the end of projects as deadlines approach, as well as during the testing stage so that systems can be tested when they're not being used. In some cases, software engineers may be required to be on call to deal with problems. This can involve evening and weekend work in a shift pattern. Allowances may be available in these cases.

Self-employment and freelance or contract work is possible as there is an increasing market for contract software engineers with specialist knowledge. Career breaks, on the other hand, may be difficult due to the need to keep technical knowledge up to date in a rapidly changing environment.