Work of Statement

Objectives

This project is a small scope of original production base Proposal that will allow the quick development before the demonstration in August. It will consist of Data Ingestion from multiple sources, Dockerizing of web application, backend modules for easy deployment to AMS EC2.
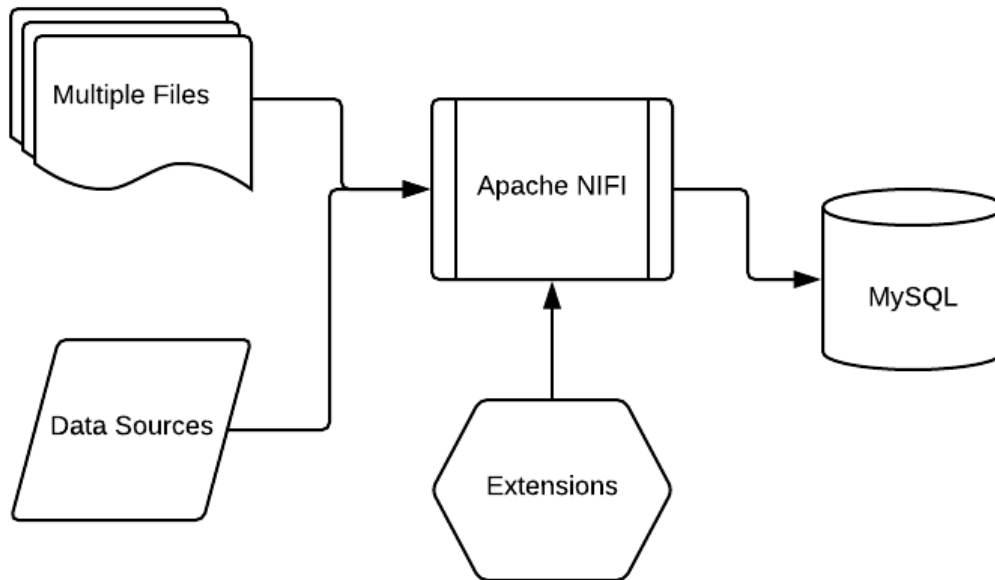
The schedule is that at the end of the first month, things will all get together to deploy to EC2 as the beta version. During this period, some alternations, additional features may be applied. Functions, UI may be refined. Then we will come up the version best for the demo.

Scope of work
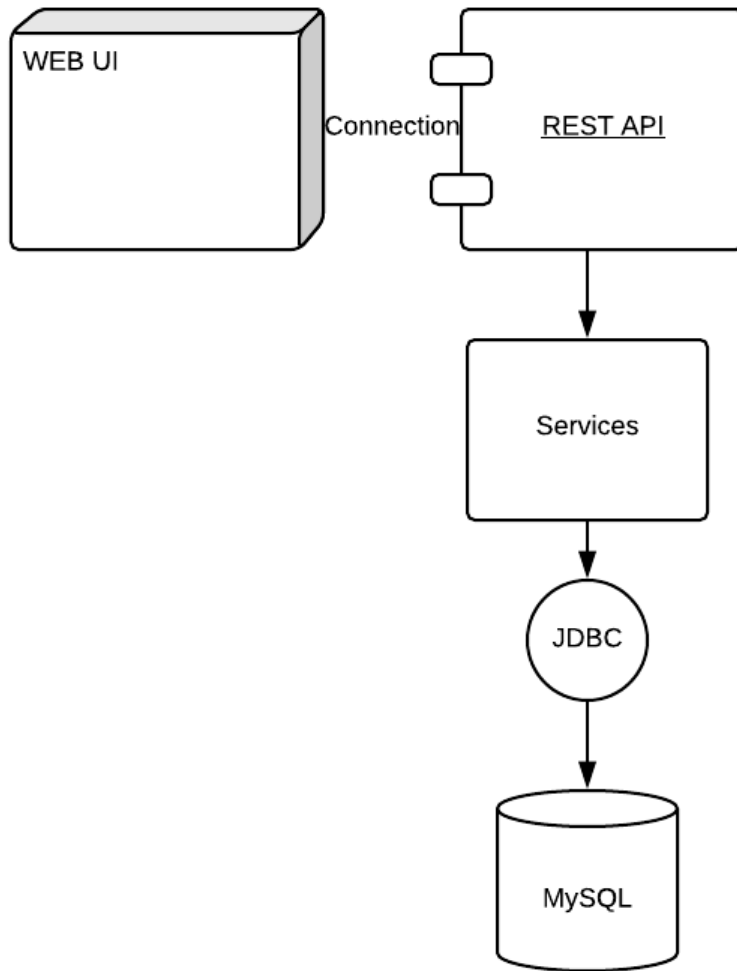
Data Ingestion will consist:

1. Use Apache NIFI as center to connect multiple resources and retrieve data into our system.

2. Database setup, MySQL with schema design.
3. Data format conversions.
4. Wrap up those modules into dockers as deliveries.

Multiple Files
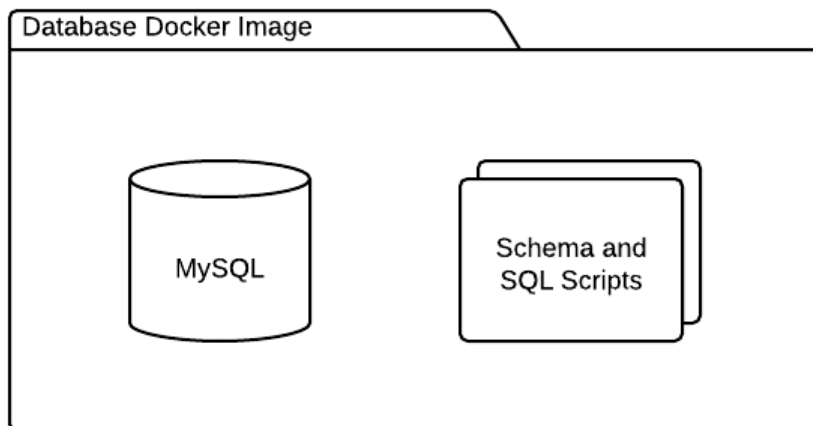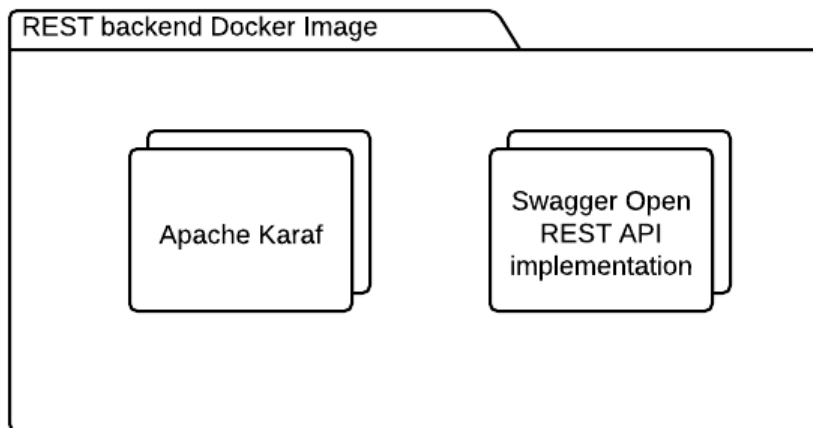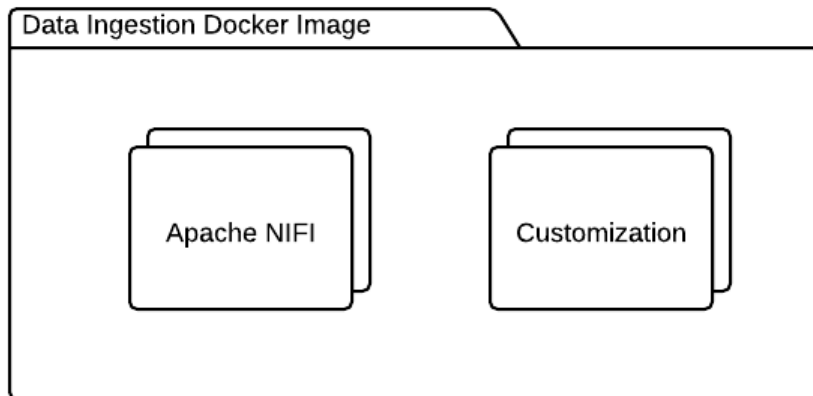
Apache NIFI

MySQL

Data Sources

Extensions

REST API design and development will consist:

1. Open REST API standard.
2. Apache Karaf container base.
3. Swagger base implementation

We intend to wrap up those modules into Docker containers, Data Ingestion, REST and Database. Those docker images will be the deliverables we generate. Such process will separate the responsibilities of each function, provide easy testing, maintenance and deployment etc advantages.

Data Ingestion Docker Image

Apache NIFI

Customization

REST backend Docker Image

Apache Karaf

Swagger Open REST API implementation

Database Docker Image

MySQL

Schema and SQL Scripts

4

Schedule

The below itemizes Deliverables and estimated time to implement. Those modules are packaged as docker images. Each docker instance can be tested individually and they will be under development in parallel.

	Time	**Deliverable**
Data Ingestion Docker Image	Estimated 25 Hours, but depends on how many data amount and sources.	NIFI data flow and Docker Image and Instance
REST Backend Docker Image	Estimated 25 Hours, but depends on how many database tables and amounts.	Java implementation and Docker Image and Instance
Database Docker Image	Estimated 25 Hours, depends on alternations and amount of SQL scripts, data format conversion.	Schema Design, data loadings and Docker Image and Instance
AMS EC2 Deployment and Web Application Integration	Estimated 25 Hours, depends on Web Application Integration.	Deployment of Docker Images to EC2 with all modules including Web App.

	Time	Deliverable
EC2 Production Environment Test and Maintenance	No Estimation.	Maintenance of production and any alternation, tuning etc.

The last phase of Production Environment Test and Maintenance is not estimated due to the fact that many factors may involve. We can foresee that the feature alternations, integration etc issues.