

## System Overview

### Introduction

The purpose of this document is to outline the design of the DVA (Data Visualization Appliance). This software is in compliance with the specifications given by project sponsor: Stew Sutton. This document describes all of the specifications of the software, the deployment, the overall architecture of the system, the database architecture, a site mapping for user interfaces, and descriptions of all user interface views.

The main purpose of this software is to:

- Display data visualization
- Manipulate existing data visualizations
- Accept user create data visualization extensions

### System Specification

The following frameworks will be used in the DVA Software:

- Webpack
- React
- Redux Babel
- Bootstrap
- Passport
- Sequelize
- Bcrypt
- Chai
- Mocha
- Sinon
- Axios
- D3

## Deployment Diagram

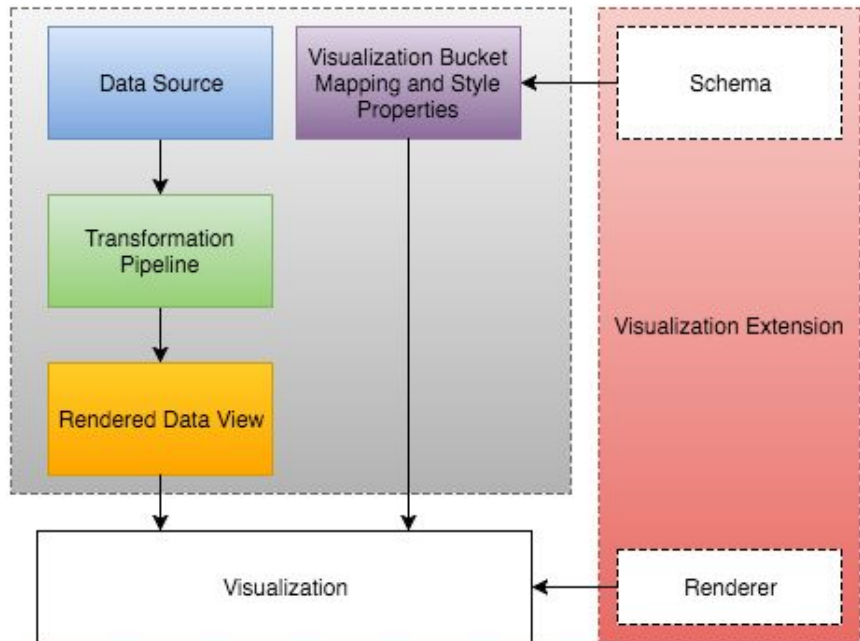
The **Data Set** contains an array of JavaScript objects derived either from a simple flat file such as CSV, JSON or through a backing store like a MySQL connection and predefined query from which fresh data can be fetched.

Visualization type can be Sanskey, Line, Bar, Pie, and so on. Each one may provide its own set of parameters, as well as global parameters such as height, width, and so on.

JavaScript functions can be written with the built-in code editor (Codemirror) and placed in series between the raw data from the data source and the rendered data view that is sent into the builder

A preview of what the data looks like after having been processed through the transformation pipeline, before it enters the visualization builder

The **Document** references a data source, optionally a set of transformers that make up a data transformation pipeline, and visualizer-specific options such as chosen extension, bucket mapping, and style properties.

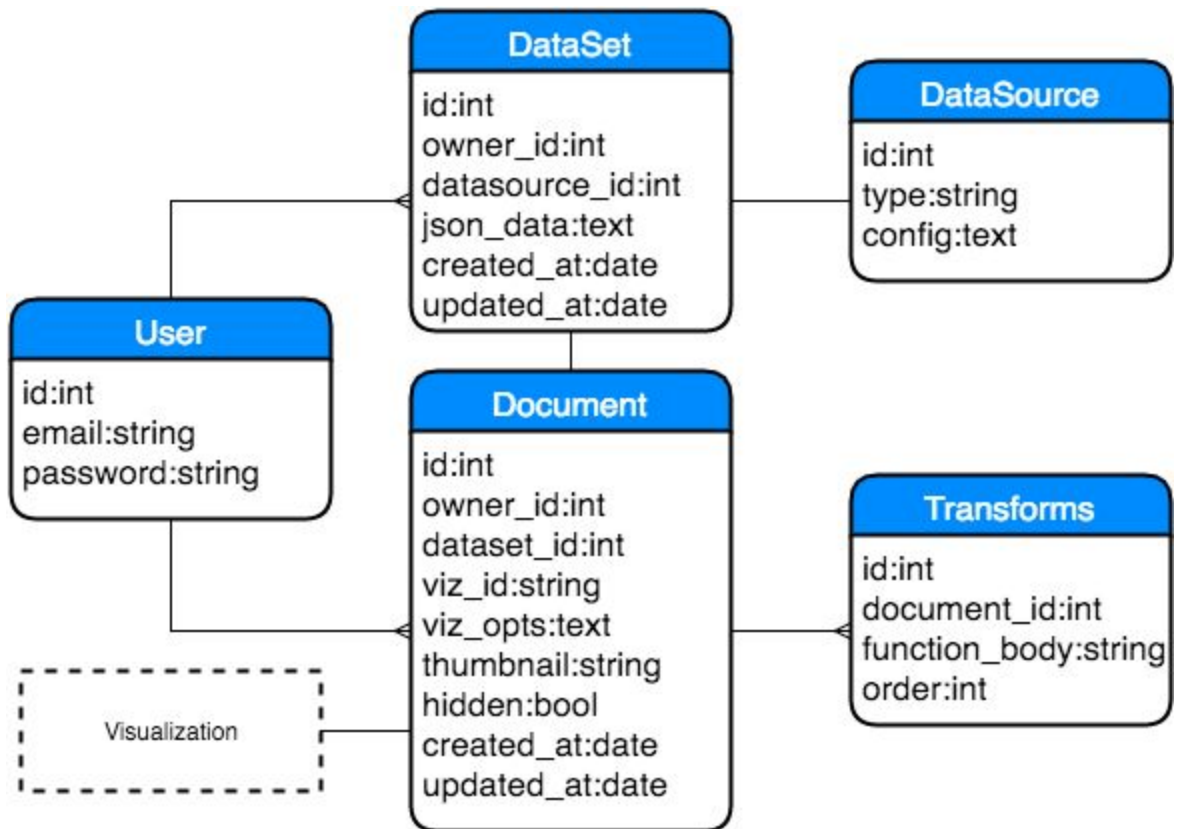


The visualization extension is a module that adheres to a strict contract defined by the DVA application. In this contract, a schema (in JSON) and a renderer (a JavaScript function) are exposed and accessed by DVA.

## Architectural Design

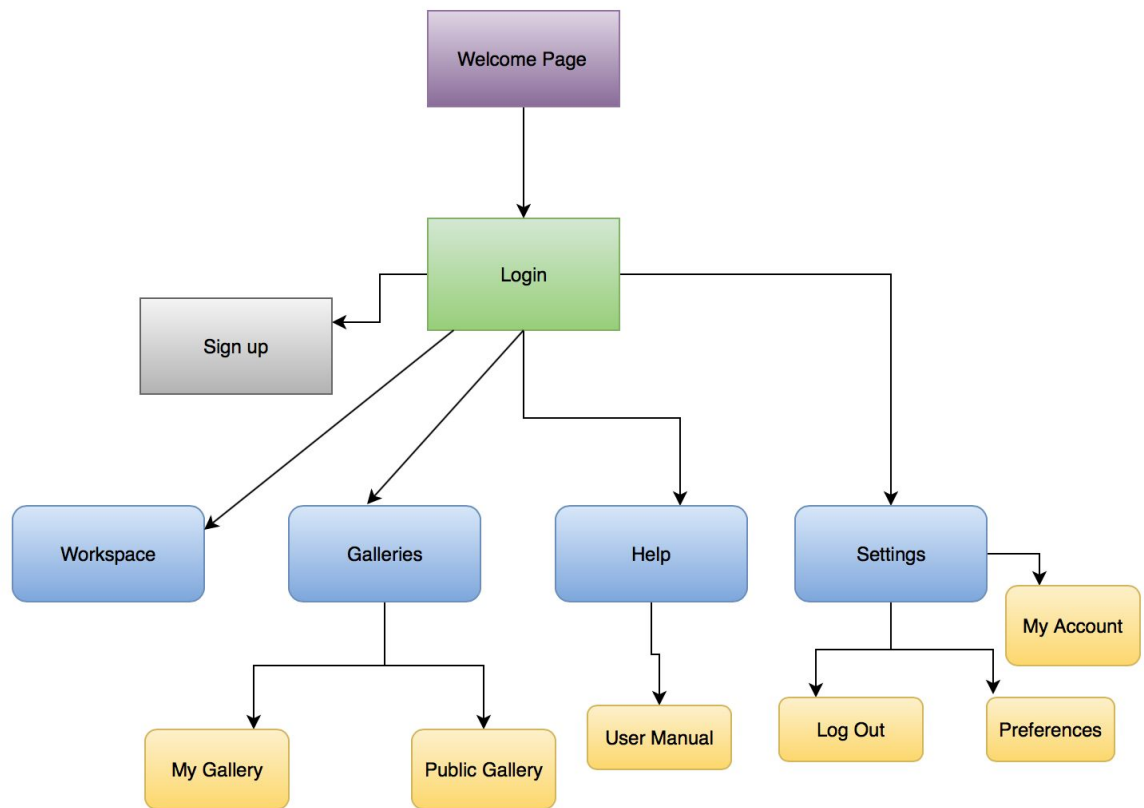
TBD

## Database Design



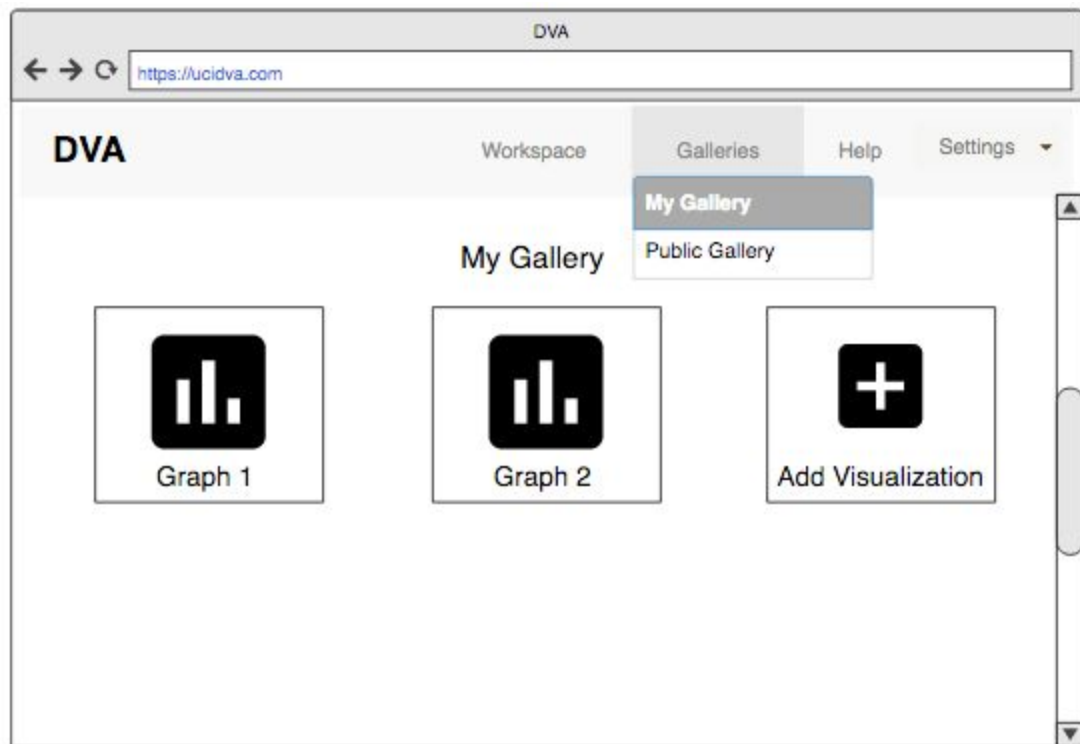
# UI Design

## Site Map



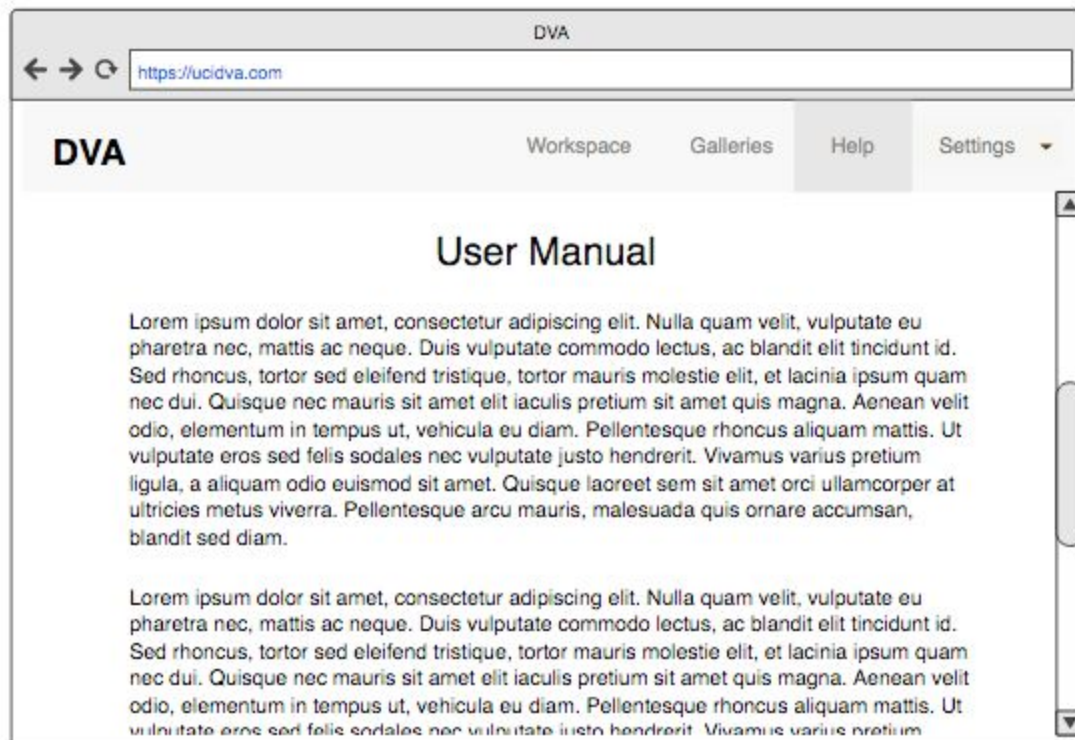
Above is a diagram representing the sitemap for DVA. Users start off at the main welcome page of our site and led to a login where they can also sign up if they are new users. They then get the option of where they want to go next, whether that be the workspace where they can create visualizations by importing their own data, or to a gallery page where they can either see their own visualizations or a public gallery where they can explore other users' visualizations. There is also a help page where there will be a user manual to give them guidance and understanding about the site. As well as a settings drop down bar that will lead users to either their account information or to a preferences page where they will be able to change a few of the preferences in regards to their workspace.

## Public Gallery Page



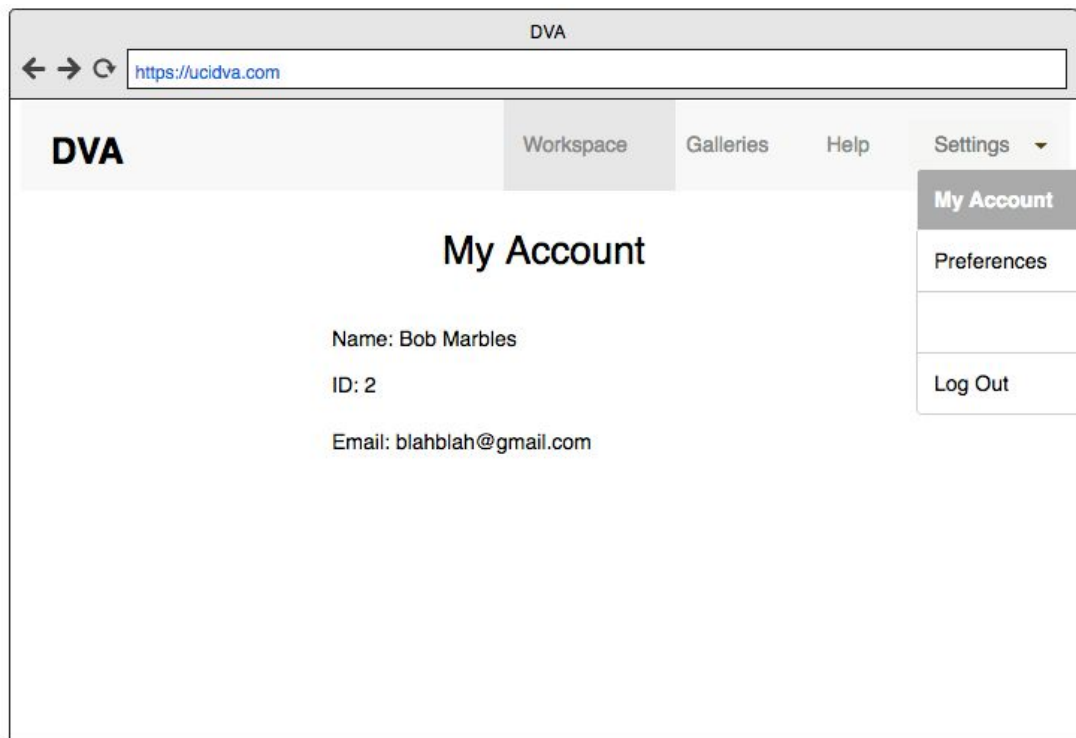
This mockup represents a view of what the galleries page will look like. This is where Users will be able to view and edit the visualizations they have already made. They also have the option of being able to look at a public gallery where all users can share with others the visualizations they have made through our site. Users can easily get to these pages from almost any point of the site once they have logged into an account. However, the public gallery may be able to be accessed from anywhere on the site at appropriate links.

## User Manual Page



The Help page or User manual page is a page requested specifically from the project sponsor in wanting a sort of user guide that gives instructions or help on how to fully utilize the site. This page can be accessed through the appropriate tab/link once a user has logged into an account.

## My Account Page



This mockup of the settings page gives a look not only into the drop down menu for settings but the My Account page. Once a user has logged into their account, they can easily access their account information and change preferences as needed. They also have the option to logout of the site in this drop down menu.