

agent_management.py

```
import base64
from bs4 import BeautifulSoup
import os
import re
import requests
import streamlit as st

from api_utils import send_request_to_groq_api
from ui_utils import get_api_key, update_discussion_and_whiteboard

def agent_button_callback(agent_index):
    # Callback function to handle state update and logic execution
    def callback():
        st.session_state['selected_agent_index'] = agent_index
        agent = st.session_state.agents[agent_index]

        agent_name = agent['config']['name'] if 'config' in agent and 'name' in agent['config'] else ""
        st.session_state['form_agent_name'] = agent_name
        st.session_state['form_agent_description'] = agent['description'] if 'description' in agent else ""
        # Directly call process_agent_interaction here if appropriate
        process_agent_interaction(agent_index)
        return callback

def construct_request(agent_name, description, user_request, user_input, rephrased_request, reference_url):
    request = f"Act as the {agent_name} who {description}."
    if user_request:
        request += f" Original request was: {user_request}."
    if rephrased_request:
        request += f" You are helping a team work on satisfying {rephrased_request}."
    if user_input:
        request += f" Additional input: {user_input}."
    if reference_url:
        try:
            response = requests.get(reference_url)
            response.raise_for_status()
            soup = BeautifulSoup(response.text, 'html.parser')
            url_content = soup.get_text()
            request += f" Reference URL content: {url_content}."
        except requests.exceptions.RequestException as e:
            print(f"Error occurred while retrieving content from {reference_url}: {e}")
    if st.session_state.discussion:
        request += f" The discussion so far has been {st.session_state.discussion[-50000:]}."
    return request

def delete_agent(index):
    if 0 <= index < len(st.session_state.agents):
```

```

expert_name = st.session_state.agents[index]["expert_name"]
del st.session_state.agents[index]

# Get the full path to the JSON file
agents_dir = os.path.abspath(os.path.join(os.path.dirname(__file__), "agents"))
json_file = os.path.join(agents_dir, f"{expert_name}.json")

# Delete the corresponding JSON file
if os.path.exists(json_file):
    os.remove(json_file)
    print(f"JSON file deleted: {json_file}")
else:
    print(f"JSON file not found: {json_file}")

st.experimental_rerun()

def display_agents():
    if "agents" in st.session_state and st.session_state.agents:
        st.sidebar.title("Your Agents")
        st.sidebar.subheader("Click to interact")
        display_agent_buttons(st.session_state.agents)
        if st.session_state.get('show_edit'):
            edit_index = st.session_state.get('edit_agent_index')
            if edit_index is not None and 0 <= edit_index < len(st.session_state.agents):
                agent = st.session_state.agents[edit_index]
                display_agent_edit_form(agent, edit_index)
            else:
                st.sidebar.warning("Invalid agent selected for editing.")
        else:
            st.sidebar.warning("No agents have yet been created. Please enter a new request.")

def display_agent_buttons(agents):
    for index, agent in enumerate(agents):
        agent_name = agent["config"]["name"] if agent["config"].get("name") else f"Unnamed Agent {index + 1}"
        col1, col2 = st.sidebar.columns([1, 4])
        with col1:
            gear_icon = "" # Unicode character for gear icon
            if st.button(gear_icon, key=f"gear_{index}"):
                st.session_state['edit_agent_index'] = index
                st.session_state['show_edit'] = True
        with col2:
            if "next_agent" in st.session_state and st.session_state.next_agent == agent_name:
                button_style = ""
                <style>
                div[data-testid="stButton"] > button[kind="secondary"] {
                background-color: green !important;
                color: white !important;
                }

```

</style>

"""

```
st.markdown(button_style, unsafe_allow_html=True)
st.button(agent_name, key=f"agent_{index}", on_click=agent_button_callback(index))
```

```
def display_agent_edit_form(agent, edit_index):
    with st.expander(f"Edit Properties of {agent['config'].get('name', '')}", expanded=True):
        new_name = st.text_input("Name", value=agent['config'].get('name', ''), key=f"name_{edit_index}")
        description_value = agent.get('new_description', agent.get('description', ''))
        new_description = st.text_area("Description", value=description_value, key=f"desc_{edit_index}")
        if st.button(" Regenerate", key=f"regenerate_{edit_index}"):
            print(f"Regenerate button clicked for agent {edit_index}")
            new_description = regenerate_agent_description(agent)
            if new_description:
                agent['new_description'] = new_description
                print(f"Description regenerated for {agent['config']['name']}: {new_description}")
                st.experimental_rerun()
            else:
                print(f"Failed to regenerate description for {agent['config']['name']}")
        if st.button("Save Changes", key=f"save_{edit_index}"):
            agent['config']['name'] = new_name
            agent['description'] = agent.get('new_description', new_description)
            st.session_state['show_edit'] = False
            if 'edit_agent_index' in st.session_state:
                del st.session_state['edit_agent_index']
            if 'new_description' in agent:
                del agent['new_description']
            st.success("Agent properties updated!")
```

```
def download_agent_file(expert_name):
    # Format the expert_name
    formatted_expert_name = re.sub(r'[^a-zA-Z0-9\s]', '', expert_name) # Remove non-alphanumeric characters
    formatted_expert_name = formatted_expert_name.lower().replace(' ', '_') # Convert to lowercase and replace spaces
    with underscores
```

```
# Get the full path to the agent JSON file
agents_dir = os.path.abspath(os.path.join(os.path.dirname(__file__), "agents"))
json_file = os.path.join(agents_dir, f"{formatted_expert_name}.json")
```

```
# Check if the file exists
if os.path.exists(json_file):
    # Read the file content
    with open(json_file, "r") as f:
        file_content = f.read()
```

```
# Encode the file content as base64
b64_content = base64.b64encode(file_content.encode()).decode()
```

```

# Create a download link
href = f'<a href="data:application/json;base64,{b64_content}" download="{formatted_expert_name}.json">Download
{formatted_expert_name}.json</a>'
st.markdown(href, unsafe_allow_html=True)
else:
st.error(f"File not found: {json_file}")

def process_agent_interaction(agent_index):
agent_name, description = retrieve_agent_information(agent_index)
user_request = st.session_state.get('user_request', "")
user_input = st.session_state.get('user_input', "")
rephrased_request = st.session_state.get('rephrased_request', "")
reference_url = st.session_state.get('reference_url', "")
request = construct_request(agent_name, description, user_request, user_input, rephrased_request, reference_url)
response = send_request(agent_name, request)
if response:
update_discussion_and_whiteboard(agent_name, response, user_input)
st.session_state['form_agent_name'] = agent_name
st.session_state['form_agent_description'] = description
st.session_state['selected_agent_index'] = agent_index

request = f"Act as the {agent_name} who {description}."
if user_request:
request += f" Original request was: {user_request}."
if rephrased_request:
request += f" You are helping a team work on satisfying {rephrased_request}."
if user_input:
request += f" Additional input: {user_input}."
if reference_url:
try:
response = requests.get(reference_url)
response.raise_for_status()
soup = BeautifulSoup(response.text, 'html.parser')
url_content = soup.get_text()
request += f" Reference URL content: {url_content}."
except requests.exceptions.RequestException as e:
print(f"Error occurred while retrieving content from {reference_url}: {e}")
if st.session_state.discussion:
request += f" The discussion so far has been {st.session_state.discussion[-50000:]}."

api_key = get_api_key()
if api_key is None:
st.error("API key not found. Please enter your API key.")
return

response = send_request_to_groq_api(agent_name, request, api_key)
if response:
update_discussion_and_whiteboard(agent_name, response, user_input)
# Additionally, populate the sidebar form with the agent's information

```

```
st.session_state['form_agent_name'] = agent_name
st.session_state['form_agent_description'] = description
st.session_state['selected_agent_index'] = agent_index # Keep track of the selected agent for potential
updates/deletes
```

```
def regenerate_agent_description(agent):
    agent_name = agent['config']['name']
    print(f"agent_name: {agent_name}")
    agent_description = agent['description']
    print(f"agent_description: {agent_description}")
    user_request = st.session_state.get('user_request', "")
    print(f"user_request: {user_request}")
    discussion_history = st.session_state.get('discussion_history', "")
```

```
prompt = f"""
```

You are an AI assistant helping to improve an agent's description. The agent's current details are:

Name: {agent_name}

Description: {agent_description}

The current user request is: {user_request}

The discussion history so far is: {discussion_history}

Please generate a revised description for this agent that defines it in the best manner possible to address the current user request, taking into account the discussion thus far. Return only the revised description, without any additional commentary or narrative. It is imperative that you return ONLY the text of the new description. No preamble, no narrative, no superfluous commentary whatsoever. Just the description, unlabeled, please.

```
"""
```

```
api_key = get_api_key()
if api_key is None:
    st.error("API key not found. Please enter your API key.")
    return None
```

```
print(f"regenerate_agent_description called with agent_name: {agent_name}")
print(f"regenerate_agent_description called with prompt: {prompt}")
```

```
response = send_request_to_groq_api(agent_name, prompt, api_key)
if response:
    return response.strip()
else:
    return None
```

```
def retrieve_agent_information(agent_index):
    agent = st.session_state.agents[agent_index]
    agent_name = agent["config"]["name"]
    description = agent["description"]
    return agent_name, description
```

```

def send_request(agent_name, request):
    api_key = get_api_key()
    if api_key is None:
        st.error("API key not found. Please enter your API key.")
        return None
    response = send_request_to_groq_api(agent_name, request, api_key)
    return response

```

api_utils.py

```

import re
import requests
import streamlit as st
import time

def make_api_request(url, data, headers, api_key):
    time.sleep(2) # Throttle the request to ensure at least 2 seconds between calls
    try:
        if not api_key:
            raise ValueError("GROQ_API_KEY not found. Please enter your API key.")
        headers["Authorization"] = f"Bearer {api_key}"
        response = requests.post(url, json=data, headers=headers)
        if response.status_code == 200:
            return response.json()
        elif response.status_code == 429:
            error_message = response.json().get("error", {}).get("message", "")
            st.error(f"Rate limit reached for the current model. Please try again later or select a different model.")
            st.error(f"Error details: {error_message}")
            return None
        else:
            print(f"Error: API request failed with status {response.status_code}, response: {response.text}")
            return None
    except requests.RequestException as e:
        print(f"Error: Request failed {e}")
        return None

def send_request_to_groq_api(expert_name, request, api_key):
    temperature_value = st.session_state.get('temperature', 0.1)
    if api_key is None:
        st.error("API key not found. Please enter your API key.")
        return None
    if 'api_key' in st.session_state and st.session_state.api_key:
        api_key = st.session_state.api_key
    else:
        st.error("API key not found. Please enter your API key.")
        return None

    url = "https://api.groq.com/openai/v1/chat/completions"
    data = {
        "model": st.session_state.model,

```

```

"temperature": temperature_value,
"max_tokens": st.session_state.max_tokens,
"top_p": 1,
"stop": "TERMINATE",
"messages": [
{
"role": "system",
"content": "You are a chatbot capable of anything and everything."
},
{
"role": "user",
"content": request
}
]
}
headers = {
"Authorization": f"Bearer {api_key}",
"Content-Type": "application/json"
}

try:
response = make_api_request(url, data, headers, api_key)
if response:
if "choices" in response and len(response["choices"]) > 0:
message_content = response["choices"][0]["message"]["content"]
return message_content
else:
print("Error: Unexpected response format from the Groq API.")
print("Response data:", response)
return None
except Exception as e:
print(f"Error occurred while making the request to Groq API: {str(e)}")
return None

```

file_utils.py

```

import re

def create_agent_data(expert_name, description, skills=None, tools=None):
# Format the expert_name
formatted_expert_name = sanitize_text(expert_name)
formatted_expert_name = formatted_expert_name.lower().replace(' ', '_')
# Sanitize the description
sanitized_description = sanitize_text(description)
# Sanitize the skills and tools
sanitized_skills = [sanitize_text(skill) for skill in skills] if skills else []
sanitized_tools = [sanitize_text(tool) for tool in tools] if tools else []
# Create the agent data
agent_data = {
"type": "assistant",

```

```

"config": {
    "name": expert_name, # Use the original expert_name here
    "llm_config": {
        "config_list": [
            {
                "model": "gpt-4"
            }
        ],
        "temperature": 0.1,
        "timeout": 600,
        "cache_seed": 42
    },
    "human_input_mode": "NEVER",
    "max_consecutive_auto_reply": 8,
    "system_message": f"You are a helpful assistant that can act as {expert_name} who {sanitized_description}."
},
"description": description, # Use the original description here
"skills": sanitized_skills,
"tools": sanitized_tools
}
crewai_agent_data = {
    "name": expert_name,
    "description": description,
    "skills": sanitized_skills,
    "tools": sanitized_tools,
    "verbose": True,
    "allow_delegation": True
}
return agent_data, crewai_agent_data

```

```

def create_workflow_data(workflow):
    # Sanitize the workflow name
    sanitized_workflow_name = sanitize_text(workflow["name"])
    sanitized_workflow_name = sanitized_workflow_name.lower().replace(' ', '_')

    return workflow

```

```

def sanitize_text(text):
    # Remove non-ASCII characters
    text = re.sub(r'[^\x00-\x7F]+', '', text)
    # Remove non-alphanumeric characters except for standard punctuation
    text = re.sub(r'^a-zA-Z0-9s.!?,:;"'-]+', '', text)
    return text

```

main.py

```

import streamlit as st

from agent_management import display_agents

```



```
from ui_utils import get_api_key, display_api_key_input, display_discussion_and_whiteboard,
display_download_button, display_user_input, display_rephrased_request, display_reset_and_upload_buttons,
display_user_request_input, rephrase_prompt, get_agents_from_text, extract_code_from_response,
get_workflow_from_agents
```

```
def main():
```

```
    st.markdown("""
```

```
    <style>
```

```
    /* General styles */
```

```
    body {
```

```
    font-family: Arial, sans-serif;
```

```
    background-color: #f0f0f0;
```

```
    }
```

```
    /* Sidebar styles */
```

```
    .sidebar .sidebar-content {
```

```
    background-color: #ffffff !important;
```

```
    padding: 20px !important;
```

```
    border-radius: 5px !important;
```

```
    box-shadow: 0 2px 4px rgba(0, 0, 0, 0.1) !important;
```

```
    }
```

```
    .sidebar .st-emotion-cache-k7vsyb h1 {
```

```
    font-size: 12px !important;
```

```
    font-weight: bold !important;
```

```
    color: #007bff !important;
```

```
    }
```

```
    .sidebar h2 {
```

```
    font-size: 16px !important;
```

```
    color: #666666 !important;
```

```
    }
```

```
    .sidebar .stButton button {
```

```
    display: block !important;
```

```
    width: 100% !important;
```

```
    padding: 10px !important;
```

```
    background-color: #007bff !important;
```

```
    color: #ffffff !important;
```

```
    text-align: center !important;
```

```
    text-decoration: none !important;
```

```
    border-radius: 5px !important;
```

```
    transition: background-color 0.3s !important;
```

```
    }
```

```
    .sidebar .stButton button:hover {
```

```
    background-color: #0056b3 !important;
```

```
    }
```

```
.sidebar a {  
display: block !important;  
color: #007bff !important;  
text-decoration: none !important;  
}
```

```
.sidebar a:hover {  
text-decoration: underline !important;  
}
```

```
/* Main content styles */  
.main .stTextInput input {  
width: 100% !important;  
padding: 10px !important;  
border: 1px solid #cccccc !important;  
border-radius: 5px !important;  
}
```

```
.main .stTextArea textarea {  
width: 100% !important;  
padding: 10px !important;  
border: 1px solid #cccccc !important;  
border-radius: 5px !important;  
resize: none !important;  
}
```

```
.main .stButton button {  
padding: 10px 20px !important;  
background-color: #dc3545 !important;  
color: #ffffff !important;  
border: none !important;  
border-radius: 5px !important;  
cursor: pointer !important;  
transition: background-color 0.3s !important;  
}
```

```
.main .stButton button:hover {  
background-color: #c82333 !important;  
}
```

```
.main h1 {  
font-size: 32px !important;  
font-weight: bold !important;  
color: #007bff !important;  
}
```

```
/* Model selection styles */  
.main .stSelectbox select {  
width: 100% !important;  
padding: 10px !important;
```

```
border: 1px solid #cccccc !important;
border-radius: 5px !important;
}
```

```
/* Error message styles */
```

```
.main .stAlert {
color: #dc3545 !important;
}
```

```
</style>
```

```
""", unsafe_allow_html=True)
```

```
model_token_limits = {
'lama3-70b-8192': 8192,
'lama3-8b-8192': 8192,
'mixtral-8x7b-32768': 32768,
'gemma-7b-it': 8192
}
```

```
api_key = get_api_key()
if api_key is None:
api_key = display_api_key_input()
if api_key is None:
st.warning("Please enter your GROQ_API_KEY to use the app.")
return
```

```
col1, col2, col3 = st.columns([2, 5, 3])
with col3:
selected_model = st.selectbox(
'Select Model',
options=list(model_token_limits.keys()),
index=0,
key='model_selection'
)
st.session_state.model = selected_model
st.session_state.max_tokens = model_token_limits[selected_model]
temperature = st.slider(
"Set Temperature",
min_value=0.0,
max_value=1.0,
value=st.session_state.get('temperature', 0.3), # Default value or the last set value
step=0.01,
key='temperature'
)
```

```
st.title("AutoGroq")
```

```
# Ensure default values for session state are set
if "discussion" not in st.session_state:
st.session_state.discussion = ""
```

```

if "whiteboard" not in st.session_state:
    st.session_state.whiteboard = "" # Apply CSS classes to elements

with st.sidebar:
    st.markdown('<div class="sidebar">', unsafe_allow_html=True)
    st.markdown('</div>', unsafe_allow_html=True)

display_agents()

with st.container():
    st.markdown('<div class="main">', unsafe_allow_html=True)
    display_user_request_input()
    display_rephrased_request()
    st.markdown('<div class="discussion-whiteboard">', unsafe_allow_html=True)
    display_discussion_and_whiteboard()
    st.markdown('</div>', unsafe_allow_html=True)
    st.markdown('<div class="user-input">', unsafe_allow_html=True)
    display_user_input()
    st.markdown('</div>', unsafe_allow_html=True)
    display_reset_and_upload_buttons()
    st.markdown('</div>', unsafe_allow_html=True)

display_download_button()

if __name__ == "__main__":
    main()

```

ui_utils.py

```

import os
import streamlit as st

def get_api_key():
    if 'api_key' in st.session_state and st.session_state.api_key:
        api_key = st.session_state.api_key
        print(f"API Key from session state: {api_key}")
        return api_key
    elif "GROQ_API_KEY" in os.environ:
        api_key = os.environ["GROQ_API_KEY"]
        print(f"API Key from environment variable: {api_key}")
        return api_key
    else:
        return None

def display_api_key_input():
    if 'api_key' not in st.session_state:
        st.session_state.api_key = ""

api_key = st.text_input("Enter your GROQ_API_KEY:", type="password", value=st.session_state.api_key,

```

```
key="api_key_input")
```

```
if api_key:
```

```
    st.session_state.api_key = api_key
```

```
    st.success("API key entered successfully.")
```

```
    print(f"API Key: {api_key}")
```

```
return api_key
```

```
import io
```

```
import json
```

```
import pandas as pd
```

```
import re
```

```
import time
```

```
import zipfile
```

```
from file_utils import create_agent_data, sanitize_text
```

```
import datetime
```

```
import requests
```

```
def create_zip_file(zip_buffer, file_data):
```

```
    with zipfile.ZipFile(zip_buffer, 'w', zipfile.ZIP_DEFLATED) as zip_file:
```

```
        for file_name, file_content in file_data.items():
```

```
            zip_file.writestr(file_name, file_content)
```

```
def display_discussion_and_whiteboard():
```

```
    discussion_history = get_discussion_history()
```

```
    tab1, tab2, tab3 = st.tabs(["Most Recent Comment", "Whiteboard", "Discussion History"])
```

```
    with tab1:
```

```
        st.text_area("Most Recent Comment", value=st.session_state.get("last_comment", ""), height=400, key="discussion")
```

```
    with tab2:
```

```
        st.text_area("Whiteboard", value=st.session_state.whiteboard, height=400, key="whiteboard")
```

```
    with tab3:
```

```
        st.write(discussion_history)
```

```
def display_discussion_modal():
```

```
    discussion_history = get_discussion_history()
```

```
    with st.expander("Discussion History"):
```

```
        st.write(discussion_history)
```

```
def display_download_button():
```

```
    if "autogen_zip_buffer" in st.session_state and "crewai_zip_buffer" in st.session_state:
```

```
        col1, col2 = st.columns(2)
```

```
        with col1:
```

```

st.download_button(
    label="Download Autogen Files",
    data=st.session_state.autogen_zip_buffer,
    file_name="autogen_files.zip",
    mime="application/zip",
    key=f"autogen_download_button_{int(time.time())}" # Generate a unique key based on timestamp
)
with col2:
    st.download_button(
        label="Download CrewAI Files",
        data=st.session_state.crewai_zip_buffer,
        file_name="crewai_files.zip",
        mime="application/zip",
        key=f"crewai_download_button_{int(time.time())}" # Generate a unique key based on timestamp
    )
else:
    st.warning("No files available for download.")

def display_user_input():
    user_input = st.text_area("Additional Input:", key="user_input", height=100)

    if user_input:
        url_pattern = re.compile(r'http[s]?://(?:[a-zA-Z]|[0-9]|[$-_@.&+]|[*\\(\)])|(?:%[0-9a-fA-F][0-9a-fA-F]))+')
        url_match = url_pattern.search(user_input)
        if url_match:
            st.session_state.reference_url = url_match.group()
        else:
            st.session_state.reference_url = "
        else:
            st.session_state.reference_url = "

    return user_input

def display_rephrased_request():
    if "rephrased_request" not in st.session_state:
        st.session_state.rephrased_request = ""

    st.text_area("Re-engineered Prompt:", value=st.session_state.get('rephrased_request', ""), height=100,
        key="rephrased_request_area")

def display_reset_and_upload_buttons():
    col1, col2 = st.columns(2)
    with col1:
        if st.button("Reset", key="reset_button"):
            # Define the keys of session state variables to clear
            keys_to_reset = [
                "rephrased_request", "discussion", "whiteboard", "user_request",

```

```

"user_input", "agents", "zip_buffer", "crewai_zip_buffer",
"autogen_zip_buffer", "uploaded_file_content", "discussion_history",
"last_comment", "user_api_key", "reference_url"
]
# Reset each specified key
for key in keys_to_reset:
    if key in st.session_state:
        del st.session_state[key]
# Additionally, explicitly reset user_input to an empty string
st.session_state.user_input = ""
st.session_state.show_begin_button = True
st.experimental_rerun()

with col2:
    uploaded_file = st.file_uploader("Upload a sample .csv of your data (optional)", type="csv")

    if uploaded_file is not None:
        try:
            # Attempt to read the uploaded file as a DataFrame
            df = pd.read_csv(uploaded_file).head(5)

            # Display the DataFrame in the app
            st.write("Data successfully uploaded and read as DataFrame:")
            st.dataframe(df)

            # Store the DataFrame in the session state
            st.session_state.uploaded_data = df
        except Exception as e:
            st.error(f"Error reading the file: {e}")

def display_user_request_input():
    user_request = st.text_input("Enter your request:", key="user_request", value=st.session_state.get("user_request", ""))
    if st.session_state.get("previous_user_request") != user_request:
        st.session_state.previous_user_request = user_request
    if user_request:
        if not st.session_state.get('rephrased_request'):
            handle_user_request(st.session_state)
        else:
            autogen_agents, crewai_agents = get_agents_from_text(st.session_state.rephrased_request)
            print(f"Debug: AutoGen Agents: {autogen_agents}")
            print(f"Debug: CrewAI Agents: {crewai_agents}")

    if not autogen_agents:
        print("Error: No agents created.")
        st.warning("Failed to create agents. Please try again.")
    return

agents_data = {}

```

```

for agent in autogen_agents:
    agent_name = agent['config']['name']
    agents_data[agent_name] = agent

print(f"Debug: Agents data: {agents_data}")

workflow_data, _ = get_workflow_from_agents(autogen_agents)
print(f"Debug: Workflow data: {workflow_data}")
print(f"Debug: CrewAI agents: {crewai_agents}")

autogen_zip_buffer, crewai_zip_buffer = zip_files_in_memory(agents_data, workflow_data, crewai_agents)
st.session_state.autogen_zip_buffer = autogen_zip_buffer
st.session_state.crewai_zip_buffer = crewai_zip_buffer
st.session_state.agents = autogen_agents

st.experimental_rerun()

def extract_code_from_response(response):
    code_pattern = r"```(?:.*?)```"
    code_blocks = re.findall(code_pattern, response, re.DOTALL)

    html_pattern = r"<html.*?>.*?</html>"
    html_blocks = re.findall(html_pattern, response, re.DOTALL | re.IGNORECASE)

    js_pattern = r"<script.*?>.*?</script>"
    js_blocks = re.findall(js_pattern, response, re.DOTALL | re.IGNORECASE)

    css_pattern = r"<style.*?>.*?</style>"
    css_blocks = re.findall(css_pattern, response, re.DOTALL | re.IGNORECASE)

    all_code_blocks = code_blocks + html_blocks + js_blocks + css_blocks
    unique_code_blocks = list(set(all_code_blocks))

    return "\n\n".join(unique_code_blocks)

def extract_json_objects(json_string):
    objects = []
    start_index = json_string.find("{")
    while start_index != -1:
        end_index = json_string.find("}", start_index)
        if end_index != -1:
            object_str = json_string[start_index:end_index+1]
            objects.append(object_str)
            start_index = json_string.find("{", end_index + 1)
        else:
            break
    return objects

```



```
def get_agents_from_text(text, max_retries=3, retry_delay=2):
```

```
    api_key = get_api_key()
```

```
    temperature_value = st.session_state.get('temperature', 0.5)
```

```
    url = "https://api.groq.com/openai/v1/chat/completions"
```

```
    headers = {
```

```
        "Authorization": f"Bearer {api_key}",
```

```
        "Content-Type": "application/json"
```

```
    }
```

```
    groq_request = {
```

```
        "model": st.session_state.model,
```

```
        "temperature": temperature_value,
```

```
        "max_tokens": st.session_state.max_tokens,
```

```
        "top_p": 1,
```

```
        "stop": "TERMINATE",
```

```
        "messages": [
```

```
            {
```

```
                "role": "system",
```

```
                "content": f"""
```

```
You are an expert system designed to identify and recommend the optimal team of experts
```

```
required to fulfill this specific user's request: $userRequest Your analysis shall
```

```
consider the complexity, domain, and specific needs of the request to assemble
```

```
a multidisciplinary team of experts. Each recommended expert shall come with a defined role,
```

```
a brief description of their expertise, their skill set, and the tools they would utilize
```

```
to achieve the user's goal. The first agent must be qualified to manage the entire project,
```

```
aggregate the work done by all the other agents, and produce a robust, complete,
```

```
and reliable solution. Return the results in JSON values labeled as expert_name, description,
```

```
skills, and tools. Their 'expert_name' is their title, not their given name.
```

```
Skills and tools are arrays (one expert can have multiple skills and use multiple tools).
```

```
Return ONLY this JSON response, with no other narrative, commentary, synopsis,
```

```
or superfluous remarks/text of any kind. Tools shall be single-purpose methods,
```

```
very specific and narrow in their scope, and not at all ambiguous (e.g.: 'add_numbers'
```

```
would be good, but simply 'do_math' would be bad) Skills and tools shall be all lower case
```

```
with underscores instead of spaces, and they shall be named per their functionality,
```

```
e.g.: calculate_surface_area, or search_web
```

```
"""
```

```
},
```

```
{
```

```
    "role": "user",
```

```
    "content": text
```

```
}
```

```
]
```

```
}
```

```
    retry_count = 0
```

```
    while retry_count < max_retries:
```

```
        try:
```

```
            response = requests.post(url, json=groq_request, headers=headers)
```

```
            if response.status_code == 200:
```

```
                response_data = response.json()
```

```
                if "choices" in response_data and response_data["choices"]:
```

```

content = response_data["choices"][0]["message"]["content"]
print(f"Content: {content}")
json_objects = extract_json_objects(content)
if json_objects:
    autogen_agents = []
    crewai_agents = []
    missing_names = False
    for json_str in json_objects:
        try:
            agent_data = json.loads(json_str)
            expert_name = agent_data.get('expert_name', '')
            if not expert_name:
                missing_names = True
                break
            description = agent_data.get('description', '')
            skills = agent_data.get('skills', [])
            tools = agent_data.get('tools', [])
            autogen_agent, crewai_agent = create_agent_data(expert_name, description, skills, tools)
            autogen_agents.append(autogen_agent)
            crewai_agents.append(crewai_agent)
        except json.JSONDecodeError as e:
            print(f"Error parsing JSON object: {e}")
            print(f"JSON string: {json_str}")
            if missing_names:
                print("Missing agent names. Retrying...")
                retry_count += 1
                time.sleep(retry_delay)
                continue
            print(f"AutoGen Agents: {autogen_agents}")
            print(f"CrewAI Agents: {crewai_agents}")
            return autogen_agents, crewai_agents
        else:
            print("No valid JSON objects found in the response")
            return [], []
    else:
        print("No agents data found in response")
    else:
        print(f"API request failed with status code {response.status_code}: {response.text}")
    except Exception as e:
        print(f"Error making API request: {e}")
        retry_count += 1
        time.sleep(retry_delay)
    print(f"Maximum retries ({max_retries}) exceeded. Failed to retrieve valid agent names.")
    return [], []

```

```

def get_discussion_history():
    if "discussion_history" not in st.session_state:
        st.session_state.discussion_history = ""
    return st.session_state.discussion_history

```

```
def get_workflow_from_agents(agents):
    current_timestamp = datetime.datetime.now().isoformat()
    temperature_value = st.session_state.get('temperature', 0.3)
```

```
    workflow = {
        "name": "AutoGroq Workflow",
        "description": "Workflow auto-generated by AutoGroq.",
        "sender": {
            "type": "userproxy",
            "config": {
                "name": "userproxy",
                "llm_config": False,
                "human_input_mode": "NEVER",
                "max_consecutive_auto_reply": 5,
                "system_message": "You are a helpful assistant.",
                "is_termination_msg": None,
                "code_execution_config": {
                    "work_dir": None,
                    "use_docker": False
                },
                "default_auto_reply": "",
                "description": None
            },
            "timestamp": current_timestamp,
            "user_id": "default",
            "skills": None
        },
        "receiver": {
            "type": "groupchat",
            "config": {
                "name": "group_chat_manager",
                "llm_config": {
                    "config_list": [
                        {
                            "model": "gpt-4"
                        }
                    ],
                    "temperature": temperature_value,
                    "cache_seed": 42,
                    "timeout": 600,
                    "max_tokens": None,
                    "extra_body": None
                },
                "human_input_mode": "NEVER",
                "max_consecutive_auto_reply": 10,
                "system_message": "Group chat manager",
                "is_termination_msg": None,
                "code_execution_config": None,
```

```

"default_auto_reply": "",
"description": None
},
"groupchat_config": {
"agents": [],
"admin_name": "Admin",
"messages": [],
"max_round": 10,
"speaker_selection_method": "auto",
"allow_repeat_speaker": True
},
"timestamp": current_timestamp,
"user_id": "default",
"skills": None
},
"type": "groupchat",
"user_id": "default",
"timestamp": current_timestamp,
"summary_method": "last"
}

```

```

for index, agent in enumerate(agents):
agent_name = agent["config"]["name"]
description = agent["description"]
formatted_agent_name = sanitize_text(agent_name).lower().replace(' ', '_')
sanitized_description = sanitize_text(description)
system_message = f"You are a helpful assistant that can act as {agent_name} who {sanitized_description}."

```

```

if index == 0:
other_agent_names = [sanitize_text(a['config']['name']).lower().replace(' ', '_') for a in agents[1:]]
system_message += f" You are the primary coordinator who will receive suggestions or advice from all the other
agents ({', '.join(other_agent_names)}). You must ensure that the final response integrates the suggestions from other
agents or team members. YOUR FINAL RESPONSE MUST OFFER THE COMPLETE RESOLUTION TO THE
USER'S REQUEST. When the user's request has been satisfied and all perspectives are integrated, you can respond
with TERMINATE."

```

```

agent_config = {
"type": "assistant",
"config": {
"name": formatted_agent_name,
"llm_config": {
"config_list": [
{
"model": "gpt-4"
}
],
"temperature": temperature_value,
"cache_seed": 42,
"timeout": 600,
"max_tokens": None,

```

```

"extra_body": None
},
"human_input_mode": "NEVER",
"max_consecutive_auto_reply": 8,
"system_message": system_message,
"is_termination_msg": None,
"code_execution_config": None,
"default_auto_reply": "",
"description": None
},
"timestamp": current_timestamp,
"user_id": "default",
"skills": None # Set skills to null only in the workflow JSON
}
workflow["receiver"]["groupchat_config"]["agents"].append(agent_config)

crewai_agents = []
for index, agent in enumerate(agents):
    agent_name = agent["config"]["name"]
    description = agent["description"]
    _, crewai_agent_data = create_agent_data(agent_name, description, agent.get("skills"), agent.get("tools"))
    crewai_agents.append(crewai_agent_data)

return workflow, crewai_agents

def handle_user_request(session_state):
    user_request = session_state.user_request

    max_retries = 3
    retry_delay = 2 # in seconds

    for retry in range(max_retries):
        try:
            rephrased_text = rephrase_prompt(user_request)
            print(f"Debug: Rephrased text: {rephrased_text}")

            if rephrased_text:
                session_state.rephrased_request = rephrased_text
                break # Exit the loop if successful
            else:
                print("Error: Failed to rephrase the user request.")
                st.warning("Failed to rephrase the user request. Please try again.")
                return # Exit the function if rephrasing fails
        except Exception as e:
            print(f"Error occurred in handle_user_request: {str(e)}")
            if retry < max_retries - 1:
                print(f"Retrying in {retry_delay} second(s)...")
                time.sleep(retry_delay)
            else:

```

```

print("Max retries exceeded.")
st.warning("An error occurred. Please try again.")
return # Exit the function if max retries are exceeded

rephrased_text = session_state.rephrased_request

autogen_agents, crewai_agents = get_agents_from_text(rephrased_text)
print(f"Debug: AutoGen Agents: {autogen_agents}")
print(f"Debug: CrewAI Agents: {crewai_agents}")

if not autogen_agents:
    print("Error: No agents created.")
    st.warning("Failed to create agents. Please try again.")
    return

agents_data = {}
for agent in autogen_agents:
    agent_name = agent['config']['name']
    agents_data[agent_name] = agent

print(f"Debug: Agents data: {agents_data}")

workflow_data, _ = get_workflow_from_agents(autogen_agents)
print(f"Debug: Workflow data: {workflow_data}")
print(f"Debug: CrewAI agents: {crewai_agents}")

autogen_zip_buffer, crewai_zip_buffer = zip_files_in_memory(agents_data, workflow_data, crewai_agents)
session_state.autogen_zip_buffer = autogen_zip_buffer
session_state.crewai_zip_buffer = crewai_zip_buffer
session_state.agents = autogen_agents

def rephrase_prompt(user_request):
    temperature_value = st.session_state.get('temperature', 0.1)
    print("Executing rephrase_prompt()")
    api_key = get_api_key()
    if not api_key:
        st.error("API key not found. Please enter your API key.")
        return None

    url = "https://api.groq.com/openai/v1/chat/completions"
    refactoring_prompt = f"""
    Refactor the following user request into an optimized prompt for an LLM,
    focusing on clarity, conciseness, and effectiveness. Provide specific details
    and examples where relevant. Do NOT reply with a direct response to the request;
    instead, rephrase the request as a well-structured prompt, and return ONLY that rephrased
    prompt. Do not preface the rephrased prompt with any other text or superfluous narrative.
    Do not enclose the rephrased prompt in quotes.
    \n\nUser request: \"{user_request}\"
    \n\nrephrased:
    """

```

```

groq_request = {
    "model": st.session_state.model,
    "temperature": temperature_value,
    "max_tokens": 100,
    "top_p": 1,
    "stop": "TERMINATE",
    "messages": [
        {
            "role": "user",
            "content": refactoring_prompt,
        },
    ],
}

headers = {
    "Authorization": f"Bearer {api_key}",
    "Content-Type": "application/json",
}

print(f"Request URL: {url}")
print(f"Request Headers: {headers}")
print(f"Request Payload: {json.dumps(groq_request, indent=2)}")

try:
    print("Sending request to Groq API...")
    response = requests.post(url, json=groq_request, headers=headers, timeout=10)
    print(f"Response received. Status Code: {response.status_code}")

    if response.status_code == 200:
        print("Request successful. Parsing response...")
        response_data = response.json()
        print(f"Response Data: {json.dumps(response_data, indent=2)}")

        if "choices" in response_data and len(response_data["choices"]) > 0:
            rephrased = response_data["choices"][0]["message"]["content"]
            return rephrased.strip()
        else:
            print("Error: Unexpected response format. 'choices' field missing or empty.")
            return None
        else:
            print(f"Request failed. Status Code: {response.status_code}")
            print(f"Response Content: {response.text}")
            return None
    except requests.exceptions.RequestException as e:
        print(f"Error occurred while sending the request: {str(e)}")
        return None
    except (KeyError, ValueError) as e:
        print(f"Error occurred while parsing the response: {str(e)}")
        print(f"Response Content: {response.text}")

```

```
return None
except Exception as e:
    print(f"An unexpected error occurred: {str(e)}")
return None
```

```
def update_discussion_and_whiteboard(agent_name, response, user_input):
    if user_input:
        user_input_text = f"\n\n\n{user_input}\n\n"
        st.session_state.discussion_history += user_input_text
        response_text = f"{agent_name}:\n\n {response}\n\n===\n\n"
        st.session_state.discussion_history += response_text
        code_blocks = extract_code_from_response(response)
        st.session_state.whiteboard = code_blocks
        st.session_state.last_agent = agent_name
        st.session_state.last_comment = response_text
```

```
def zip_files_in_memory(agents_data, workflow_data, crewai_agents):
    # Create separate ZIP buffers for Autogen and CrewAI
    autogen_zip_buffer = io.BytesIO()
    crewai_zip_buffer = io.BytesIO()
```

```
    # Prepare Autogen file data
    autogen_file_data = {}
    for agent_name, agent_data in agents_data.items():
        agent_file_name = f"{agent_name}.json"
        agent_file_data = json.dumps(agent_data, indent=2)
        autogen_file_data[f"agents/{agent_file_name}"] = agent_file_data
```

```
    workflow_file_name = f"{sanitize_text(workflow_data['name'])}.json"
    workflow_file_data = json.dumps(workflow_data, indent=2)
    autogen_file_data[f"workflows/{workflow_file_name}"] = workflow_file_data
```

```
    # Prepare CrewAI file data
    crewai_file_data = {}
    for index, agent_data in enumerate(crewai_agents):
        agent_file_name = f"agent_{index}.json"
        agent_file_data = json.dumps(agent_data, indent=2)
        crewai_file_data[f"agents/{agent_file_name}"] = agent_file_data
```

```
    # Create ZIP files
    create_zip_file(autogen_zip_buffer, autogen_file_data)
    create_zip_file(crewai_zip_buffer, crewai_file_data)
```

```
    # Move the ZIP file pointers to the beginning
    autogen_zip_buffer.seek(0)
    crewai_zip_buffer.seek(0)
```

```
    return autogen_zip_buffer, crewai_zip_buffer
```