V3D Digraph Visualizer Documentation

Team: App-Synth

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Contents

1   Agile Documentation

This document is based on the lecture held by industry expert Justine de Bryne at The University of Pretoria. We aim to follow the quality example displayed by her.

2   User Stories

The user requirements are derived from a number of user stories. This section serves as a reference to the constructed user stories and under which module they fall under.

2.1   Data Module

- As a User, I want to Save Graph for later use

- As a User, I want to Update Graph during interaction

- As a User, I want to Create Graph from a text file to create a model

2.2   Interaction Module

- As a User, I want to Select Vertex in order to move/edit

- As a User, I want to Create Vertex to add to the model

- As a User, I want to Update Vertex to a new value

- As a User, I want to Remove Vertex from the model

- As a User, I want to Create Edge add to the model

- As a User, I want to Update Edge to modify forces between vertices to observe structural changes

- As a User, I want to Remove Edge from the model

2.3 Rendering Module

- As a User, I want to Render VR Graph for viewing

- As a User, I want to Reload Graph to diaplay updated version

- As a User, I want to Undo Changes made to graph

- As a User, I want to Render Graph on External Display for 3rd party user to view

2.4 Synchronization Module

- As a User, I want to Publish State Changes to sync with external display

- As a User, I want to Receive State Changes to sync with VR display

3 Product Requirements

Taking the the user stories in to consideration we will now create a set of product requirements. Each requirement we aim to meet within a sprint (a specified number of days).

3.1 Data Module

- Read graph data in all specified formats

- Format the data in such a way that it is easily interpreted for graph construction

- Take graph information and export it to a specified file format

3.2 Interaction Module

- Update graph information through graph interaction

- Provide undo functionality on graph
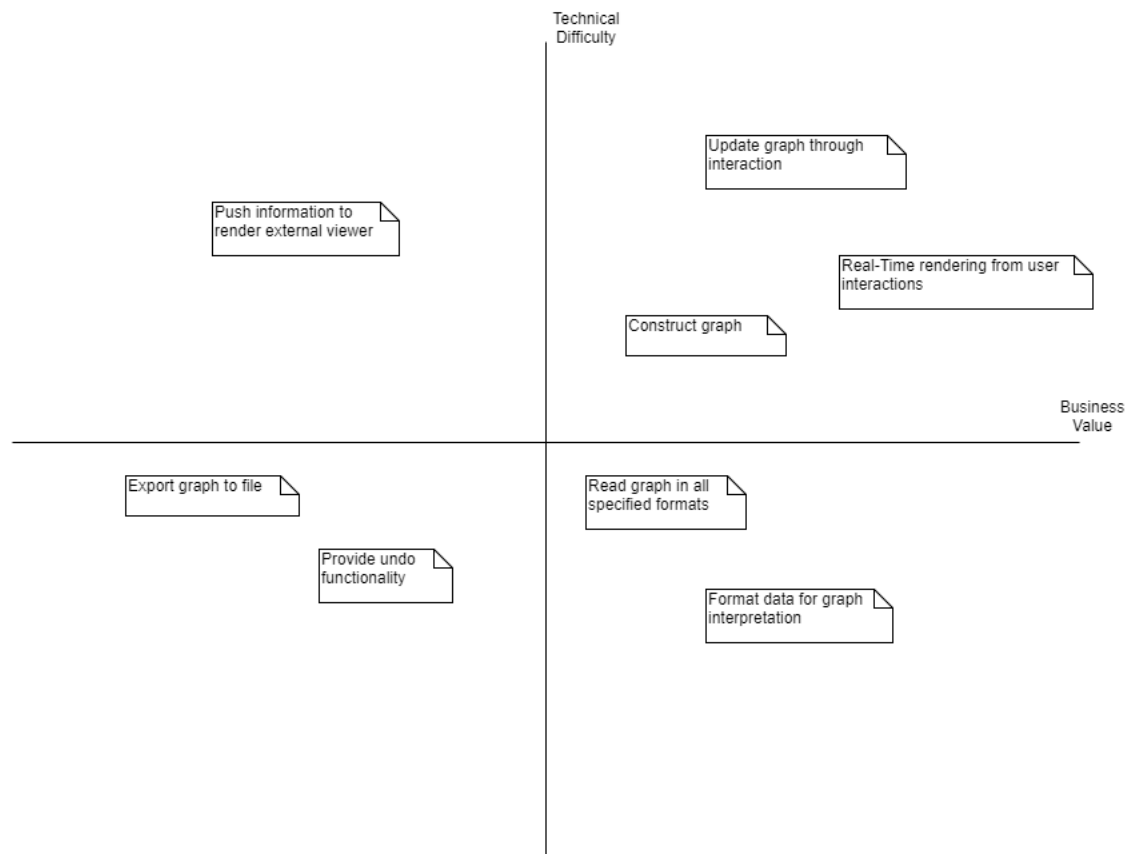
3.3 Rendering Module

- Take formatted graph information and construct a graph

- Provide real time rendering from user interactions
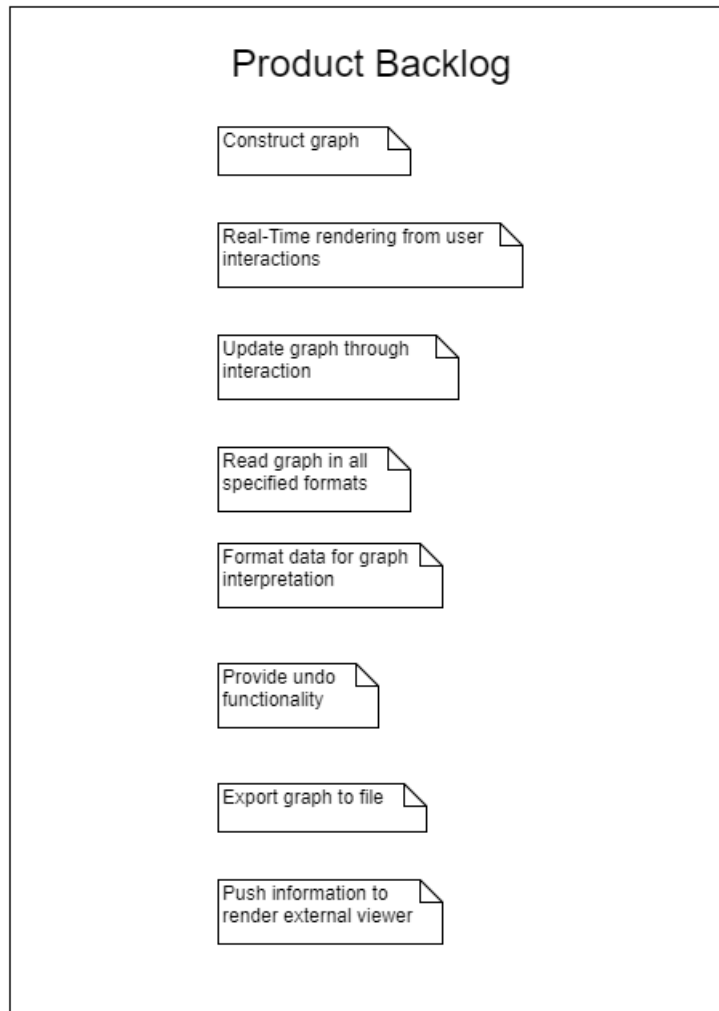
3.4 Synchronization Module

- Provide real time rendering on viewer based on VR view

- Push relevant changes to external viewers

4 Business Value vs Technical Difficulty & Product Backlog

The product requirements are plotted on the following graph to illustrate how important they are for business success and how difficult each is to implement.

Technical
Difficulty

Update graph through
interaction

Push information to
render external viewer

Real-Time rendering from user
interactions

Construct graph

Business
Value

Export graph to file

Read graph in all
specified formats

Provide undo
functionality

Format data for graph
interpretation

According to the diagram and fulfilling as many prerequisites as possibly while maintaining concurrency we have the following implementation order on the product backlog.

Product Backlog

Construct graph

Real-Time rendering from user interactions

Update graph through interaction

Read graph in all specified formats

Format data for graph interpretation

Provide undo functionality

Export graph to file

Push information to render external viewer

We use the order of cards in the backlog as a guide to help us order our execution order. Taking into account other factors such as dependencies.