

Procedural Content Generation Berbasis Algoritma Genetika Untuk Lingkungan Adaptif Pada Game Berjenis Role Playing Game

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ABSTRAK

Lingkungan game pada Role Playing Game (RPG) bisa dibilang sebagai salah satu faktor penting dalam menunjang immersivitas game dan realisme plot. Pada intinya tiap bagian pada lingkungan game akan mencerminkan imajinasi dan kreativitas developer yang berguna untuk memperkuat plot baik statis maupun dinamis. Integritas plot dan lingkungan game yang mana saling mendukung satu sama lain membuat proses realisasi lingkungan game semakin kompleks berdasarkan elaborasi dan kemegahan plot. Meskipun demikian, sebagai salah satu alternatif untuk meringankan proses realisasi lingkungan game, mekanisme semi-auto dari Procedural Content Generation (PCG) dapat dipergunakan. PCG membutuhkan algoritma lain sebagai dasar dan mekanisme pemroses, yang mana pada penelitian ini akan menggunakan Genetic Algoritma (GA) sebagai dasar bagi PCG. Karakteristik GA yang cenderung memberikan nilai optimal dan semi acak, membuat GA sesuai untuk menghasilkan lingkungan game yang seakan-akan alami dan terikat dengan plot. Pada akhir dari penelitian ini akan dihasilkan mekanisme yang dapat digunakan untuk menghasilkan lingkungan game RPG berdasarkan poin-poin tertentu dalam plot.

Kata Kunci : Procedural Content Generation, Algoritma Genetika, Lingkungan Game Adaptif, Role Playing Game

Procedural Content Generation Based on Genetic Algorithm for Adaptive Environment in Role Playing Game

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ABSTRACT

Role-Playing-Game's (RPG) environment could be said as one of many significance factors to improve game immersivities and plot realism. In essence each part of game environments will bring about the imaginations and creativities of the developer which were used to enhance the plots be it narrated beforehand or on-the-fly. The integrity of plots and environments which were always having supporting-each-other relationship make the realization of environments becoming more complex in exchange for the elaboration and sophistication of the plots. Having that being said, as an alternative for the workload need to be done, the complex realization could be achieved using the always-dynamic algorithm called Procedural Content Generation (PCG). The usage of PCG always go hand-in-hand with other algorithm as its core and for this experimental research, Genetic Algorithm (GA) will be used. GA prone to give semi randomly optimized value which is quite suitable for the seemingly unprecedented environments in RPG's plots narration. The final result of this research would be bring about a novel approach to generate RPG's environment solely based on point of interest of the plots.

Keyword : Procedural Content Generation, Genetic Algorima, Adaptive Game Environement, Role Playing Game