

Data Flow Architecture

Input → Filter → Analyze → Prioritize → Generate → Display

1. **Data Ingestion:** CSV files loaded into memory as dictionaries
2. **Filtering Layer:** Keyword-based screening for support emails
3. **Analysis Engine:** Sentiment analysis + information extraction
4. **Priority Engine:** Multi-factor scoring system
5. **Response Generator:** Rule-based template system
6. **CLI Interface:** Menu-driven display and interaction

Key Components

Sentiment Analysis

- NLTK VADER lexicon for compound sentiment scoring
- Three-tier classification: Positive/Negative/Neutral
- Sentiment influences priority and response tone

Information Extraction

- Regex patterns for phone numbers and email addresses
- Sentence-level parsing for requirement identification
- Keyword proximity matching for context extraction