**AI Voice Lesson Scheduler: Current Version Overview**

This project is a **web-based scheduler** designed for students to book voice lessons with their teacher, integrated with **Google Calendar**. The system simplifies lesson scheduling through **AI-driven time suggestions** and provides flexibility for private and conservatory students, while ensuring that the teacher has the final say in confirming lesson times.

**Current Features and Structure:**

**1. No Registration or Accounts:**

* Students can access the scheduler via a shared link, without the need to create accounts.
* Instead of registering, students simply provide:
  + **Full Name**
  + **Lesson Category** (e.g., Curtis, MSM, Bard, Private Studio, Consultation)
  + **Top 3 Preferred Time Slots** (for their lessons)

**2. Language Selection (English and Mandarin):**

* The scheduler allows students to select their **preferred language** (English or Mandarin) at the start.
* All interface text and email notifications will be displayed in the chosen language.

**3. Student Input Form:**

* Students enter their **basic information** using a form:
  + Name
  + Lesson Category (e.g., Curtis, MSM, Bard, Private Studio, Consultation)
  + Preferred time slots (top 3 choices)
  + For **private studio students**, they can also choose lesson frequency:
    - **Once**
    - **Weekly**
    - **Biweekly**
    - **Monthly**

**4. AI-Driven Time Slot Suggestions:**

* Once a student submits their preferences, the system will use **AI** to suggest **weekly schedules** that optimize the teacher’s availability based on all student submissions.
* The AI considers each student’s preferred time slots and prioritizes earlier submissions (first-come, first-served).

**5. Teacher Finalization:**

* The **teacher reviews the suggested schedules** generated by the AI.
* The teacher has the final say on which schedule to confirm.
* Once the teacher finalizes the schedule, the lesson times are locked in.

**6. First-Come, First-Served Scheduling:**

* Students who submit their preferences first are given priority for their preferred time slots.
* If a time slot is taken by an earlier submission, the system suggests the next best available slot to later students.

**7. Swapping Time Slots:**

* The teacher can manually **swap time slots** between two students if a conflict arises or if the students agree to switch times.

**8. Google Calendar Integration:**

* Once the teacher finalizes the schedule, all confirmed lesson times are automatically synced with **Google Calendar** for both the teacher and the students.
* Any changes to the schedule (such as cancellations) are also reflected in Google Calendar in real-time.

**9. Cancellations with Optional Messages:**

* Students and teachers can cancel lessons if needed.
* When canceling, the system allows for an **optional message** to be included, providing context for the cancellation (e.g., “I have a conflict this week, can we reschedule?”).
* The cancellation is sent via email to the other party along with the optional message.

**10. Missed Lesson Tracking:**

* After each lesson, the system sends a **notification** to both the student and teacher asking whether the lesson took place.
* If the lesson is marked as missed (by either party), the system logs this as a **missed lesson**.
* The teacher receives a notification when a lesson is missed, allowing them to follow up with the student to arrange a make-up session manually.

**11. Post-Lesson Confirmation:**

* After the lesson, both the student and teacher are asked to confirm whether the lesson took place.
* If there’s a conflict (e.g., one party says “Yes” and the other says “No”), the system flags the lesson and notifies both the student and teacher to resolve the issue.

**12. Post-Confirmation Error Handling:**

* If an error is discovered after the schedule has been finalized and synced with Google Calendar, the teacher can **reopen the schedule** to correct the mistake.
* Once the error is corrected, the system automatically updates **Google Calendar** and sends updated confirmation emails to the affected students.

**13. Private Student Features:**

* **Private students** follow the same **Fall and Spring semester structure** as conservatory students but have no lesson cap (unlike conservatory students, who have 14-15 lessons per semester).
* Private students can schedule lessons with different frequencies:
  + **Once**
  + **Weekly**
  + **Biweekly**
  + **Monthly**

**Current System Workflow:**

1. **Accessing the Scheduler**:
   * A student accesses the scheduler via a shared link and is presented with an interface to choose their **preferred language** (English or Mandarin).
2. **Submitting Lesson Preferences**:
   * The student provides their **name**, **lesson category**, and **preferred time slots**.
   * For private students, they also select how frequently they want lessons (once, weekly, biweekly, monthly).
3. **AI-Driven Time Slot Suggestions**:
   * The system processes the submission in real-time and suggests lesson times based on availability and student preferences, giving priority to students who submit first.
4. **Teacher Finalization**:
   * The teacher receives the AI-generated suggestions and reviews the schedule.
   * The teacher finalizes the schedule, locking in the lesson times.
5. **Google Calendar Sync and Confirmation**:
   * Once finalized, the lesson times are added to both the teacher’s and students’ **Google Calendar**.
   * The student receives a confirmation email with the lesson details.
6. **Missed Lesson Tracking**:
   * After each lesson, the system asks both the student and teacher to confirm whether the lesson took place.
   * Missed lessons are logged, and the teacher is notified to arrange make-ups if needed.
7. **Cancellations with Optional Messages**:
   * Either party can cancel lessons, with the option to include a message explaining the reason for cancellation.
   * The system automatically updates Google Calendar and sends an email notification to the other party with the cancellation details.

**Summary of Key Features:**

* **Language Selection**: English and Mandarin options.
* **Student Input Form**: Simple, no-registration form for student details and lesson preferences.
* **AI Scheduling**: Real-time AI-driven time slot suggestions based on student preferences and availability.
* **Teacher Finalization**: The teacher reviews and finalizes the schedule.
* **Google Calendar Integration**: Syncs lesson times with Google Calendar.
* **Cancellations**: Includes an optional message when canceling, with email notifications.
* **Missed Lesson Tracking**: Logs missed lessons and notifies the teacher.
* **Post-Lesson Notifications**: Confirms whether lessons took place and flags conflicts.
* **Post-Confirmation Error Handling**: Allows the teacher to reopen and fix schedules if needed.
* **Could be used for anytime of one-on-one lesson types**: Specifically Voice Lessons for now.

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**Next Steps for Implementation:**

1. **Set up the basic Flask app** (with the student input form).
2. **Implement AI-driven scheduling logic** and **Google Calendar integration**.
3. Add the **teacher finalization feature**, allowing the teacher to review and lock in the schedule.
4. Develop the **cancellation system with optional messaging** and **post-lesson notifications** for missed lessons.
5. Ensure the system logs **missed lessons** and handles **post-confirmation errors** through manual reopening and corrections.

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