

J3DGE: AN EDUCATIONAL 3D GAME ENGINE WRITTEN IN JAVA

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J3dge is an educational 3D game engine written in the Java programming language. J3dge is created due to the lack of good learning materials on game engines, and is built to be a learning material for students interested in the topic. The goal of J3dge is to help students learn the internals of a game engine by studying its source code. While a lot of other open source game engines exist, they are not ideal for beginners to learn because of their complexity and code readability issue. J3dge is designed to be simple and readable: It contains only a core set of features and its source code is easy to read and self-explanatory. The Java programming language was chosen to be J3dge's implementation language because of its expressiveness and its popularity among computer science students.

J3dge supports multiple windows, keyboard and mouse input, mesh loading, texture, material, realistic lighting, resource management and various other features essential to a game engine. A game demo was created to demonstrate the features of J3dge and to prove that it can be used for game production. The source code is organized logically into 36 classes controlled to stay below 4000 lines and can be read through quickly by any students with some graphics programming experience. J3dge is open source and free to everyone.