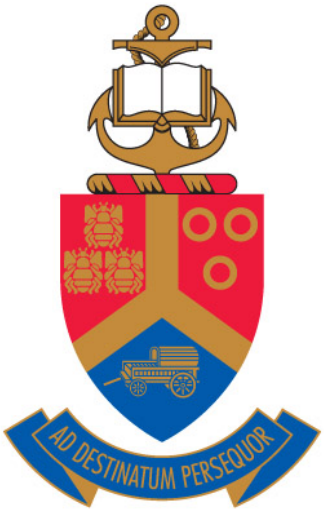

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Denkleiers • Leading Minds • Dikgopolo tša Dihlalefi

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Contents

0.1 Vision

The vision of this project is to enable everyday people to use the power of virtual reality to grasp a sense of scale in manners that have usually been misunderstood. This would allow easy and feasible comparisons, compared to their real-world counterparts.

0.2 Project Scope

A user can select a scenario they would like to visualise using Oculus Rift. Users can also specify their desired scene using inputs which will be generated and rendered for the user after objects are collected from a cloud store.

0.3 Architectural Requirements

0.3.1 Access and integration requirements

0.3.2 Quality requirements

Code needs to follow high development standards to produce professional code. Source code needs to be easily understood and maintainable.

Flexibility

The system needs to be able to accept a range of different object / model file types for both 2D and 3D files. CSV as well as other input data formats need to be supported.

Maintainability

- The system should be modular and allow easy updating and fixing in the future.

Scalability

All major platforms should be catered for in support or aleast be relatively simple to port to. This includes:

- Windows
- Mac
- Linux

An added bonus would be:

- Android
- iOS
- Any other mobile platform (Windows mobile, etc)

Performance requirements

To ensure the best experience and prevent any motion sequence meeting performance requirements is crucial.

- Consistent and high frame rate (75 or more fps or 13.33 ms max per frame)
- Low latency between input and display

Oculus Rift's requirements for CV1 (Consumer Version 1) has the following explicitely stated requirements:

- NVIDIA GTX 970 / AMD 290 equivalent or greater.
- Intel i5-4590 equivalent or greater.
- 8GB+ RAM.
- Compatible HDMI 1.3 video output.
- 2x USB 3.0 ports.
- Windows 7 SP1 or newer.

Working backwards, DK2 requires atleast a GTX 770 equivelant card or better owning to the fact that it has 25% less pixels compared to the CV1. Also it only needs to run at 75 fps compared to 90 fps of the CV1.

Reliability

- The system should be able to handle user input without crashing.

Security

Currently security is not part of the requirements, however this could change at any stage.

Auditability

Testability

There should be proper unit tests which cover all the contracts of the project. All tests should be automated and allow for both mock objects and integration tests.

Usability

- The system must have a simple and easy to use interface
- The system should not require training before use
- Designing scenarios should be simple

Integrability

Deployability

0.3.3 Architectural responsibilities

0.3.4 Architecture constraints

0.4 Architecture design?

Is this needed?? Subsections include: architectural tactics, architectural components addressing architectural responsibilities, infrastructure, concepts and contraints for application components

0.5 Initial Design