# Design and architecture

This code challenge web application uses a general approach of MVC with CingleVueServlet as a controller, CingleVue.html with javascript and ajax as the view and MongoDBManager class as the model that works with the database. JSON is used to retrieve the data from the server and display it in an html table. (Another idea for improvement is to have the server side be a webservice so it can be used by other clients)

MongoDBManager was tested and is working. It implements DBManager interface so the code can be changed quickly should we choose to work with a different database.

CingleVueServlet has the required code written and so does CingleVue.html.

I used GitHub and a local installation of SVN for version control.

# Next steps

The next step would be to create a Maven project with the required dependencies for web application, package the classes into war/ear and deploy to an application server such as JBoss or Tomcat. Then make sure the Servlet and the html are working properly or modify until they do.

Things to add to the code are validation for correct input when updating a school or inserting a new one and also appropriate messages to the user when the operation was successful.

HTML requires a good CSS and better layout to make it prettier.

# Ideas for improvement

* I would use an existing Bootstrap framework to make the MVC more generic and easier to expand on.
* An optional improvement would be to show only partial info on every school in the main list and allow the user to expand on it with a mouse click (for example with showing a hidden div) to view or update. The user can click anywhere on the line, use a button or use a hyperlink to expand.
* Test the application work on Mobile and different browsers.
* Better exception and error handling.

# Future possibilities

* Stress test the application for scalability with many different clients updating schools.
* Add member login and user privileges so some users can only view schools and some can delete/update/insert new.
* Store the history of users update on schools.
* Add a chat for the stakeholders to communicate when logged into the system.
* Use this application as a gateway to select a school and login to another application that manages the learning process. This can be targeted for students or teachers/principals.