ZLang: A Scripting Language for Digital Content Creation Applications

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Abstract:

ABSTRACT Digital Content Creation (DCC) Applications (e.g. Blender, Autodesk 3ds Max) have long been used for the creation and editing of digital content (e.g. Images, videos). Due to current advancement in the field, the need for controlled automated work forced these applications to add support for scripting languages that gave power to artists without diving into many details. With time these languages developed into more mature languages and were used for more complex tasks (driving physics simulations, controlling particle systems, or even game engines). For long, these languages have been interpreted, embedded within the applications, lagging the UIs or incomparable with real programming languages (regarding Completeness, Expressiveness, Extensibility and Abstractions). In this paper, we present a high level scripting language (Zlang) and a DCC Engine that addresses those problems. The language can be interpreted, compiled, extended in C/C++ and has a number of constructs, and optimizations dedicated to DCC domain. The engine provides geometric primitives, mesh modifiers, key-framed animation and Physics Simulations (Rigid Body, and Cloth Simulations). The engine is designed and implemented as a library so it can be used alone or embedded.

Keywords:

Three-Dimensional Graphics and Realism, Modeling Packages, Methodology and Techniques-Languages.

Published In:

International Journal of Computer Applications, Volume 50 – No.5,