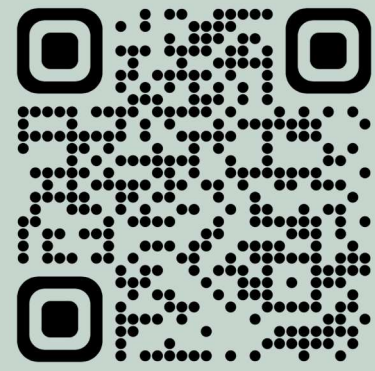


POPULATION EXPLORER



Exploring Demographic Trends through Interactive Simulation

Our interactive application allows you to visualize and explore population data across various countries.

By adjusting parameters such as retirement age, pension payout, immigration rate, birth rate, and death rate, you can simulate different demographic scenarios and observe their potential impacts on population structures.

This will help you to better understand complicated population trends and think about how global populations may change in the future.

1 Choose Challenge



Optimize variables to sustainably fund retirees.

- 1 Adjust all variables
- 2 Fixed retirement payout
- 3 Fixed retirement payout and age

2 Retirement Age



3 Pension Payout



4 Immigration Rate



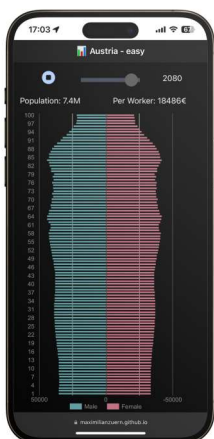
5 Birth Rate



6 Death Rate



7 Population Pyramid



Data Sources and Processing

Our application utilizes data from the **2022 Revision of World Population Prospects**, a comprehensive report by the United Nations (UN) providing population estimates and projections for 237 countries. We focused on three key aspects: births, deaths, and immigration.

For **births**, we used the UN dataset to distribute total annual births across countries, applying the natural male-to-female birth ratio of 1.05:1.

Deaths were allocated to each age cohort based on the probability of death per age, year, and country from the UN life table data.

To model **immigration**, we combined UN net migration projections with Eurostat data on immigration into EU countries by age and gender. We cleaned and normalized the Eurostat data to create a migration distribution, which was then used to distribute the UN net migration figures into each age cohort.

Webpage Development

The **frontend** was built with **ionic** and **React**, enabling us to create a responsive, mobile-first design with engaging user interfaces and smooth animations. Ionic provided a rich set of pre-styled UI components, while React facilitated efficient state management and component rendering.

For **data visualization**, we integrated **React Google Charts**, a React wrapper for the Google Charts library. This allowed us to create dynamic, interactive charts that represent demographic data in a visually appealing and easily understandable format.