

DAPPS Subnational Toolkit

International Programs Center, Population Division
U.S. Census Bureau
Training and Statistical Development Branch

coding it forward >



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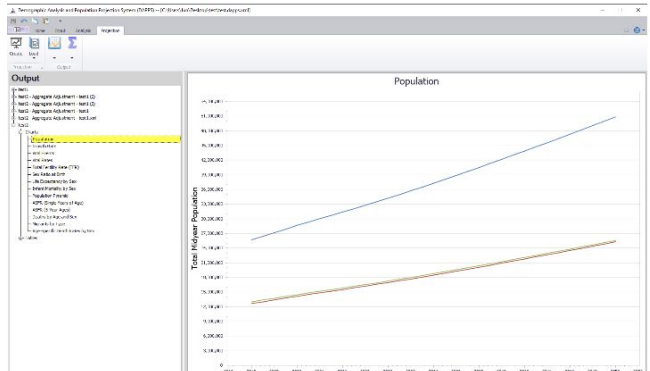
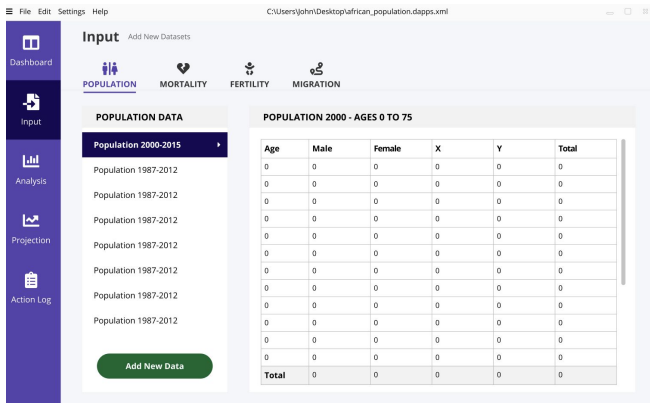
DAPPS Overview

- **What:** Demographic Analysis and Population Projection Software (DAPPS)
- **For Who:** Census Analysts, International Governments, anyone interested in demography because DAPPS is publicly available (i.e. the UN has used DAPPS).
- **Importance:** helps countries and organizations around the world develop informed public policy



Demographic Analysis & Population Projection System

Evolution



2023

Next DAPPS Version (We are here)

Main Feature: Subnational Toolkit

2021

DAPPS 4.0

UI Redesigned and upgraded to modern tech frameworks and languages like JS, HTML/CSS, and R

Credits: past fellows Jun Huang, Fardous Sadnaur, Cyrus Irani

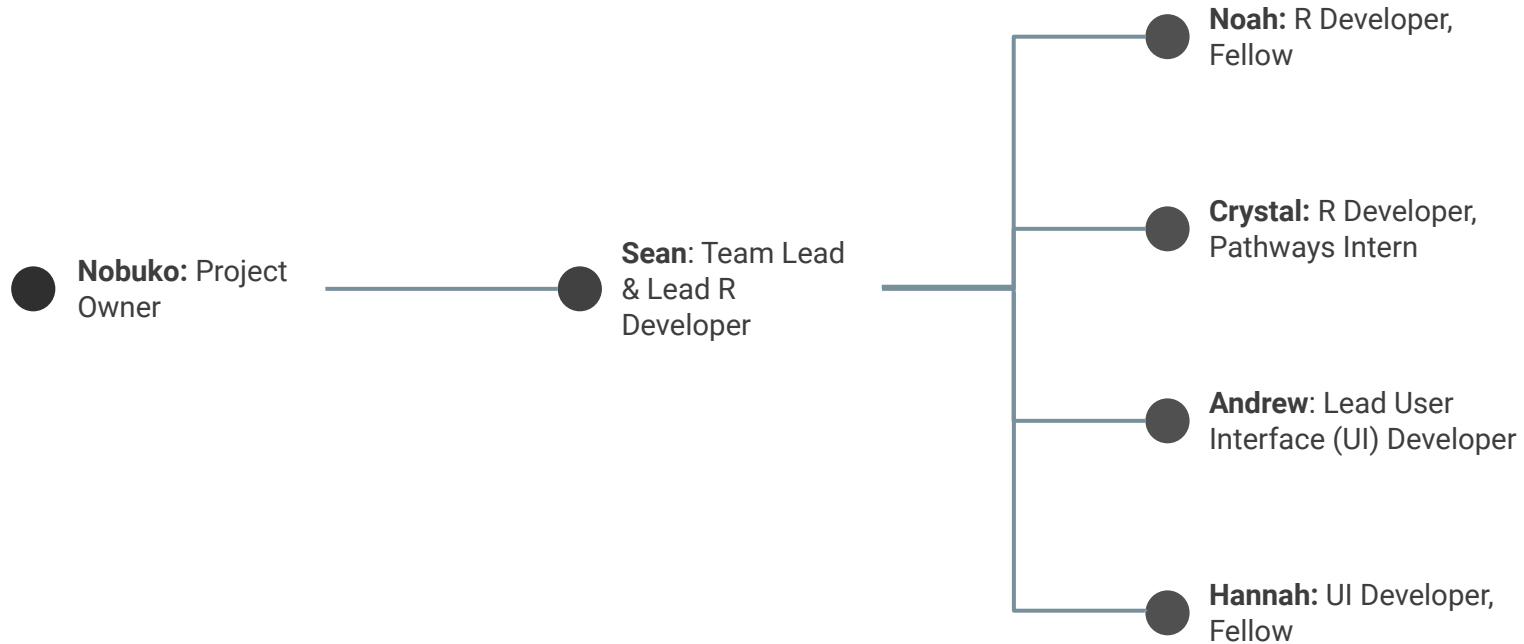
DAPPS 3.3

Original DAPPS written in programming language Fortran

Subnational Toolkit

- **Population projections:** Estimates of future population size for a specified geographic area.
 - Subnational area: An administrative region below the national level.
- **Subnational Toolkit incorporates:**
 - Cohort Component methods
 - Mathematical methods
- **Currently include:** CTBL32, LTCSRMig, MIGSUB, PROJE032, PROJTFR32, RUPCompare, RUPSTCompare, RUPSubAdj, and SALGST
- Coordinated approach to subnational projection
 - Implementing the Subnational Toolkit in DAPPS 4.0

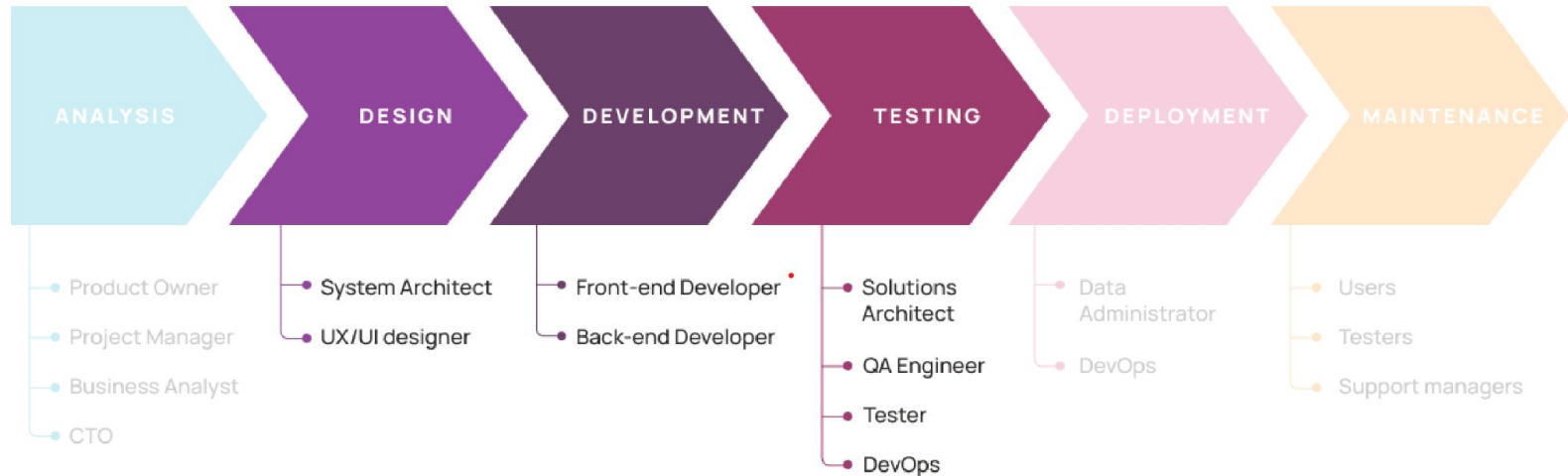
Roles and Responsibilities



Implementation

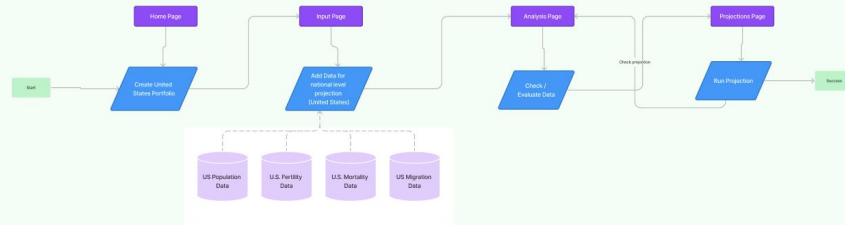
Software Development

We focus primarily on the design, development, and testing phases

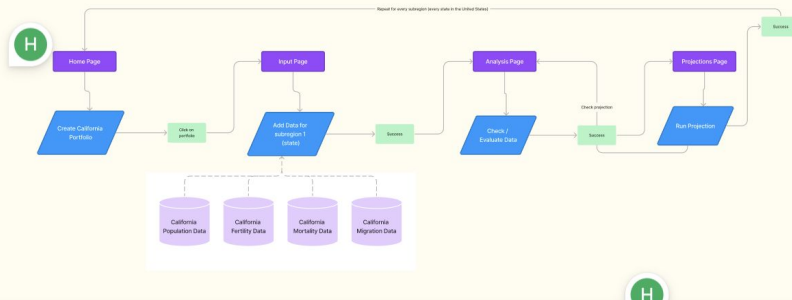


Design: User Interface (UI)

Step 1: Create United States National Projection



Step 2: Use Subnational Analysis Methods to create final adjusted values for subregions



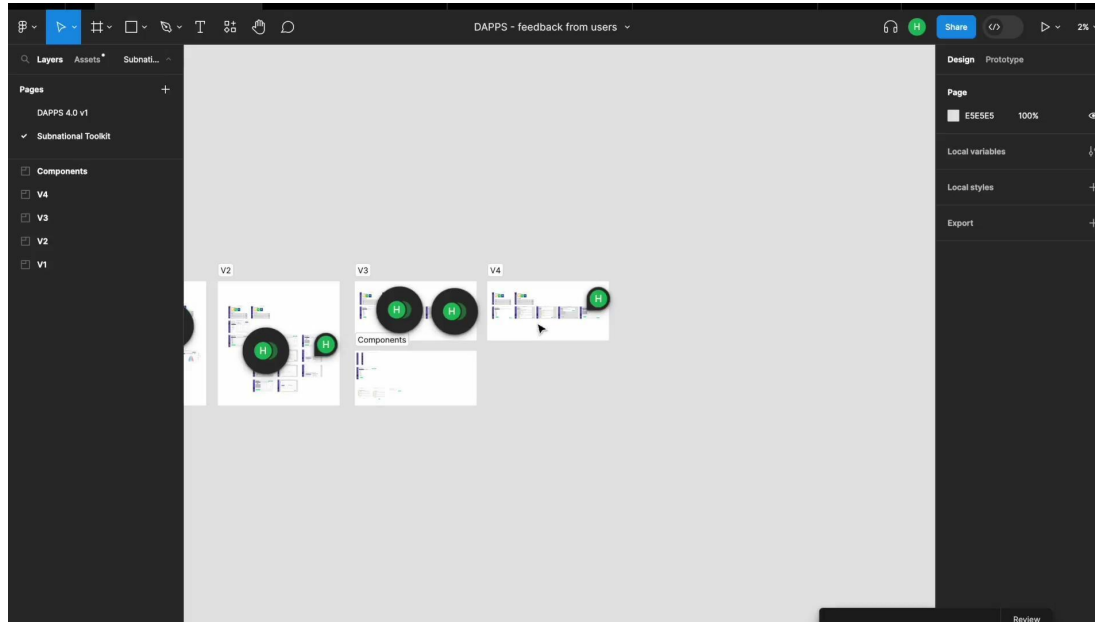
Platform Used:



Process:

1. User Flows
2. Design Iterations

Design: User Interface (UI)



[Video Here](#)

Platform Used:



Process:

1. User Flows
2. Design Iterations
 - a. Adding Subnational to the sidebar
 - b. Redesigning the home page

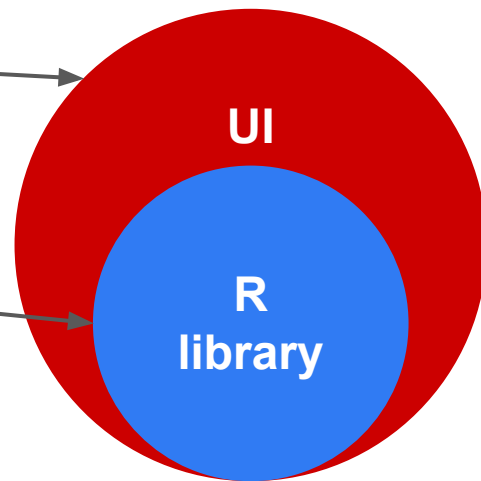
Development: System Architecture

Frontend: UI tools

- Electron: Framework for developing desktop applications
- HTML/CSS/Javascript: Popular Web development languages

Backend: R Library Development

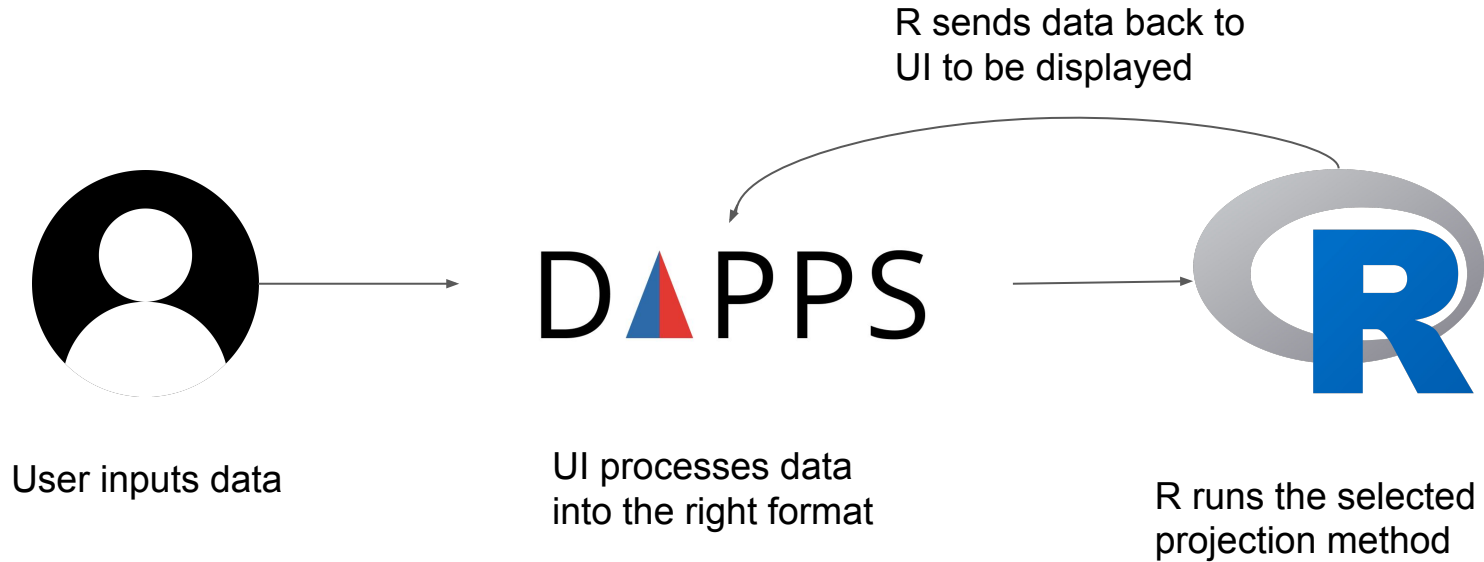
- Base R: Stable foundation with minimal dependencies
- Hierarchical list structure outputs
 - UI accessibility
 - Power users in R



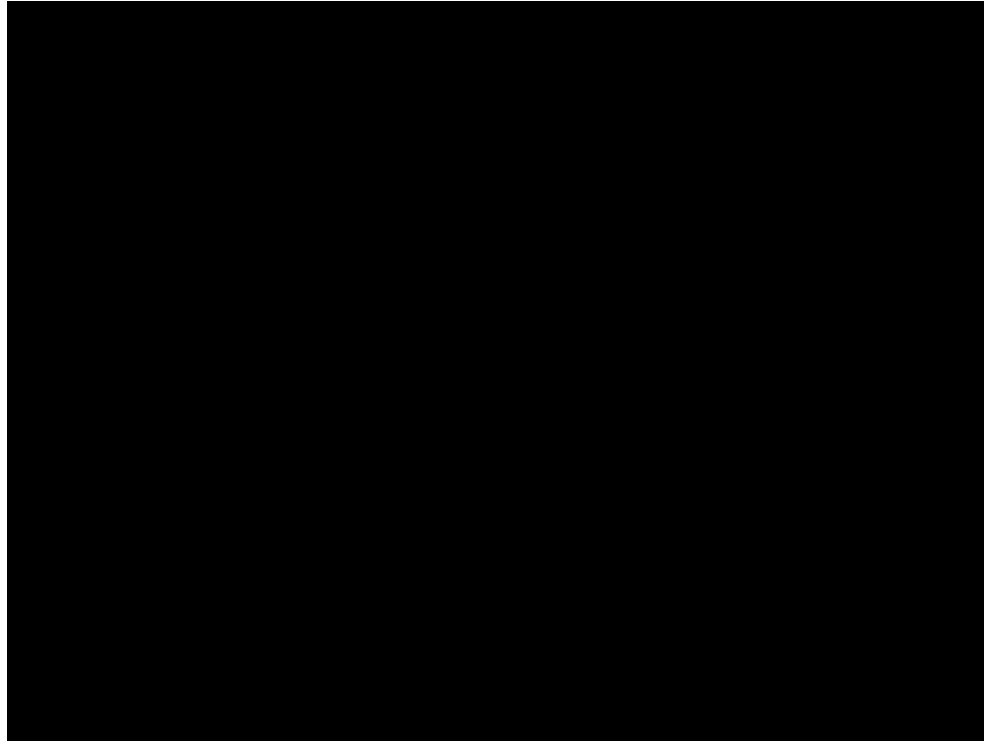
Platforms Used:



Development: System Flow



Demo: ProjTFR32



[Video Here](#)

Conclusions

- **Recommendations for the Census:**
 - Invest into design (helps a lot with project vision / definition)
 - Keep recruiting tech fellows
 - Helps with discussions and implementation
 - Shoutout to the past 3 Fellows who have worked on DAPPS!
- **Next Steps:**
 - Noah and Hannah are both extending!
 - Finishing the subnational toolkit with data visualizations

Thank You

Any Questions or Comments?

(Also, huge Shoutout to our managers Nobuko, Sean and Andrew!!)

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