The Price of Living: A Visual Journey Through Inflation

Department of Electronics, Telecommunications and Informatics (DETI)
University of Aveiro
Information Visualisation
2025/2026 – 1st Semester
Practical Assignment – Application for the Visual Exploration of a Data Set

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1. Introduction

"The Price of Living: A Visual Journey Through Inflation" is a data visualization project that explores the phenomenon of inflation in Portugal.
The goal is to help users understand how inflation has evolved over time and how it affects the cost of living, wages, housing, and income inequality.

The application aims to communicate this information through **interactive and intuitive visualizations**, making complex economic data more accessible and engaging.

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2. Objectives

- Visually explore inflation trends in Portugal over recent years.
- Compare price increases with wage evolution.
- Understand how inflation affects income distribution and inequality.
- Provide an interactive tool that enables users to **filter, explore, and interpret** the data through visual means.

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3. Data

The project uses publicly available datasets from **PORDATA** and **Eurostat**, including:

- Consumer Price Index (CPI) by goods and services
- Harmonised Index of Consumer Prices (HICP)
- National minimum wage
- Income share of the poorest 40%
- Total and core inflation rates

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4. Target Users and Context

This application is designed for:

- Students and educators seeking to explore and understand inflation data.
- Policy analysts and decision-makers studying economic inequality.

- The general public interested in the evolution of living costs in Portugal.

The visualization is web-based, encouraging **exploration and interaction** through clear, accessible design.

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5. Main Questions

The application helps users visually answer key questions such as:

1. How much did inflation increase overall and by category?
2. Did wages keep up with rising prices?
3. How does Portugal compare with the European Union average?
4. Did inflation worsen inequality or affect low-income groups the most?

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6. Visualization Design

The visualizations are implemented using **D3.js**, following a **human-centred, iterative design process**.

Planned Views:

1. **Overview of Inflation Over Time** – showing overall inflation and core inflation trends.
2. **Price vs. Wage Comparison** – visualizing the gap between inflation and wage growth.
3. **Income Distribution Impact** – highlighting how inflation affects income inequality and the poorest 40% of the population.

Each visualization supports **interactive exploration**, allowing users to filter categories, hover for details, and compare across time periods.

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7. Design Process and Iterations

First Iteration:

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- **Data and user analysis**
- **Main questions definition**
- **Selection of visualization techniques** (line charts, bar charts, and scatter plots)
- **Development of a low-fidelity prototype**
- **Usability testing** with classmates

Second Iteration:

- Integration of user feedback
- Implementation of the prototype using **D3.js**
- **Heuristic Evaluation** and **user testing** of the final prototype

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8. Tools and Libraries

- **D3.js** – for interactive data visualization
- **HTML / CSS / JavaScript** – for web interface development
- **PorData & Eurostat APIs** – for data sourcing

All non-original code or external libraries are clearly referenced in the code and documentation.

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9. Installation and Execution

1. Clone or download the repository.
2. Install dependencies (if any) via `npm install` or as indicated in the project folder.
3. Open the main HTML file (`index.html`) in a web browser.
4. The visualizations will be generated dynamically from the included dataset(s).

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10. Team

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11. Development Progress

📅 Timeline

Milestone	Date	Status
First Iteration Presentation	20/10/2025	✅ Complete
Low-fidelity Prototypes	20/10/2025	✅ Complete
Project Structure Setup	03/11/2025	✅ Complete
Data Collection	In Progress	🚧
D3.js Implementation	In Progress	🚧
User Testing (Iteration 2)	Pending	⏳
Final Presentation	24/11/2025	⏳

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✅ Completed

- ☑ Data and phenomenon analysis
- ☑ Target users and context definition
- ☑ Main questions formulation
- ☑ Low-fidelity prototype design
- ☑ Project folder structure
- ☑ HTML/CSS/JS basic setup
- ☑ D3.js integration
- ☑ First test visualization (Inflation Timeline)

🚧 In Progress

- [ ] Real data collection from Pordata
- [ ] Implementation of remaining visualizations
- [ ] Interactive features (tooltips, filters, brushing)

⏳ Upcoming

- [ ] Heuristic evaluation
- [ ] User testing with representative users
- [ ] Final presentation preparation
- [ ] Demo video production

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12. How to Run

Quick Start

```
# Clone the repository
git clone https://github.com/hujuc/The-Price-of-Living-VI.git

# Navigate to project folder
cd The-Price-of-Living-VI

# Start local server (Python 3)
python3 -m http.server 8000

# Open browser at http://localhost:8000
```

Alternative (Direct Open)

Simply open `index.html` in your browser (Chrome, Firefox, Safari, Edge).

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Project Structure

```
The-Price-of-Living-VI/
├── index.html               # Main page
├── css/styles.css          # Styles
├── src/main.js            # D3.js visualizations
├── data/                  # Datasets (to be collected)
├── prototypes/           # Low-fidelity prototypes
├── evaluation/           # Usability test results
└── docs/                # Documentation & presentations
```

For detailed testing instructions, see TESTING.md.

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