Software Engineer or Developer

Software engineers or developers design and develop the programs which tell computers to perform specified functions, such as controlling complex manufacturing processes or aerospace systems. They may also be called systems developers or the name of a specific programming language, for example Java, C# or C++, may be in the title.

The Work

You could be:

- working from specifications drawn up by a systems analyst or business analyst
- adapting existing or developing new systems
- breaking system designs down into logical parts and coding each one using a programming language
- testing, or debugging, the code and rewriting as necessary
- installing, maintaining and updating the system once developed
- writing code to integrate new or existing systems
- working with technical authors to produce operational manuals, explaining how the system works
- working closely with other professionals such as systems analysts, project managers and web designers
- consulting with clients regarding the performance and maintenance of software systems.

Most software engineers and developers are familiar with a range of applications and languages, but you might specialise in one particular type.

Pay

The figures below are only a guide. Actual pay rates may vary, depending on:

- where you work
- the size of company or organisation you work for
- the demand for the job.

The starting salary can be in the range of £25,000 to £30,000 a year. Senior or lead programmers and developers can earn up to £70,000 a year or more. You might earn extra through bonuses or performance related pay.

If you have specialist skills you may earn more through contract work.

Conditions

- You would work normal hours from an office or home.
- You spend most of your time working at a computer.
- You might have to work evenings or weekends to meet deadlines. Depending on your job, you might sometimes be on call.
- You might have to travel and spend time away from home to meet with clients.

Getting In

- Most entrants have a degree (SCQF Levels 9-11) in a subject such as computer science, computer and electronic systems or software engineering. For entry to degree course you need 4-5 Highers.
- Some entrants have a specialised postgraduate (SCQF Level 11) qualification in software engineering.
- Graduates in other subjects can enter by taking a postgraduate course in a computer programming subject.
- You may enter with a HND (SCQF Level 8) in Computing: Software Development.
- For entry to an HND course you normally need 1-2 Highers plus some subjects at National 5.
- Colleges and universities often prefer you to have Maths and a relevant subject such as Computing, Physics or a technological subject at Higher.
- You might get in through a Modern Apprenticeship in IT and Telecommunications or Digital Applications at SCQF Level 6, then work your way up with experience and further specialist training, or a Technical Apprenticeship at SCQF Level 8.
- Studying for a relevant Foundation Apprenticeship while in fifth and sixth year at school could count towards entry of a course. Entry requirements vary between colleges, but you usually require some subjects at National 5 including English and Maths.
- For some jobs you may be required to complete a technical or programming task as part of the recruitment process.

There are jobs with a wide range of organisations: software houses, IT consultants, the armed forces, central and local government, public utilities, the media, the aerospace, telecommunications, banking and electronics industries.

Opportunities are good. You will find jobs advertised on the internet.

What Does It Take

You need to have:

- excellent IT and programming skills
- an analytical, logical and methodical approach
- excellent problem solving skills
- a high level of patience, perseverance and attention to detail
- good interpersonal and communication skills – to work with colleagues and clients who may not have a technical background
- an ability to learn new skills and technology quickly.

You should be able to:

- prioritise workloads
- work accurately under pressure and meet deadlines
- work as part of a team as well as on your own
- understand the client's business needs and respect confidential information.

Training

- Training is usually on the job.
- With a Modern Apprenticeship you would work towards the Diploma for Information Technology and Telecommunications Professionals at SCQF Level 6 or Diploma in Digital Application Support at SCQF Level 6.
- You can study for professional qualifications in programming through BCS, The Chartered Institute for IT.
- To keep up to date with developments in new software and programming languages you might take short certification courses run by software manufacturers, such as Microsoft or Oracle.

Getting On

- With experience, you might gain promotion to team leader, project manager or senior developer.
- You might move into systems analysis (see the Systems Analyst job profile).
- You might work freelance on short term contracts or as a consultant.
- You might work overseas either with UK based companies or international organisations.

More Information

For more information please see organisation below:

EngineeringUK

Contacts

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SPE Aberdeen
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Statistics

Employment Status UK %

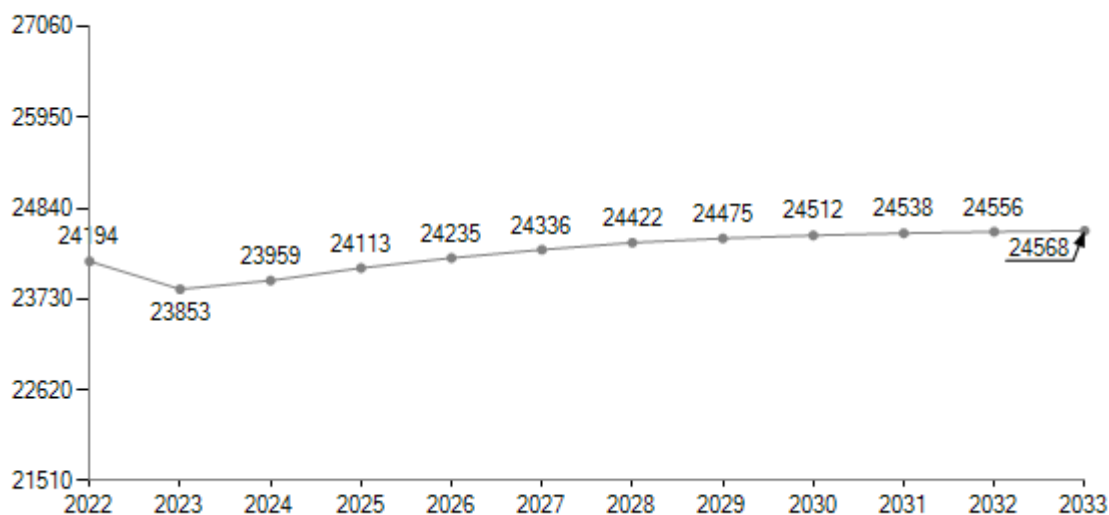■ 81.52%
FT Employee
■ 11.71%
Self Employed
□ 6.76%
PT Employee
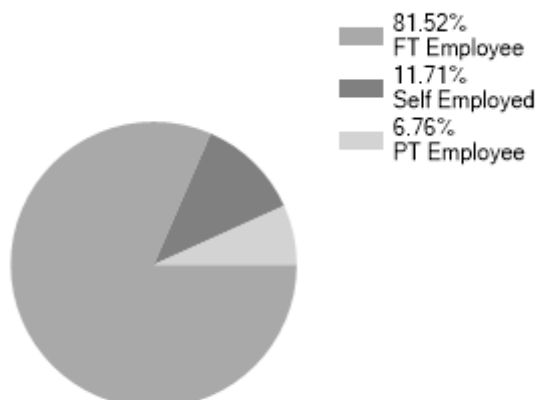
Past Unemployment - Scotland

No Claimant statistics available for Scotland.

LMI data powered by LMI for All

Predicted Employment in Scotland

LMI data powered by Lightcast