

Project Report Format

1. INTRODUCTION

1.1 Project Overview

1.2 Purpose

2. IDEATION PHASE

2.1 Problem Statement

2.2 Empathy Map Canvas

2.3 Brainstorming

3. REQUIREMENT ANALYSIS

3.1 Customer Journey map

3.2 Solution Requirement

3.3 Data Flow Diagram

3.4 Technology Stack

4. PROJECT DESIGN

4.1 Problem Solution Fit

4.2 Proposed Solution

4.3 Solution Architecture

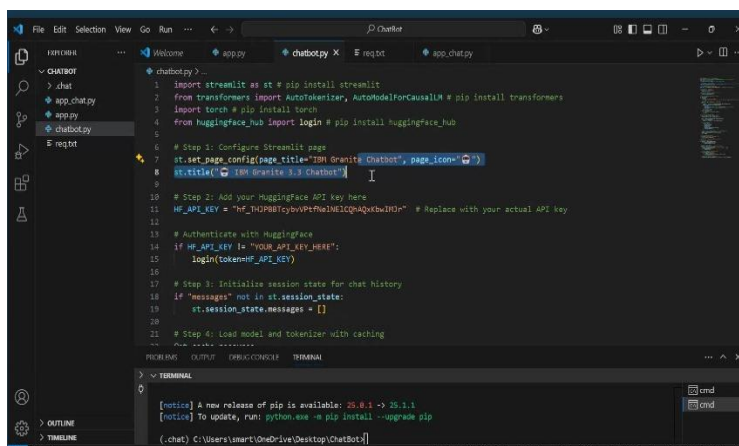
5. PROJECT PLANNING & SCHEDULING

5.1 Project Planning

6. FUNCTIONAL AND PERFORMANCE TESTING

6.1 Performance Testing

7. RESULTS



```
1 import streamlit as st # pip install streamlit
2 from transformers import AutoTokenizer, AutoModelForCausalLM # pip install transformers
3 import torch # pip install torch
4 from huggingface_hub import login # pip install huggingface_hub
5
6 # Step 1: Configure Streamlit page
7 st.set_page_config(page_title="IBM Granite Chatbot", page_icon="🤖")
8 st.title("IBM Granite 3.3 Chatbot")
9
10 # Step 2: Add your HuggingFace API key here
11 HF_API_KEY = "HF_TOKEN_HERE" # Replace with your actual API key
12
13 # Authenticate with HuggingFace
14 if HF_API_KEY != "YOUR_API_KEY_HERE":
15     login(token=HF_API_KEY)
16
17 # Step 3: Initialize session state for chat history
18 if "messages" not in st.session_state:
19     st.session_state.messages = []
20
21 # Step 4: Load model and tokenizer with caching
22 @st.cache_data
23 def load_model_and_tokenizer():
24     tokenizer = AutoTokenizer.from_pretrained("ibm-granite/granite-3.3-chatbot")
25     model = AutoModelForCausalLM.from_pretrained("ibm-granite/granite-3.3-chatbot", torch_dtype=torch.float16).to("cuda:0")
26     return tokenizer, model
27
28 tokenizer, model = load_model_and_tokenizer()
29
30 if st.button("Chat"):
31     user_input = st.text_input("Enter your message")
32     if user_input:
33         st.session_state.messages.append({"role": "user", "content": user_input})
34         # Generate response
35         with st.spinner("Thinking..."):
36             input_tokens = tokenizer.tokenize(user_input)
37             output_tokens = model.generate(input_tokens, max_length=100)
38             response = tokenizer.decode(output_tokens)
39             st.session_state.messages.append({"role": "assistant", "content": response})
40         st.chat_message("user").text(user_input)
41         st.chat_message("assistant").text(response)
42         st.session_state.messages = st.session_state.messages[-2:]
43
44 if st.session_state.messages:
45     for message in st.session_state.messages:
46         st.chat_message(message["role"]).text(message["content"])
```

8. ADVANTAGES & DISADVANTAGES

8.1 Advantages

1. Improved Public Service Efficiency
2. Data-Driven Decision Making
3. Greater Transparency and Accountability

8.2 Disadvantages

1. Privacy and Data Security Concerns
2. Bias and Discrimination in AI Algorithms
3. Digital Divide and Accessibility Issues

9. CONCLUSION

Citizen AI enhances government-citizen interaction by delivering smarter, faster, and more personalized public services. With responsible use, it can foster transparency, trust, and inclusive civic engagement.

10. FUTURE SCOPE

Citizen AI platforms have a promising future in enhancing participatory governance by enabling data-driven, personalized citizen engagement. They will play a key role in improving transparency, trust, and responsiveness in public services.

11. APPENDIX

Source code: VS code

Demo link: <https://drive.google.com/file/d/10bkQzmHq-CccFdKE1CMdqOZ7kpl8SQIP/view?usp=drivesdk>

Github link: <https://github.com/Serayu882/Citizen-AI-Project.git>