

agent_management.py

```
import base64
import os
import re
import streamlit as st

from config import API_URL

from ui_utils import get_llm_provider, regenerate_json_files_and_zip, 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,
                    skill_results):
    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 and reference_url in st.session_state.reference_html:
        html_content = st.session_state.reference_html[reference_url]
        request += f" Reference URL content: {html_content}."
    if st.session_state.discussion:
        request += f" The discussion so far has been {st.session_state.discussion[-50000:]}"
    if skill_results:
        request += f" Skill results: {skill_results}."
    return request

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'):
```

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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(f"No agents have yet been created. Please enter a new request.")
    st.sidebar.warning(f"NOTE: GPT models can only be used locally, not in the online demo.")
    st.sidebar.warning(f"ALSO: 'No secrets files found' warning is normal and inconsequential in local mode.")
    st.sidebar.warning(f"FINALLY: If no agents are created, do a hard reset (CTL-F5) and try switching models. LLM results can be unpredictable.")
    st.sidebar.warning(f"SOURCE: https://github.com/jgravelle/AutoGroq")

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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}",
                help="Edit Agent" # Add the tooltip text
            ):
                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):
        col1, col2 = st.columns([4, 1])
        with col1:
            new_name = st.text_input("Name", value=agent['config'].get('name', ''), key=f"name_{edit_index}")
        with col2:
            container = st.container()
            space = container.empty()

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if container.button("X", key=f"delete_{edit_index}"):
if st.session_state.get(f"delete_confirmed_{edit_index}", False):
st.session_state.agents.pop(edit_index)
st.session_state['show_edit'] = False
st.experimental_rerun()
else:
st.session_state[f"delete_confirmed_{edit_index}"] = True
st.experimental_rerun()
if st.session_state.get(f"delete_confirmed_{edit_index}", False):
if container.button("Confirm Deletion", key=f"confirm_delete_{edit_index}"):
st.session_state.agents.pop(edit_index)
st.session_state['show_edit'] = False
del st.session_state[f"delete_confirmed_{edit_index}"]
st.experimental_rerun()
if container.button("Cancel", key=f"cancel_delete_{edit_index}"):
del st.session_state[f"delete_confirmed_{edit_index}"]
st.experimental_rerun()
description_value = agent.get('new_description', agent.get('description', ""))
new_description = st.text_area("Description", value=description_value, key=f"desc_{edit_index}")
col1, col2, col3 = st.columns([1, 1, 2])
with col1:
if st.button("Re-roll ", 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.session_state[f"regenerate_description_{edit_index}"] = True
# Update the value parameter of st.text_area to display the new description
description_value = new_description
st.experimental_rerun()
else:
print(f"Failed to regenerate description for {agent['config']['name']}")
with col2:
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.session_state.agents[edit_index] = agent
regenerate_json_files_and_zip()
st.session_state['show_edit'] = False
with col3:
script_dir = os.path.dirname(os.path.abspath(__file__))
skill_folder = os.path.join(script_dir, "skills")
skill_files = [f for f in os.listdir(skill_folder) if f.endswith(".py")]
for skill_file in skill_files:

```

```

skill_name = os.path.splitext(skill_file)[0]
if skill_name not in agent:
    agent[skill_name] = False
    skill_checkbox = st.checkbox(
        f"Add {skill_name} skill to this agent in Autogen™",
        value=agent[skill_name],
        key=f"{skill_name}_{edit_index}"
    )
    if skill_checkbox != agent[skill_name]:
        agent[skill_name] = skill_checkbox
    st.session_state.agents[edit_index] = agent

```

```

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', "")
    # Execute associated skills for the agent
    agent = st.session_state.agents[agent_index]
    agent_skills = agent.get("skills", [])
    skill_results = {}
    for skill_name in agent_skills:
        if skill_name in st.session_state.skill_functions:
            skill_function = st.session_state.skill_functions[skill_name]
            skill_result = skill_function()

```

```

skill_results[skill_name] = skill_result
request = construct_request(agent_name, description, user_request, user_input, rephrased_request, reference_url,
skill_results)
print(f"Request: {request}")
# Use the dynamic LLM provider to send the request
llm_provider = get_llm_provider(API_URL)
llm_request_data = {
    "model": st.session_state.model,
    "temperature": st.session_state.get('temperature', 0.1),
    "max_tokens": st.session_state.max_tokens,
    "top_p": 1,
    "stop": "TERMINATE",
    "messages": [
        {
            "role": "user",
            "content": request
        }
    ]
}
response = llm_provider.send_request(llm_request_data)
if response.status_code == 200:
    response_data = llm_provider.process_response(response)
    if "choices" in response_data and response_data["choices"]:
        content = response_data["choices"][0]["message"]["content"]
        update_discussion_and_whiteboard(agent_name, content, 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
        st.experimental_rerun() # Trigger a rerun to update the UI

```

```

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.
"""

```

```

print(f"regenerate_agent_description called with agent_name: {agent_name}")
print(f"regenerate_agent_description called with prompt: {prompt}")
llm_provider = get_llm_provider(API_URL)
llm_request_data = {
    "model": st.session_state.model,
    "temperature": st.session_state.get('temperature', 0.1),
    "max_tokens": st.session_state.max_tokens,
    "top_p": 1,
    "stop": "TERMINATE",
    "messages": [
        {
            "role": "user",
            "content": prompt
        }
    ]
}
response = llm_provider.send_request(llm_request_data)
if response.status_code == 200:
    response_data = llm_provider.process_response(response)
    if "choices" in response_data and response_data["choices"]:
        content = response_data["choices"][0]["message"]["content"]
        return content.strip()
    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):
    llm_provider = get_llm_provider(API_URL)
    response = llm_provider.send_request(request)
    return response

```

api_utils.py

```

import importlib
import requests
import streamlit as st
import time

```

```

from config import LLM_PROVIDER, RETRY_TOKEN_LIMIT

```

```

def get_llm_provider(api_url):
    provider_module = importlib.import_module(f"llm_providers.{LLM_PROVIDER}_provider")
    provider_class = getattr(provider_module, f"{LLM_PROVIDER.capitalize()}Provider")

```

```
return provider_class(api_url=api_url)
```

```
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:
            llm = LLM_PROVIDER.upper()
            raise ValueError(f"{llm}_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. If you click 'Re-roll' again, we'll retry with a reduced token count. Or you can try selecting 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_with_retry(url, data, headers, api_key):
    response = make_api_request(url, data, headers, api_key)
    if response is None:
        # Add a retry button
        if st.button("Retry with decreased token limit"):
            # Update the token limit in the request data
            data["max_tokens"] = RETRY_TOKEN_LIMIT
            # Retry the request with the decreased token limit
            print(f"Retrying the request with decreased token limit.")
            print(f"URL: {url}")
            print(f"Retry token limit: {RETRY_TOKEN_LIMIT}")
            response = make_api_request(url, data, headers, api_key)
            if response is not None:
                print(f"Retry successful. Response: {response}")
            else:
                print("Retry failed.")
    return response
```

auth_utils.py

```
import os
```

```
import streamlit as st
```

```
from config import LLM_PROVIDER
```

```

def get_api_key():
    api_key_env_var = f"{LLM_PROVIDER.upper()}_API_KEY"
    api_key = os.environ.get(api_key_env_var)

    if api_key is None:
        api_key = globals().get(api_key_env_var)

    if api_key is None:
        if api_key_env_var not in st.session_state:
            api_key = st.text_input(f"Enter the {LLM_PROVIDER.upper()} API Key:", type="password")
            if api_key:
                st.session_state[api_key_env_var] = api_key
                st.success("API Key entered successfully.")
            else:
                st.warning(f"Please enter the {LLM_PROVIDER.upper()} API Key to use the app.")
        else:
            api_key = st.session_state.get(api_key_env_var)

    return api_key

```

```

def get_api_url():
    api_url_env_var = f"{LLM_PROVIDER.upper()}_API_URL"
    api_url = os.environ.get(api_url_env_var)

    if api_url is None:
        api_url = globals().get(api_url_env_var)

    if api_url is None:
        if api_url_env_var not in st.session_state:
            api_url = st.text_input(f"Enter the {LLM_PROVIDER.upper()} API URL:", type="password")
            if api_url:
                st.session_state[api_url_env_var] = api_url
                st.success("API URL entered successfully.")
            else:
                st.warning(f"Please enter the {LLM_PROVIDER.upper()} API URL to use the app.")
        else:
            api_url = st.session_state.get(api_url_env_var)

    return api_url

```

config.py

```

#APIs
LLM_PROVIDER = "groq" # Supported values: "groq", "openai", "ollama", "lmstudio"

GROQ_API_URL = "https://api.groq.com/openai/v1/chat/completions"
LMSTUDIO_API_URL = "http://localhost:1234/v1/chat/completions"

```



```
OLLAMA_API_URL = "http://127.0.0.1:11434/api/generate"
```

```
OPENAI_API_KEY = None
```

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

```
if LLM_PROVIDER == "groq":
```

```
    API_KEY_NAME = "GROQ_API_KEY"
```

```
    API_URL = GROQ_API_URL
```

```
elif LLM_PROVIDER == "lmstudio":
```

```
    API_KEY_NAME = None
```

```
    API_URL = LMSTUDIO_API_URL
```

```
elif LLM_PROVIDER == "openai":
```

```
    API_KEY_NAME = "OPENAI_API_KEY"
```

```
    API_URL = OPENAI_API_URL
```

```
elif LLM_PROVIDER == "ollama":
```

```
    API_KEY_NAME = None
```

```
    API_URL = OLLAMA_API_URL
```

```
else:
```

```
    raise ValueError(f"Unsupported LLM provider: {LLM_PROVIDER}")
```

```
API_KEY_NAMES = {
```

```
    "groq": "GROQ_API_KEY",
```

```
    "lmstudio": None,
```

```
    "ollama": None,
```

```
    "openai": "OPENAI_API_KEY",
```

```
    # Add other LLM providers and their respective API key names here
```

```
}
```

```
# Retry settings
```

```
MAX_RETRIES = 3
```

```
RETRY_DELAY = 2 # in seconds
```

```
RETRY_TOKEN_LIMIT = 5000
```

```
LLM_URL = GROQ_API_URL
```

```
# Model configurations
```

```
if LLM_PROVIDER == "groq":
```

```
    MODEL_TOKEN_LIMITS = {
```

```
        'mixtral-8x7b-32768': 32768,
```

```
        'llama3-70b-8192': 8192,
```

```
        'llama3-8b-8192': 8192,
```

```
        'gemma-7b-it': 8192,
```

```
    }
```

```
elif LLM_PROVIDER == "lmstudio":
```

```
    MODEL_TOKEN_LIMITS = {
```

```
        'instructlab/granite-7b-lab-GGUF': 2048,
```

```
    }
```

```
elif LLM_PROVIDER == "openai":
```

```
    MODEL_TOKEN_LIMITS = {
```

```
        'gpt-4o': 4096,
```

```
    }
```

```

elif LLM_PROVIDER == "ollama":
MODEL_TOKEN_LIMITS = {
'lama3': 8192,
}
else:
MODEL_TOKEN_LIMITS = {}

```

file_utils.py

```

import datetime
import os
import re
import streamlit as st

def create_agent_data(agent):
expert_name = agent['config']['name']
description = agent['description']
current_timestamp = datetime.datetime.now().isoformat()

formatted_expert_name = sanitize_text(expert_name)
formatted_expert_name = formatted_expert_name.lower().replace(' ', '_')

sanitized_description = sanitize_text(description)
temperature_value = st.session_state.get('temperature', 0.1)

autogen_agent_data = {
"type": "assistant",
"config": {
"name": formatted_expert_name,
"llm_config": {
"config_list": [
{
"user_id": "default",
"timestamp": current_timestamp,
"model": st.session_state.model,
"base_url": None,
"api_type": None,
"api_version": None,
"description": "OpenAI model configuration"
}
],
"temperature": temperature_value,
"cache_seed": None,
"timeout": None,
"max_tokens": None,
"extra_body": None
},
"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}."

```

```

"is_termination_msg": None,
"code_execution_config": None,
"default_auto_reply": "",
"description": description
},
"timestamp": current_timestamp,
"user_id": "default",
"skills": []
}

#script_dir = os.path.dirname(os.path.abspath(__file__))
skill_folder = os.path.join(os.path.dirname(os.path.abspath(__file__)), "skills")
skill_files = [f for f in os.listdir(skill_folder) if f.endswith(".py")]

for skill_file in skill_files:
    skill_name = os.path.splitext(skill_file)[0]
    if agent.get(skill_name, False):
        skill_file_path = os.path.join(skill_folder, skill_file)
        with open(skill_file_path, 'r') as file:
            skill_data = file.read()
            skill_json = create_skill_data(skill_data)
            autogen_agent_data["skills"].append(skill_json)

crewai_agent_data = {
    "name": expert_name,
    "description": description,
    "verbose": True,
    "allow_delegation": True
}

return autogen_agent_data, crewai_agent_data

def create_skill_data(python_code):
    # Extract the function name from the Python code
    function_name_match = re.search(r"def\s+(\w+)\(", python_code)
    if function_name_match:
        function_name = function_name_match.group(1)
    else:
        function_name = "unnamed_function"

    # Extract the skill description from the docstring
    docstring_match = re.search(r'"""(.*)"""', python_code, re.DOTALL)
    if docstring_match:
        skill_description = docstring_match.group(1).strip()
    else:
        skill_description = "No description available"

    # Get the current timestamp
    current_timestamp = datetime.datetime.now().isoformat()

```

```
# Create the skill data dictionary
skill_data = {
    "title": function_name,
    "content": python_code,
    "file_name": f"{function_name}.json",
    "description": skill_description,
    "timestamp": current_timestamp,
    "user_id": "default"
}
```

```
return skill_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'[^\w\d.-_!@#$%^&*()-+=~`|;:\'"/>?<]+', '', text)
    return text
```

main.py

```
import os
import streamlit as st
```

```
from config import LLM_PROVIDER, MODEL_TOKEN_LIMITS
```

```
from agent_management import display_agents
from auth_utils import get_api_key
from ui_utils import 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,
load_skill_functions
```

```
def main():
    # Construct the relative path to the CSS file
    css_file = "AutoGroq/style.css"

    # Check if the CSS file exists
    if os.path.exists(css_file):
        with open(css_file) as f:
            st.markdown(f'<style>{f.read()}</style>', unsafe_allow_html=True)
```

```

else:
    st.error(f"CSS file not found: {os.path.abspath(css_file)}")

load_skill_functions()

api_key = get_api_key()
if api_key is None:
    api_key = display_api_key_input()
if api_key is None:
    llm = LLM_PROVIDER.upper()
    st.warning(f"{llm}_API_KEY not found. Please enter your API key.")
    return

col1, col2 = st.columns([1, 1]) # Adjust the column widths as needed
with col1:
    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]

with col2:
    temperature = st.slider(
        "Set Temperature",
        min_value=0.0,
        max_value=1.0,
        value=st.session_state.get('temperature', 0.3),
        step=0.01,
        key='temperature'
    )

# If the LLM Provider is "groq", the title is "AutoGroq"
if LLM_PROVIDER == "groq":
    st.title("AutoGroq")
elif LLM_PROVIDER == "ollama":
    st.title("AutoGroqOllama")
elif LLM_PROVIDER == "lmstudio":
    st.title("AutoGroqLM_Studio")
elif LLM_PROVIDER == "openai":
    st.title("AutoGroqChatGPT")

# 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 datetime
import importlib
import os
import streamlit as st
import time

from config import API_URL, LLM_PROVIDER, MAX_RETRIES, MODEL_TOKEN_LIMITS, RETRY_DELAY

from skills.fetch_web_content import fetch_web_content

def display_api_key_input():
    if 'api_key' not in st.session_state:
        st.session_state.api_key = ""
    llm = LLM_PROVIDER.upper()
    api_key = st.text_input(f"Enter your {llm}_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 api_utils import get_llm_provider
from file_utils import create_agent_data, create_skill_data, sanitize_text
```

```
import datetime
```

```
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:
        if "whiteboard" not in st.session_state:
            st.session_state.whiteboard = ""
        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)
reference_url = st.text_input("URL:", key="reference_url")

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:
url = url_match.group()
if "reference_html" not in st.session_state or url not in st.session_state.reference_html:
html_content = fetch_web_content(url)
if html_content:
if "reference_html" not in st.session_state:
st.session_state.reference_html = {}
st.session_state.reference_html[url] = html_content
else:
st.warning("Failed to fetch HTML content.")
else:
st.session_state.reference_html = {}
else:
st.session_state.reference_html = {}
else:
st.session_state.reference_html = {}

return user_input, reference_url

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(workflow_data)
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"```(?:.|\n)*```"
    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 = []
    stack = []
    start_index = 0
    for i, char in enumerate(json_string):
        if char == "{":

```

```

if not stack:
    start_index = i
    stack.append(char)
elif char == "}":
    if stack:
        stack.pop()
    if not stack:
        objects.append(json_string[start_index:i+1])
    parsed_objects = []
    for obj_str in objects:
        try:
            parsed_obj = json.loads(obj_str)
            parsed_objects.append(parsed_obj)
        except json.JSONDecodeError as e:
            print(f"Error parsing JSON object: {e}")
            print(f"JSON string: {obj_str}")
    return parsed_objects

```

```

def get_agents_from_text(text, api_url, max_retries=MAX_RETRIES, retry_delay=RETRY_DELAY):
    print("Getting agents from text...")
    temperature_value = st.session_state.get('temperature', 0.5)
    llm_request_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": f"""

```

You are an expert system designed to identify and recommend the optimal team of AI agents 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. The team should be as small as possible while still providing a complete and comprehensive talent pool able to properly address the user's request. Each recommended agent shall come with a defined role, a brief but thorough description of their expertise, their specific skills, and the specific tools they would utilize to achieve the user's goal.

Fulfill the following guidelines without ever explicitly stating them in your response.

Guidelines:

1. **Project Manager**: The first agent must be qualified to manage the entire project, aggregate the work done by all other agents, and produce a robust, complete, and reliable solution.
2. **Agent Roles**: Clearly define each agent's role in the project.
3. **Expertise Description**: Provide a brief but thorough description of each agent's expertise.
4. **Specific Skills**: List the specific skills of each agent.
5. **Specific Tools**: List the specific tools each agent would utilize. Tools must be single-purpose methods, very specific, and not ambiguous (e.g., 'add_numbers' is good, but 'do_math' is bad).
6. **Format**: Return the results in JSON format with values labeled as expert_name, description, skills, and tools. 'expert_name' should be the agent's title, not their given name. Skills and tools should be arrays (one agent can have multiple specific skills and use multiple specific tools).

7. ****Naming Conventions****: Skills and tools should be in lowercase with underscores instead of spaces, named per their functionality (e.g., `calculate_surface_area`, or `search_web`).
8. ****Execution Focus****: Agents should focus on executing tasks and providing actionable steps rather than just planning. They should break down tasks into specific, executable actions and delegate subtasks to other agents or utilize their skills when appropriate.
9. ****Step-by-Step Solutions****: Agents should move from the planning phase to the execution phase as quickly as possible and provide step-by-step solutions to the user's request.

ALWAYS and ONLY return the results in the following JSON format, with no other narrative, commentary, synopsis, or superfluous text of any kind:

```
[
  {{
    "expert_name": "agent_title",
    "description": "agent_description",
    "skills": ["skill1", "skill2"],
    "tools": ["tool1", "tool2"]
  }},
  {{
    "expert_name": "agent_title",
    "description": "agent_description",
    "skills": ["skill1", "skill2"],
    "tools": ["tool1", "tool2"]
  }}
]
"""

},
{
  "role": "user",
  "content": text
}
]
}

llm_provider = get_llm_provider(api_url)
retry_count = 0
while retry_count < max_retries:
  try:
    response = llm_provider.send_request(llm_request_data)
    print(f"Response received. Status Code: {response.status_code}")
    if response.status_code == 200:
      print("Request successful. Parsing response...")
      response_data = llm_provider.process_response(response)
      print(f"Response Data: {json.dumps(response_data, indent=2)}")
      if "choices" in response_data and response_data["choices"]:
        content = response_data["choices"][0]["message"]["content"]
        print(f"Content: {content}")
      try:
        json_data = json.loads(content)
        if isinstance(json_data, list):
          autogen_agents = []
          crewai_agents = []
```

```

for agent_data in json_data:
    expert_name = agent_data.get('expert_name', '')
    if not expert_name:
        print("Missing agent name. Retrying...")
        retry_count += 1
        time.sleep(retry_delay)
        continue
    description = agent_data.get('description', '')
    skills = agent_data.get('skills', [])
    tools = agent_data.get('tools', [])
    agent_skills = []
    for skill_name in skills:
        if skill_name in st.session_state.skill_functions:
            agent_skills.append(skill_name)
    autogen_agent_data = {
        "type": "assistant",
        "config": {
            "name": expert_name,
            "llm_config": {
                "config_list": [
                    {
                        "user_id": "default",
                        "timestamp": datetime.datetime.now().isoformat(),
                        "model": st.session_state.model,
                        "base_url": None,
                        "api_type": None,
                        "api_version": None,
                        "description": "OpenAI model configuration"
                    }
                ],
                "temperature": temperature_value,
                "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 {description}."
        },
        "description": description,
        "skills": agent_skills,
        "tools": tools
    }
    crewai_agent_data = {
        "name": expert_name,
        "description": description,
        "skills": agent_skills,
        "tools": tools,
        "verbose": True,
        "allow_delegation": True
    }

```

```

autogen_agents.append(autogen_agent_data)
crewai_agents.append(crewai_agent_data)
print(f"AutoGen Agents: {autogen_agents}")
print(f"CrewAI Agents: {crewai_agents}")
return autogen_agents, crewai_agents
else:
print("Invalid JSON format. Expected a list of agents.")
return [], []
except json.JSONDecodeError as e:
print(f"Error parsing JSON: {e}")
print(f"Content: {content}")
json_data = extract_json_objects(content)
if json_data:
autogen_agents = []
crewai_agents = []
for agent_data in json_data:
expert_name = agent_data.get('expert_name', "")
if not expert_name:
print("Missing agent name. Retrying...")
retry_count += 1
time.sleep(retry_delay)
continue
description = agent_data.get('description', "")
skills = agent_data.get('skills', [])
tools = agent_data.get('tools', [])
agent_skills = []
for skill_name in skills:
if skill_name in st.session_state.skill_functions:
agent_skills.append(skill_name)
autogen_agent_data = {
"type": "assistant",
"config": {
"name": expert_name,
"llm_config": {
"config_list": [
{
"user_id": "default",
"timestamp": datetime.datetime.now().isoformat(),
"model": st.session_state.model,
"base_url": None,
"api_type": None,
"api_version": None,
"description": "OpenAI model configuration"
}
],
"temperature": temperature_value,
"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 {description}."
},
"description": description,
"skills": agent_skills,
"tools": tools
}
crewai_agent_data = {
"name": expert_name,
"description": description,
"skills": agent_skills,
"tools": tools,
"verbose": True,
"allow_delegation": True
}
autogen_agents.append(autogen_agent_data)
crewai_agents.append(crewai_agent_data)
print(f"AutoGen Agents: {autogen_agents}")
print(f"CrewAI Agents: {crewai_agents}")
return autogen_agents, crewai_agents
else:
print("Failed to extract JSON objects from content.")
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": []
},
"receiver": {
  "type": "groupchat",
  "config": {
    "name": "group_chat_manager",
    "llm_config": {
      "config_list": [
        {
          "user_id": "default",
          "timestamp": datetime.datetime.now().isoformat(),
          "model": st.session_state.model,
          "base_url": None,
          "api_type": None,
          "api_version": None,
          "description": "OpenAI model configuration"
        }
      ],
      "temperature": temperature_value,
      "cache_seed": 42,
      "timeout": 600,
      "max_tokens": MODEL_TOKEN_LIMITS.get(st.session_state.model, 4096),
      "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": []
},
"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:] if a in
st.session_state.agents] # Filter out deleted agents

```

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."

```

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": [
{
"user_id": "default",
"timestamp": datetime.datetime.now().isoformat(),
"model": st.session_state.model,
"base_url": None,

```

```

"api_type": None,
"api_version": None,
"description": "OpenAI model configuration"
}
],
"temperature": temperature_value,
"cache_seed": 42,
"timeout": 600,
"max_tokens": MODEL_TOKEN_LIMITS.get(st.session_state.model, 4096),
"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": [] # Set skills to null only in the workflow JSON
}

```

```

workflow["receiver"]["groupchat_config"]["agents"].append(agent_config)

```

```

crewai_agents = []
for agent in agents:
    if agent not in st.session_state.agents: # Check if the agent exists in st.session_state.agents
        continue # Skip the agent if it has been deleted

```

```

_, crewai_agent_data = create_agent_data(agent)
crewai_agents.append(crewai_agent_data)

```

```

return workflow, crewai_agents

```

```

def handle_user_request(session_state):
    print("Debug: Handling user request for session state: ", session_state)
    user_request = session_state.user_request
    max_retries = MAX_RETRIES
    retry_delay = RETRY_DELAY

    for retry in range(max_retries):
        try:
            print("Debug: Sending request to rephrase_prompt")
            rephrased_text = rephrase_prompt(user_request, API_URL) # Pass the API_URL to rephrase_prompt
            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

if "rephrased_request" not in session_state:
    st.warning("Failed to rephrase the user request. Please try again.")
    return

rephrased_text = session_state.rephrased_request

autogen_agents, crewai_agents = get_agents_from_text(rephrased_text, API_URL)
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

# Set the agents attribute in the session state
session_state.agents = autogen_agents

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(workflow_data)
session_state.autogen_zip_buffer = autogen_zip_buffer
session_state.crewai_zip_buffer = crewai_zip_buffer

def load_skill_functions():
    script_dir = os.path.dirname(os.path.abspath(__file__))
    skill_folder = os.path.join(script_dir, "skills")
    skill_files = [f for f in os.listdir(skill_folder) if f.endswith(".py")]
    skill_functions = {}
    for skill_file in skill_files:
        skill_name = os.path.splitext(skill_file)[0]
        skill_module = importlib.import_module(f"skills.{skill_name}")

```

```

if hasattr(skill_module, skill_name):
    skill_functions[skill_name] = getattr(skill_module, skill_name)
st.session_state.skill_functions = skill_functions

```

```

def regenerate_json_files_and_zip():
    # Get the updated workflow data
    workflow_data, _ = get_workflow_from_agents(st.session_state.agents)

    # Regenerate the zip files
    autogen_zip_buffer, crewai_zip_buffer = zip_files_in_memory(workflow_data)

    # Update the zip buffers in the session state
    st.session_state.autogen_zip_buffer = autogen_zip_buffer
    st.session_state.crewai_zip_buffer = crewai_zip_buffer

```

```

def rephrase_prompt(user_request, api_url):
    temperature_value = st.session_state.get('temperature', 0.1)
    print("Executing rephrase_prompt()")
    print(f"Debug: api_url: {api_url}")

```

```

refactoring_prompt = f"""

```

Refactor the following user request into an optimized prompt for a language model whose priority is resolving user request by discussing and performing the actions necessary to fulfill the user's request. Focus on the fulfilling all following aspects without explicitly stating them:

1. Clarity: Ensure the prompt is clear and unambiguous.
2. Specific Instructions: Provide detailed steps or guidelines.
3. Context: Include necessary background information.
4. Structure: Organize the prompt logically.
5. Language: Use concise and precise language.
6. Examples: Offer examples to illustrate the desired output.
7. Constraints: Define any limits or guidelines.
8. Engagement: Make the prompt engaging and interesting.
9. Feedback Mechanism: Suggest a way to improve or iterate on the response.

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.

User request: "{user_request}"

Rephrased:

```

"""

```

```

model = st.session_state.model
max_tokens = MODEL_TOKEN_LIMITS.get(model, 4096) # Use the appropriate max_tokens value based on the
selected model

```

```

llm_request_data = {
    "model": model,
    "temperature": temperature_value,
    "max_tokens": max_tokens,

```

```

"top_p": 1,
"stop": "TERMINATE",
"messages": [
{
"role": "user",
"content": refactoring_prompt,
},
],
}

```

```

llm_provider = get_llm_provider(api_url) # Pass the api_url to get_llm_provider

```

```

try:
print("Sending request to LLM API...")
print(f"Request Details:")
print(f" URL: {api_url}") # Print the API URL
print(f" Model: {model}")
print(f" Max Tokens: {max_tokens}")
print(f" Temperature: {temperature_value}")
print(f" Messages: {llm_request_data['messages']}")

```

```

response = llm_provider.send_request(llm_request_data)
print(f"Response received. Status Code: {response.status_code}")
print(f"Response Content: {response.text}")

```

```

if response.status_code == 200:
print("Request successful. Parsing response...")
response_data = llm_provider.process_response(response)
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 Exception as e:
print(f"An 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(workflow_data):
    autogen_zip_buffer = io.BytesIO()
    crewai_zip_buffer = io.BytesIO()
```

```
    autogen_file_data = {}
    for agent in st.session_state.agents:
        agent_name = agent['config']['name']
        formatted_agent_name = sanitize_text(agent_name).lower().replace(' ', '_')
        agent_file_name = f"{formatted_agent_name}.json"
        autogen_agent_data, _ = create_agent_data(agent)
        autogen_agent_data['config']['name'] = formatted_agent_name
        agent_file_data = json.dumps(autogen_agent_data, indent=2).encode('utf-8')
        autogen_file_data[f"agents/{agent_file_name}"] = agent_file_data
```

```
    script_dir = os.path.dirname(os.path.abspath(__file__))
    skill_folder = os.path.join(script_dir, "skills")
    skill_files = [f for f in os.listdir(skill_folder) if f.endswith(".py")]
```

```
    for skill_file in skill_files:
        skill_name = os.path.splitext(skill_file)[0]
        if agent.get(skill_name, False):
            skill_file_path = os.path.join(skill_folder, skill_file)
            with open(skill_file_path, 'r') as file:
                skill_data = file.read()
            skill_json = json.dumps(create_skill_data(skill_data), indent=2).encode('utf-8')
            autogen_file_data[f"skills/{skill_name}.json"] = skill_json
```

```
    workflow_file_name = "workflow.json"
    workflow_file_data = json.dumps(workflow_data, indent=2).encode('utf-8')
    autogen_file_data[workflow_file_name] = workflow_file_data
```

```
    crewai_file_data = {}
    for index, agent in enumerate(st.session_state.agents):
        agent_name = agent['config']['name']
        formatted_agent_name = sanitize_text(agent_name).lower().replace(' ', '_')
        crewai_agent_data = create_agent_data(agent)[1]
        crewai_agent_data['name'] = formatted_agent_name
        agent_file_name = f"{formatted_agent_name}.json"
        agent_file_data = json.dumps(crewai_agent_data, indent=2).encode('utf-8')
        crewai_file_data[f"agents/{agent_file_name}"] = agent_file_data
```

```
    create_zip_file(autogen_zip_buffer, autogen_file_data)
    create_zip_file(crewai_zip_buffer, crewai_file_data)
```

```
autogen_zip_buffer.seek(0)
crewai_zip_buffer.seek(0)

return autogen_zip_buffer, crewai_zip_buffer
```

base_provider.py

```
# llm_providers/base_provider.py
from abc import ABC, abstractmethod
```

```
class BaseLLMProvider(ABC):
    @abstractmethod
    def send_request(self, data):
        pass

    @abstractmethod
    def process_response(self, response):
        pass
```

groq_provider.py

```
import json
import requests
from auth_utils import get_api_key
from llm_providers.base_provider import BaseLLMProvider

class GroqProvider(BaseLLMProvider):
    def __init__(self, api_url):
        self.api_key = get_api_key()
        self.api_url = api_url

    def send_request(self, data):
        headers = {
            "Authorization": f"Bearer {self.api_key}",
            "Content-Type": "application/json",
        }
        # Ensure data is a JSON string
        if isinstance(data, dict):
            json_data = json.dumps(data)
        else:
            json_data = data
        response = requests.post(self.api_url, data=json_data, headers=headers)
        return response

    def process_response(self, response):
        if response.status_code == 200:
            return response.json()
        else:
```

```
raise Exception(f"Request failed with status code {response.status_code}")
```

lmstudio_provider.py

```
import json
import requests
from llm_providers.base_provider import BaseLLMProvider

class LmstudioProvider(BaseLLMProvider):
    def __init__(self, api_url):
        self.api_url = api_url

    def send_request(self, data):
        headers = {
            "Content-Type": "application/json",
        }

        # Construct the request data in the format expected by the LM Studio API
        lm_studio_request_data = {
            "model": data["model"],
            "messages": data["messages"],
            "temperature": data.get("temperature", 0.1),
            "max_tokens": data.get("max_tokens", 2048),
            "stop": data.get("stop", "TERMINATE"),
        }

        # Ensure data is a JSON string
        if isinstance(lm_studio_request_data, dict):
            json_data = json.dumps(lm_studio_request_data)
        else:
            json_data = lm_studio_request_data

        response = requests.post(f"{self.api_url}", data=json_data, headers=headers)
        return response

    def process_response(self, response):
        if response.status_code == 200:
            response_data = response.json()
            if "choices" in response_data:
                content = response_data["choices"][0]["message"]["content"]
                return {
                    "choices": [
                        {
                            "message": {
                                "content": content.strip()
                            }
                        }
                    ]
                }
            else:
                return {}
        else:
            return {}
```



```
else:
    raise Exception("Unexpected response format. 'choices' field missing.")
else:
    raise Exception(f"Request failed with status code {response.status_code}")
```

ollama_provider.py

```
import json
import requests
from llm_providers.base_provider import BaseLLMProvider

class OllamaProvider(BaseLLMProvider):
    def __init__(self, api_url):
        self.api_url = api_url

    def send_request(self, data):
        headers = {
            "Content-Type": "application/json",
        }
        # Construct the request data in the format expected by the Ollama API
        ollama_request_data = {
            "model": data["model"],
            "prompt": data["messages"][0]["content"],
            "temperature": data.get("temperature", 0.1),
            "max_tokens": data.get("max_tokens", 2048),
            "stop": data.get("stop", "TERMINATE"),
            "stream": False,
        }
        # Ensure data is a JSON string
        if isinstance(ollama_request_data, dict):
            json_data = json.dumps(ollama_request_data)
        else:
            json_data = ollama_request_data
        response = requests.post(self.api_url, data=json_data, headers=headers)
        return response

    def process_response(self, response):
        if response.status_code == 200:
            response_data = response.json()
            if "response" in response_data:
                content = response_data["response"].strip()
            if content:
                return {
                    "choices": [
                        {
                            "message": {
                                "content": content
                            }
                        }
                    ]
                }
```

```

}
]
}
else:
raise Exception("Empty response received from the Ollama API.")
else:
raise Exception("Unexpected response format. 'response' field missing.")
else:
raise Exception(f"Request failed with status code {response.status_code}")

```

openai_provider.py

```

import requests
import json
from auth_utils import get_api_key
from llm_providers.base_provider import BaseLLMProvider

class OpenaiProvider(BaseLLMProvider):

    def __init__(self, api_url):
        self.api_key = get_api_key()
        self.api_url = api_url

    def send_request(self, data):
        headers = {
            "Authorization": f"Bearer {self.api_key}",
            "Content-Type": "application/json",
        }

        # Ensure data is a JSON string
        if isinstance(data, dict):
            json_data = json.dumps(data)
        else:
            json_data = data

        response = requests.post(self.api_url, data=json_data, headers=headers)
        return response

    def process_response(self, response):
        if response.status_code == 200:
            return response.json()
        else:
            raise Exception(f"Request failed with status code {response.status_code}")

```

fetch_web_content.py

```

from typing import Optional
import requests
import collections
collections.Callable = collections.abc.Callable

```

```
from bs4 import BeautifulSoup
```

```
def fetch_web_content(url: str) -> Optional[str]:  
    """
```

Fetches the text content from a website.

Args:

url (str): The URL of the website.

Returns:

Optional[str]: The content of the website.
 """

```
try:
```

```
# Send a GET request to the URL
```

```
response = requests.get(url)
```

```
# Check for successful access to the webpage
```

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

```
# Parse the HTML content of the page using BeautifulSoup
```

```
soup = BeautifulSoup(response.text, "html.parser")
```

```
# Extract the content of the <body> tag
```

```
body_content = soup.body
```

```
if body_content:
```

```
# Return all the text in the body tag, stripping leading/trailing whitespaces
```

```
return " ".join(body_content.get_text(strip=True).split())
```

```
else:
```

```
# Return None if the <body> tag is not found
```

```
return None
```

```
else:
```

```
# Return None if the status code isn't 200 (success)
```

```
return None
```

```
except requests.RequestException:
```

```
# Return None if any request-related exception is caught
```

```
return None
```