Technical Documentation for YAML Schema

This documentation describes the structure, logic, and components used in the YAML-based dialogue specification.

The schema defines a conversational workflow between an HR agent and a candidate during a recruitment process. Below is a detailed explanation of each section and the general schema format used in the specification.

1. Overview

The YAML schema defines a step-by-step conversation flow, where:

- The **HR agent** initiates the interaction with the candidate.
- The conversation consists of several **nodes** with unique IDs.
- Each node is identified by the key `id` and contains actions and possible transitions to other nodes.
- The flow involves checking the candidate's interest in a job opening, discussing their experience, prompting them to apply, and answering additional questions.
- Some nodes serve as **decision branches**, directing the flow based on the candidate's responses.

2. Schema Components

2.1 Nodes

A node represents a specific stage in the conversation. Each node has the following structure:

- `id`: A unique identifier for the node.
- `initiator`: Indicates who is initiating the action in that node (either `agent` or `candidate`).
- `actions`: A list of actions performed in the node.
- `is_start` (optional): A boolean field that indicates whether the node is the starting point of the conversation. Defaults to `false`.
- `is_end` (optional): A boolean field that indicates whether the node ends the conversation. Defaults to `false`.
- `is_branch` (optional): A boolean field that indicates whether the node creates a decision point, directing the flow based on different responses. Defaults to `false`.
- `next`: Defines the next node(s) in the conversation flow. In a branching node, this will be a dictionary mapping specific responses to subsequent node IDs.

2.2 Actions

Actions describe the specific steps or messages exchanged in the conversation. Each action has the following structure:

- `role`: Specifies who performs the action (`agent` or `candidate`).
- `action_type`: Defines the type of action, such as:
  - `template`: Predefined messages with placeholders for personalized content.
  - `message`: Custom messages exchanged between participants.

- $\circ$ `response`: A reaction to a prompt or question.
- `description`: A brief description of the action's purpose.
- `example`: (For `template` or `message` actions) Provides an example of the message that is sent. Placeholders such as `{candidate[first_name]}` or `{agent[company_name]}` are used for dynamic content insertion.
  - $\circ$ In the case of `message` actions, the example is used as a one-shot example in the generation prompt.
- `response_type`: (For `response` actions) Defines the expected type of response.
  - $\circ$ `template`: A predefined response format. No LLM generation, only template matching.
  - $\circ$ `message`: A free-form text response. LLM generation is used to generate the response.
- `examples`: (For `response` actions) A dictionary mapping possible responses to example text. Used as either a one-shot example in the generation prompt or for template matching depending on the `response_type`.

2.3 Branching Logic

Some nodes create decision branches where the conversation can proceed to different nodes based on the candidate's response. This is handled via:

- `is_branch`: Set to `true` when the node serves as a decision point.
- `next`: A dictionary that maps specific response values to the next node ID (e.g., `yes`: `job_experience_question`, `no`: `goodbye`).

3. Schema Example Walkthrough

Example YAML Schema

```yaml
- id: introduction
  is_start: true
  initiator: agent
  actions:
    - role: agent
      action_type: template
      description: Initiate the conversation by introducing yourself, the HR a
      example: |
        Hello {candidate[first_name]}, I'm {agent[first_name]}, a recruiter fr
  next: interest_check

- id: interest_check
  initiator: candidate
  actions:
    - role: candidate
      action_type: response
      response_type: template
      description: Confirm if they are interested in the open position.
      examples:
        "yes": Hello {agent[first_name]}, yes, I would like to learn more abou
        "no": Hello {agent[first_name]}, thank you for reaching out, but I'm n
  is_branch: true
  next:
    "yes": job_experience_question
```

```yaml
        "no": goodbye

  - id: job_experience_question
    initiator: agent
    actions:
      - role: agent
        action_type: message
        description: Ask the candidate about a past job experience relevant to t
        example: |
          Sounds great! Can you tell me more about your experience working as a
      - role: candidate
        action_type: message
        description: Provide details about their job experience.
        example: |
          I worked as a <job_title> at <company>, where I was responsible for <r
    next: application_prompt

  - id: application_prompt
    initiator: agent
    actions:
      - role: agent
        action_type: template
        description: Prompt the candidate to apply for the open position. Just a
        example: |
          Based on your experience, I believe you would be a good fit for the ro
      - role: candidate
        action_type: response
        response_type: template
        description: Confirm whether or not they would like to apply for the ope
        examples:
          "yes": Yes, I would like to apply for the position.
          "no": I'm sorry, but I'm not interested in applying at this time.
    is_branch: true
    next:
      "yes": additional_questions
      "no": goodbye

  - id: additional_questions
    initiator: agent
    actions:
      - role: agent
        action_type: template
        description: Invite the candidate to ask any questions they may have abo
        example: |
          Before I guide you to the next steps, do you have any questions about
      - role: candidate
        action_type: response
        description: Provide any questions that you as the candidate may have ab
        examples:
          "yes": Yes, I have a few questions. Can you tell me more about <specif
          "no": No, I don't have any more questions at the moment.
    is_branch: true
    next:
      "yes": additional_questions_followup
```

```
        "no": application_portal

    - id: additional_questions_followup
      initiator: agent
      actions:
        - role: agent
          action_type: message
          description: Respond to the candidate's questions. Don't ask any additic
          example: |
            Thank you for your questions. I'm happy to provide more information ab
            <Provide additional information or guidance based on the candidate's q
            Shall we proceed with the application process?
        - role: candidate
          action_type: message
          description: Confirm they are ready to proceed with the application proc
          example: |
            Thank you for the information. I'm ready to proceed with the applicati
      next: application_portal

    - id: application_portal
      initiator: agent
      actions:
        - role: agent
          action_type: template
          description: Guide the candidate to the application portal or provide in
          example: |
            Great! To proceed with your application, please visit our application
        - role: candidate
          action_type: message
          description: Confirm that they will proceed with the application process
          example: |
            Thank you for the information. I will visit the application portal and
      next: goodbye

    - id: goodbye
      initiator: agent
      actions:
        - role: agent
          action_type: message
          description: End the conversation with a closing message.
          example: |
            Thank you for your time {candidate[first_name]}. If you have any more
      is_end: true
```

Node: `introduction`

- **Purpose**: Initiates the conversation between the agent and the candidate, introducing the open position.
- **Initiator**: The agent.
- **Actions**:

  - The agent uses a `template` message to introduce themselves and the open job position.

  - Example:

```
        Hello {candidate[first_name]}, I'm {agent[first_name]}, a recruiter fr
```

- **Next**: Leads to `interest_check` node.

Node: `interest_check`

- **Purpose**: Asks the candidate if they are interested in the job opening.
- **Initiator**: The candidate.
- **Actions**:

  - The candidate responds, using a `template`, with either interest (`yes`) or disinterest (`no`).

  - Examples:

    ```
        "yes": Hello {agent[first_name]}, yes, I would like to learn more abou
        "no": Hello {agent[first_name]}, thank you for reaching out, but I'm n
    ```

- **Branching**:
  - If the candidate says "yes," the flow moves to `job_experience_question`.
  - If the candidate says "no," the flow moves to `goodbye`.

Node: `job_experience_question`

- **Purpose**: Asks the candidate about their past job experience.
- **Initiator**: The agent.
- **Actions**:

  - The agent asks a detailed question about the candidate's relevant job experience using a `message`.

  - The candidate provides details about their experience using a `message`.

  - Example for the agent:

    ```
        Sounds great! Can you tell me more about your experience working as a
    ```

  - Example for the candidate:

    ```
        I worked as a <job_title> at <company>, where I was responsible for <r
    ```

Node: `application_prompt`

- **Purpose**: Prompts the candidate to apply for the job.
- **Initiator**: The agent.
- **Actions**:

  - The agent prompts the candidate to apply using a `template`.

  - The candidate responds, using a `template`, indicating whether they want to apply (`yes`) or not (`no`).

  - Example for the agent:

```
        Based on your experience, I believe you would be a good fit for the ro
```

- **Branching**:
  - If the candidate says "yes," the flow moves to `additional_questions`.
  - If the candidate says "no," the flow moves to `goodbye`.

Node: `additional_questions`

- **Purpose**: Invites the candidate to ask any additional questions they may have about the role.
- **Initiator**: The agent.
- **Actions**:
  - The agent asks if the candidate has questions using a `template`.
  - The candidate responds using a `template` or `message` depending on whether they have questions.
- **Branching**:
  - If the candidate has questions, the flow moves to `additional_questions_followup`.
  - If the candidate does not have questions, the flow moves to `application_portal`.

Node: `goodbye`

- **Purpose**: Ends the conversation with a closing message.
- **Initiator**: The agent.
- **Actions**:

  - The agent sends a final `message` thanking the candidate and closing the conversation.

  - Example:

    ```
            Thank you for your time {candidate[first_name]}. If you have any more
    ```