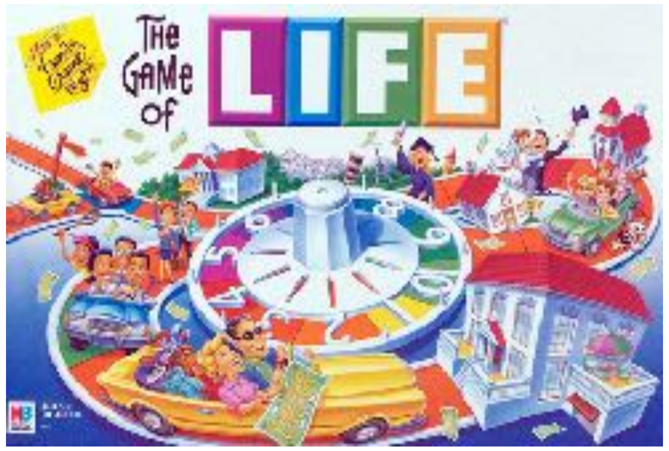
GRACE SHOPPER

Development Team Simulation Game

Part I: What



Grace Shopper is a game that lasts 10 calendar days (7 class days!)

Grace Shopper is essentially a Live-Action Role-Playing (LARP) game

You are a recent graduate of a coding bootcamp who has just landed your first programming job at a small dev shop. For your first project, you've been assigned to a client who has run a successful Etsy shop for the past few years but is outgrowing that platform and needs their own e-commerce site. You'll be working with 2-4 other recent bootcamp grads.

Along the way, you'll have to balance other projects (PEP, REACTO), meetings, presentations (career success), and various other distractions. Your client or manager might change requirements on you mid-project or make unrealistic demands given the deadline.

GRACE SHOPPER IS ABOUT…

…Single Page Apps?

…E-Commerce Sites?

…Deploying to Heroku?

…Performant Algorithms?

1. TEAM PROJECT MANAGEMENT

PRIMARY GOAL: DEVELOP AS A TEAM

- **Communication and planning**
  - Design mockups and system architecting
  - Agile methodologies and iterative design
  - Daily standup and problem solving
  - Task assignment and issue tracking
- **Collaborative development**
  - Longer-term and larger-scale
  - Pair programming
  - Code reviews
  - Merge conflict resolution

GRACE SHOPPER SUCCESS = LEARN TEAM-BASED DEVELOPMENT TECHNIQUES

2. TOOLS & TECH

SECONDARY GOAL: TOOLING & MASTERY

- **Dev Ops**
  - Deployment on **Heroku**
  - **Travis CI** (Continuous Integration / Testing)
- **Project Management**
  - **GitHub** Features
  - Advanced **Git**
  - Project Boards (**GitHub Projects**)

- **Full-stack Applications**
  - **Node**, **Express**, **Sequelize**, **React**, **Redux** practice & synthesis
  - **Schema** design
  - **Testing** patterns
  - **Visual** design
  - **Security**

GRACE SHOPPER IS AN EDUCATIONAL EXERCISE (NOT A PORTFOLIO PIECE)

3. THE PRODUCT

TERTIARY GOAL: THE PRODUCT

- Many "business requirements" and features are about to be presented to you
- These are all *motivation* for mastering team-based development, new tools, and junior phase material
- Many of these features are good to know or even <u>important</u> in the industry, but they are *stretch goals*

PRODUCT FEATURES ARE GOOD… BUT NOT YOUR GRADE

PRIORITY REVIEW

1) TEAM-BASED DEV SKILLS

2) MASTER TOOLS & TECH

3) PRODUCT FEATURES

OK WE GET IT!
SO WHAT *ARE* THE REQUIREMENTS?

GRACE SHOPPER IS AN E-COMMERCE SITE

WHAT KIND OF PRODUCT(S)?

(your choice)

…keep it clean

TIER 1: MVP SHOPPING EXPERIENCE

- Two roles: guests (not signed in) and users (signed in)
- Deployed (online!)
- See all products
- Add to cart / edit cart
- Checkout (submit order)
- Backend data validations
- Rudiments of security

TIER 2: E-COMMERCE ESSENTIALS

- Continuous Integration / Continuous Development (CI/CD)
- Really nice UI/UX design
  - Front-end data validations
- Carts persist in database (can load cart on a new browser)
- Order history (users can see theirs, including historic cost)
- User Profile (viewable, users can edit contact info / other data)
- Accept payment (Stripe, Paypal/Venmo/Braintree, Bitcoin)
- Admin page (edit products, manage users)
- OAuth integration

TIER 3: EXTRA FEATURES & FLAIR

- **Inventory tracking and management**
- **Persistent guest cart (front-end storage)**
  - Merge guest / user carts upon login
- **Accessibility (a11y)**
  - A11y checklist
  - screen reader friendly
  - keyboard navigable
  - colorblind-friendly
- **Email confirmation**

TIER 3: EXTRA FEATURES & FLAIR (CONT.)

- Error/loading states in UI
- Product Filters & Pagination
- Toast notifications for events
- Featured products
- Promo codes
- Wishlists
- Social media integrations

TIER 4: S TIER

- **Internationalization (i18n)**
- **Localization (l10n)**
- **Visualization dashboard**
- **Recommendation engine**
- **Multi-tenancy**
    - White labeling
- **Surprise us**

SURELY THIS IS IMPOSSIBLE!?

10 CALENDAR DAYS
7 CLASS DAYS
LECTURES &C.

PRIORITY REVIEW

1) TEAM-BASED DEV SKILLS

2) MASTER TOOLS & TECH

3) PRODUCT FEATURES

Tier 1 is Passing!

Part II: How

Logistics

- Teams of ~4
- Starts today
- Code reviews (2: this Wed. & next Mon.)
- “Presentation to management” next Wednesday
    - Instructors, Fellows, two other Grace Shopper teams
- Rotating team “roles”

STAND UP

A stand up a day
keeps the merge conflicts away

- **Goal:**
  - stay updated on each other’s progress
  - organize efficiently (no double-work!)
  - remove blockers
- **Short (~15 minutes or less)**
- **Each person in round robin style:**
  - What did I do yesterday?
  - What am I doing today?
  - Do I have any *blockers?*
- **Blocker: something *outside of your control* that is preventing progress on the thing you’re doing today**

- **Alice:** “Yesterday, I refactored most of the product and orders routes, but there’s still a bit left to do. Today, I’m going to finish those routes. I don’t have any blockers.

- **Bob:** “Yesterday, I finished scaffolding the Orders page with dummy data. Today, I want to make the UI interact with the live data, but my blocker is that I need Alice’s backend changes to be merged before I do that.

- **Alice:** “Good to know - the orders changes are ready, it’s just the product routes that need fixing. I can make a pull request right after this, if you can review it.

ROLES

Fellow === Project Manager

- **A simulation of “agile”**
- **Lead standup every day**
  - Discuss yesterday’s roles, assign today’s roles
  - Assign daily goal
- **Customize support for your specific team**

Taskmaster

- **Keep track of todos / issues**
  - Bite-size
  - In project management tool (GitHub Projects)
- **Assign pairs / tasks each day**
- **Facilitate communication and minimize double work**
  - Make sure everybody knows what everybody else is doing

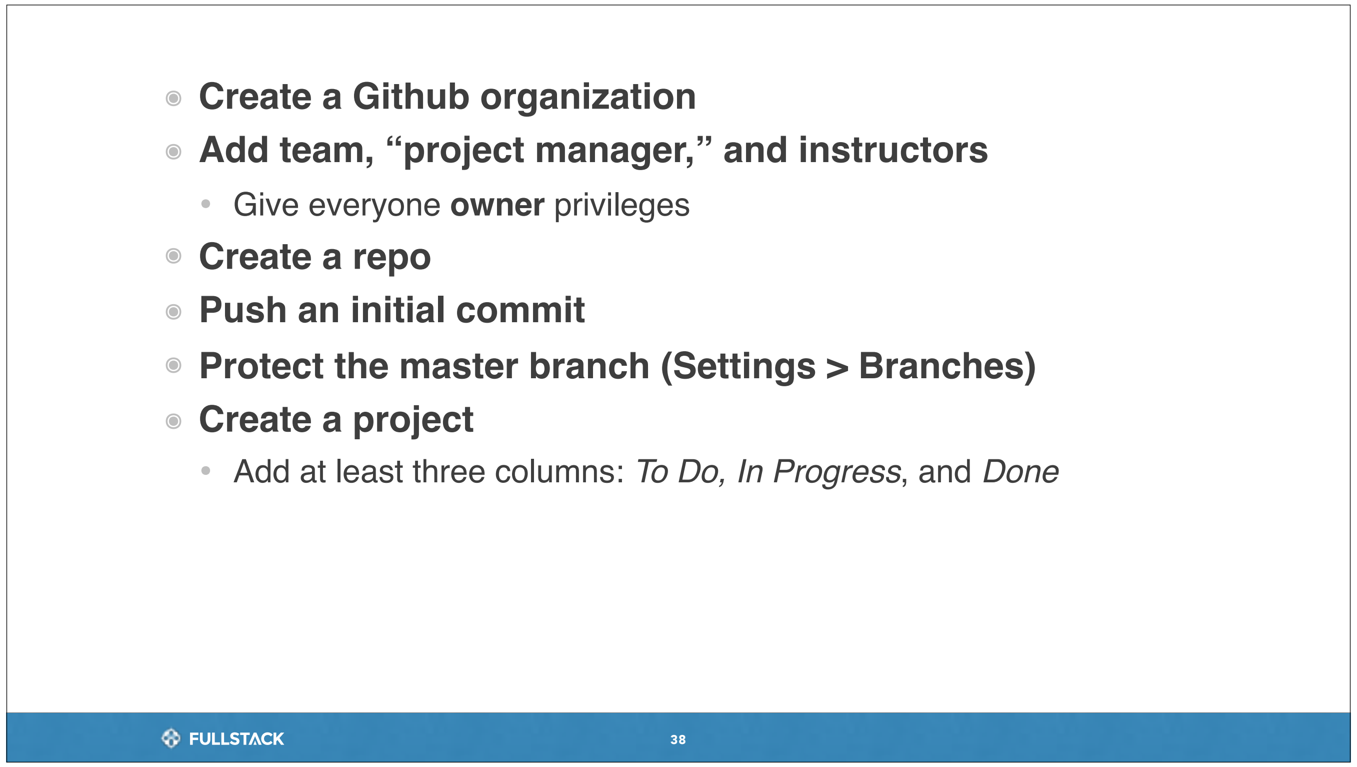
Gitmaster

- Make sure everybody's `commit`-ing responsibly
- Make sure people are making pull requests
- Make sure people are reviewing pull requests

Testmaster

- Make sure tests are being written
- YOU DO NOT WRITE ALL THE TESTS

GIT’ING STARTED



- **Create a Github organization**
- **Add team, “project manager,” and instructors**
  - Give everyone **owner** privileges
- **Create a repo**
- **Push an initial commit**
- **Protect the master branch (Settings > Branches)**
- **Create a project**
  - Add at least three columns: *To Do, In Progress*, and *Done*

FULLSTACK

Talk about adding instructors and project managers

WRITING ISSUES

User Stories

- *As a <persona>, I want to <do something> so that <reason>*
- Software should be designed based on what the users of that software want
- Stories !== implementation details

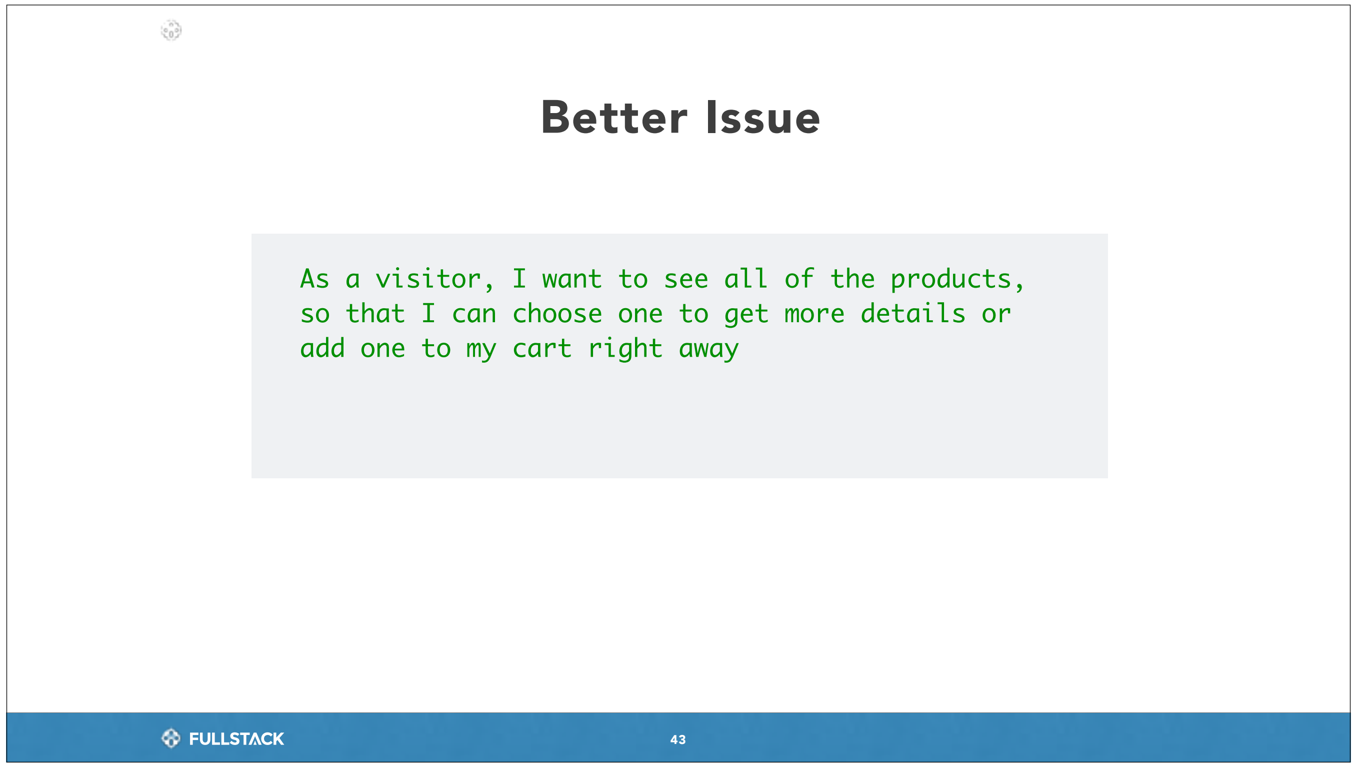
Implementation Detail

- **How you will actually fulfill a user story**
- **Split each story into specific, bite-size tasks (implementation detail)**
  - Should always serve a user story
- **Write a ticket for each implementation detail**
  - User story !== implementation detail
  - Associate each ticket with a GitHub issue] — **More on this later today**

Bad Issue

```
We need a route to serve up all the products
```

Do you need this route?! We want to tie it to a user story – why write code you don’t need

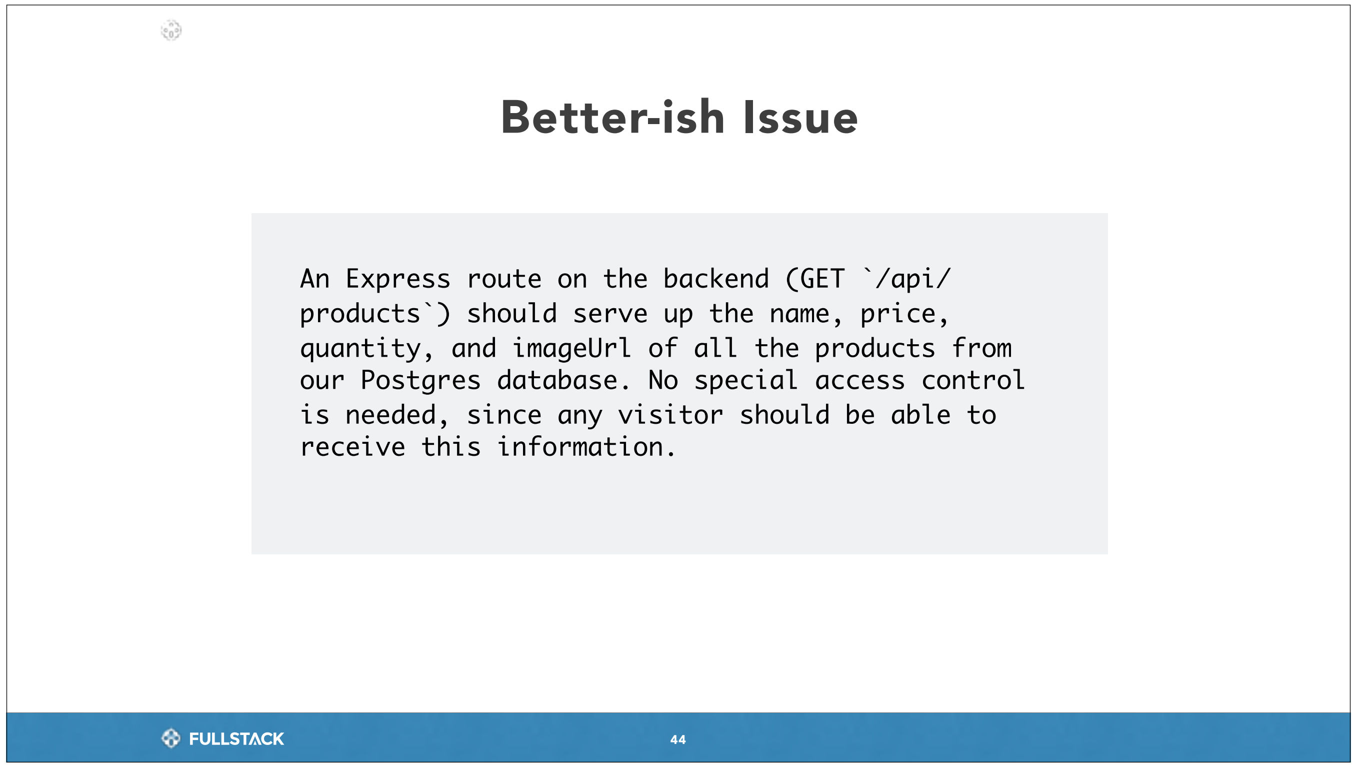


Better Issue

```
As a visitor, I want to see all of the products,
so that I can choose one to get more details or
add one to my cart right away
```

FULLSTACK

User story — too big to be an issue. This can be the front-end and back-end, so we need to split it up



Better-ish Issue

```
An Express route on the backend (GET `/api/
products`) should serve up the name, price,
quantity, and imageUrl of all the products from
our Postgres database. No special access control
is needed, since any visitor should be able to
receive this information.
```

This is the implementation detail in the issue and exactly what you do, but do we need to do it?! We need to tie it to a user story

Good Issue!

```
Story: As a visitor, I want to see all of the
products, so that I can choose one to get more
details or add one to my cart right away

Implementation: an Express route on the backend
(GET `/api/products`) should serve up the name,
price, quantity, and imageUrl of all the products
from our Postgres database. No special access
control is needed, since any visitor should be
able to receive this information.
```

DOING WORK

Feature Branches

- Never work directly on master!
- Always work from another branch ("feature" branch)
- Connect the branch to GitHub Project issues with `#issueNumber`
  - `git checkout -b my-feature-#issue`

MERGING TOGETHER

Pull Requests

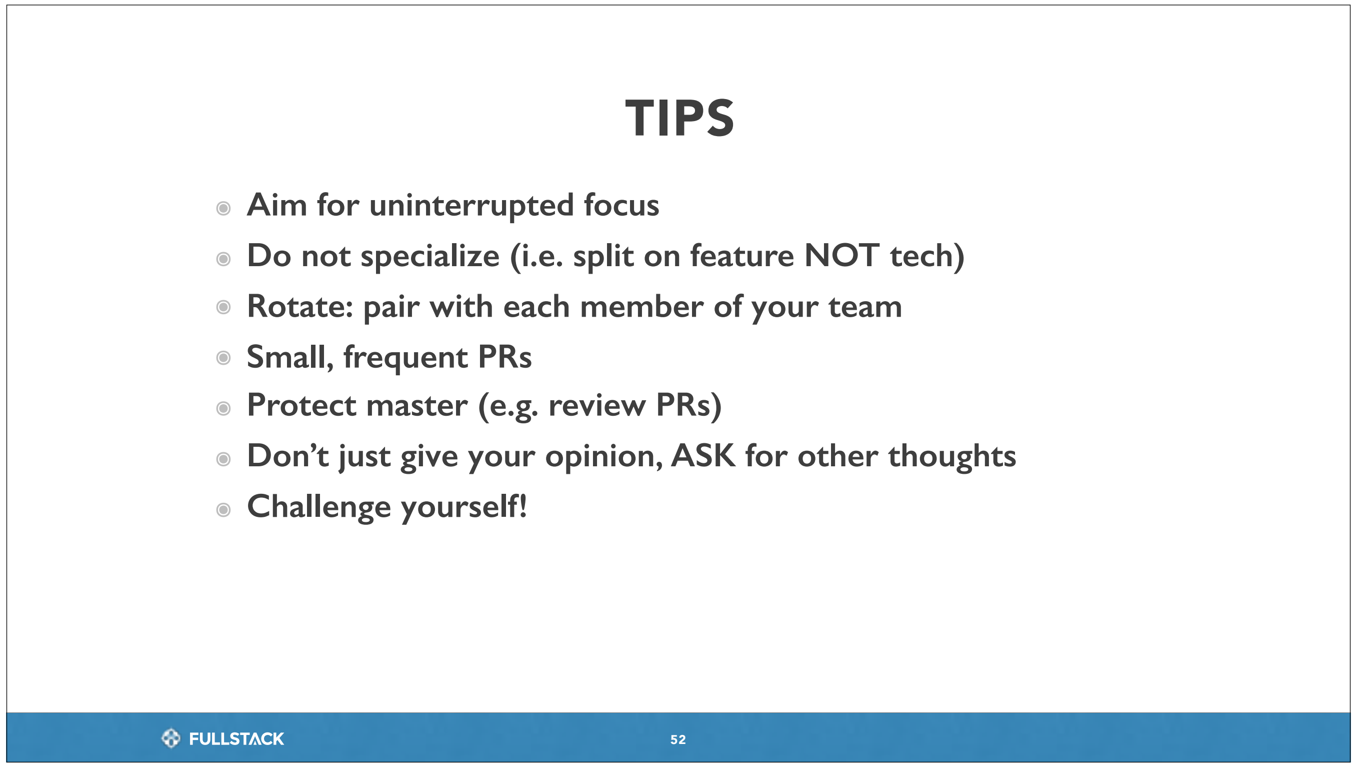
- **Push your branch up to the remote**
  - `` `git push origin my-feature-#issue` ``
- **Go to your remote repo on Github**
  - Make a pull request (it should prompt you)
- **Someone else reviews your pull request**
- **If they request changes, make them locally and then push remotely again**

Merging

- Complete requested changes
- Merge the PR on Github
- All team members can now update their local master branch
    - `` `git checkout master` ``
    - `` `git pull origin master` ``
- If you are currently working on a feature, you should update it with the latest changes from master
    - `` `git checkout my-other-feature` ``
    - `` `git merge master` ``

PRODUCTION

- **Deploy your app to Heroku**
- **Practice Continuous Integration**
  - Integrate code into master several times **EACH DAY**
- **…we will provide more guidance in a couple days**



TIPS

- Aim for uninterrupted focus
- Do not specialize (i.e. split on feature NOT tech)
- Rotate: pair with each member of your team
- Small, frequent PRs
- Protect master (e.g. review PRs)
- Don't just give your opinion, ASK for other thoughts
- Challenge yourself!

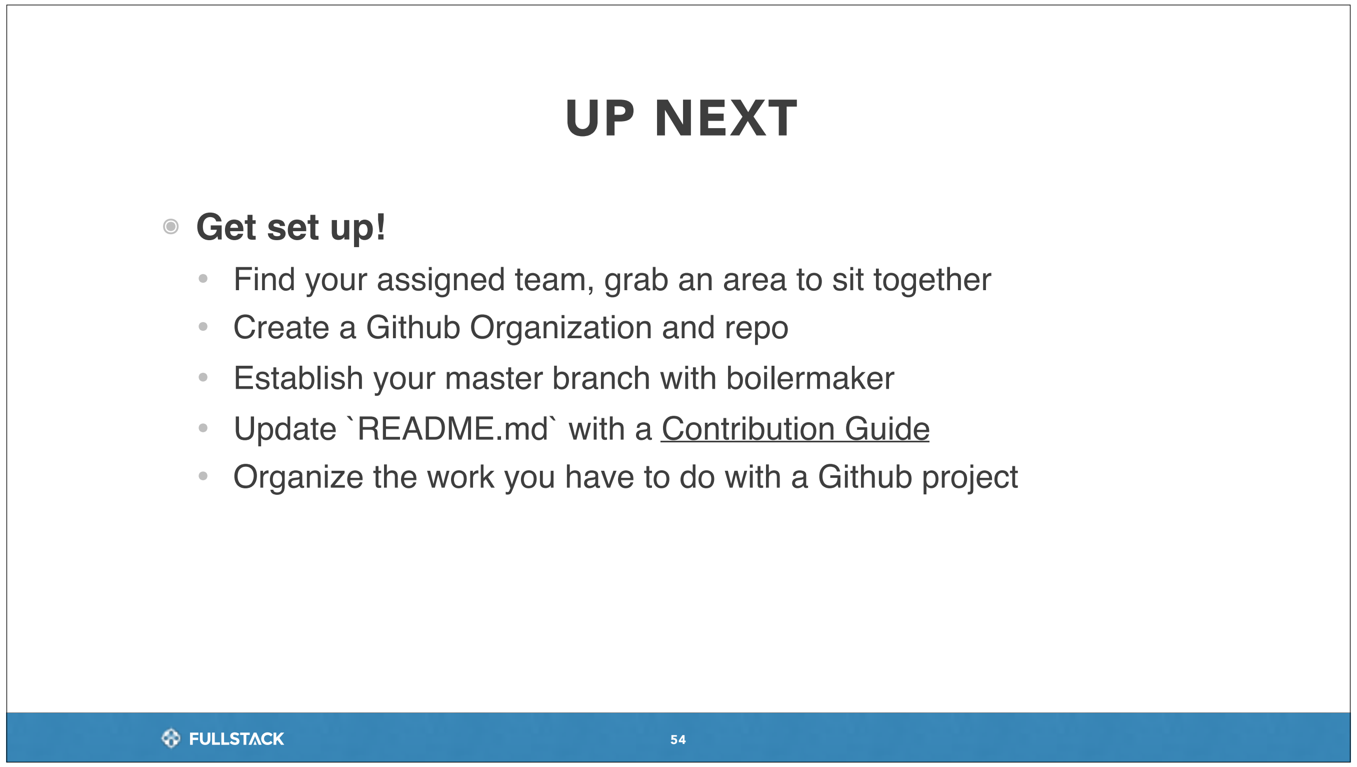
FULLSTACK

Super important: small pull requests are easier to review and easier to manage. If you make big monolithic pull requests, you are asking for trouble.

Talk about what you want to do, but also ASK others how they want to do a thing

SENIOR PHASE HELP TICKETS

- Can take longer and be more complicated
- Keep using the queue
- Do your research FIRST
- Beware when using technologies that aren’t part of FSA’s core curriculum


UP NEXT

- **Get set up!**
  - Find your assigned team, grab an area to sit together
  - Create a Github Organization and repo
  - Establish your master branch with boilermaker
  - Update `README.md` with a Contribution Guide
  - Organize the work you have to do with a Github project

FULLSTACK

Example Contribution Guide