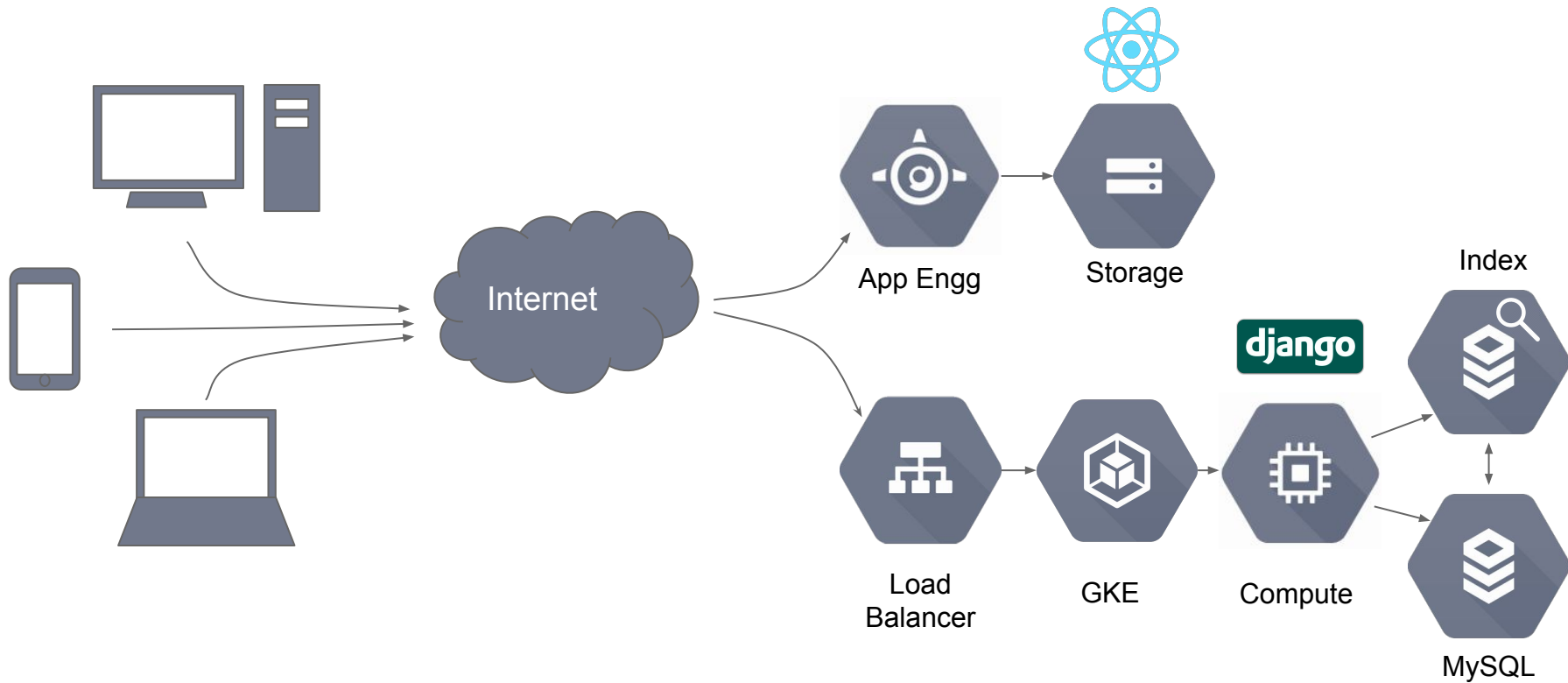# Equal Education

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- Demonstration
- Backend
- Frontend
- Self Critique
- Data Visualization
- Developer Critique

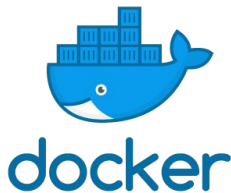# Demonstration

[Equal Education](#)

Backend Design

Data Flow

Infrastructure

- Docker container running on Kubernetes Cluster(GKE)
- Django with Gunicorn
- Google's Cloud SQL

Fast Searching

- Python App in GAE
- Gcloud Search API
- Index on the DB

Backend Testing

- Django Unit Tests (Python unittests)
- Postman for API calls


```python
from django.test import TransactionTestCase
from django.test.runner import DiscoverRunner
from unittest.suite import TestSuite


class UnitTestRunner(DiscoverRunner):
    def setup_databases(self, **kwargs):
        pass

    def teardown_databases(self, old_config, **kwargs):
        pass

    def build_suite(self, test_labels=None, extra_tests=None, **kwargs):
        test_suite = super().build_suite(test_labels, extra_tests, **kwargs)
        tests = [test for test in test_suite._tests if self.is_unittest(test)]
        return TestSuite(tests=tests)

    def is_unittest(self, test):
        return not issubclass(test.__class__, TransactionTestCase)
```
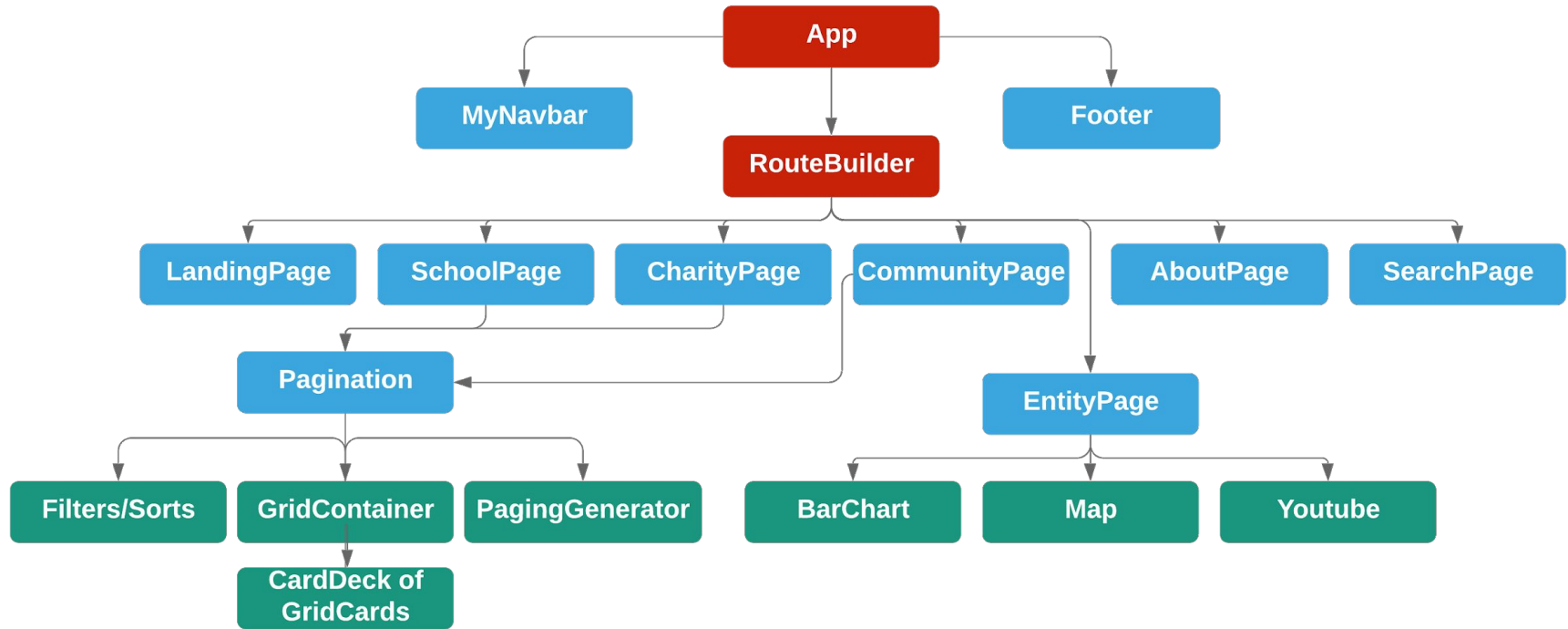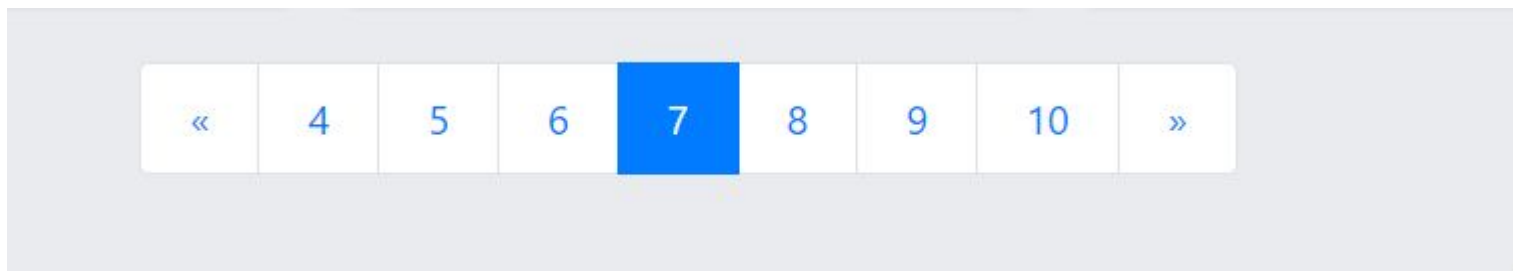
Frontend Design
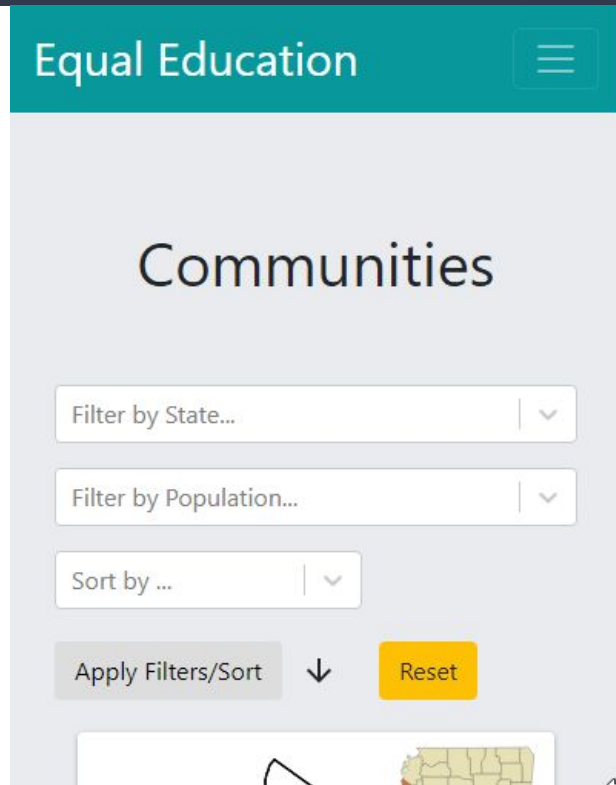
Components Hierarchy

Pagination

Key Features
- Durability
  - http://www.equaleducation.info/schools/2?&Poverty=Extreme&State=Mississippi&sort=Population&desc=true
- Pre-caching of all grid pages within pagination range
- Dynamic Range with prev/next buttons only appearing when applicable
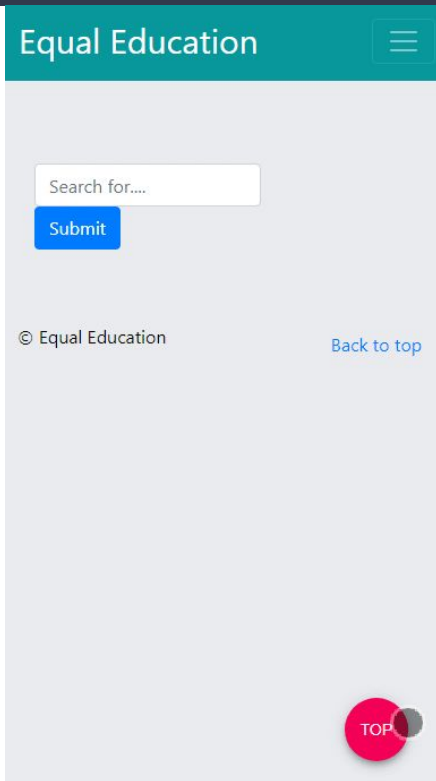- Reuseable components allowed for quick construction of our grid pages

| « | 4 | 5 | 6 | 7 | 8 | 9 | 10 | » |

Filtering and Sorting

Key Features
- Mix and Match
- AutoComplete, especially helpful for large possible fields with known states
- Mobile Friendly
- Fields are autopopulated by the link, Better user experience
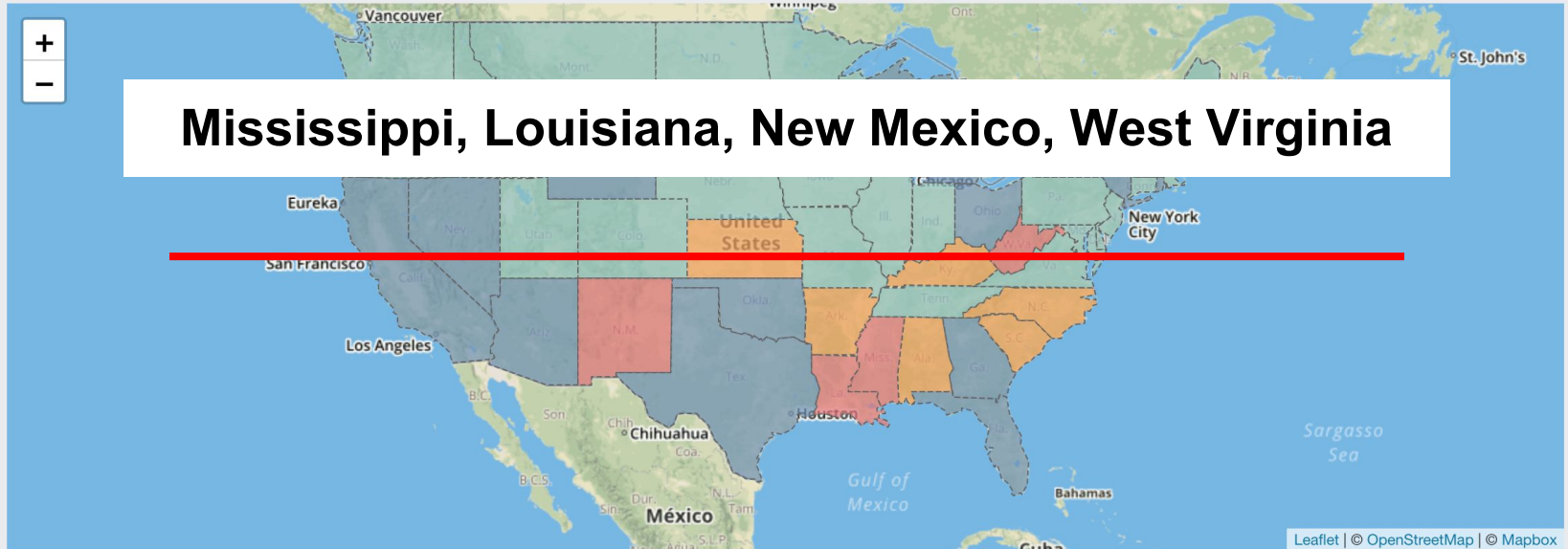- Reset Button for Quick Return to Default

Search w/ Redux

Key Features
- ● Dynamic Buttons allowing quick jump to different categories
- ● Manage search keywords/terms with Redux, allowing highlighter component to easily access them and efficiently do it's thing
- ● If Search Terms aren't within normal card info, can be seen and highlighted upon hitting view more
- ● Mobile-friendly
- ● Easy back-to-top FAB for large results
- ● Search Box in menu can be used to easily perform multi-term search within page w/o knowledge of regex

Data Analysis – (1)
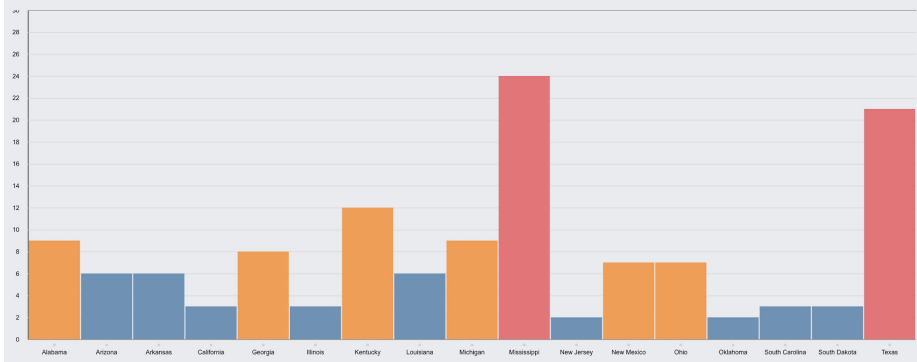

The Poverty Data by State
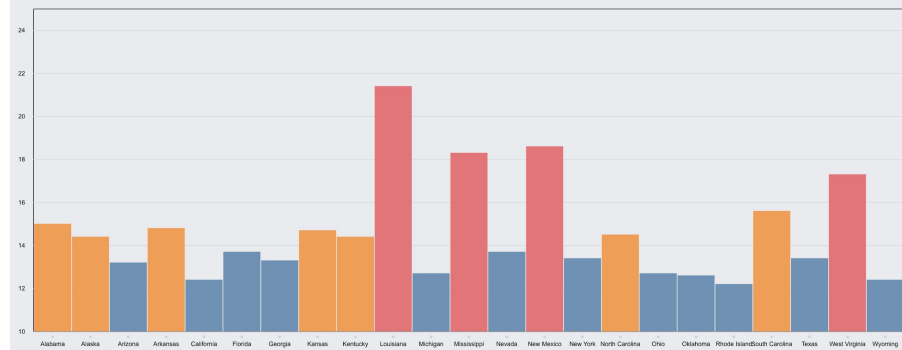
Mississippi, Louisiana, New Mexico, West Virginia

Data Analysis – (2)

The Number of Poverty School Districts by State

Mississippi, Texas → AVG = 22.5 school districts
Others → AVG = 1.81 school districts

The Poverty Rate by State

Mississippi, Louisiana, New Mexico, West Virginia
21.14%(Louisiana) - 7.7%(Colorado) = 13.44%!

The gap between each state is high → Our site can help!

Self Critique

Positive:

- Website is fast
  - caching, redux
- Good use of reusable components
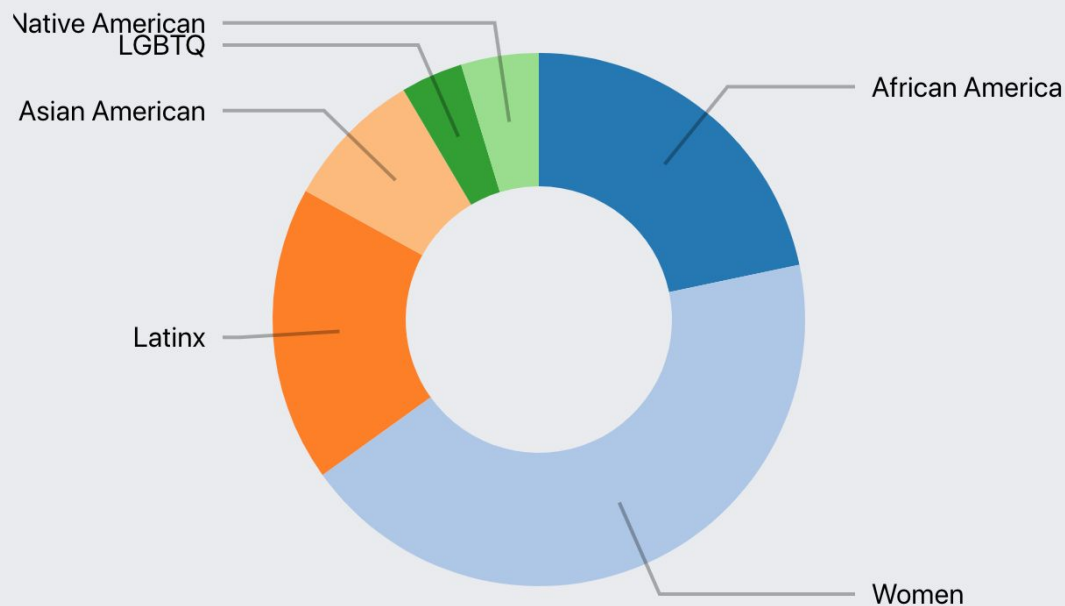- Extra media
- Searching, filtering

Negative:

- Lack of Data
- Styling; messy, too homogeneous
- Scheduling issues
- Start with React from the beginning

What We Learned:

- React, GCP, various tools
- The amount of teamwork/communication necessary for this project
- The number of things that can go wrong at any given moment

Our Developer Site Visualizations – (1)

Minority Percentage(%)

Women: 43%
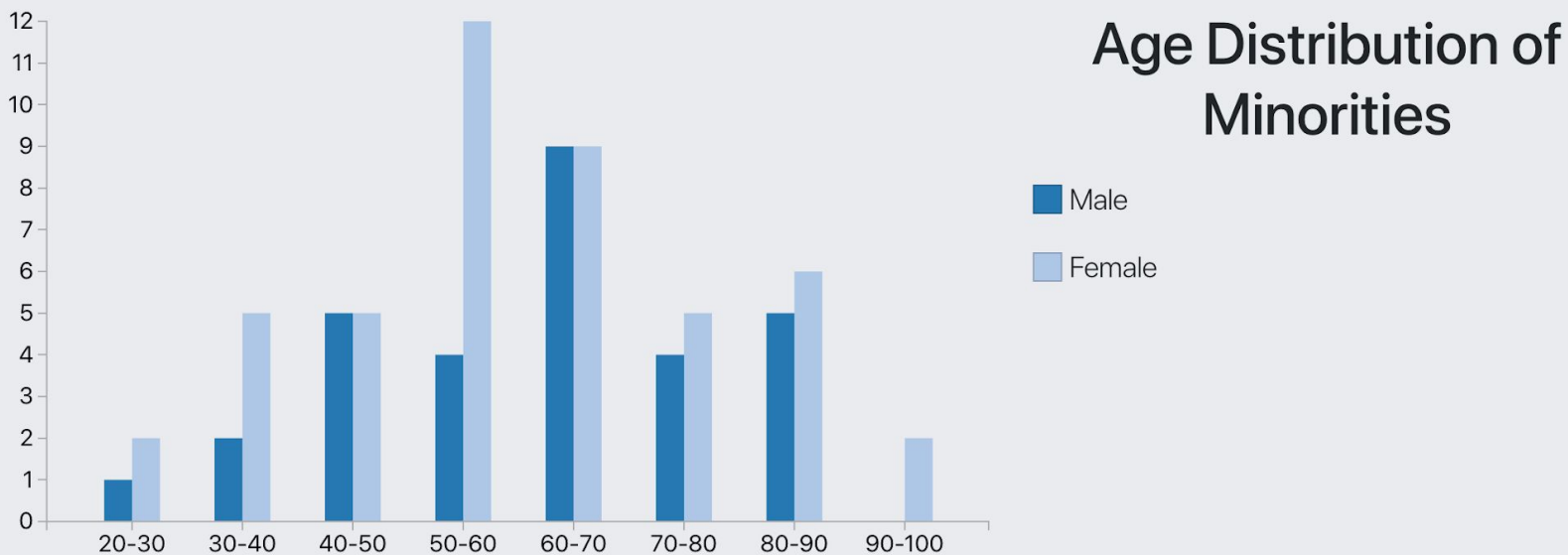
African American: 22%

Latinx: 18%

Asian American: 8%
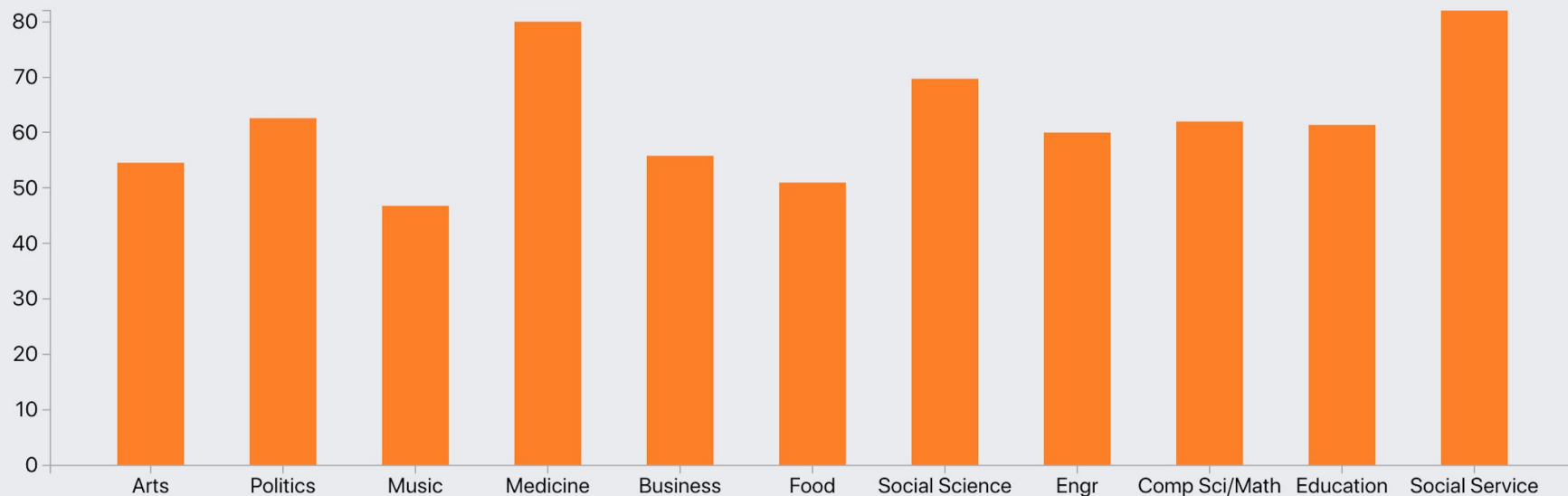
Native American: 5%

LGBTQ: 4%

*Rounded to nearest integer

Our Developer Site Visualizations – (2)

Our Developer Site Visualizations – (3)

Age Distribution Among Industries

Developer Critique

Positive:
- Great images with good sizing
- Dynamic search
- Data text representations in text is nice for instances
- Cards at the bottom giving previews to related instances is nice
- Strong imagery
- Person of the week

What we learned:
- Imagery makes it interesting and captivating
- Minorities and their representation

Improvements:
- Splash page
  - Carousel white text with white background
  - Person of the week
- Pagination doesn't need next/prev when not applicable
- New tab when going to outside link
- Too much loading
- Empty space at bottom of visualizations
- More diversity (e.g. Asian-American representation, LGBTQ, younger ages, etc)
- Layouts

What puzzles us:
- About page loading time