Oregon State University
College of Engineering

CS Capstone Requirements Document

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Ancestry Data Viewer

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This document lists the requirements that the finished application must fulfill. This document will be used to grade the final project and is also an agreement with the client regarding what they should expect from the end product.

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1 Introduction

1.1 Purpose

The purpose of this project is to create a program that will open GEDCOM files and show the data contained in a clear and easy to read manner.

1.2 Scope

The software will open and get data from GEDCOM file and use the data to produce the required features. These features include full tree view, direct lineage view, 3D view, and also the ability to find the common ancestor of two people(node) in the tree.

1.3 Definitions, acronyms, and abbreviations

Tree : is actually refers to the tree data structure for displaying data. Elements in the tree is refer to as nodes. Every person's name in the GEDCOM file will be a node on our tree diagram.

Graph: A graph is a superset of Trees. Whereas a node trees can hold only two children per node, a graph is capable of holding as many nodes as desired.

1.4 References

1.5 Overview

There are two more sections to this SRS document. Section 2 is a detailed description of the ADVS including the it's functionalities, constraints, and the intended user of this software. Section 3 is a user story describing what the users are capable of doing with the ADVS.

2 Overall Description

2.1 Product perspective

The user will interface with the ADVS through a laptop or desktop with Linux or Windows operating system. The software is not self-contained, as the user will need to provide their own GEDCOM file for the software to display. The software will parse the input GEDCOM file to obtain the data and run an algorithm to generate and display a graph that is clear and easy to read.

2.2 Product functions

- Full Tree View: Display the full family tree contained within the GEDCOM file. The tree should never have nodes that overlap with each other.
- Direct Lineage View: Display people who is directly related to a select person, including the person themselves. The application will specifically highlight the person, their birth parents, their grandparents, and so on.
- Find Common Ancestor: Select two people and highlight their common ancestor on the tree. If an ancestor is not found, the application will inform the user that no such ancestor exists.
- VR Compatibility: Detect if a VR headset is plugged in, and generate a new view if the user enables. The VR view is capable of performing every function that the non-VR view is capable of performing.
- VR Controller Compatibility: Use VR controller to rotate, and zoom in and out of the tree. The VR controller should only work if VR mode is enabled.

2.3 User characteristics

A standard user should not need to have great technical knowledge in order to successfully use the application. They should be able to read and understand basic computer terminology, such as clicking, and moving the mouse, and should be able to read and follow simple instructions. It is assumed that this is their first GEDCOM reader, so they will not have any previous experience with using a different viewer.

2.4 Constraints

- We are required to create a 3D view of the family tree. The 3D view can only be accessed with the VR devices.
- The software only works on computers with Linux and Windows operating systems. Compatibility with OSX and other operating systems is not prioritized. The application must be simple to use
- The application must not be aesthetically displeasing
- The application must run in a reasonable amount of time
- The application must be capable of reading proper GEDCOM files.

2.5 Assumptions and dependencies

We are dependent on pre-existing VR frameworks in order to implement VR functionality. If not, we will not be able to create our own, as this would be too complicated and time consuming. The VR framework should be capable of switching to and from VR mode and Desktop Application mode.

3 Specific requirements

- Users are able to of opening and displaying GEDCOM files. The full family tree view will automatically display after opening the GEDCOM file.
- Users are able to select a person and toggle direct lineage view button to narrow down the tree to display only people directly related to the selected person.
- Users are able to select two people and the software will find and highlight the common ancestor of these two people.
- Users are able to switch to VR Mode. User will be able to view the tree in 3D after switching to VR Mode, and they are able to zoom in and out with the VR controllers
- The majority of users, as discovered via user study, are capable of intuiting how to use the application, or intuiting how to receive assistance for using the application.
- The majority of users, as discovered via user study, find the application to look at worse unobtrusive.
- If a user attempts to read an invalid GEDCOM file, the application must inform the user that the file is invalid, but not crash. The application must run in a reasonable amount of time, as discovered via user study.
- If the user attempts to search for the common ancestor of a person and their parent, the application will return their grandparents.
- If the user attempts to search for the the common ancestor of a person and their spouse, and the spouse is not related to the family in any way, the application will inform the user that no such ancestor exists.