

3D Environment Creator

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The 3D Environment Creator Application is an application to simulate a real environment and the interaction that take place in the real environment in a 3D virtual environment. This application able the user to create desire environment through a XML file that initializes the environment. The application will get the real environment updates through pipe.

This application can be used to simulate the football match. It will get the players' initial positions and will update the environment by processing the video from top view and sending the player's movements to the application. Such a 3D Simulation of the match has so many usefulness for the analyzers.

Children usually play in the park. Parents are always worried for their children. This application can remove their worries by simulating the park environment in a virtual environment. This virtual environment can be accessible through internet. The parents can always be informed of the current position of their children and his state. To do such thing, each child must have a tag on his cloth. A device will send the position and state of each child in the environment to a device. Device collects information and sends them to this application through pipe. So, Always a 3D virtual environment will shows the whole park that parents can move freely through the virtual park and check their child's position and state. This application can be very useful for many other environments like factories, universities, etc.

This application is written based on OGRE Graphics Engine. The whole structure of this application can be described in some steps:

1. First, a XML file will be read. It contains the objects and their position when initializing the application.
2. The updates in the environment will receive through pipe.
3. When an object moves the last movement path will be shown as a pipe in the environment.
4. Each object that is not static and can move in the environment has an underlying circle.

This application is able to create new meshes, move current objects and remove them from the environment real-time. This work can be done through pipe.

All of the pictures that are in this document have been taken from a test environment. Because of this, you will see a dark sky, a robot, 2 bicycles.

Libraries that is used to implement this application:

- OGRE SDK For Linux and Windows
- Expat For Linux and Windows

Packages used in this project:

- Visual Studio(For Windows), Eclipse(For Linux)
- OGRE SDK(For Windows), OGRE SDK(For Linux)
- Expat(For Windows and Linux)
- 3D Studio Max

Files:

ParkApplication(Windows)_Executable.rar	Contains an executable Version of project.
ParkApplication(Windows)_Solution.rar	Contains the codes of the project. To build and run the solution, you need Visual Studio 2010.
ParkApplication(Linux)_Executable.rar	Contains the executable file of the application.
ParkApplication(Linux)_Workspace.rar	Contains the codes of the project. This workspace has been created by Eclipse.
Media.rar	The Media files that must be available to create the test environment.
Readme.pdf	Contains descriptions about the application.