

4. UI/UX Design & Prototyping

4.1 Wireframes & Mockups

These represent the visual structure of the user interface, showing screen layouts, navigation, and interactions.

Key Screens & Components:

1. **Home Screen** – Provides an overview of the system with an upload button for CSV files.
 2. **File Upload Screen** – Allows users to browse and upload CSV files, displaying supported formats and validation messages.
 3. **Preprocessing Status Screen** – Shows progress on data cleaning and transformation.
 4. **Prediction Results Screen** – Displays model output in text, charts, and multimedia formats (text-to-speech/video).
 5. **Settings & Preferences Screen** – Allows customization of output format, API settings, and user preferences.
 6. **Error Handling Screen** – Shows validation errors, missing data alerts, and troubleshooting tips.
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4.2 UI/UX Guidelines

Design Principles:

- **Clarity & Simplicity** – Minimalist design focusing on intuitive user interactions.
 - **Consistency** – Uniform typography, spacing, and UI components across all screens.
 - **Responsiveness** – Ensuring seamless performance across desktop and mobile devices.
 - **Feedback & Interactivity** – Progress indicators, tooltips, and real-time validation for better user engagement.
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Color Scheme:

- **Primary Color:** Blue (#007BFF) – Represents trust and technology.
 - **Secondary Colors:**
 - Light Gray (#F8F9FA) – Clean background for readability.
 - Dark Gray (#343A40) – For contrast in text and UI elements.
 - Green (#28A745) – Indicates success states.
 - Red (#DC3545) – Used for error messages and alerts.
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Typography:

- **Primary Font:** Roboto (Sans-serif) – Modern, clean, and highly readable.
 - **Font Sizes:**
 - Headings: 24px – 32px (Bold)
 - Body Text: 16px – 18px (Regular)
 - Buttons & Labels: 14px – 16px (Medium)
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Accessibility Considerations:

- **Contrast Ratios** – Ensuring WCAG-compliant color contrast for readability.
- **Keyboard Navigation** – Users should navigate without a mouse.
- **ARIA Labels & Screen Reader Support** – Enhancing accessibility for visually impaired users.
- **Error Handling & Feedback** – Clear, descriptive messages instead of vague error codes.