Data Collection and Pre-processing Phase

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Team ID	SWTID1720025517
Project Title	CodeXchange: An AI-Powered Code Translator Tool Using PaLM's Chat-Bison-001
Maximum Marks	6 Marks

Pre-processing

Section Description:

User Input Collection:
The app collects various user inputs such as source code, target programming language, and any specific translation preferences through Streamlit's interactive widgets.

Validation:
Before translating the code, the app checks if the required fields are filled out. This ensures that the prompts sent to the PaLM API are complete and coherent.

Prompt Construction:
The collected inputs are used to construct prompts for the PaLM API. This involves formatting the inputs into a structured text that the PaLM model can understand and generate appropriate translations for.

API Interaction:
The constructed prompts are then sent to the PaLM API, which processes the text and generates the desired outputs (e.g., translated code snippets).

Data Pre-processing Code Screenshots

```
import streamlit as st

# User inputs
source_code = st.text_area("Enter Source Code")
target_language = st.selectbox("Select Target Language", ["Python", "Java", "C++", "JavaS
translation_preferences = st.text_input("Enter any specific translation preferences")

# Button to generate translation
if st.button("Translate Code"):
    # Validation
    if source_code and target_language:
        # Construct prompt
        prompt = f"Translate the following code to {target_language}: \n\n{source_code}\n
        # API interaction code here...
    else:
        st.error("Please fill out all required fields.")
```

Validating User Inputs:

```
if not source_code:
    st.error("Source code cannot be empty.")
if not target_language:
    st.error("Please select a target language.")
```

Constructing Prompts for the API:

```
prompt = f"Translate the following code to {target_language}: \n\n{source_code}\n\nPrefere
```

API Interaction:

```
palm.configure(api_key="your-api-key")
chat_model = "models/chat-bison-001"


def translate_code(source_code, source_lang, target_lang):
    context = f"You are a highly skilled software developer with expertise in multiple pr
    response = palm.chat(model=chat_model,messages=[context])
    return str(response.candidates[0]["content"][3:len(response.candidates[0]["content"])

st.set_page_config(layout="wide")  # Set the layout to wide
```