agent_management.py

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

from api_utils import send_request_to_groq_api
from bs4 import BeautifulSoup
from ui_utils import get_api_key, 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'):
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}",
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()
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.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(
```

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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:
```

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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()
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()
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()
response = llm_provider.send_request(request)
return response

api_utils.py

import requests
import streamlit as st
import time

```
from config import GROQ_API_URL, GROQ_API_URL, LLM_PROVIDER, LLM_URL, OPENAI_API_URL,
RETRY_TOKEN_LIMIT
from llm_providers.groq_provider import GroqProvider
from llm_providers.openai_provider import OpenAIProvider


def get_llm_provider():
if LLM_PROVIDER == "groq":
return GroqProvider(api_url=GROQ_API_URL)
elif LLM_PROVIDER == "openai":
return OpenAIProvider(api_url=OPENAI_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:
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. 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_to_groq_api(expert_name, request, api_key):
llm_url = LLM_URL
temperature_value = st.session_state.get('temperature', 0.1)
if api_key is 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 = llm_url
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


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 GROQ_API_KEY_NAME, LLM_PROVIDER, OPENAI_API_KEY_NAME

def get_api_key():
if LLM_PROVIDER == "groq":
api_key_name = GROQ_API_KEY_NAME
elif LLM_PROVIDER == "openai":
api_key_name = OPENAI_API_KEY_NAME
# Add other LLM providers here...
else:
raise ValueError(f"Unsupported LLM provider: {LLM_PROVIDER}")

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

api_key = os.environ.get(api_key_name)
if api_key:
print(f"API Key from environment variable: {api_key}")
return api_key

api_key = st.secrets.get(api_key_name)
if api_key:
print(f"API Key from Streamlit secrets: {api_key}")
return api_key

api_key = st.text_input(f"Enter the {api_key_name}:", type="password")
if api_key:
st.session_state.api_key = api_key
st.success("API key entered successfully.")
return api_key
else:
st.warning(f"Please enter the {api_key_name} to use the app.")
return None
```

config.py

```
#APIs
LLM_PROVIDER = "groq" # Supported values: "groq", "openai"

GROQ_API_KEY_NAME = "GROQ_API_KEY"
GROQ_API_KEY = None
GROQ_API_URL = "https://api.groq.com/openai/v1/chat/completions"

OPENAI_API_KEY_NAME = "OPENAI_API_KEY"
OPENAI_API_KEY = None
OPENAI_API_URL = "https://api.openai.com/v1/chat/completions"
```

```
# Retry settings
MAX_RETRIES = 3
RETRY_DELAY = 2  # in seconds
RETRY_TOKEN_LIMIT = 5000
LLM_URL = GROQ_API_URL

# Model configurations
MODEL_TOKEN_LIMITS = {
'llama3-70b-8192': 8192,
'llama3-8b-8192': 8192,
'mixtral-8x7b-32768': 32768,
'gemma-7b-it': 8192,
'gpt-4o': 4096,
}
```

file_utils.py

```
import datetime
import importlib.resources as resources
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)

autogen_agent_data = {
"type": "assistant",
"config": {
"name": formatted_expert_name,
"llm_config": {
"config_list": [
{
"user_id": "default",
"timestamp": current_timestamp,
"model": "gpt-4",
"base_url": None,
"api_type": None,
"api_version": None,
"description": "OpenAI model configuration"
}
],
"temperature": st.session_state.get('temperature', 0.1),
```

```
"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'[^a-zA-Z0-9\s.,!?:;\'"-]+', '', text)
return text
```

main.py

```
import os
import streamlit as st

from config import MODEL_TOKEN_LIMITS

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, 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:
st.warning("Please enter your GROQ_API_KEY to use the app.")
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'
)

st.title("AutoGroqGPT")

# 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 auth_utils import get_api_key
from config import OPENAI_API_KEY_NAME, GROQ_API_KEY_NAME, LLM_URL, 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 = ''

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 api_utils import get_llm_provider
from file_utils import create_agent_data, create_skill_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:
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"```(.*?)```"
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])

# Try to parse each extracted object
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, 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.

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.

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()

retry_count = 0
while retry_count < max_retries:
try:
llm_request_json = json.dumps(llm_request_data)

response = llm_provider.send_request(llm_request_json)
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"]
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', [])
# Associate skills with the agent based on their capabilities
agent_skills = []
for skill_name in skills:
if skill_name in st.session_state.skill_functions:
agent_skills.append(skill_name)
# Create the agent data using the new signature
autogen_agent_data = {
"type": "assistant",
"config": {
"name": expert_name,
"llm_config": {
"config_list": [
{
"user_id": "default",
"timestamp": datetime.datetime.now().isoformat(),
"model": "gpt-4",
"base_url": None,
"api_type": None,
"api_version": None,
"description": "OpenAI model configuration"
}
],
"temperature": st.session_state.get('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 {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}")
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": "gpt-4",
"base_url": None,
"api_type": None,
"api_version": None,
"description": "OpenAI model configuration"
}
],
"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": []
},
"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": "gpt-4",
"base_url": None,
"api_type": None,
"api_version": None,
"description": "OpenAI model configuration"
}
```

```
],
"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": []  # 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):
user_request = session_state.user_request
max_retries = MAX_RETRIES
retry_delay = RETRY_DELAY

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

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)
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):
temperature_value = st.session_state.get('temperature', 0.1)
print("Executing rephrase_prompt()")

refactoring_prompt = f"""
Refactor the following user request into an optimized prompt for a language model. Focus on the following aspects:
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()

try:
print("Sending request to LLM API...")
print(f"Request Details:")
print(f"  URL: {llm_provider.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}")

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\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 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",
}
response = requests.post(self.api_url, 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}")
```

openai_provider.py

```
# llm_providers/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
```