Write me a set of python functions for a jiu-jitsu analysis and coaching app. I want to use the current version of this file called jiu-jitsu functions, but adjust the file contents based on this new prompt. I want the following top level functions, using the helper functions I have included in the genai.py, chatgpt.py, and movieai.py files. The top level functions I want are:

1. A function called “generate\_grappling\_plan”: I want to send the function: a still frame image of a grappling match; provide a variable for whether the image is to recognize the top jiu-jitsu player, the bottom jiu-jitsu player, or both players called “player\_variable”; an optional variable for whether or not this is an MMA or Jiu-jitsu match called “isMMA”; and an optional variable for some keywords to prime the ai on what to look for.
   1. Then I want call genai.generate\_image\_description and pass it the image, and the following prompt: “the image is a still frame from a grappling match. The match has <<isMMA>> rules. I want you to analyze: <<player\_variable>>, and provide three options for the next immediate steps towards grappling moves that would work best for them given their current position. I want these steps to be listed in quick bullet format like ex: “1) <<step>> : towards <<move>>, 2) …” Base the recommendations on historical MMA and Jiu-jitsu match performance. I want you to also take special note of the following keywords for your image and recommendation analysis: <<keywords>>”
   2. I then want to return the text of the response as the overall function return
2. A function called “analyse\_grappling\_match”: I want to send the function: a video of a grappling match; provide a variable for whether the image is to recognize the top jiu-jitsu player, the bottom jiu-jitsu player, or both players called “player\_variable”; an optional variable for whether or not this is an MMA or Jiu-jitsu match called “isMMA”; an optional variable for some keywords to prime the ai on what to look for, a variable called “start\_time”, and a variable called “end\_time”.
   1. If provided a start\_time and an end\_time, I want to generate a subset of the video provided which contains only the part of the video between the start and end times.
   2. Then I want to call the Genai.generate\_video\_description function subset of the video just created if present, or the original video if there was no subset generated. I will call the function with the following prompt: “these images are frames from from a grappling match. The match has <<isMMA>> rules. I want you to analyze: <<player\_variable>>, and provide an analysis of what went right or wrong during the match, along with some recommendations for the <player\_variable> in their next match” I want these recommendations to be listed in a quick summary format. Base the recommendations on the athlete’s body type, jiu-jitsu guard situation, and historical MMA and Jiu-jitsu match performance. I want you to also take special note of the following keywords for your analysis: <<keywords>>”
3. A function called “generate\_flow\_chart”: I want to send the function: a text description of the physical attributes of the athlete called “measurables”; a variable for whether the image is to be from a top jiu-jitsu position, bottom jiu-jitsu position, or both positions “position\_variable” (where the default is both positions); an optional variable for whether or not this is an MMA or Jiu-jitsu match called “isMMA” (default is yes); and an optional variable for some keywords to prime the ai on what to come up with for called “favorite\_ideas”
   1. Then I want to call Genai.generate\_text with the following prompt: “I want you to generate a Mermaid based radial visual flow chart of jiu-jitsu moves that will have the greatest likelihood of success for an athlete with the following measurables: <measurables>. I want this chart to focus on <position\_variable> under the <isMMA> ruleset, and take into account that the athlete has the following ideas: <favorite\_ideas> of the athlete. Could you label the flow arrows in the diagram using a description of the primary movement required to get to that bubble. Only return the mermaid object, and not any shoulder text whatsoever”
   2. I want the function to return a string called mermaid\_object which contains the response from Genai.generate\_text
4. A function called “gracie\_talk”: I want to pass the function a text variable for the name of a Gracie to speak with called “gracie\_name”, a text variable called “chat\_history” which contains the history of the chat, and a text variable called “user\_messaage” which contains the next prompt in the conversation. Using these inputs, I want to call Genai.generate\_chat\_response with the <chat\_history>, the <user\_message>, and the following prompt: “you are the famous martial arts practitioner <gracie\_name>. I want you to have a conversation with the user based on that information, and have the conversation focused around improving the user’s grappling and self-defense. I want the conversation to always have an upbeat and motivational conversational style.”
5. A function called: “generate\_mermaid”, which takes in string called mermaid\_object, and coverts it into a displayable javascript based Mermaid object. Then the function will return the Mermaid object.
6. A function called: “display\_graph”, which takes in a Mermaid objected called flow\_chart, and then displays the chart as an HTML object which can be expanded or shrunk to fit the user’s desired size.
7. A function called next\_move, which takes in the mermaid chart called flow\_chart, and the text of the next move selected called move\_text, a text description of the physical attributes of the athlete called “measurables”; an optional variable for whether or not this is an MMA or Jiu-jitsu match called “isMMA” (default is yes); and an optional variable for some keywords to prime the ai on what to come up with for called “favorite\_ideas”It will then search the flow chart for the text of that move represented as one of the lines, and select the next node in sequence as the center of a new diagram. The text of this node will be called new\_position. Then it will call generate\_flow\_chart with all of those inputs and pass it the new\_position variable as the “position\_variable” input. The function will return
8. I also want a function called “get\_attributes”: I want to send the function: a still frame image of a grappling match; provide a variable for whether the image is to recognize the top jiu-jitsu player, the bottom jiu-jitsu player, or both players called “player\_variable”; it then calls genai.generate\_image\_description to ask the ai what the height and weight of the athlete in a particular position is.

Useful helper functions

Genai.generate\_text (needs prompt + possibly instance instructions)

Genai.generate\_chat\_response (chat\_history and user\_message)

Genai.generate\_image(prompt)

Genai.encode\_image(file)

Genai.generate\_image\_description(image, instructions)

Genai.extract\_frames (video, max samples)

Genai.generate\_video\_description(vide, max samples, instructions)

Write me a front end for an app called Jiu-Jitsu Genie. This app will have python based functions, but does not overall need to be in python. I recommend flask, but do whatever is easiest to display mermaid based flow charts. This app will use the helper functions I have included in the jiu-jitsu functions.py, genai.py, chatgpt.py, and movieai.py files.

I want this app to have a nice black and white GUI. I want the left hand side to have a selection bar which allows the user to choose between a number of functions that will be described in detail later. Across all of the functions, I want to have state variables which persist. Those variables are called “current\_image” which is a string that points to an imported image into the flask app , “current\_chat” which is a string containing the back and forth from the gracie\_talk function , current\_flowchart which is a mermaid flowchart object , and current\_video which points to a video that the user can upload.

I want the app to have the following functions:

1. I want the app to have a function which is called “Position Image Recommendations”. This function have an input where the user can upload an image. If they don’t upload an image format, throw an error and request that they submit an image; the resultant file location will be called image\_location. The page will also have a text box that allows the user to input any jiu-jitsu position to a variable called “position\_variable”; the page will also will allow the user to select whether the ruleset is MMA from a dropdown option menu that provides true or false options, and puts the result into a variable called isMMA; the page will also allow the user to submit into a text field that is called “ideas” and the text submitted goes into a variable called “keywords”. If all variables aren’t chosen or included, do not proceed further and throw an error message. Once variables are all inputted, I want to call the function get\_attributes(image\_location, position\_variable) and the append the results onto the “keywords” variable. Then finally call generate\_grappling\_plan(image\_location, position\_variable, isMMA, keywords) and display the analysis using clean bullet point format inside of a bounded text box.
2. Master talk
3. FLOW chart generator
4. “Video Match analysis”