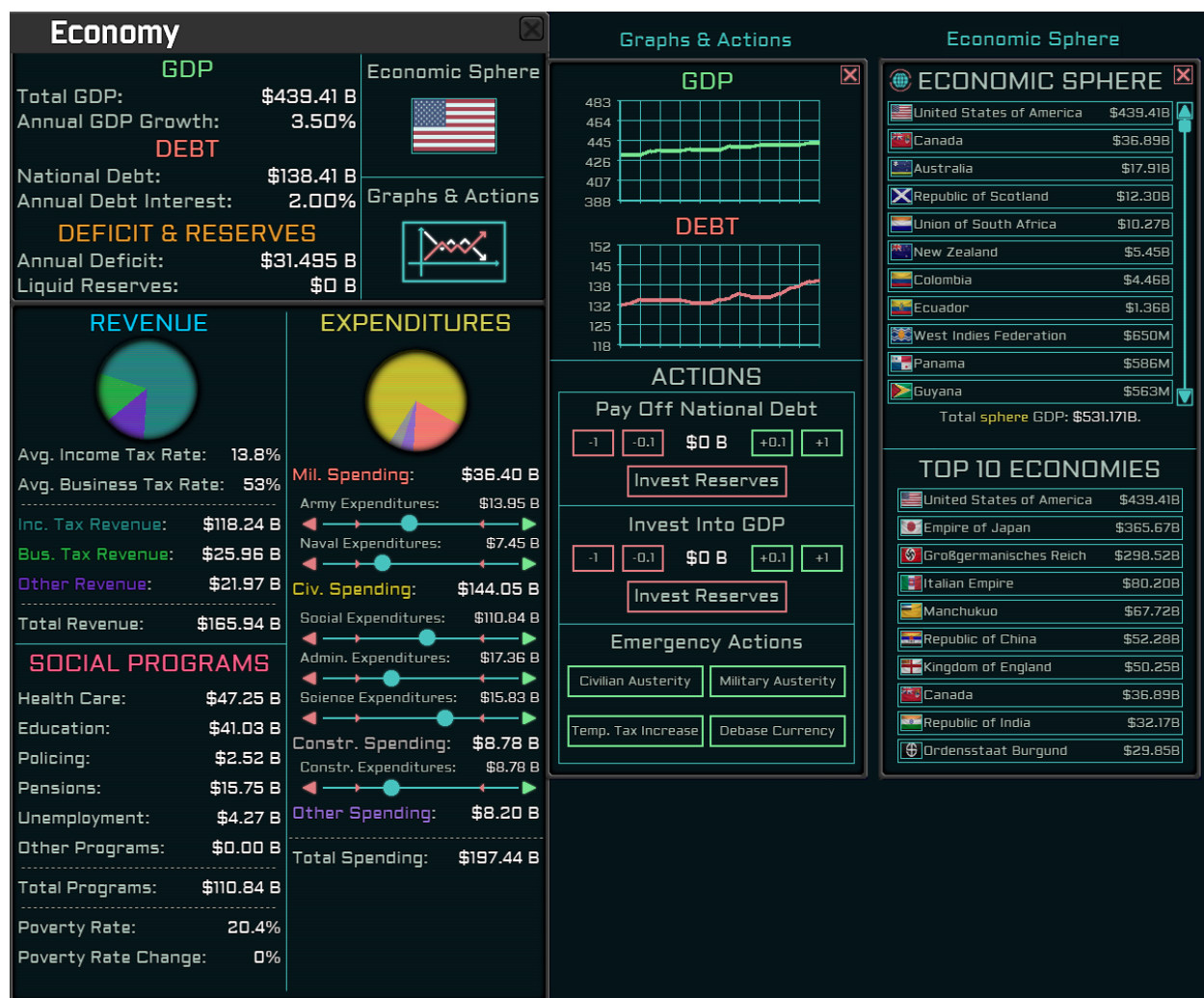


Seth Fenton - Jai Shah

### Government Budget Simulator

1. Deficit Clock
2. Government Spending on Different Sectors
3. Subsidies
4. GDP Clock
5. Scrapes real world top 10 economies data allowing you to play as any government in the last 15 years that has easily available data
6. Honestly maybe use the GPT API to search it instead of just directly scraping (4k tokens per convo should be more than enough), have it list top ten trade partners in array form
7. Give random positive and negative events
8. Print Debt To GDP
9. People happiness value in utils, calculated by taking a standard human development growth curve and adjusting it by gdp per capita using random formula I'll come up with based on vibes and testing
10. Print trade surplus (negative if deficit)
11. <https://us.abalancingact.com/federal-budget-simulator> this but with a smaller US focus and a much smaller focus on the GUI, also ours will progress over time and have a pause button, instead of just being a single thing, closer metaphor is probably like the TNO Mod of hoi 4 but no alt history and no relative focus on the Gui



List the top ten trading partners for Germany and their trade balances along with most traded along industry, in Java array format

Here is an example Java array format for the top ten trading partners of Germany, their trade balances, and the most traded industries based on recent data:

```
java
class TradePartner {
    String country;
    double tradeBalance; // In billion EUR
    String mostTradedIndustry;

    TradePartner(String country, double tradeBalance, String mostTradedIndustry) {
        this.country = country;
        this.tradeBalance = tradeBalance;
        this.mostTradedIndustry = mostTradedIndustry;
    }

    @Override
    public String toString() {
        return "Country: " + country + ", Trade Balance: " + tradeBalance + " billion EUR"
    }
}

public class GermanyTradePartners {
    public static void main(String[] args) {
        TradePartner[] partners = new TradePartner[]{
            new TradePartner("United States", 24.8, "Automobiles and automotive parts"),
            new TradePartner("China", -8.3, "Machinery, electronics, and vehicles"),
            new TradePartner("France", 5.3, "Automobiles, machinery, chemicals"),
            new TradePartner("Netherlands", 7.6, "Machinery, chemicals, electronics"),
            new TradePartner("Italy", 4.5, "Machinery, vehicles, chemicals"),
            new TradePartner("Poland", 3.2, "Machinery, chemicals, electronics"),
            new TradePartner("United Kingdom", -4.5, "Automobiles, machinery, chemicals"),
            new TradePartner("Belgium", 2.1, "Chemicals, machinery, electronics"),
            new TradePartner("Spain", 1.8, "Automobiles, machinery, chemicals"),
            new TradePartner("Austria", 3.7, "Machinery, vehicles, chemicals")
        };

        for (TradePartner partner : partners) {
            System.out.println(partner);
        }
    }
}
```

#### Explanation:

- **Trade Partner:** This class holds the country name, trade balance (in billion EUR), and the most traded industry.
- **Trade Balances:** Positive values indicate a trade surplus for Germany with the partner, and negative values indicate a trade deficit.
- **Most Traded Industry:** These industries represent the main products Germany exports or imports with that country.

You can run this code in your Java environment to display the trading data.

Let me know if you need more details or any modifications!

As you can see gpt auto creates a class we can make a subclass of a trade partners class to grab all the values,

Gpt token limit on a conversation is 4k so about 3000 words, we should need much less to preload all values

This is honestly my favorite idea ever please let us do it

## Chemical Reaction Simulator

1. Has a databank of reaction constants/characteristics and the capacity to search the web for more (specifically NIST chemical reactants database) <https://kinetics.nist.gov/kinetics/>
2. Models independent molecules directly on screen using circles of radii determined with a periodic table library (which has to exist), visual effects are probably coded in processing for ease
3. Code in gravity and most other fundamental forces that are easy to calculate, when gases are used leverage ideal gas laws so as to not have to do calculus

4. I can't think of a chemical reaction simulator off the top of my head but I'm sure one exists we can feasibly copy
5. [https://phet.colorado.edu/sims/html/reactants-products-and-leftovers/latest/reactants-products-and-leftovers\\_all.html](https://phet.colorado.edu/sims/html/reactants-products-and-leftovers/latest/reactants-products-and-leftovers_all.html)

#### Orbital Laser Simulator

1. A straight rip of nuke map, they probably use the google maps api which I believe is free to use for any project
2. Have to do slightly different math with lasers but the display can be fairly similar though likely much more simplified
3. Six size of laser options + six distance from the surface of the planet options (assume that changes something but not sure, would have to check) and the ability to customize lasers
4. Calculate damage based on gas composition of the atmosphere and let the user select gas composition and density
5. Probably much worse graphics
6. <https://nuclearsecrecy.com/nukemap/>