5. PROJECT DEVELOPMENT PHASE

5.1 Introduction

This phase involves coding, integration, and testing of modules.

The system was developed using Python and Streamlit.

5.2 Environment Setup

- Installed Python
- Installed required libraries
- Generated Gemini API key
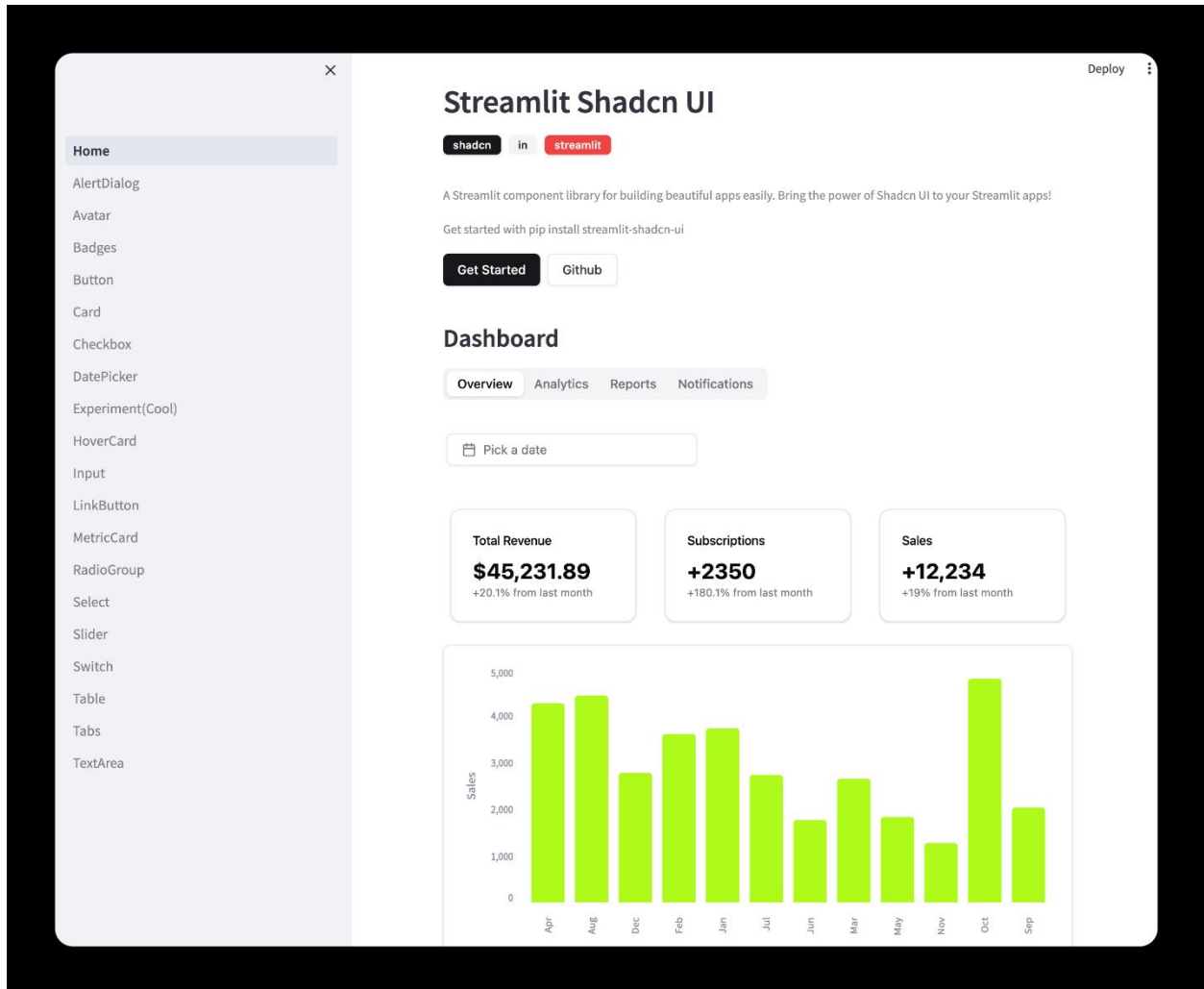- Configured .env file

---

5.3 Model Initialization

```
genai.configure(api_key=os.getenv("GOOGLE_API_KEY"))
model = genai.GenerativeModel("gemini-1.5-flash")
```

5.4 Translation Function

```
def translate_text(text, source_language, target_language):
    prompt = f"Translate the following text from {source_language} to {target_language}:
{text}"
    response = model.generate_content(prompt)
    return response.text
```

5.5 Frontend Development

For OCR app

Upload Image

Drag and drop file here
Limit 200MB per file • JPG, PNG, JPEG, JPG

Browse files

a02-004-s02-02.png 77.3KB ×

Commonwealth every facility possible To

Input Image is:

Extract text

Output is:

Now I edit the text area and is ready to
download with download_button.

Press Ctrl+Enter to apply

Download data as docx

Text Extraction Completed!

🧪 **Test Dropdown**

	circulariteitscode	materiaal	secundair	check	productnaam
	603	beton	40	☑	
	409	hout	50	☑	
	407	staal	30	☑	

wdwdwd
Fundering met 20% puingranulaat
Hennep Bouwblokken
Metisse isolatie
Ecococon gevelpaneel
Luchtkanalen Greenweave/Multiweave Fabric Duct
Luchtkanalen
test
Beton; gewapend [massief dragende binnenwanden]

Streamlit components used:

- st.title()

- st.text_area()

- st.selectbox()

- st.button()

- st.write()

5.6 Testing Phase

Testing was performed to verify:

- Input validation

- Language selection accuracy

- API response correctness

- UI responsiveness