17-356/17-766: Software Engineering for Startups
Homework 2: Sprint 0

50 points
Due: January 29th, Midnight
This homework is to be done with your group.

In this homework, you will work together with your team to begin initial design, and prepare for your first sprint as a group.

References:
- Sprint 0
- startup sprint
- Github Learning Lab
- Github Guides
- Dronuts Starter Kit

The learning goals of this assignment are that, once completing it, you will be able to:
- Identify the key user stories that will constitute the Minimum Viable Product (MVP).
- Justify which features to include based on priority, and time available
- Understand and practice the basic building blocks for how to create and deploy a modern web app (related, in some fashion, to the MVC model)

Your task this week is to prepare for the initial sprint:

- **Create your project backlog**
  - Reconcile all individual user stories into a backlog of team user stories. If you want to reconcile these within an online tool, e.g. Trello, Zenhub, Github Issues, that works too.
  - Estimate the amount of time your team will take to implement each user story, and justify your estimation.
  - Write a document listing the user stories your team will include in the MVP and which your team will not. Add a SHORT justification for each user story decision. NOTE: you cannot select more than 40 hours worth of work in a single week, per team.

- **Select a Backend Framework**
  - Create a set of business objectives and criteria for deciding what type of framework you should use.
  - Evaluate two frameworks, identifying their strengths and weaknesses.
    - LoopBack
    - Express
  - Choose (as a team) which framework is preferable for the development of Dronut, and write a business-style email justifying your choice of framework to your investors.

- **Prepare to write the first line(s) of productive code. This will include:**
  - Agree upon and configure development communication tools, e.g. Slack, etc...
  - Agree upon and configure your Project Management infrastructure, including bug tracking, task management, etc...
  - Write a simple "hello-world" app with a test (even if it's fake) and follow the application instructions in the **dronut-starter README**.
  - Setup your team's development infrastructure, including Development Environment, Continuous Integration (CI), code style (via linter), and deployment pipeline as per the README.
  - Deploy your "hello-world" application for the world to see!

  Note: As mentioned, instructions for getting started can be found in the dronut-starter repository. This includes creating/joining a GitHub team, creating a repository, setting up Travis CI, Docker, and deploying on an Microsoft Azure instance.

Deliverables:
One document that includes:
- Your product backlog (or a pointer to your backlog in a location accessible to the staff, e.g. Trello, Github Issues, ZenHub)
- A short justification for which user stories you are including in your MVP
- A short document that describes which backend framework you are choosing, and why you decided on that framework
- A URL which is running your starter repository

Grading:
This homework is worth 50 points. To receive full credit, you must have a reasonable product backlog that includes estimates and a short (no more than a few sentences) justifications for the user stories you choose for your MVP. You should have a reasonable justification for which framework you choose, and you should be ready to right your first line of real, productive code in the next sprint.