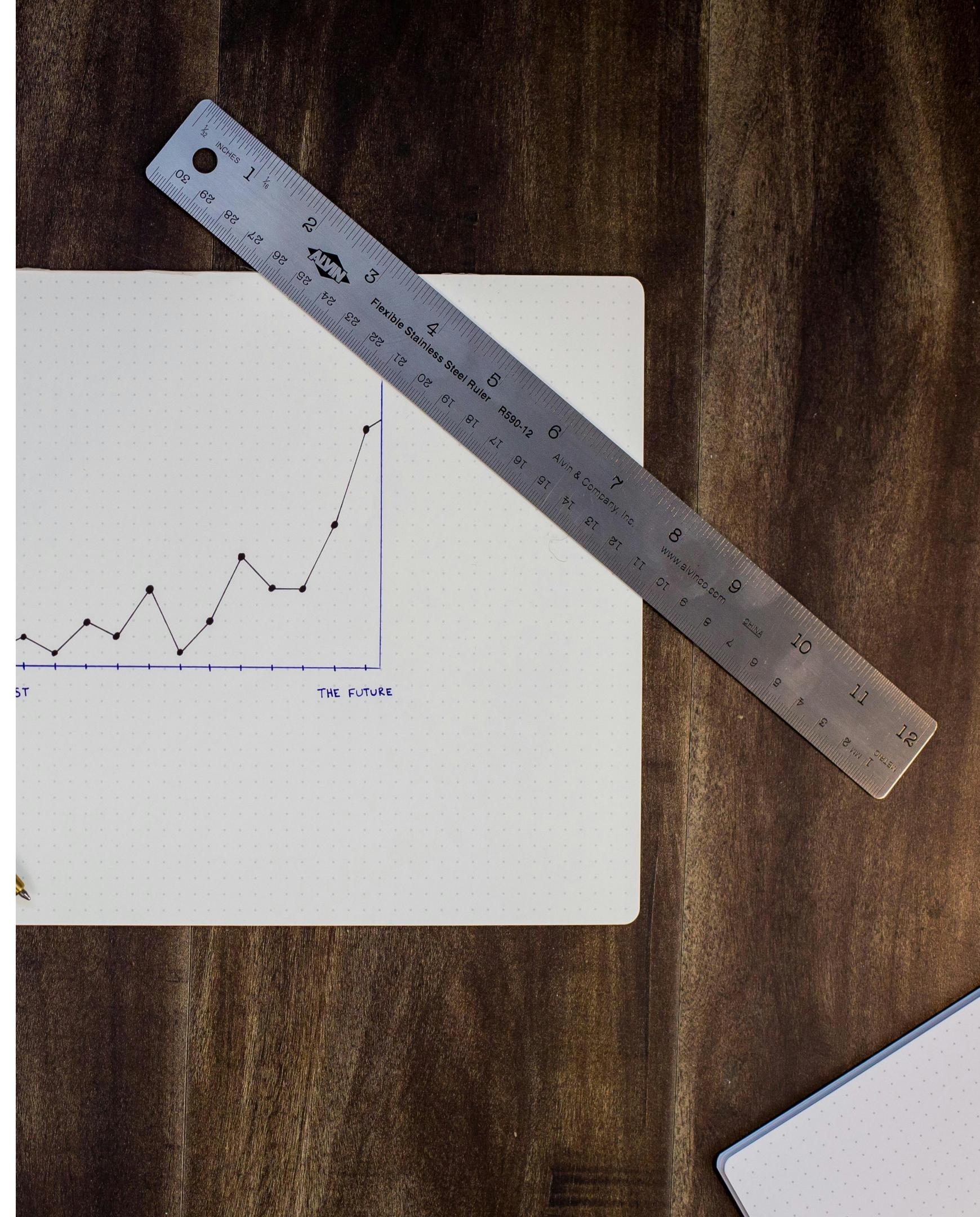




BRUNO GAMA

Project Budget Tracker

From Complexity to Clarity: Your Budget Tracker
in Action



Topics

- C Challenges for budget tracking
- O Overview
- S Scope Mapper
- I Implementation Plan
- A Application Presentation

Challenges of budget tracking

Managing project budgets and expenses efficiently involves navigating several key challenges that can hinder productivity and decision-making.

The application is designed to address these hurdles and provide a more seamless experience for project managers. Below are the main challenges we aim to overcome:



Activity Management

Managing contract, financial, and logistical data from various sources



Manual Effort

High time investment and susceptibility to errors in manual analysis



Communication Gaps

Limited ability to interact effectively with other project managers in real-time



Decision Making Barriers

Lack of holistic visualization impedes strategic insights



Overview

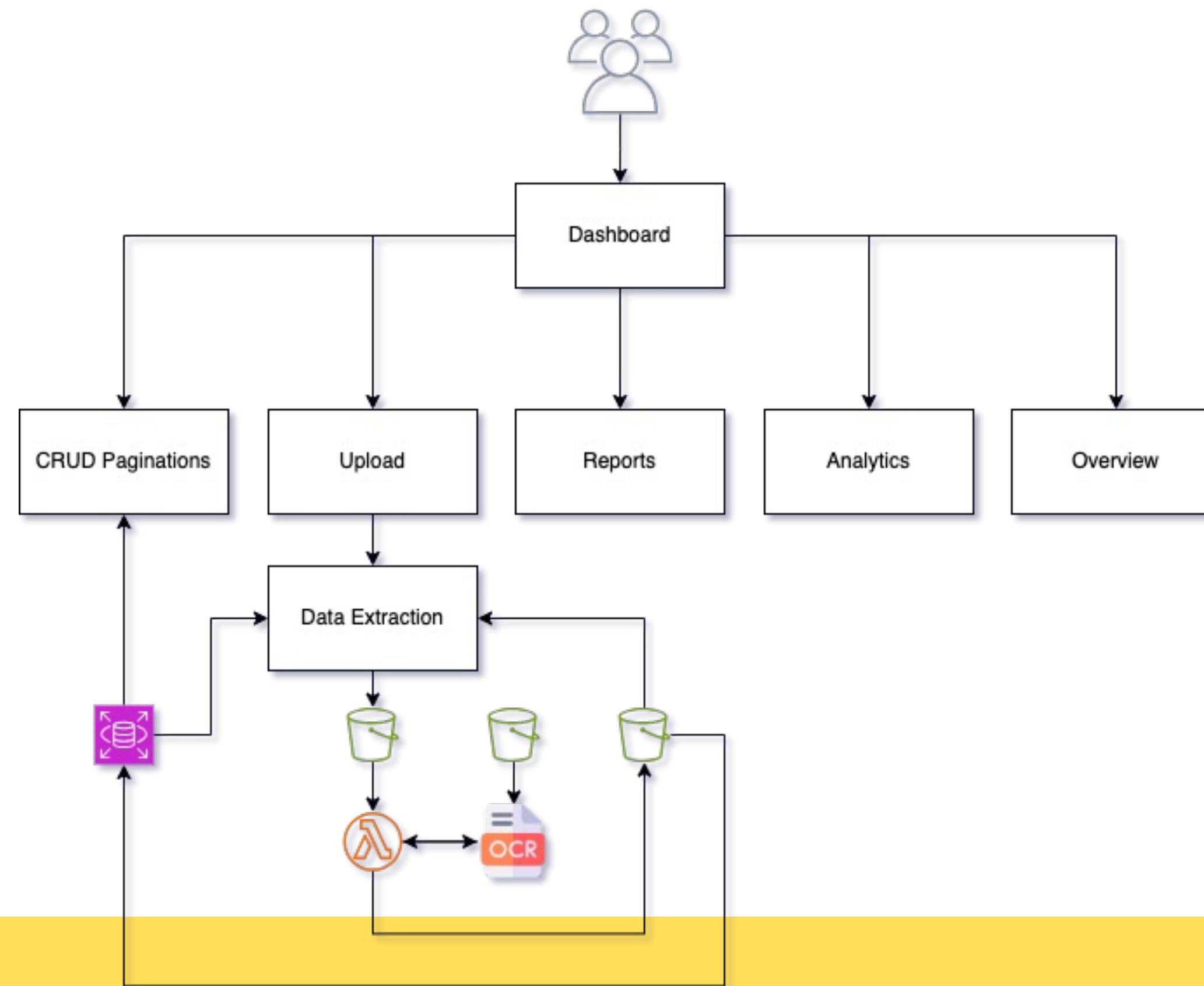
Budget tracking in large-scale projects is often fragmented, requiring data from multiple sources and formats (PDFs, CSVs, etc.). This can lead to inefficiencies, data loss, and delayed decision-making.

The application addresses these challenges by providing an integrated platform that simplifies tracking, visualization, and interpretation of project budgets and expenses in real-time. The goal is to empower project managers with clear, actionable insights and improve transparency across teams by consolidating data into a user-friendly interface.

KEY FEATURES

- **Budget and Expense Tracking:** View and categorize budgets and expenses for comprehensive financial oversight.
- **Date Range Filtering:** Analyse transactions by customizable date ranges to focus on specific reporting periods.
- **Multi-view Insights:** Switch seamlessly between query answers, tabular data, and document layouts to suit various reporting needs.
- **Document data extraction:** Inline PDF report viewer for seamless context alongside CSV data insights with data extraction that can be uploaded afterwards.

Scope Mapper



USER INTERFACE

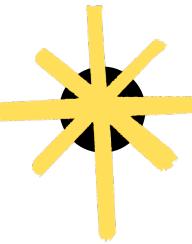
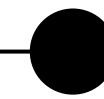
- Built using **Next.js** for rendering and routing pages dynamically.
- **Tailwind CSS** provides responsive and utility-based styling.
- **Shadcn UI components** are used for consistent and pre-styled UI elements (buttons, dropdowns, tables, etc.).

AWS INFRASTRUCTURE

- Leveraging **Terraform** for automated infrastructure deployment.
- Utilizing **OCR System** for efficient data extraction and streamlined data uploads.

Implementation plan

To address the challenge of analysing and managing complex contract data efficiently, I went with the following three-phase approach designed to deliver automation, integration, and user-friendly visualization:



Data Analysis

- Identify possible types of reports and data points needed for project budget tracking.
- Analyse the structure of the data to design parsing logic.
- Outline key functionalities such as file uploads, tab views and budget insights.

Application Development

- Develop the application using **Next.js** for interactive pages and responsive components with **Tailwind CSS**.
- Implement file handling and data parsing using **JavaScript** and **Terraform** to extract relevant information.
- Add support for dynamic data views and seamless document previews.

Infrastructure

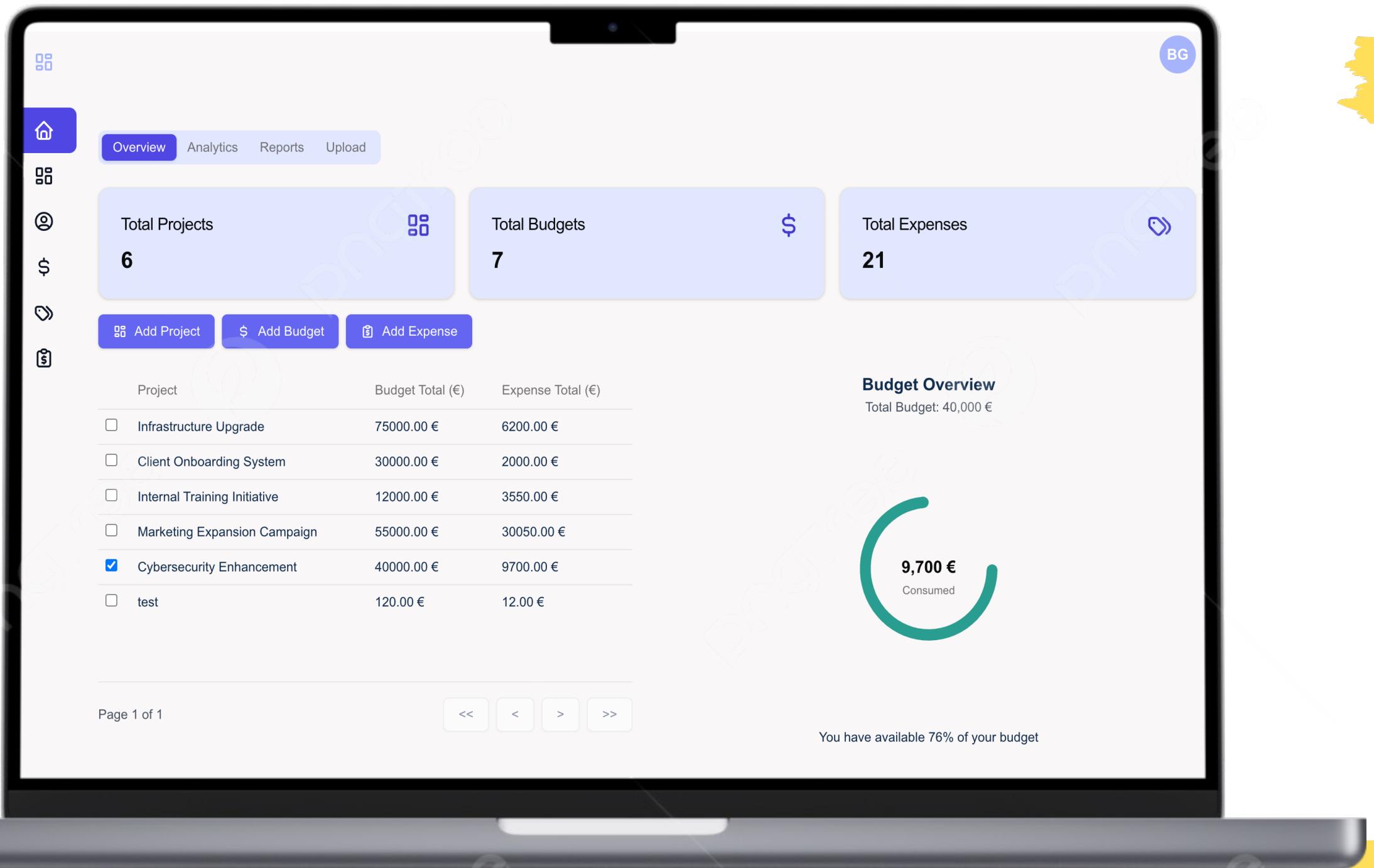
- Utilize **Terraform** for infrastructure provisioning to create scalable and reliable environments.
- Integrate **AWS Textract** for automated extraction of text from documents.
- Ensure seamless data flow and accessibility for live updates during file uploads.



Outcome

Transforming data complexity into clear
insights

Budget platform



KEY FEATURES

- **Budget Tracking:** Allow project managers to input and categorize their project budget and expenses.
- **Date Range Visualization:** Provide a way for users to visualize their transactions over a selected date range.
- **Categorization:** Enable users to categorize their expenses (e.g., consultancy services, licenses, operations, business travels, etc.).

Overview Dashboard

KEY IDEAS

Overview Analytics Reports Upload

Total Projects Total Budgets Total Expenses

6 \$7 21

Add Project Add Budget Add Expense

Project	Budget Total (€)	Expense Total (€)
Infrastructure Upgrade	75000.00 €	6200.00 €
Client Onboarding System	30000.00 €	2000.00 €
Internal Training Initiative	12000.00 €	3550.00 €
Marketing Expansion Campaign	55000.00 €	30050.00 €
Cybersecurity Enhancement	40000.00 €	9700.00 €
test	120.00 €	12.00 €

Budget Overview
Total Budget: 12,000 €



3,550 € Consumed

You have available 70% of your budget

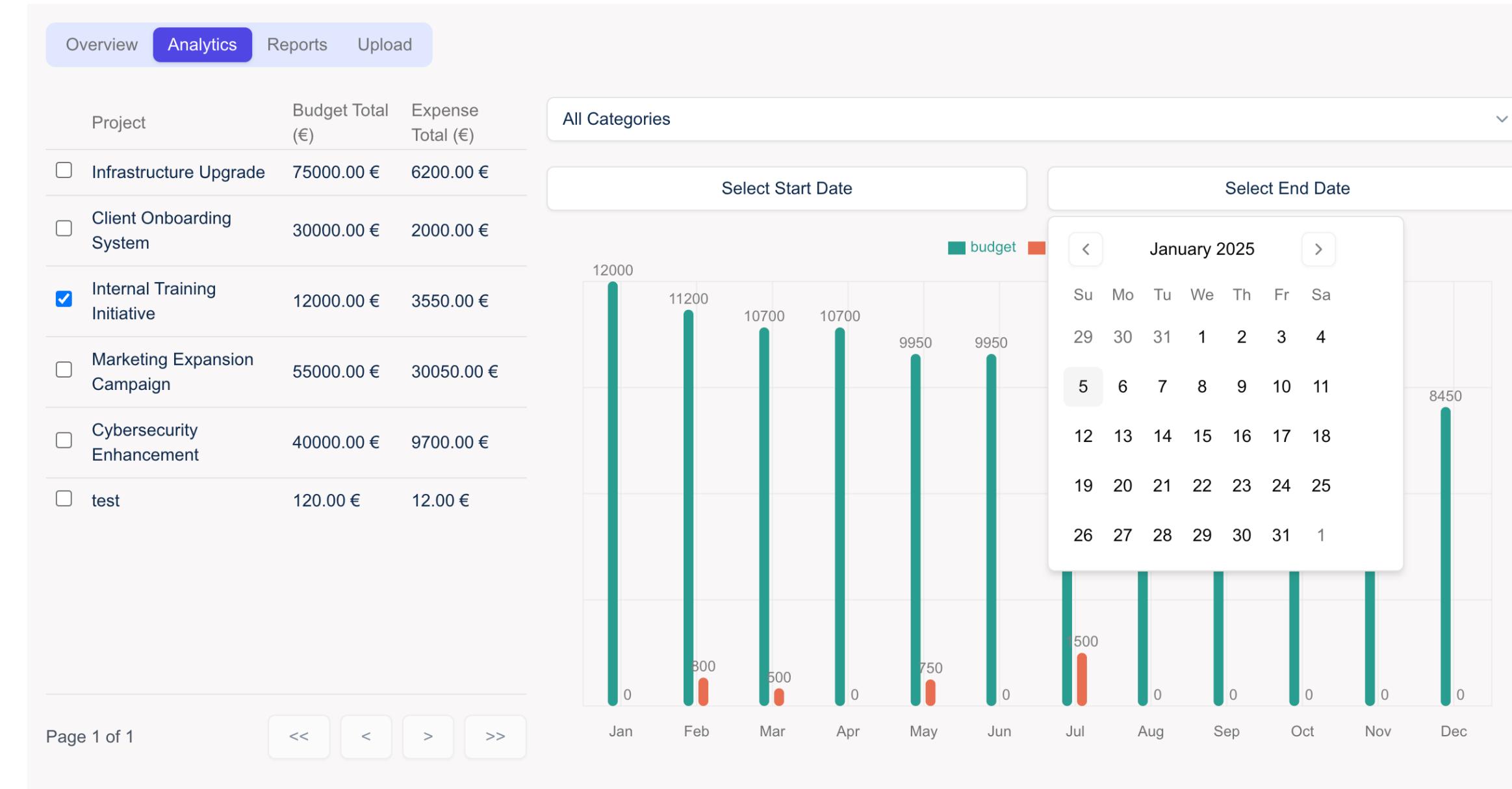
Page 1 of 1 << < > >>

- Quick Summary:** Displays the total count of projects, budgets, and expenses at a glance.
- Project Overview Table:** Provides a paginated view of all existing projects for easy navigation.
- Quick Actions:** Enables swift creation of new projects, budgets, and expenses with dedicated buttons.
- Visual Insights:** Presents graphical data for quick comprehension of a selected project's total budget, consumed amounts, and percentage usage.

Analytics Dashboard

KEY IDEAS

- Project Overview Table:** Display a list of projects with their corresponding budget totals and expense totals.
- Date Range Filter:** Allows the manager to filter budget and expense data by selecting a start and end date using a calendar.
- Category Selector:** Provides the option to filter transactions by categories for more focused analysis.
- Graphical Visualization:** Displays a bar chart to compare budget allocation and expenses over time for the selected project, offering quick insights into financial trends.
- Project Selection:** Enables users to select individual projects from the list to view specific budget and expense details.



Report Dashboard

Overview Analytics Reports **Reports** Upload

Project	Budget Total (€)	Expense Total (€)
Infrastructure Upgrade	75000.00 €	6200.00 €
Client Onboarding System	30000.00 €	2000.00 €
<input checked="" type="checkbox"/> Internal Training Initiative	12000.00 €	3550.00 €
Marketing Expansion Campaign	55000.00 €	30050.00 €
Cybersecurity Enhancement	40000.00 €	9700.00 €
test	120.00 €	12.00 €

All Categories
Select Start Date Select End Date
Reset Filters

Budget Details

Employee Workshops	12,000 €
Category: Employee Training	

Expense Details

Description: Conference room rental for training	800.00 €	
Budget: Employee Workshops	Date: 02/02/2025	Category: Employee Training
Description: User training platform subscription	500.00 €	
Budget: Employee Workshops	Date: 20/03/2025	Category: Employee Training

Page 1 of 1 << < > >>

KEY IDEAS

- Project Overview Table:** Displays a list of projects with their corresponding budget and expense totals. Users can select a specific project to view its details.
- Filter Options:**
 - Category Selector:** Filter budget and expense records by categories to refine the report.
 - Date Range Picker:** Allows selection of a specific time frame to display relevant budget and expense records.
 - Reset Filters Button:** Quickly resets all selected filters to the default view.
- Budget Details:**
 - Displays the selected budget's name, category, and allocated amount.
- Expense Details:**
 - Shows a detailed breakdown of expenses related to the selected budget, including descriptions, budget association, expense amounts, dates, and categories for clarity.

Upload Dashboard

KEY IDEAS

- Document Preview Section:** Displays the uploaded document in an inline PDF viewer for real-time reference. Users can scroll through the document to get contextual information alongside the extracted data.
- File Selection Dropdown:** Allows users to select previously uploaded reports for review. Provides flexibility to navigate between different project-related documents.
- Tabs for Data Views:**
 - Query Tab:** Provides information such as the query text, answer, and confidence score, making it easy to verify extracted insights.
 - Table Tab:** Extracts tabular data directly from the PDF document into structured table format.
 - Layout Tab:** Presents detailed layout information, such as headers, sections, and text content positions within the document.
- Automatic Data Population:** After extracting data through AWS Textract, the page enables automated insertion of relevant details into the database for seamless budget and expense tracking.
- Purpose:** This page streamlines the review and validation of extracted data, providing a single-pane-of-glass view for document insights. It helps reduce manual input and errors, ensuring faster data processing and improved workflow efficiency.

The screenshot displays the 'Upload' dashboard interface. At the top, there's a navigation bar with 'Overview', 'Analytics', 'Reports', and a purple 'Upload' button. Below the navigation is a section titled 'Upload and View File'. This section includes a 'Document Preview' area showing a PDF of a 'BUDGET TRACKING REPORT' for January 2025, with a table of administered accounts. To the right of the preview is a 'Budget Tracking Report' dropdown menu. Further down, there are three tabs: 'Query' (selected), 'Table', and 'Layout'. The 'Query' tab shows a table of extracted data with columns for Page number, Query, Answer, Alias, and Confidence Score % (Query answer). The data includes questions about budget periods, allocation for client onboarding, and expenses for cybersecurity enhancement, along with their answers and confidence scores.

Page number	Query	Answer	Alias	Confidence Score % (Query answer)
1	Which period is the report?	January 2025		88.00000000
1	What is the Budget Allocation for Client Onboarding System?	30,000.00		99.00000000
1	What is the Expenses for Cybersecurity Enhancement?	9,700.00		99.00000000

Data Exportation

Key Value

```
keyValues.csv queryAnswers.csv rawText.txt table-1.csv  
1 'Page number','Key','Value','Confidence Score % (Key)','Confidence Score % (Value)  
2 "'1","'1. To (Name and address of employer)"","'Alejandro Rosalez 123 Any Street, Any Town, USA","'99.72560120","'99.91876221"  
3 "'1","'2. From (Name and address of lender)"","'Carlos Salazar 100 Main Street, Anytown, USA","'99.76187134","'99.97045898"  
4 "'1","'3. Signature of Lender","'Carlos Salazar","'99.69421387","'96.17017365"  
5 "'1","'4. Title","'Project Manager","'99.70014954","'99.96837616"
```

Direct SQL

```
keyValues.csv queryAnswers.csv rawText.txt table-1.csv  
1 "",,"Personnel Only",  
2 "",,"10",  
3 "",,"Monthly Amount",  
4 "",,"$ 520",  
5 "",,"$ 162",  
6 "",,"$ 756",  
7 "",,"$ 452",
```

Raw Text

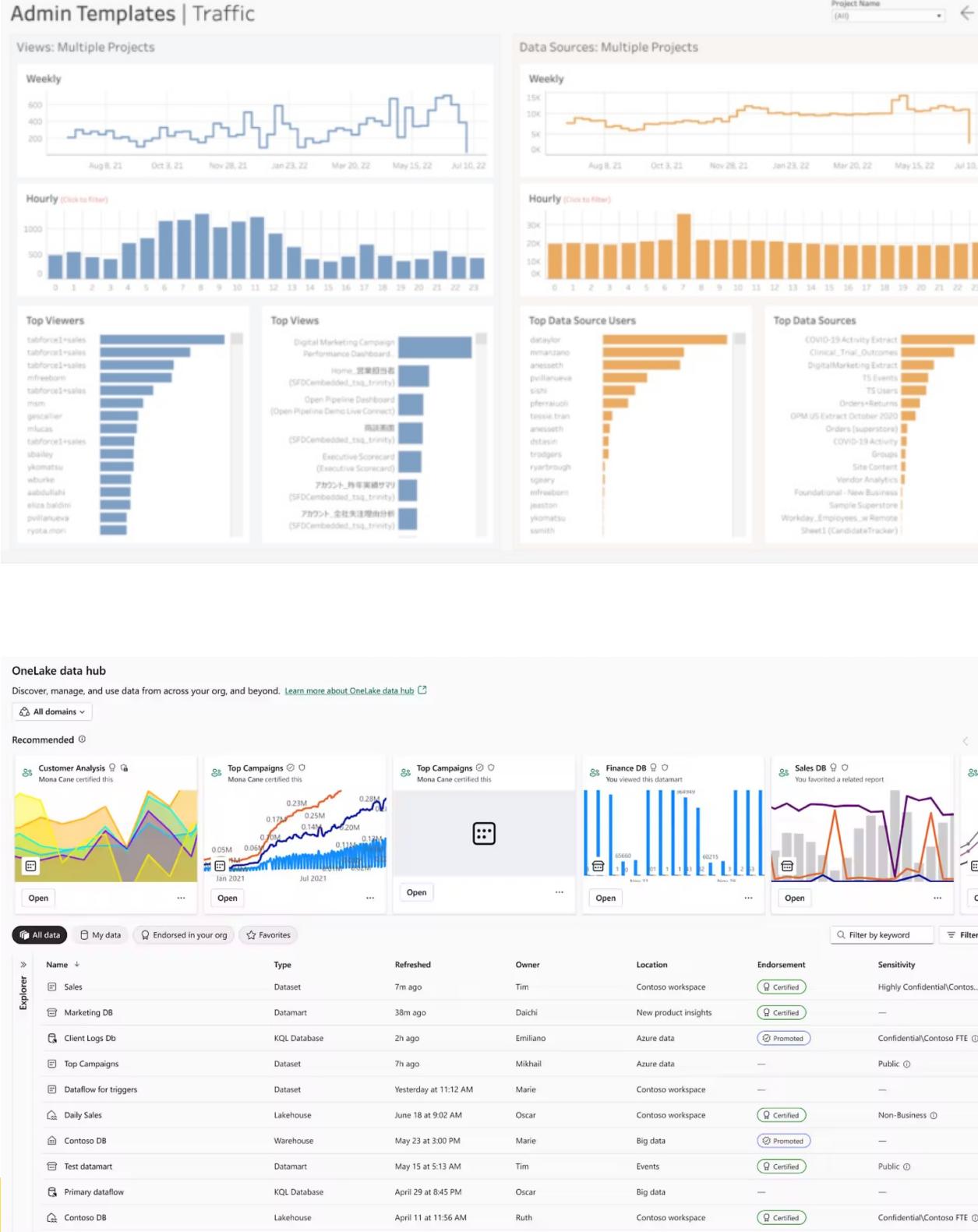
```
keyValues.csv queryAnswers.csv rawText.txt table-1.csv  
1 Request for Verification of Employment  
2 Privacy Act Notice: This information is to be used by the agency collecting it or its assignees in determining whether y  
3 not be disclosed outside the agency except as required and permitted by law. You do not have to provide this information  
4 tive mortgagor or borrower may be delayed or rejected. The information requested in this form is authorized by Title 38,  
5 HUD/FHA; by 42 USC, Section 1452b (if HUD/CPD); and Title 42 USC, 1471 et. seq., or 7 USC, 1921 et. seq. (if USDA/FmHA)  
6 Instructions: Lender - Complete items 1 through 7. Have applicant complete item 8. Forward directly to employer named in  
7 Employer - Please complete either Part II or Part III as applicable. Complete Part IV and return directly to lender named in  
8 The form is to be transmitted directly to the lender and is not to be transmitted through the applicant or any other par  
9 Part I - Request  
10 1. To (Name and address of employer)  
11 2. From (Name and address of lender)
```

SQL Answering

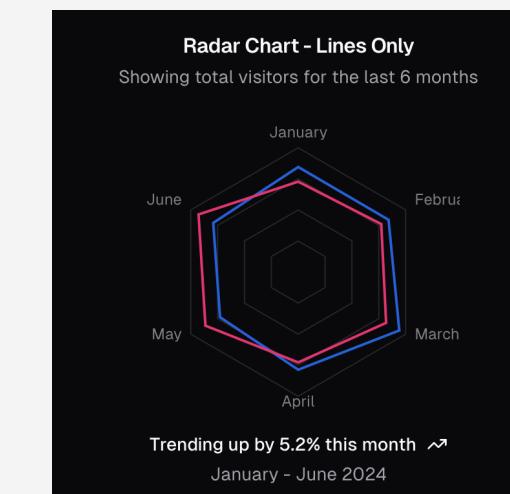
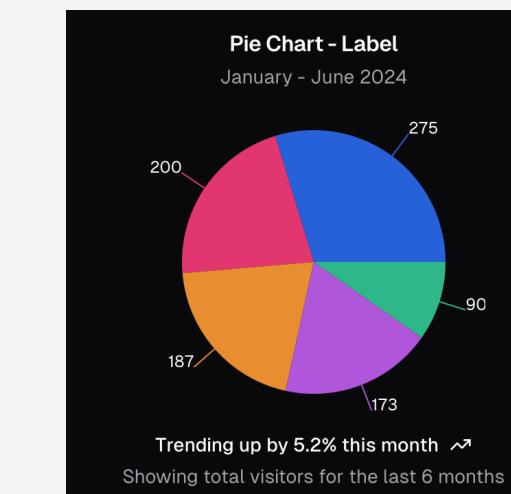
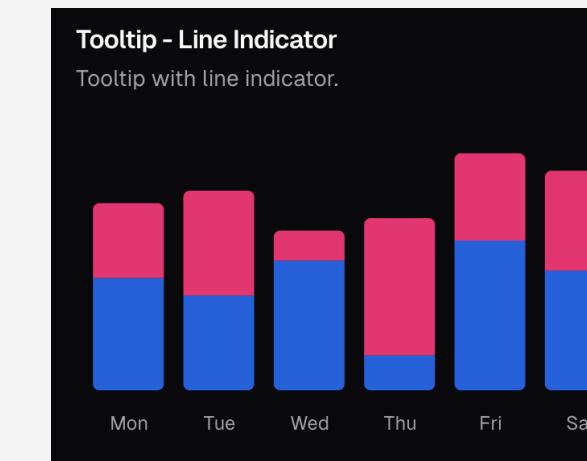
```
keyValues.csv queryAnswers.csv rawText.txt table-1.csv  
1 'Page number','Query','Answer','Alias','Confidence Score % (Query answer)  
2 "'1","'What is the form type?","'Form 1005","'form_type","'98.0000000"  
3 "'1","'What is the name of the employer?","'Alejandro Rosalez","'employer_name","'99.0000000"  
4 "'1","'What is the address of the lender?","'100 Main Street, Anytown, USA","'lender_address","'92.0000000"  
5 "'1","'What is the YTD base pay?","'$ 15.00","'YTD_base_pay","'98.0000000"  
6 "'1","'Is overtime applicable?","'Yes","'overtime","'99.0000000"  
7
```

Graphical

SHOW WHAT YOU NEED



Dashboard personalization with option of highly customizable for every need and every case.



In case of questions do not hesitate to contact me:



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- Cloud Developer for over 2 years with experience in AWS systems.
- Team Lead, Coordinator, Requirement Engineer with more than 3 years of experience.
- Software Engineer with Java, Python, Docker coding experience for over 6 years of experience.



Relevant Information



Github Repository



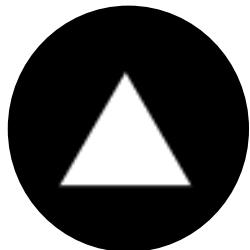
<https://github.com/brunomgama>

QA

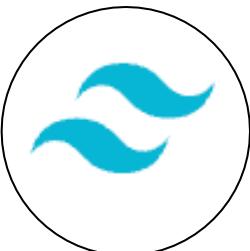
Have questions? We've got answers!



Main Documentation



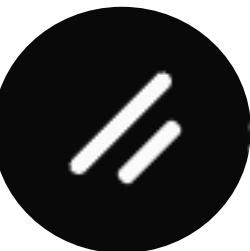
Next JS Documentation
<https://nextjs.org/docs>



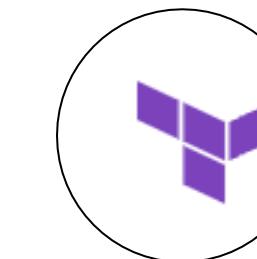
Tailwind Documentation
<https://v2.tailwindcss.com/docs>



AWS Text Extract Documentation
<https://aws.amazon.com/textract/>



Shadcn Documentation
<https://ui.shadcn.com/>



Terraform Documentation
<https://www.terraform.io/>



SQLite
<https://www.sqlite.org/>



Other base projects
<https://github.com/brunomgama>

Handling Initial Loading Issue

In some cases, when the server starts for the first time, you may encounter a `SyntaxError: Invalid or unexpected token in layout.js`. This issue is related to how Next.js initializes and transpiles TypeScript/JavaScript components during the first load. This is not a bug in the codebase itself but rather a quirk of the Next.js server when running in development mode.

Why Does This Happen?

When the Next.js server is restarted, the initial request to the application can sometimes time out during the first page load, especially when complex components such as dynamic imports and fonts (`next/font/google`) are used.

After this initial load, the issue usually resolves itself and does not occur again during subsequent navigation or page reloads.

Recommended Steps to Mitigate:

Refresh the Page: If the loading takes more than 5 seconds or you encounter a "SyntaxError: Invalid or unexpected token", simply refresh the browser page (F5 or Ctrl+R).

Conclusion:

This issue is caused by the server initialization process in Next.js and not due to the implementation of the project code. If you encounter the issue during development, refreshing the page typically resolves it.

Run Application Manually

Open a terminal in the project directory. Install dependencies:

```
npm install
```

Apply migrations and create the database schema:

```
node src/db/migrations/createTables.js
```

(Optional) Seed the database with initial sample data:

```
node src/db/seeds/seedData.js
```

Start the development server:

```
npm run dev
```

Open your browser and navigate to <http://localhost:3000>

If you encounter a loading issue, refer to the [Handling Initial Loading Issue](#) section.

Clean Database

Upon running the initializer.sh script, the database is seeded with sample data. If you wish to start with a clean database, you can delete the file that has been automatically created at /src/db/budget_tracker.db.

