



Semester: 10

Title: Modular PCG
An Architecture for Procedural Content Generation

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Abstract:

This project investigates how procedural content generation (PCG) can be used to facilitate complete game generation, how to make it accessible to designers and how it can be integrated within game development. Through analysis of previous attempts, it is discovered that complete game generation is often inaccessible, and as a solution to the problem of inaccessible PCG algorithms, the concept Modular PCG is introduced.

Modular PCG is an architecture and describes a way of designing PCG, making it more relatable to designers. It facilitates the creation of individual PCG modules that integrates directly into the virtual environment and applies procedural techniques to generate game content. Modules is self-contained and includes the necessary authoring tools, and are able to adjust to the virtual environment without interacting directly with other modules.

As initial validation of the concept, traces of Modular PCG is found in existing PCG applications, suggesting that it is a step in the right direction for PCG research. Furthermore, the concept is evaluated through a theoretical proof of concept, illustrating how it can be used to generate a complex game with an elaborate quest and map structure. The proof of concept illustrates how procedural techniques is accessible to designers and developers using Modular PCG.

With the introduction of Modular PCG, it is believed that this project has contributed to the general research area of PCG, and it is the hope that other researchers will use this project as a stepping-stone and continue researching Modular PCG.

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