



CS196

Web HackerSpace

# Things we've covered

**Frontend: React**

**Backend: Express**

## How to style?

- **Styled Components**
- **Bootstrap**

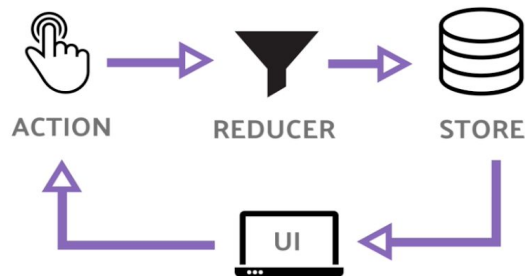
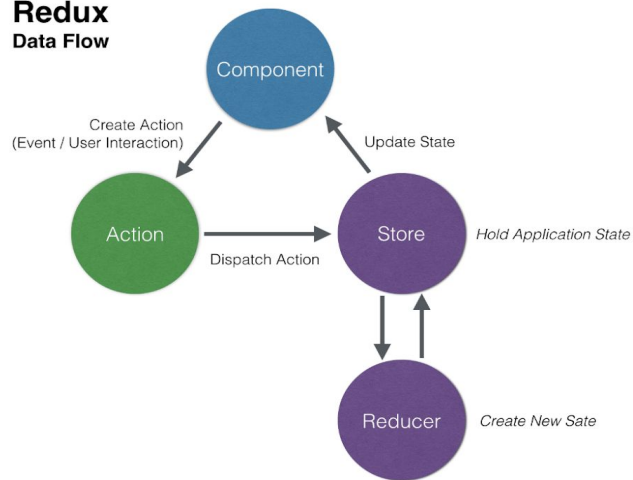
# How do I build more complex applications?

- **Redux**
  - **State management system**
  - **Action and reducer**

# Actions, Stores, and Reducers

- Actions
  - Represented as JSON objects
  - Has an action type
  - Contains other data relevant to action
- Store
  - Basically JSON of everything you store
- Reducer
  - Function that takes old state and action objects and returns the new state
- UI
  - Calls 'dispatch' on action
  - UI automatically updated by updates to store

## Redux Data Flow



## Can I add types?

- **Typescript**
- **Flow**

## Can I add compile my javascript?

- **Babel**

## Can I add bundle my javascript?

- **Webpack**

## What else can I use for my backend?

### REST APIs

- **Flask (python)**
- **Express, Hapi, Koa, http (javascript)**

# GraphQL

- **Complex APIs are hard to scale**
  - **Sending too much information**
  - **Too many routes**
- **More efficient way of querying and mutating information**



# Examples of rest vs graphql

<https://swapi.co/>

<https://graphql.graphcms.com/simple/v1/swapi>

# Deployment

Heroku

Digital Ocean

Now

**Zeit Demo**

**Static**

**Npm**

**Lambda**