# Galvanize

## Project Plan

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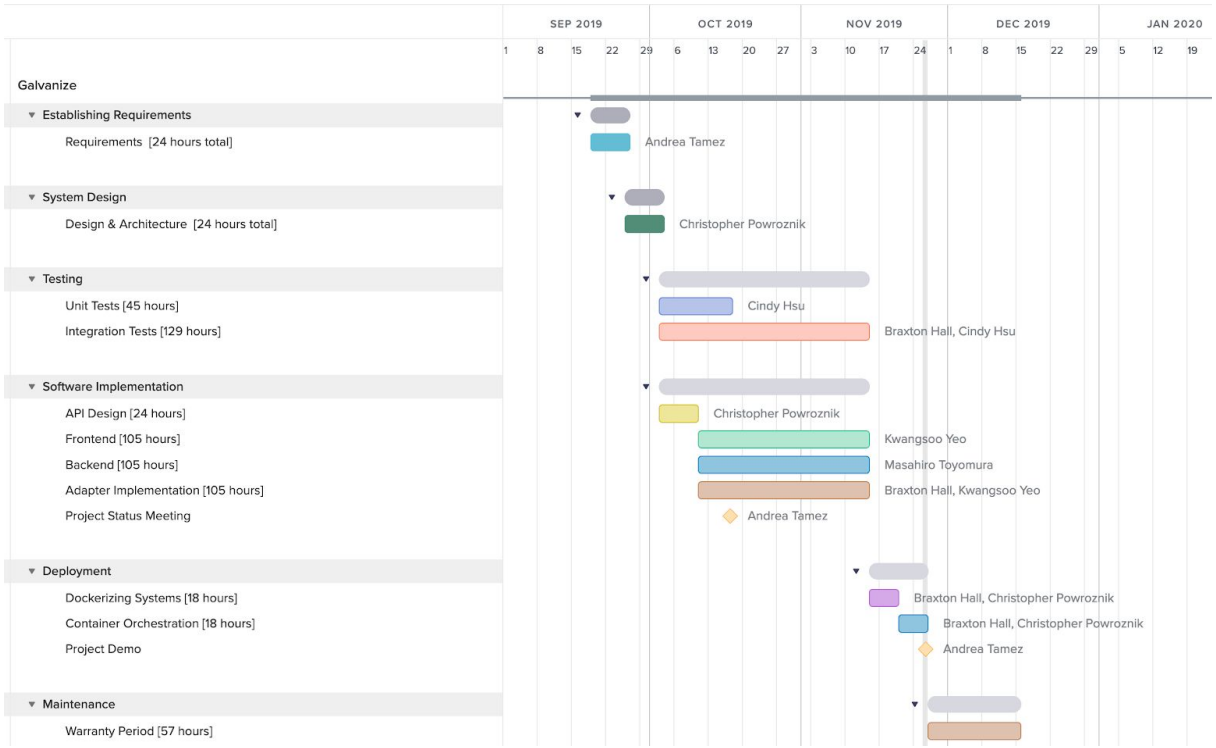
# Software Development Lifecycle




## Glossary

**Adapter**: A means through which the frontend will communicate with the backend using a standardized set of inputs and outputs. The advantage is that developers can establish requirements of implementation early in development and change implementations on one side of the adapter (backend or frontend) without changing implementation on the other side of the adapter.

**Frontend:** The conversion of data into a form of user interface through the use of tools like HTML, CSS and JavaScript.

**Backend:** The server and the data access layer which will provide access to the data that is being stored while also communicating with the front-end.

**Container Orchestration:** The deployment of the Docker images run in “Containers” and orchestrating them such that they communicate with each other and the constituent parts of the system work together as a whole.

**Docker:** An application platform as a service that helps to build and run applications with containers.

**Integration Testing:** Testing how different systems interact with each other such as the frontend and backend, usually done with more unit tests and manual end to end tests.

**Unit Testing**: Testing the correctness of small and easy to validate parts of code in an automated fashion.

**DynamoDB:** A non relational database service offered by amazon.

## Establishing Requirements

Sep 19 - Sep 26 (1 week)
Owner: Andrea Tamez

Distribution of Work: The entire team will pair out all required documents after sitting down with the Galvanize representatives. In this meeting all github issues will be created around a set of user stories that will be produced. We believe doing this meeting and step as an entire team together, will reduce confusion in later steps of the project.

Deliverables: Software requirement specification with description of both functional and nonfunctional requirements and use cases that will describe user interaction with the software.

Notes: This phase of the lifecycle will be heavily influenced by the meeting with the stakeholders that will be held on Thursday, 19 September 2019.

## System Design

Sep 26 - Oct 3 (1 week)
Owner: Christopher Powroznik

Distribution of Work: The entire team will be sitting down where we will be looking at each of the user stories, these user stories will lead the paired programming sessions of defining our adapter interface. This will be done as a full team. Andrea will be taking minutes during this meeting to keep track of tasks to be added to our GitHub issues. Masahiro and Kwangsoo will be responsible for setting up the development environments and onboarding everyone to the development flow. Christopher and Braxton will be working on setting up the continuous integration with Google Cloud Platform.

Deliverables: A complete setup of all the parts of the project will be broken down into the frontend, adapter and backend. This will include setting up the development environments and continuous integration.

Notes:

## Testing

Oct 3 - Nov 14 (4 weeks)
Owner: Cindy Hsu

Distribution of Work: Cindy and Masahiro will together construct a test suite to measure the correctness of the backend system. Christopher and Braxton will push the test suite into the Continuous Integration cycle. As development continues, Cindy will ensure that emergent cases are caught and defined measured as she maintains the test suite.

Deliverables: A comprehensive unit test suite for both the adapter and backend packages conforming to their respective interfaces delineated by the System Design Phase. As well these test suites will run on continuous integration measuring the integration of the adapter and backend systems on push.

Notes:

## Software Implementation

Oct 3 - Nov 14 (4 weeks)
Owner: Kwangsoo Yeo & Masahiro Toyomura

Distribution of Work: Kwangsoo and Masahiro will lead development of the frontend and backend packages respectively. Kwangsoo will primarily be assisted by Cindy and Christopher, while Braxton and Andrea will primarily assist Masahiro on the backend. Christopher and Cindy will be intermittently assisting with the backend development as the needs of external package integration call for it.

Deliverables: The adapters will be broken down into sections. Each of these sections will be implemented, tested and deployed to the development frontend and backend. A usable development environment will be available.

Notes:

- Project Status Meeting: Oct 15, 17
- Much of the Software Implementation phase will occur concurrently with the Testing Phase as to allow for emergent cases to be captured as the developers iterate

## Deployment

Nov 15 - Nov 26 (1.5 weeks)
Owner: Braxton Hall

Distribution of Work: This task will be tightly paired between Christopher and Braxton, Galvanize will have requirements on the integration with their current systems. Christopher and Braxton will go over each of these requirements and adjust the system accordingly to be integrated into the production deployment of the application. Andrea will be responsible for communicating and organizing the requirements from Galvanize.

Deliverables: The project will be moved over to the production environment connected to the real data at Galvanize. This will be the fine-tuning and more polished version of the frontend and backend deployed.

Notes:

- Project Demos: Nov 26, 28

### Maintenance

Nov 27 - Dec 15 (1.5 weeks)

Distribution of Work: Should the need arise, the distribution of work will be evaluated at the time of maintenance depending on the part of the system that requires it.

Deliverables:

Notes:

## Critical Path

Identifying each of the bottlenecks from our gantt chart, we estimate the project will follow the critical path of…

1. Requirements Document
2. Design & architecture document
3. Testing (Up front a per the Test Driven Development Model)
4. API design
5. Frontend, Backend and Adapter Implementation
6. Dockerizing Systems
7. Container Orchestration
8. Warranty Period

The effort will be mostly centralized around the 4th step of our critical path, in which the software implementation is ongoing, and all coding resources from each member of the team will be utilized.