Appendix H. Technical Project Management

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On the first week of the highly technical class on cloud computing, I brought up technical project management and how important it is to do what I describe in this appendix. A student raised their hand in class and asked the following question: “Is this a project management class? I thought this class is about cloud computing?”

Similarly, in the real world, it is easy to think project management doesn’t matter. A small amount of technical project management knowledge is critical to MLOps, though. Three essential components of project management are as follows:

- Attempt to plan your project out of the time you have to complete it, i.e., 12 weeks using weekly milestones.
- Do a weekly demo to your team showing the progress.
- Break tasks into 4-hour chunks of time and do them weekly, keeping track of them with a simple task tracking system like Trello or GitHub.

Now, let’s cover just enough of the basics to make sure you are successful.

Project Plan

There is nothing unique about MLOps regarding project management. Still, it is worth pointing out a few nonobvious highlights of project management that help build machine learning projects. In particular, one powerful concept in building ML solutions is to think in terms of a 10–12 week schedule and attempt to map out the individual results for each week. In the book’s source code repository, there is an example template to follow.

A takeaway is that a plan creates the scaffolding necessary to start deploying machine learning code to production, and the weekly demo creates accountability.

In Figure H-1 a week-by-week project plan allows for initial scoping of the complexity of a project.

Week	Milestone: High Level Goal	Weekly Demo Task (30 second video)
1	Kickoff	Kickoff (present plan)
2	Continous Deployment	Continous Deployment
3	Setup GCP	GCP Skeleton Project
4	Big Query Setup	Big Query Integration
5	Big Query Modeling and Prediction	Big Query Prediction
6	AutoML Setup	AutoML Prediction
7	Creation of Multiple Environments	Staging Environment
8	Integrate API	Computer Vision API
9	Stackdriver Setup	Monitoring
10	Finish MVP	MVP

Figure H-1. Project plan

Next, let's discuss the weekly demo.

Weekly Demo

In both real-world scenarios, when I work with a team deploying code to production or in educational systems, the weekly demo and the project plan are essential components that reduce the risk of a project never seeing the light of day. Another hidden fact about doing demos is making the person do the demo understand what they are doing and communicate information.

The Roman proverb “Docendo discimus” states that “by teaching, we learn.” This proverb is also related to academic research on learning, and it is one of the more effective teaching approaches I have seen in the industry and the classroom. Video demos are powerful for both the consumer and the creator.

Task Tracking

You can see a basic, public Trello tracking board online. In Figure H-2, notice a simple approach of just three columns: To Do, In Progress, and Done. Each task takes around four hours to complete since this is a good unit of work to break down tasks.

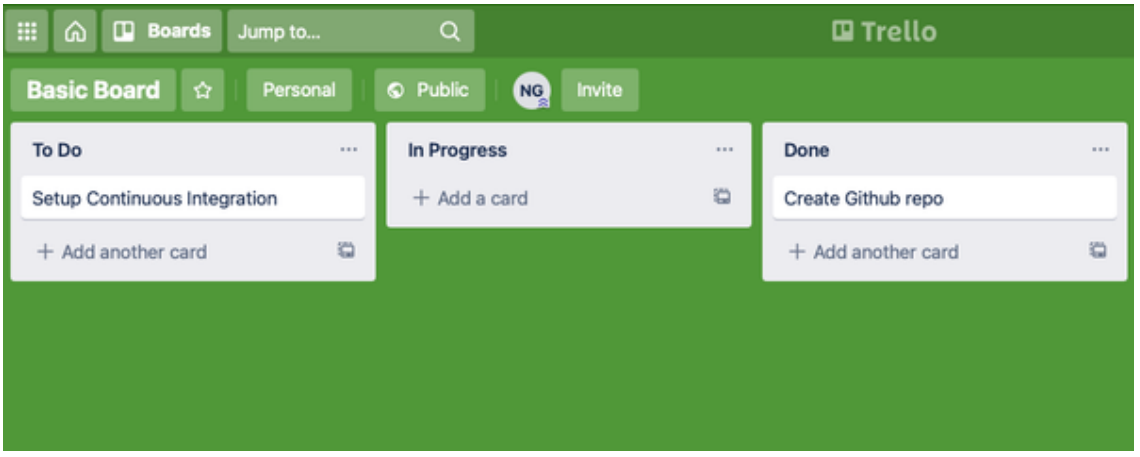

Figure H-2. Ticket tracking with Trello

Finally, each of these tickets typically completes every week. This workflow shows a sense of weekly progress. Note, you can use any board-based tracking system to accomplish the same thing. The main takeaway is to keep it simple! Simple project management systems stick around, but complex ones do not.