Features and Functionality

Psychronic is an interactive, client-side emotion journaling web application designed to help users better understand their emotional patterns, the factors that influence them, and how these patterns evolve over time. It combines simple daily input tools with robust, JavaScript-driven visual analytics, creating an experience that is both lightweight and surprisingly powerful. The following features define the core user experience:

Daily Entry Interface

Psychronic provides a clean, approachable interface where users can create one mood entry per day. The entry system includes:

- Mood Slider: A single scale (typically 1–10) allowing users to rate their emotional state.
- Energy Slider: A parallel scale rating their physical or mental energy levels.
- Tag Selector: A set of predefined tags—such as work, family, stress, sleep, exercise, creativity, etc.—allowing users to contextualize their emotional patterns. Users can select multiple tags for any given day.
- Optional Notes Field: A free-text area for writing additional context, reflections, or explanations behind the sliders and tags.

To encourage mindful input, the daily interface includes micro-interactions such as:

- An “entry saved” confirmation.
- Locked entries for past days to prevent retroactive rewriting.
- A blurred/unblurred detail panel that hides notes by default for privacy unless the user opts to reveal them.

Data Storage

All data is stored locally in the user’s browser via localStorage, meaning:

- Entries persist between sessions without requiring login.
- No data is transmitted to a server.
- Storage is keyed by date strings (e.g., 2025-02-10) to ensure consistency and easy retrieval.
- Users can close or refresh the app at any time without losing information.

This design keeps Psychronic completely serverless, lightweight, and privacy-friendly.

Analytics Section

The analytics panel is one of Psychronic’s core strengths, offering three different time-based summaries. Each view is implemented with dynamically generated SVG charts.

Week View

- Displays a Sunday → Saturday timeline.
- The graph shows two overlaid line charts: mood and energy.
- Missing days appear as gaps in the timeline
- Displays the most frequently used tags for the week.
- Automatically recalculates and redraws when the week changes.

Month View

- Shows all days of the current calendar month.
- Graph includes adequate left/right padding to match visual spacing expectations.
- Highlights trends or anomalies (e.g., sudden mood dips).
- Identifies the month’s most common tags based on entry frequency and tag count.
- Handles varying month lengths (28–31 days) and ensures consistent axis alignment.

Year View

- Aggregates each month into average mood and energy values.
- Displays a twelve-point trend line for long-term emotional patterns.
- Summarizes the year’s dominant tags, giving users a high-level sense of what influenced them overall.
- Helps identify seasonal trends, burnout cycles, or improvements.

Dark Mode

A global dark mode toggle lets users switch between light and dark themes instantly.

- Applies theme changes across the entire UI.
- Ensures charts redraw with dark-appropriate colors for axes, labels, and lines.
- Saves the user’s theme preference for future sessions.

How JavaScript Enhances the User Experience

JavaScript is the backbone of Psychronic, transforming it from a static journaling page into a responsive, data-driven tool.

Dynamic Entry Handling

JS manages:

- Validation to ensure only one entry per day.
- Automatically populating the sliders and tags if an entry already exists.
- The blur/unblur notes UI, improving privacy on shared devices.
- Live updates to localStorage as the user interacts with sliders, checkboxes, or text input.

Real-Time Analytics

Every chart in Psychronic is generated on the fly with raw JavaScript—no chart libraries.

Key enhancements include:

- Dynamic SVG Path Generation: JS calculates point positions based on the dataset, scaling values to graph height and automatically drawing the mood/energy lines.
- Automatic Axis Scaling: The graph resizes itself depending on the number of data points (7, 28–31, or 12).
- Visual Padding: JS inserts artificial “empty” points to prevent cramped edges.
- Top Tag Calculation: Using frequency maps, JS determines which tags were most selected during the chosen time period.

All of this happens instantly as users switch tabs.

Responsive Tabs

JavaScript enables seamless transitions between week/month/year views without page reloads.

- Only the active panel is shown.
- Switching tabs triggers a fresh chart redraw.
- State is preserved between switches.

Dark Mode Functionality

JavaScript dynamically adjusts:

- Chart stroke colors
- Axis lines
- Label text
- Hover/active UI states

Instead of relying only on CSS, the charts themselves are aware of the current theme and redraw accordingly.

Challenges Faced and How They Were Overcome

Chart Visualization

Building charts manually with SVG was a significant challenge. Issues included:

- Handling missing days in datasets.
- Ensuring the X-axis spacing remained visually balanced.
- Maintaining both mood and energy lines without overlap or distortion.
- Smoothly connecting points while preserving readability.

This was solved through:

- Value-scaling helper functions.
- SVG path builders that convert arrays of numbers into polyline paths.
- Padding empty values at either end.
- Logic to skip or interpolate missing data.

Time-Based Calculations

Generating correct datasets for week, month, and year views required precise handling of dates.

Challenges included:

- Determining the correct “start of week” (Sunday).
- Generating all dates in a month, including months with 28/29/30/31 days.
- Aggregating multi-tag entries across long time spans.

- Averaging mood and energy values for yearly summaries.

To solve this, the app uses:

- Helper functions for date arithmetic.
- Consistent date string formatting.
- Zero-filling for missing entries.

Dark Mode Integration

Because charts were dynamically generated, enabling dark mode meant redrawing them with different colors.

- Light mode uses darker axes and lines.
- Dark mode uses lighter strokes and text.

A simple theme-detection utility determines appropriate colors at render time.

Testing and Dummy Data

With no backend and no guarantee of real entries, testing required fake data.

- A dummy dataset generator was added to seed localStorage.
- This allowed testing weekly, monthly, and yearly analytics instantly.
- It also enabled adjusting chart behaviors without waiting for real usage.

Plans for Additional Features or Backend Integration

Psychronic is intentionally lightweight, but several expansions could significantly enhance its functionality:

Backend Integration

A backend would allow:

- Cloud storage for cross-device syncing.
- Long-term data retention without relying solely on the browser.
- More secure handling of personal notes.

User Accounts

Multiple user support could allow:

- Personalized dashboards.

- Shared family or partner journaling.
- Data separation across devices.

Advanced Analytics

Future data science features could include:

- Trend forecasting (e.g., “your energy is trending upward this month”).
- Tag-based filtering (view mood only on work days).
- Correlation analysis between mood, energy, and tags.

Export/Import Functionality

Planned features include:

- Exporting data as CSV or JSON.
- Importing backups into a new device or browser.

Further Mobile Optimization

Although currently responsive, future improvements could include:

- Larger, touch-friendly sliders.
- Bottom navigation for easier one-handed use.
- A simplified mobile analytics layout.