

Predicto – Cost, Time, and Resource Prediction System

Overview

Predicto is a web-based estimation tool that helps users calculate the cost, time, and resources required for a project. It does not use machine learning; instead, it applies logical formulas and existing data to generate accurate and fast results.

Workflow

The Predicto system follows a simple 5-step workflow:

- 1. User Input:** The user enters project details such as project name, scope, and expected duration.
- 2. Data Processing:** The system validates inputs and stores them in the database.
- 3. Calculation Logic:** Formulas are applied in the backend (Spring Boot) to calculate cost, time, and resource needs.
- 4. Display Results:** The frontend (Angular) displays the calculated results in an easy-to-read format.
- 5. PDF Generation:** The results are exported as a formatted PDF report for download.

Modules and Submodules

1. User Module

Manages user access and data entry.

- **Login / Signup:** Allows secure access to the system.
- **Input Form:** Collects project details from the user.

2. Data Processing Module

Handles input validation and organizes data.

- **Validation:** Ensures all required details are filled correctly.
- **Data Handling:** Stores data safely in the MySQL database.

3. Calculation Module

Applies predefined formulas to calculate estimates.

- **Cost Calculation:** Uses mathematical formulas to find total cost.
- **Time Estimation:** Calculates duration based on given inputs.
- **Resource Estimation:** Estimates required manpower and tools.

4. Report Module

Creates and exports result summaries.

- **Report Generation:** Prepares calculated results.
- **PDF Export:** Generates a downloadable PDF report.

5. Admin Module

Used by admins to maintain the system.

- **User Management:** Adds or removes users.
- **Project Data Management:** Updates project records in the database.

Technologies Used

Layer	Technology
Frontend	Angular (HTML, CSS, TypeScript, Angular Material)
Backend	Spring Boot (Java)
Database	MySQL
PDF Generation	iText / ReportLab
Version Control	Git & GitHub

Example Calculation

Example:

Input: Base cost per day = ₦10,000, Duration = 7 days, Workers = 5

Calculation:

- Total Cost = $10,000 \times 7 = ₦70,000$
- Total Man-Hours = $5 \times 7 \times 8 = 280$ hours

Output:

- Cost: ₦70,000
- Time: 7 days
- Resources: 5 people

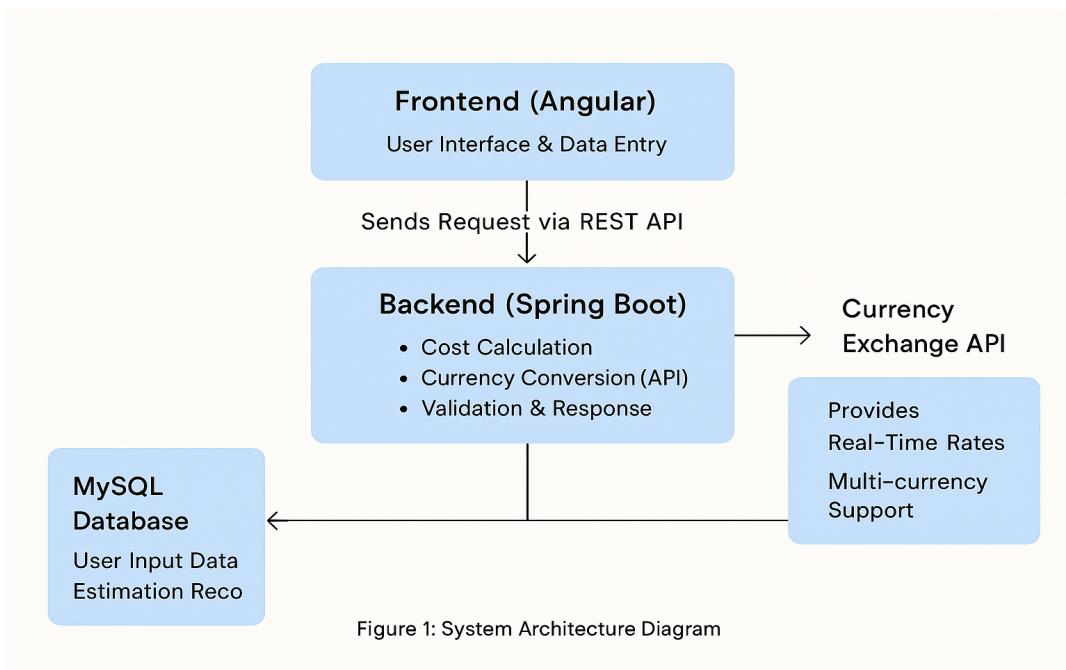
Advantages

- Easy to use and understand.
- Fast and accurate results.
- Reduces manual calculation errors.
- Generates professional PDF reports.
- Helps in better project planning.

Future Scope

- Add charts and graphs for better visualization.
- Include real-time data updates.
- Add cloud storage for multi-user access.
- Integrate AI-based predictions in the future.

Figure 1: System Architecture Diagram



Conclusion

Predicto is a user-friendly web tool that helps users estimate project cost, time, and resources easily. By using logical formulas instead of manual calculations, it saves time and increases accuracy, making it a perfect solution for effective project planning.

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