

Project Planning Phases for "Measuring the Pulse of Prosperity: Economic Freedom Analysis"

Phase 1: Pre-Planning & Research (Week 1)

- Stakeholder Alignment**
 - Define target audience (economists, policymakers, researchers).
 - Finalize core objectives (correlation analysis, regional trends).
- Data Collection & Validation**
 - Acquire datasets (Heritage Foundation, World Bank, IMF).
 - Audit data quality (missing values, outliers).
- Competitive Analysis**
 - Study existing tools (Heritage Foundation's Index, World Bank Dashboards).
- Tech Stack Selection**
 - Confirm frontend (React + D3.js) vs. backend (Node/PostgreSQL if needed).

Deliverables:

- Project charter document.
- Cleaned dataset (CSV/JSON).
- Tech stack decision log.

Phase 2: Design & Prototyping (Weeks 2–3)

- UX/UI Design**
 - Wireframe dashboard layout (Figma/Adobe XD).

- Define interactions (filters, hover tooltips).
2. **Data Pipeline Setup**
 - Python script to clean/transform data (**pandas**).
 - Store processed data in JSON for frontend.
 3. **Prototype Development**
 - Build MVP with:
 - Leaflet.js world map.
 - 1 scatter plot (e.g., **Income Tax** vs. **GDP**).
 4. **User Feedback Loop**
 - Present prototype to stakeholders for early input.

Deliverables:

- Approved wireframes.
- Data processing scripts.
- Functional prototype (hosted on Netlify).

Phase 3: Core Development (Weeks 4–6)

1. **Frontend Implementation**
 - Develop dashboard components:
 - Interactive map (color-coded by **2022 Score**).
 - Radar chart (freedom components breakdown).
 - Sortable data table.
2. **Backend (If Applicable)**
 - API endpoints for dynamic queries (Node.js + Express).
 - Database setup (PostgreSQL for historical data).
3. **Feature Integration**
 - Add filters (**Region**, **Income Level**).
 - PDF export functionality (**html2pdf.js**).

Deliverables:

- Feature-complete dashboard.
- API docs (if backend used).

Phase 4: Testing & Validation (Week 7)

1. Functional Testing

- Verify all filters/charts work as expected.
- Test PDF exports for formatting errors.

2. Data Accuracy

- Cross-check visualizations against raw data (Jupyter Notebook).

3. Performance

- Optimize large datasets for fast rendering.
- Lighthouse audit for mobile responsiveness.

Deliverables:

- Test reports (Jest/Playwright).
- Performance benchmarks.

Phase 5: Deployment & Documentation (Week 8)

1. Deployment

- Host frontend on Netlify/Vercel.
- Backend on Render/AWS (if applicable).

2. Documentation

- GitHub README (setup instructions, data sources).
- User guide (how to interpret charts).

3. Stakeholder Training

- Demo session for end-users.

Deliverables:

- Live dashboard URL.
- Technical + user documentation.

Phase 6: Maintenance & Scaling (Ongoing)

1. Updates

- Refresh data annually (automate ETL pipeline).

2. Enhancements

- Add time-series trends (slider for years).
- Dark mode, accessibility improvements.

Gantt Chart Overview

mermaid

RunCopy code

```
1gantt
2    title Project Timeline
3    dateFormat YYYY-MM-DD
4    section Core Phases
5    Pre-Planning      :done, des1, 2023-10-01, 7d
6    Design             :active, des2, 2023-10-08, 14d
7    Development       : des3, after des2, 21d
8    Testing            : des4, after des3, 7d
9    Deployment        : des5, after des4, 7d
```