Games Programmer

A games programmer uses programming and scripting languages to write code that controls how a game looks and works. This could be puzzle, adventure, role-play, combat, shooters or sports. They produce games for different platforms: PCs, laptops, consoles, the internet, interactive TV and mobile phones.

They can also be called gameplay, engine, physics or animation programmers.

The Work

You could be:

- liaising with other team members, for example the games designer, graphic designer, artists and technical architects
- producing technical specifications (documents that instruct how the game should be programmed) for different components of the game
- writing code in programming languages, such as C++ or Java, to develop front end (what the player sees) and back end (how the game actually works) elements
- developing 2D and 3D graphics, such as scenery or characters, and sound
- specialising in physics programming – creating moveable objects to behave as realistically as possible, for example running water, waves or character movement
- programming the artificial intelligence (AI) aspects of the game – how characters not controlled by the player behave, for example footballers passing the ball
- working with testers to fix any faults, known as bugs, and rewriting code
- researching new technology, platforms and ideas.

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.

For many vacancies salaries depend on skills and experience. Starting salaries are usually around £22,000 to £25,000 a year. With experience this can rise to around £35,000 to £50,000 a year or more. Senior programmers may earn £65,000 or more a year. Salaries are usually higher in London.

You might earn extra through profit sharing, bonus payments and performance-related pay.

Conditions

- You will spend most of your time working at a computer in an office or studio.
- You work with other professionals, such as designers, computer animators, programmers and testers.
- Although you work basic office hours, you might have to work overtime to meet deadlines and the

environment can be pressurised.

Getting In

- The majority of entrants to the computer games industry are graduates. Some have degrees (SCQF Levels 9-11) in maths, physics or computer science, but there are also degrees in computer games subjects, at Abertay, Edinburgh Napier, Glasgow Caledonian, Heriot-Watt and the West of Scotland universities. Glasgow School of Art also offer a degree in Games and Virtual Reality.
- Entry requirements for most of these courses are 4-5 Highers usually including Maths and preferably Physics or a computing or technological subject, plus English and Maths at National 5.
- If you have a degree in a relevant subject you could do a postgraduate games development or computer games technology course at Abertay University.
- The ScreenSkills website lists endorsed degree courses for the computer games industry.
- You may need a portfolio of work demonstrating the work you have done in games development.
- Studying for a relevant Foundation Apprenticeship while in fifth and sixth year at school could count towards entry to a course. Entry requirements vary between colleges, but you usually need relevant subjects at National 5 such as Maths, Physics or Computing Science.
- Due to the competitive nature of this sector, it helps if you demonstrate a real passion for gaming.

Job vacancies are often advertised on the internet. There is a lot of competition for jobs.

What Does It Take

You need to have:

- creativity and problem solving skills
- an analytical, logical approach
- good ability in maths and physics
- excellent IT and programming skills
- a genuine enthusiasm for gaming
- knowledge of different game types and platforms
- good communication skills for liaising with other professionals.

You need to be able to:

- keep up to date with new technology and game trends
- pay attention to detail
- work alone and as part of a team
- work under pressure, accept criticism and meet deadlines.

Training

- Training is often on the job.
- You could take short training courses in other programming and scripting languages and artificial intelligence techniques.

Getting On

- Skilled developers are in demand and with experience you can specialise or move on to become a team or project leader.
- You may be able to work overseas in Europe, USA, Canada, Australia and Japan.

More Information

- Computer games are increasingly used as educational tools to get across ideas about, for example, maths, science or social studies
- The University of Abertay has the UK's first university Centre of Excellence for Computer Games Education.
- BAFTA Young Game Designers is a competition with different categories for 10-14 and 15-18 year olds. You can write and illustrate your idea to enter the 'Game Concept Award' or make your own game to enter the 'Game Making Award'. See the BAFTA Young Game Developer website for more details.
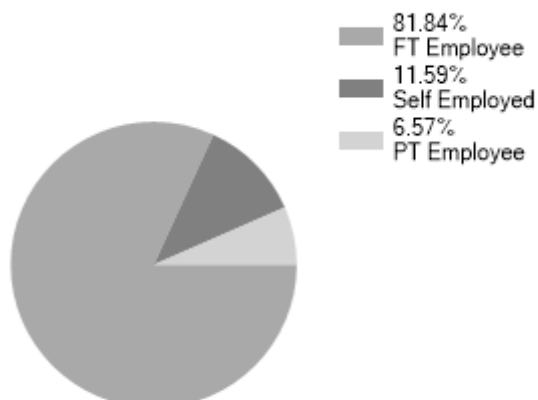
For more information please see organisations listed below:

- BCS, The Chartered Institute for IT
- British Academy of Film and Television Arts (BAFTA)
- ScreenSkills
- TIGA

Contacts

Statistics

Employment Status UK %

81.84%
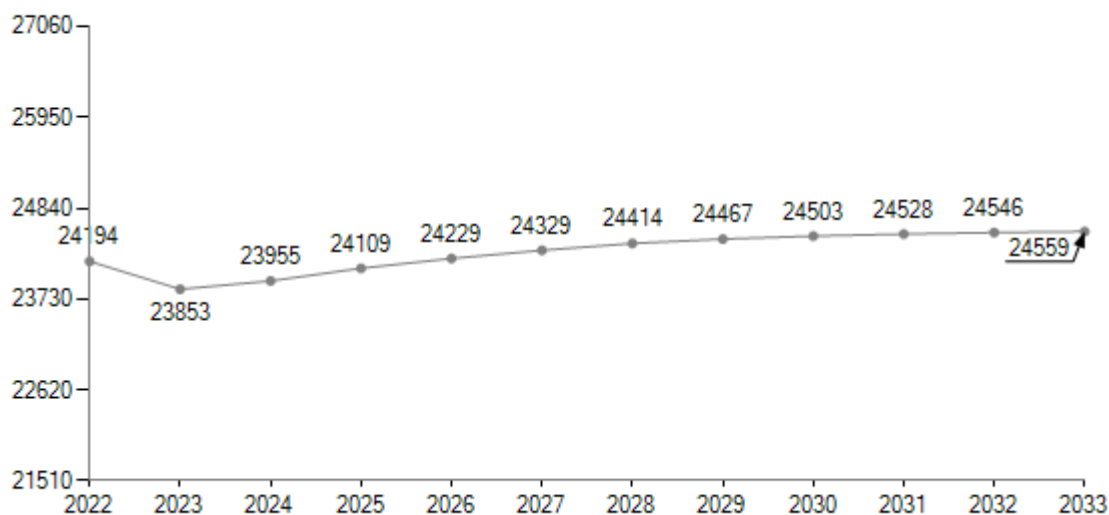FT Employee

11.59%
Self Employed

6.57%
PT Employee

LMI data powered by LMI for All

Past Unemployment - Scotland

No Claimant statistics available for Scotland.

Predicted Employment in Scotland

Year	Value
2022	24194
2023	23853
2024	23955
2025	24109
2026	24229
2027	24329
2028	24414
2029	24467
2030	24503
2031	24528
2032	24546
2033	24559

LMI data powered by Lightcast