Week 1

Learning

Architecture

Control Plane Components

I believe that `kubectl` would contain all the control plane components. Further question: does kubectl have a daemon that would listen to events?

Node Components

These run on every node.

Concepts

Workloads

Deployments

This is what I'm going to need for my first milestone.

You describe a *desired* state in a Deployment, and the Deployment Controller (remember → control plane components) changes the actual state to the desired state at a control rate. Take note that there is an *actual state* and a *desired state*.

ReplicaSet

At it's core, a ReplicaSet's **selector** specifies how to identify Pods it can acquire, **replicas** indicate how many Pods it should be maintaining and a **pod template** specifying the data of new Pods it should create to meet the number of replicas criteria.

Deployment Specification

Deployments are defined by ReplicaSets. `spec.selector` defines how the created ReplicaSet finds which Pods to manage. To create a new deployment, run

```
kubectl apply -f ./kubernetes/deployments/webapplication.yml
```

Other

There is a web-based UI for Kubernetes clusters. It can be invoked here: https://kubernetes.io/docs/tasks/access-application-cluster/web-ui-dashboard/. This may come in useful for the visual component of my milestones.

Definitions

Cluster is what you get when you deploy Kubernetes. All clusters have at least one worker node.

Nodes run containerized applications. Nodes contain pods.

Pods are the components of the application workload.

Control Plane Components make global decisions about the cluster (for example, scheduling) as well as detecting and responding to cluster events.

ReplicaSet mtains a stable set of replica Pods running at any given time.