Career Guidance AI System - Frontend Flow & API Overview

1. Quick Overview

The interface is designed for a **chat-first experience** that feels natural and personal. Students can start chatting immediately for career and course guidance, while the system gradually builds their profile and visual dashboards. Signing in is optional but allows the system to save conversations, profile data, and personalized dashboards for later use.

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2. High-Level Frontend Flow

Step	User Action	What Happens Behind the Scenes
1. Instant Start (No Login Required)	Student types directly into the main chat box — e.g., "I want to become a data scientist," or "What courses help me get into consulting?"	A temporary session starts. The **Career Matching Agent** and other agents process the question and generate an answer in natural language.
2. Optional Sign-In for Better Personalization	Top-right button: *"Sign in to save your plan & get better advice."*	If the student signs in, a persistent profile is created and linked to their data for future sessions.
3. File Uploads & Descriptions	Small buttons under the chat input allow uploading resume, course list, or goal file. The student can also type short project descriptions ("Built an ML model for my class").	Uploaded or written content is parsed by the Profile Agent, which updates both structured data and text summaries used by other agents.
4. Editable Profile Sidebar	Collapsible sidebar with editable info: name, major, semester, courses, goals, interests.	Updates sync automatically, allowing the AI to personalize chat responses and dashboard data.
5. Chat Interaction (Main Focus)	The chatbot responds naturally with combined insights — course recommendations, job paths, and	Career Matching Agent coordinates with Job Market, Course Catalog, and Project

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	project ideas — rather than just dashboard data.	Advisor Agents to craft a conversational yet data-driven answer.
6. Dashboards (Supporting Panels)	When logged in, dashboards appear beside or below the chat. They display structured visual data (courses, jobs, skills).	Dashboards are built dynamically from the same responses used in chat and refresh automatically.
7. Dashboard Filters	Career Dashboard → filters for job location, industry. Academic Dashboard → filters for semester, course difficulty, or electives.	Filters adjust agent parameters and regenerate dashboard data while keeping chat context intact.
8. Save / Export Plan	The student can save or download their personalized career roadmap.	Dashboard + chat context are stored and can be reloaded later.
9. Returning Sessions	Signed-in users see their last dashboard and previous chat history.	Profile and chat data are retrieved so the system continues where they left off.

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3. API Routes (Frontend ↔ Backend)

Endpoint	Method	Purpose	Example Request	Example Response
`/api/chat`	POST	Send a chat message and receive AI-generated career/course advice.	`{ "message": "I want to be a data scientist" }`	`{ "reply": "You can start with courses like BUAN 6359 and BUAN 6380...", "dashboard_update": true }`
`/api/profile`	GET	Fetch user profile.	—	`{ "major": "MSBA", "year": 2, "goal": "Data Scientist" }`

Endpoint	Method	Purpose	Example Request	Example Response
`/api/profile`	POST	Update or create profile.	`{ "major": "CS", "year": 3, "goal": "Consulting" }`	`{ "status": "Profile updated" }`
`/api/upload`	POST	Upload files (resume, transcript, goals).	FormData with file and type.	`{ "status": "Uploaded", "parsed_skills": ["Python", "SQL"] }`
`/api/dashboard`	GET	Retrieve current or saved dashboard data.	`?user_id=abc123`	`{ "recommended_courses": ["BUAN 6380"], "projects": ["ML app"] }`
`/api/dashboard`	POST	Save current dashboard.	`{ "user_id": "abc123", "dashboard_data": {...} }`	`{ "status": "Dashboard saved" }`
`/api/filters`	POST	Apply filters to dashboards.	`{ "dashboard": "career", "filters": {"location": "Dallas"} }`	`{ "updated_dashboard": {...} }`

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4. Behind the Scenes

- **Career Advisor Agent:** Central orchestrator and core voice of the chatbot. It composes the final natural-language response for the user by combining insights from all supporting agents.
- **Profile Agent:** Handles student information, uploaded files, and both structured and summarized data.
- **Job Market Agent:** Gathers job trends, skills, and salary insights for specific roles and locations.
- **Course Catalog Agent:** Matches student skills and goals to relevant UTD courses and prerequisites.
- **Project Advisor Agent:** Suggests projects and learning paths to fill skill gaps or strengthen the portfolio.
- **Dashboards:** Display structured data extracted from agent responses — a visual summary of what the chatbot discussed.

- **Data Storage:** Profile data, chat history, and dashboard results are stored for signed-in users and reloaded automatically.

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5. Note

All features, layout, and API designs are **flexible and subject to change** as the system improves. Future updates may include additional agents, smarter context retention, or new interactive elements.