APPRENTICESHIP WORKFORCE DEVELOPMENT PROGRAMME

Tackling the Urgent Need for More Industry Professionals in the Apprenticeship Workforce – Creative Industries

West Midlands Creative Alliance Collaborative Project

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'Apprenticeship Essentials: What's Involved in' Series

The Game Programmer Apprenticeship

An apprenticeship is a programme of work-based training which addresses a set of *knowledge*, *skills,* and *behaviours* (KSBs) that are defined by an apprenticeship standard. These standards are developed by groups of companies who intend to appoint apprentices in those roles and then published by government on the *Institute for Apprenticeships and Technical Education* (IfATE) website.

The published *Level 7 Game Programmer* apprenticeship standard can be found here and was created by a team including Microsoft (Rare), Sony (PlayStation London Studio), nDreams and Sumo Digital.

The Learning

The *knowledge* required for an apprenticeship typically consists of the facts and understanding that can be taught through lectures or presentations. In contrast, *skills* are the applied abilities which are learnt and demonstrated through practical work such as tutorials or work projects. *Behaviours* embody the professional mindset required which are developed and assessed through team-based project activities in the workplace.

The Level 7 Game Programmer apprenticeship standard focusses heavily on the *knowledge* and *skills* that underpin programming in whatever language is appropriate to their employer's studio. Console game studios might therefore focus on C++, indie on C# and web on HTML5/JavaScript. Whichever language they focus on apprentices are not just expected to write code but understand how that code executes in order that they can debug, profile, and optimise code to make it performant for real-time applications. This emphasis is reflected in the first few *knowledge* and *skills* set out by standard, and this is the content that carries the most weight in terms of employability as a game programmer.

Apprentices are also required to learn relevant mathematics, understand software development methodologies, and have practical experience of applying them in teamwork using appropriate tools. They should develop the appropriate *behaviours* that allow them to work effectively alongside other creative colleagues and have respect for the input of role of diverse backgrounds and disciplines.

There are two different flavours of apprenticeship set out in the standard: a *Game Software Programmer* who typically works on a game team delivering a product aimed at consumers, and a *Game Technology Programmer* who typically works on the technologies that game development teams use to create games. Both share the same core set of KSBs, but each option has a few different knowledge and skills at the end of the standard to reflect their slightly different focus.
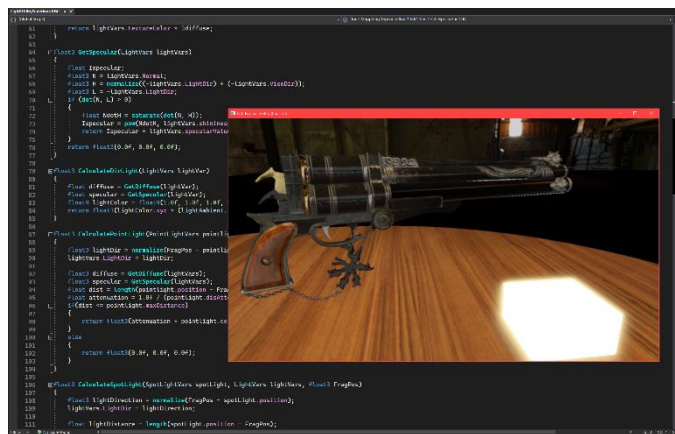
The Assessment

Apprenticeship qualifications are assessed in a process known as *End-Point Assessment*. This is undertaken by an independent organisation who appoint specialist examiners with significant professional experience in the field. Apprenticeships can be assessed in a wide variety of ways, but the *End-Point Assessment* for *Level 7 Game Programmer* consists of a *Professional Discussion* underpinned by portfolio and a *Project* with presentation and questions.

The *Professional Discussion* is similar to an industry interview, where the apprentice is asked questions about the projects they worked on and the content they studied during their training programme. The initial questions come from a bank of questions provided to the examiner by the *End-point Assessment Organisation*, but the follow up questions take their own course based on the answers provided. This interview process last for two hours, during which the examiner marks off each KSB as they gain evidence for the apprentice having demonstrated it to their satisfaction.

The *Project* is similar to an undergraduate degree project presentation where the apprentice delivers a presentation about a significant piece of programming work that they completed for their studio once they had completed their training programme. The presentation lasts for approximately 90 minutes followed by 90 minutes of questions, during which the examiner also marks off each KSB as they gain evidence for it.

To pass the End-point Assessment the examiner needs to be able to find evidence for every single KSB over the course of the two assessments, with different KSBs being allocated to each assessment method. A candidate can also be awarded a *Distinction* in either assessment if they also demonstrate distinction-level criteria as part of their answers. If they score a distinction in both assessments, then they receive distinction overall; one distinction will get them a *Merit* overall and otherwise they receive an overall *Pass* grade.

The Apprentice Journey

An apprentice is typically recruited directly by an employer and has a salary and a job title which fits a junior position within their field (e.g., *game programmer intern*). An apprentice must spend an average of one day a week studying a training provider over the course of their apprenticeship. In practice this often means condensed periods of training followed by condensed periods of work (e.g., 3 weeks training: 12 weeks of work), but the training must continue over a minimum period of 12 months overall.

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