Breakfree AI - Evaluation part

1. **Project Overview:**
   Develop an automated workflow to evaluate the structure and quality of content used in employee training programs using **LangGraph**. The system processes local PDF/CSV files, extracts and evaluates the content, classifies the document type, and generates structured JSON output for easy frontend integration.

2. **Key Features and workflow:**
   Completed:
   -> Upload local pdf/csv files
   -> Extract text from pdf (example: reading tables in a document)
   -> Structure Evaluation of the extracted content using predefined parameters and assigning binary score for each parameter. If criteria met then 1, else 0
   -> Check Structure compliance (score => 80% then compliant else not compliant)
   -> Classify the document (either e-learning script or training proposal) by assigning total score as the sum of all binary scores for each parameter.
   -> Predicting category based on highest score
   -> routing extracted text from the pdf to respective nodes
   (example, predicted category is training proposals then the model sends the extracted text to evaluate training proposal node which checks quality of each criteria met, assigns a total score by calculating sum of binary scores of each category)

   In progress:
   -> This workflow will have a chatbot-like interface such that the user can send queries based on the context of the entire session
   -> Latest sessions must be stored such that it can be viewed again anytime (show the latest first, like the sidebar on chatgpt)

3. **Expected output**
   o/p must be in JSON format to map objects in the frontend and must include the following fields
   -> total score for structure
   -> predicted category (classification result)
   -> feedback for structure and suggestions to improve structure assessment scores

   -> total score for quality
   -> feedback and suggestions to improve quality assessment score

For Classification Results:


```
{
 "Training Proposal Score":9
 "E-learning Script Score":2
 "Predicted Category":"Training Proposal"
 "Reasoning":"The document contains a program overview, clearly defined learning
 objectives, target audience description, training methodology explanation,
 course outline, assessment and evaluation approach, duration and delivery
 format, and other essential elements of a training proposal."
 "Confidence":"High"
 "Compliance":"Compliant"
}
```

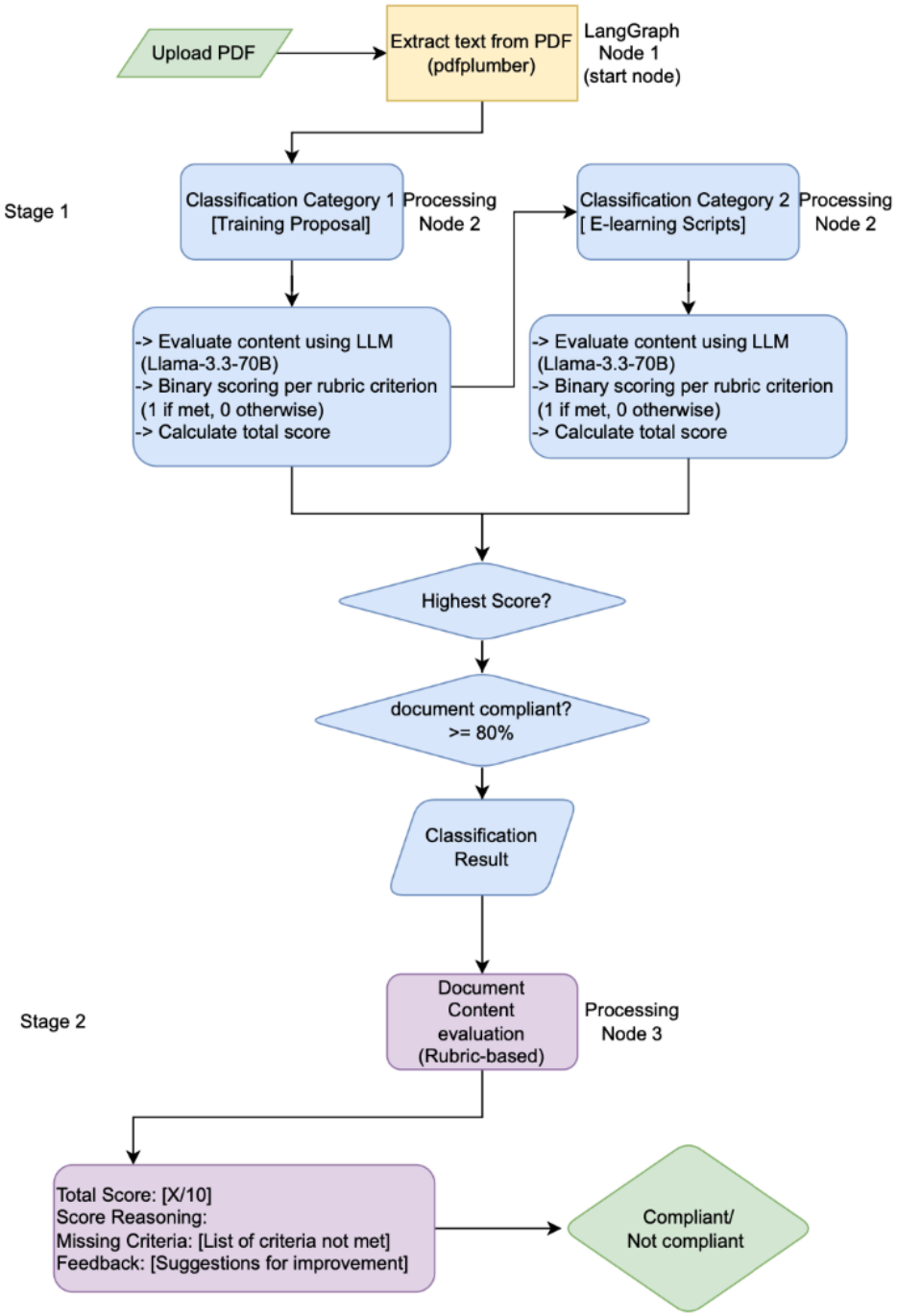

For Evaluation Results:


```
{
 "scores":{
  "Presence of Introduction & Program Overview":"1"
  "Clearly defined Learning Objectives":"1"
  "Target Audience Description":"0"
  "Training Methodology Explanation":"1"
  "Course Outline & Content":"1"
  "Assessment & Evaluation Approach":"0"
  "Duration & Delivery Format":"1"
  "Trainer/Facilitator Profile":"0"
  "Pricing & Investment Details":"1"
  "Call to Action & Next Steps":"0"
 }
 "Reasoning":{
  "Presence of Introduction & Program Overview":"The document includes an
  overview of the Accent Neutralization and Cross Culture Training program, which
  serves as an introduction to the program."
  "Clearly defined Learning Objectives":"The document outlines specific learning
  objectives, such as recognizing and using Standard English grammar, speaking
  with a neutral accent, and communicating effectively in correct English."
  "Target Audience Description":"The document does not explicitly describe the
  target audience, which is a crucial aspect of a training proposal."
  "Training Methodology Explanation":"The document explains the training
  methodology through the course outline, which includes elements of
  pronunciation, spoken English, and cross-cultural differences."
  "Course Outline & Content":"The document provides a detailed course outline,
  including topics such as elements of pronunciation, spoken English, and
  cross-cultural differences."
  "Assessment & Evaluation Approach":"The document does not outline an assessment
  and evaluation approach, which is essential to measure the effectiveness of the
  training program."
  "Duration & Delivery Format":"The document specifies the duration of the
  workshop as 80 hours spread over 2 weeks, but it does not mention the delivery
  format (e.g., in-person, virtual, or blended). However, it can be inferred that
  the program is designed for in-person delivery."
```

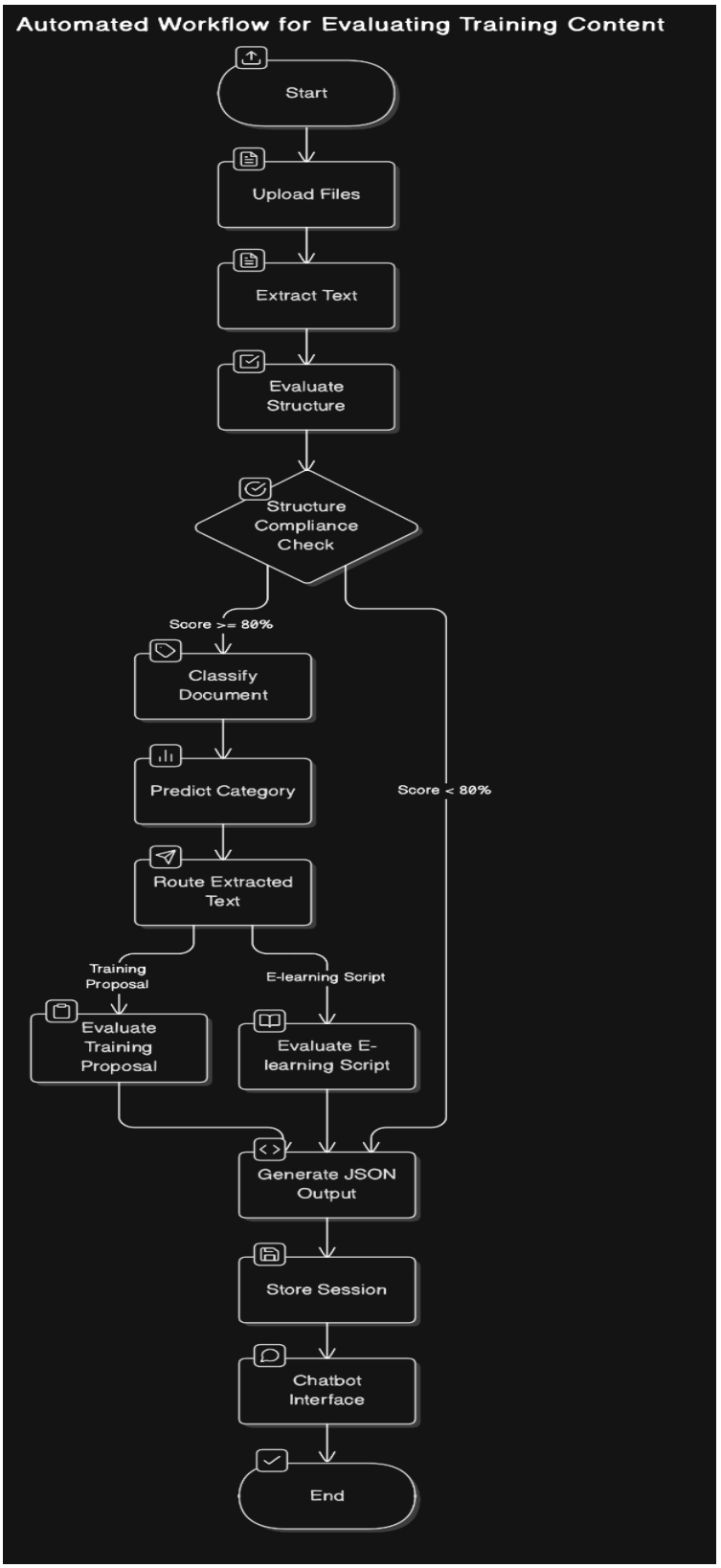
```
"Trainer/Facilitator Profile":"The document does not provide details on the facilitator or trainer profile, which is important to establish credibility and expertise."
"Pricing & Investment Details":"The document includes pricing details, with a cost of 16,500/- per day plus taxes."
"Call to Action & Next Steps":"The document does not conclude with a clear call to action or next steps, which is necessary to prompt the reader to take action."
}
"Total Score":"6"
"Compliance Status":"Non-Compliant"
"Feedback":"The document lacks essential elements, including a target audience description, assessment and evaluation approach, trainer/facilitator profile, and a clear call to action. To improve compliance, it is recommended that these sections be added or expanded upon."
"Suggestions":"1. Add a target audience description to clarify who the program is designed for.
2. Develop an assessment and evaluation approach to measure the program's effectiveness.
3. Include a trainer/facilitator profile to establish credibility and expertise.
4. Conclude with a clear call to action and next steps to prompt the reader to take action."
}
```


4. **Find the code here ->** https://github.com/sakshikarande26/breakfreeAI-evaluation.git **(multiagent.py)**

Initial workflow:



Current Architecture:



Questions:

1. How can I manage session state in LangGraph?
2. What are some alternative approaches to managing session state in a conversational workflow?
3. How can I integrate a conversational interface into my workflow?
4. What is the best way to create an API for this workflow?
5. How can I design the API to effectively handle session management and conversational interactions?