**Feature Name: Speech to Text with Sentence Categorization and Visual Output**

**Feature Goal**

Enable caregivers to speak naturally into a smartphone interface (e.g., app, web app), transcribe that speech into text, automatically categorize each sentence as either an **Observation** (e.g., mood, behavior, symptoms) or an **Activity** (e.g., meals, medications, hygiene), and display the categorized text visually for review/edit.

**User Story**

As a caregiver supporting someone with complex care needs, I want a smartphone interface that records my voice and automatically transcribes, categorizes, and visually organizes each sentence, allowing me to easily capture and review care details without the burden of manual notetaking.

**Functional Requirements**

**1. Speech Capture**

* **FR1.1** The system shall allow the user to initiate voice capture via a microphone-enabled input (e.g., a “Record” button on mobile or desktop).
* **FR1.2** The system shall display real-time visual feedback (e.g., waveform, timer) indicating that recording is active.
* **FR1.3** The system shall support a maximum recording length of up to 2 minutes per entry.

**2. Speech-to-Text Transcription**

* **FR2.1** The system shall transcribe spoken input into grammatically correct text using an automatic speech recognition (ASR) engine.
* **FR2.2** The system shall display the transcribed text in a preview window for user verification before submission.
* **FR2.3** The system shall allow basic editing of the transcription by the user (optional: on/off toggle for manual correction).

**3. Sentence Segmentation**

* **FR3.1** The system shall segment the transcribed text into discrete sentences using natural language processing (NLP) techniques.
* **FR3.2** The system shall maintain sentence order and integrity (e.g., time-stamped or structured as a list).

**4. Categorization Logic**

* **FR4.1** The system shall analyze each sentence and categorize it as either:
  + **Observation** – Statements describing symptoms, emotional states, behaviors, or health-related conditions.
  + **Activity** – Statements describing actions taken by or for the care recipient (e.g., feeding, bathing, medication).
* **FR4.2** The system shall use a fine-tuned classification model or rules-based engine based on caregiver domain vocabulary (e.g., "She seemed drowsy" → Observation; "I gave her melatonin" → Activity).
* **FR4.3** The system shall support multilingual classification if speech input is in other supported languages (optional for later phase).

**5. Visual Output**

* **FR5.1** The system shall display categorized sentences in a clear, visually distinct format:
  + **Observation sentences** shall be labeled with a blue tag/icon or placed in a blue card.
  + **Activity sentences** shall be labeled with a green tag/icon or placed in a green card.
* **FR5.2** The system shall provide an option to reclassify a sentence manually via a dropdown or toggle.
* **FR5.3** The system shall support exporting or saving the categorized text as a journal entry linked to the care recipient’s timeline.

**6. User Experience (UX)**

* **FR6.1** The user shall be able to undo/redo changes to the transcription or categorization.
* **FR6.2** The categorized output shall support accessibility features (e.g., text-to-speech for review).
* **FR6.3** The system shall notify the user if the audio quality is too poor for accurate transcription.

**7. Integration Requirements**

* **FR7.1** The system shall store the categorized entries in a database .
* **FR7.2** The categorized data shall be tagged with metadata (e.g., timestamp, caregiver ID, session ID).
* **FR7.3** The output shall be queryable and filterable in the caregiver dashboard for future analytics or visualization (e.g., activity frequency over time).

**Stretch Goals**

* Sentiment analysis overlay for Observations.
* AI summarization of grouped Observations.
* Voice profiles for multi-caregiver environments.
* Automatic prompt follow-up (“Would you like to record another observation now?”).

**Example Scenario:**

**Input:**  
Spoken:

“She woke up at 6 am. I gave her breakfast and morning meds. She seemed a bit more anxious than usual.”

**Output:**

* “She woke up at 6 am.” → **Activity**
* “I gave her breakfast and morning meds.” → **Activity**
* “She seemed a bit more anxious than usual.” → **Observation**

Each sentence is tagged and displayed as color-coded blocks, with an option to edit tags or text.