Seed oils, obesity and testosterone levels

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Problem Statement

- "Is there a correlation between seed oil consumption, rising obesity rates, and declining testosterone levels in men?"
- **Why It Matters:**
  - Seed oils dominate modern processed foods.
  - Parallel trends: Obesity ↗️, Testosterone ↘️.
  - Societal implications: Health risks, behavioral changes.

Methodology

- **Tools Used:**
  - React.js for the frontend.
  - Recharts for interactive graphs.
  - React-Bootstrap for UI components.
- **Data Sources:**
  - Quick history of seed oils - https://pabook.libraries.psu.edu/literary-cultural-heritage-map-pa/feature-articles/dr-ottos-amazing-oil
  - Dietary trends - https://pmc.ncbi.nlm.nih.gov/articles/PMC8805510/#s3
  - Obesity trends - https://www.niddk.nih.gov/health-information/health-statistics/overweight-obesity
  - obesity linked to heart disease - https://pmc.ncbi.nlm.nih.gov/articles/PMC3250069/
  - obesity linked to lower testosterone ion men - https://pmc.ncbi.nlm.nih.gov/articles/PMC3955331/#sec1-2

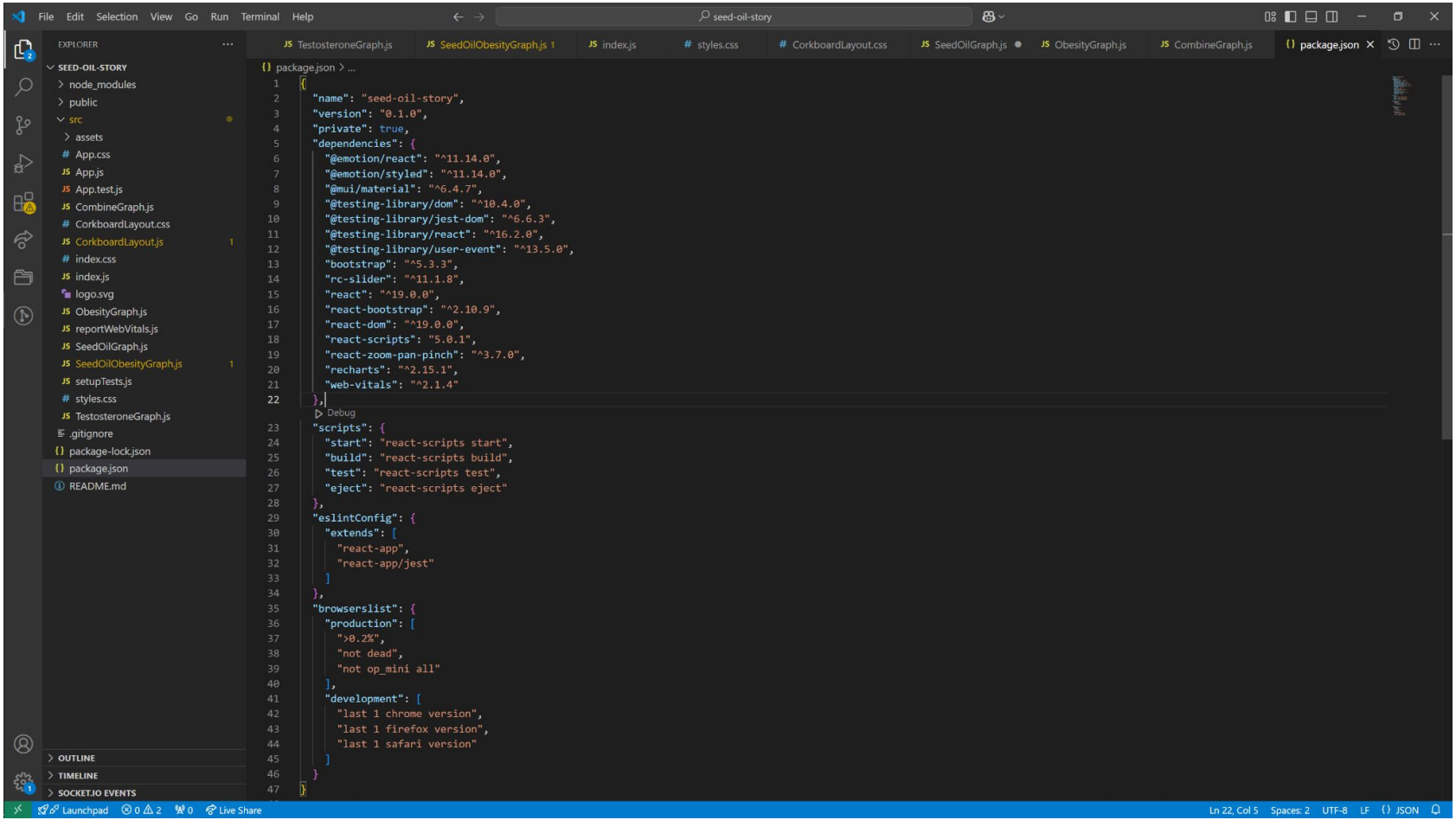
Steps:

1. Set up React app: npx create-react-app.
2. Added dependencies:
3. bash
4. Copy
5. npm install recharts, react-bootstrap, rc-slider
6. Built components:
    - SeedOilGraph.js, ObesityGraph.js, etc.
7. Integrated data and state management (useState).
8. Styled with CSS for a modern look.

IDE Setup (Next Slide):

- Folder structure, extensions (ESLint, Prettier).

IDE Setup and dependencies



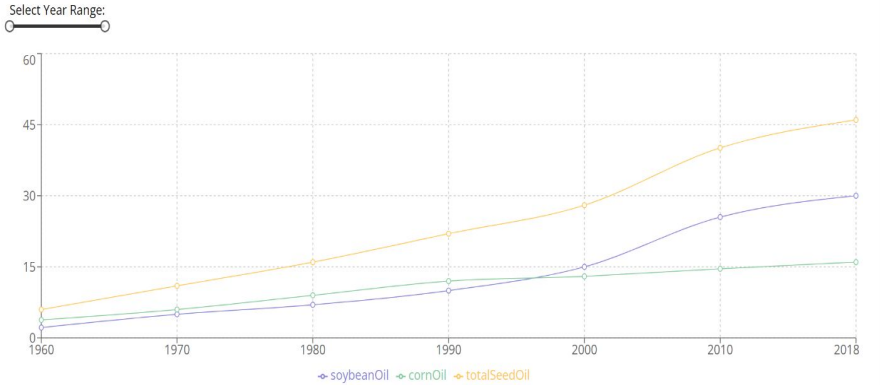
Key features

Interactive Graphs:

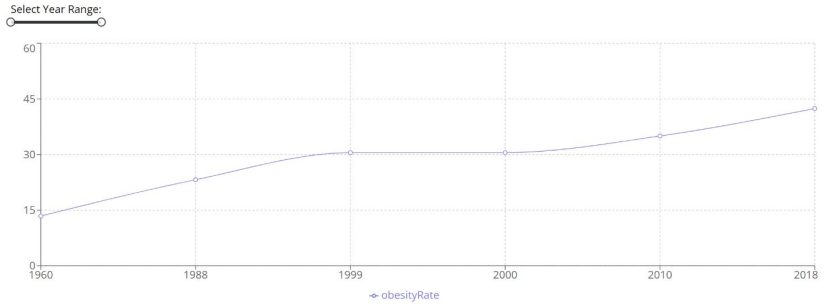
- Year-range sliders for dynamic filtering.
- Dual-axis charts for comparing metrics.
- Tooltips with detailed data points.

Example Graph (Next Slide):

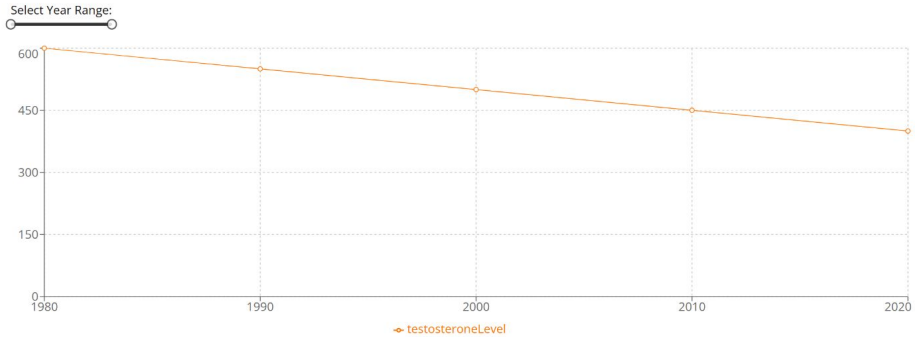
Seed Oil Consumption Over Time



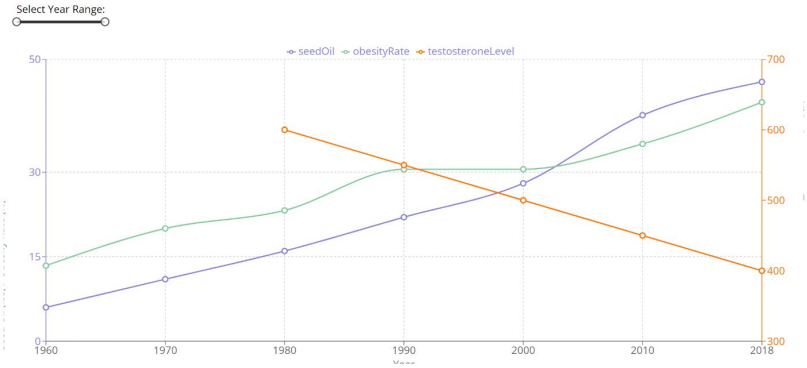
Obesity Rates Over Time



Testosterone Levels in Men Over Time



Seed Oil Consumption, Obesity Rates, and Testosterone Levels (Combined)



1. **Seed Oil Consumption** ↗️
    - 6.0 lbs/person (1960) → 46.0 lbs/person (2018).
2. **Obesity Rates** ↗️
    - 13.4% (1960) → 42.4% (2018).
3. **Testosterone Levels** ↘️
    - 600 ng/dL (1980) → 400 ng/dL (2020).

Correlation:

- Strong parallel trends suggest a potential link.

1. **Data Scaling:**
    - Solved with dual Y-axes for obesity (0–50%) vs. testosterone (300–700 ng/dL).
2. **State Management:**
    - Slider updates using useState.
3. **Tooltip Customization:**
    - Dynamic content based on hovered data points.

Code Snippet (Example):

javascript

```
// Dual-axis setup in CombinedGraph.js

<YAxis yAxisId="left" domain={[0, 50]} />

<YAxis yAxisId="right" domain={[300, 700]} />
```

Lessons Learn

- **Technical Skills:**
  - React state management.
  - Recharts for dynamic visualizations.
  - Actually use github (Broke my project and had to restart)
- **Conceptual Takeaways:**
  - Correlation ≠ causation.
  - Data storytelling requires clarity and context.