# Table 2.3: Popular Visualization Methods for Mood Data

| Visualization Method | Description | Advantages | Disadvantages | Implementation in Pro Mood Tracker |
| --- | --- | --- | --- | --- |
| Calendar View | Color-coded calendar showing mood entries by day | - Intuitive time-based overview- Easy to spot patterns by day of week- Familiar format for users | - Limited detail about each entry- Color interpretation may vary- Space constraints on mobile | Implemented using custom calendar component with color mapping for mood levels |
| Line Chart | Line graph showing mood levels over time | - Clear trend visualization- Easy to identify fluctuations- Good for long-term patterns | - Can get cluttered with multiple data points- Less effective for categorical data- Requires interpolation for missing days | Implemented using Recharts library with customizable date ranges and smoothing options |
| Bar Chart | Vertical bars representing mood distribution or frequency | - Clear comparison of categories- Good for showing distribution- Works well with counted data | - Less effective for time series- Can be misleading with scale choices- Limited detail on individual entries | Implemented using Chart.js with mood distribution by category and time period |
| Radar/Spider Chart | Multi-axis chart showing mood across different dimensions | - Good for multi-factor analysis- Shows relationships between variables- Compact representation | - Can be difficult to interpret- Limited by number of axes- Requires normalization | Implemented using Recharts for time-of-day analysis and factor correlation |
| Heatmap | Grid-based visualization with color intensity | - Good for dense data sets- Shows patterns and clusters- Works well for time-based data | - Color interpretation challenges- Requires sufficient data density- May need legend explanation | Implemented for year-view of mood data with intensity mapping |
| Pie/Donut Chart | Circular chart showing proportion of mood categories | - Shows distribution clearly- Familiar to most users- Visually appealing | - Limited to showing proportions- Can be misleading with too many segments- No time dimension | Implemented using Chart.js for mood distribution by category |
| Scatter Plot | Points plotted to show relationship between two variables | - Good for correlation analysis- Shows individual data points- Identifies outliers | - Can get cluttered with many points- Requires two continuous variables- Pattern recognition may be difficult | Implemented for weather correlation analysis |
| Bubble Chart | Enhanced scatter plot with size dimension | - Adds third dimension to data- Good for multi-variable analysis- Visually engaging | - Can be difficult to compare bubble sizes- Limited by screen space- Complex to interpret | Considered for future implementation |
| Stream Graph | Flowing, stacked area chart showing changes over time | - Visually appealing flow representation- Good for showing changing proportions- Highlights patterns over time | - Can be difficult to read exact values- Area comparisons can be challenging- Requires significant data points | Considered for future implementation |
| Sankey Diagram | Flow diagram showing relationships and transitions | - Shows relationships between categories- Visualizes transitions or flows- Good for complex relationships | - Complex to implement- Requires structured relationship data- Space-intensive | Implemented using d3-sankey for mood transition analysis |