**Billrive Development Setup Guide**

**Introduction:**

Billrive is comprised of two applications (for now)

**billrive-service** (Spring MVC, REST, JPA (Hibernate as provider), MySQL DB)

**billrive-client** (Angular JS, Bootstrap, Underscore)

Initial Setup:

* Recommended Tools for development: (The project is IDE neutral but this setup is tested and works best)
  + Netbeans, MySQL Community Cluster, MySQL Workbench, JBOSS 6/7, Netbeans Chrome plugin, Chrome Angular Batarang plugin. (Recent versions unless specified otherwise)
* Clone the repository to your computer.
  + git clone http://github.com/billrive/billrive.git

Setting up **billrive-client:**

* The billrive-client project is a Netbeans HTML5 project. So Netbeans identified the project and you can open it in Netbeans that way (File -> Open -> point to the downloaded billrive-client folder).
* Make sure that you have Netbeans Chrome plugin installed. Restart both Chrome and Netbeans.
* Now expand the billrive-client project -> app . Right click and hit "run". It should open it and show the client view in Chrome. If it doesn't, Right click on the project -> properties -> Run. In "Browser" drop down, select "Netbeans with Chrome Integration"
* Now retry running the index.html in the app folder.
* This setup enables setting up breakpoints for debugging javascript (Angular).

Setting up **Application Server** andthe **Database:**

* The **conf** folder from the repository has all the configuration files needed for this project.
* Tomcat:

To setup your Tomcat environment, replace your conf/server.xml and conf/context.xml with their equivalents in this repository (conf/tomcat folder). Use the conf/billrive.sql to populate your MySQL database. Match the connection details with that of those in conf/context.xml

Debugging in Tomcat:

Starting Tomcat in Debug mode from Netbeans doesn't work.

Do a "catalina jpda start" in the /bin folder externally and connect to port 8000 for debugging from Netbeans/Eclipse.

From Netbeans: Go to server properties and setup the right debugging option and the port number. Use the same port number to debug.

Permgen Error:

Add the following VM options to resolve the error (can be added as startup env args in Netbeans)

-Xms256m -Xmx512m -XX:MaxPermSize=512m -XX:PermSize=128m

* Download mysql jdbc driver jar and paste it in the lib folder.
* MySQL: Download MySQL. Start the server. Download MySQL Workbench. Open up MySql Workbench and create a connection to your localhost MySQL instance. Create a database titled 'billrivedb'.
* Use the conf/billrive.sql to populate the database.

Setting up **billrive-service:**

* **billrive-service** is a maven project. You can open the project in Netbeans or import it into Eclipse.
* Install Maven, JDK 6/7 on your computer and run mvn install or package and deploy the application to the application server. The following REST url should output some sample JSON for the bills object.
  + http://localhost:8080/billrive-service/rest/1/bills/

**Architecture**

**BillRive-Service**

* Spring MVC (REST) architecture. REST architecture following the guidelines from this video (http://www.youtube.com/watch?v=5WXYw4J4QOU).