Introduction to SAEDashboard

David Kong

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What is it?

- SAEDashboard stands for Subnational area estimation dashboard
- It is a simple and interactive web-based dashboard for visualizing subnational data
- Provides filters like 'indicators/subgroup/year' to retrieve model output
- Allow drill down to see time series plots by subgroups
- The project started in July, 2020
- Our researcher saw the opportunity to apply the dashboard to different model data
- Customize a new dashboard from it takes 1-2 weeks
- And it becomes an open source project recently
Examples of SAEDashboards

- Public dashboard
  - Subnational family planning estimation tool (SFPET)

- Few Internal dashboards:
  - Subnational sexual transmitted infection estimation tool (SSTIET)
  - Subnational estimation of routine immunization indicators (SERII)
  - Subnational estimation of unmet need and routine immunization (SEUNRI)
  - Subnational estimation of vulnerable population in Kenya (SEVPKenya)
Dashboard DEMO
Architecture

- Docker containers are used to run each front end and API layer. That makes it easy for cloud deployment.
- Python is used to develop the API and ReactJS, JavaScript are used to develop the front end.
- Model data is stored in CSV files.
- GeoJSON from GADM.org is used to store geographical boundaries.
- amCharts is the library used for plots and maps.

Docker is an open-source platform that enables developers to automate the deployment and scaling of applications within software containers.
Data file naming

- Csv Data files are stored in [repo]/service/data/data
- Filename convention is:

  
  – E.g. Senegal__traditional__method__all__1.csv
Data file content

- For content of csv file, columns needed are:

<table>
<thead>
<tr>
<th>Column</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>state</td>
<td>Name of the subnational area. Can be adm1 or adm2 names. E.g. Africa:Senegal:Dakar</td>
</tr>
<tr>
<td>[indicator_name]</td>
<td>Reference value. E.g. traditional_method</td>
</tr>
<tr>
<td>se.[indicator_name]</td>
<td>Standard error for reference value</td>
</tr>
<tr>
<td>year</td>
<td>Data year.</td>
</tr>
<tr>
<td>pred</td>
<td>Predicted value</td>
</tr>
<tr>
<td>pred_upper</td>
<td>Upperbound of credible interval</td>
</tr>
<tr>
<td>pred_lower</td>
<td>Lowerbound of credible interval</td>
</tr>
</tbody>
</table>
GeoJson files

• They are used to show geographical boundaries on the map chart
• GeoJson files can be download from GADM
• They are free for academic use or other non-commercial use. License is here
• You can also bring your own shapes files / geoJson files
• Take a look at this shell script to see how we convert a geoJson file to be used in Dashboard
Installation DEMO
Installation Steps

- Prerequisites
  - Docker Desktop

1. From a terminal, run this command to clone the repository
   ```bash
git clone https://github.com/InstituteforDiseaseModeling/SAEDashboard.git
   ```

2. Next, build the container images
   ```bash
docker compose -f docker-compose.local.yml build
   ```

3. Next, start the containers
   ```bash
docker compose -f docker-compose.local.yml up -d
   ```

4. In a browser, navigate to [http://localhost](http://localhost) to see the dashboard
Configurable settings

- Configurable options include:
  - Title
  - Admin1/2 toggle
  - Default Year
  - Default Region
  - Default Country
  - Default color theme / indicator
- App_config.json is stored in [repo]/client/src folder
Next step?

• Listen to feedbacks to enhance the project
  – Feel free to create issues in our Github repository
• Make it more customizable
Team members

- Joshua Proctor (principal research scientist)
- David Kong (frontend software engineer)
- Emily Claps (backend software engineer)
- Clark Kirkman IV (backend software engineer)
- Sam Buxton (software engineer in quality control)
Questions / Comments
Thank you!!