### **Project Specification Tab (proj\_specification\_tab.py) Analysis**

This table breaks down the functions responsible for fetching AI recommendations and rendering the interactive sections of the Project Specification tab.

| **Function/Method Name** | **Location of the API/Function** | **Input Parameters** | **Output [Datatype]** | **Comments** |
| --- | --- | --- | --- | --- |
| init\_session\_state | proj\_specification\_tab.py | None | None | Initializes session state variables (ai\_recommendations\_loading, ai\_recommendation\_data, data\_loaded) to manage the data loading process and prevent re-fetching on every user interaction. |
| get\_ai\_recommendations\_sync | proj\_specification\_tab.py | section\_name: str, prompt: str, client\_data, seller\_data, default\_data: dict | dict | A synchronous wrapper that calls the main AI recommendation function (get\_ai\_proj\_sepc\_recommendations). If the AI call fails or returns empty data, it returns the provided default\_data. |
| get\_ai\_proj\_sepc\_recommendations | Recommendation.recommendation\_utils | prompt: str, client\_data, seller\_data | dict | **(External API Call)** This is the core function that sends a prompt, client data, and seller data to the AI/LLM to get tailored recommendations for a specific project section (e.g., Scope, Timeline). |
| load\_all\_data | proj\_specification\_tab.py | client\_data, seller\_data | None | Orchestrates the data loading for the entire tab. It iterates through all sections (scope, timeline, etc.), calls get\_ai\_recommendations\_sync for each, and stores all the results in st.session\_state.ai\_recommendation\_data. |
| show\_simple\_spinner | proj\_specification\_tab.py | None | None | A UI function that uses st.markdown to inject custom HTML/CSS for displaying a loading spinner overlay while load\_all\_data is running in the background. |
| get\_section\_data | proj\_specification\_tab.py | section\_name: str | dict | A simple helper function to retrieve the pre-loaded AI data for a specific section from st.session\_state. |
| render\_two\_column\_selector | Common\_Utils.ai\_suggestion\_utils | left\_title: str, textarea\_session\_key: str, default\_data: dict, etc. | (str, bool) | **(External UI Component)** A reusable function that renders the standard two-column layout: a text area on the left and a list of selectable AI suggestions on the right. It handles the logic for adding/removing suggestions from the text area. |
| proj\_specification\_tab | proj\_specification\_tab.py | client\_data, seller\_data, is\_locked: bool | list | **The main entry point for the tab.** It manages the initial loading state (showing the spinner and calling load\_all\_data) and then calls render\_two\_column\_selector for each of the five main sections (Scope, Timeline, Effort, Team, Pricing), returning all the final text content. |