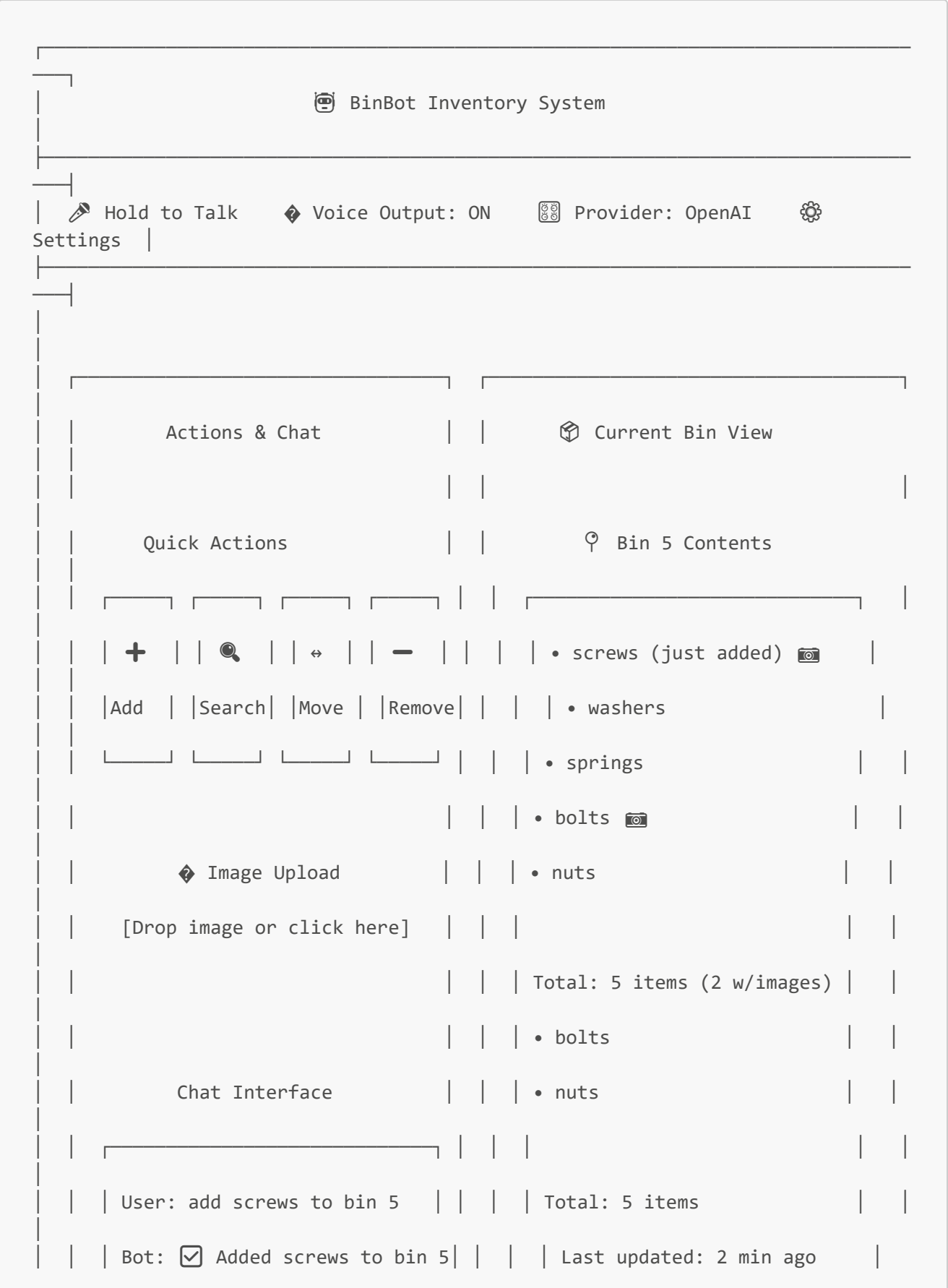
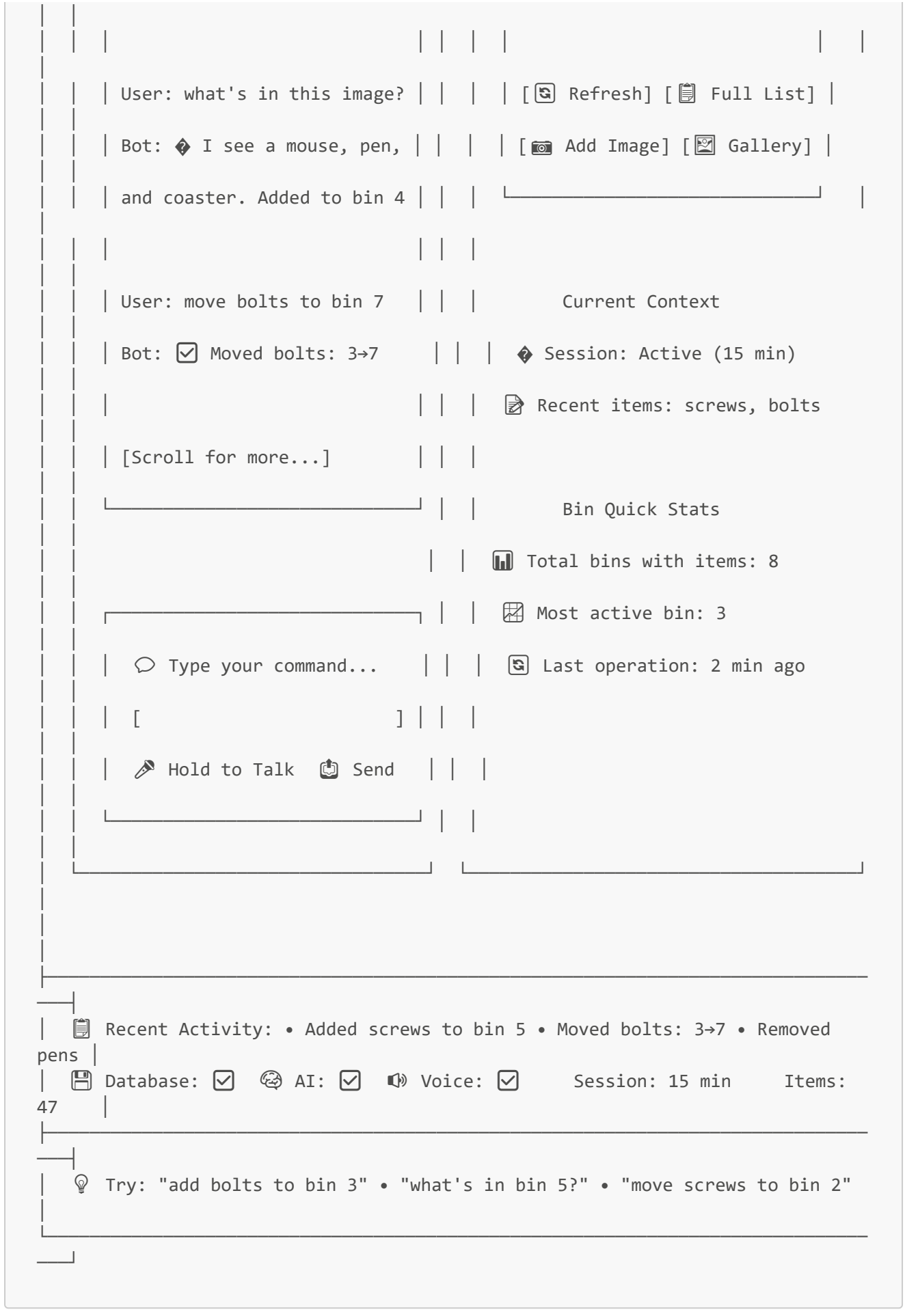
BinBot UI Wireframe Design

Layout Overview





Component Details

1. Header Section

- **Title**: "🤖 BinBot Inventory System"
- **Style**: Large, prominent branding
- **Color**: Primary brand color

2. Voice Controls Bar

- **PTT Button**: "Hold to Talk" - Press and hold to activate voice input
- **Voice Output Toggle**: ON/OFF switch for voice responses with speaker icon
- **Provider Display**: Shows current voice provider (Browser/OpenAI)
- **Settings**: Gear icon for voice configuration

3. Main Content Area (Split Layout)

Left Panel (60% width) - Actions & Chat

- **Quick Actions Section**:
  - 6 action buttons in 2x3 grid layout (Add, Search, Smart Image Upload, Move, Remove, Images)
  - **Smart Image Upload**: Camera icon - upload image to automatically identify and add items
  - **Images**: Gallery icon - view and manage images associated with items
  - Prominent placement at top for easy access
  - Visual icons with clear labels
- **Chat Interface**:
  - Scrollable message history below actions
  - User messages: Right-aligned, blue background
  - Bot responses: Left-aligned, gray background
  - Timestamps on hover, auto-scroll to bottom
- **Input Area**:
  - Large text input with placeholder at bottom
  - PTT button for voice input (press and hold)
  - Send button (Enter key also works)
  - Voice and text input work together seamlessly

Right Panel (40% width) - Current Bin View

- **Current Bin Contents**: Primary focus showing live view of active bin
  - Shows up to 5 items with newest/changed items highlighted
  - **Image indicators**: 📷 icon next to items that have associated images
  - Refresh button to update contents
  - "Full List" button to see all items in modal
  - **Add Image** button to associate images with bin or items

    - **Gallery** button to view all images in current bin
    - Total item count and image count displayed
    - Auto-updates when operations affect the displayed bin

- **Current Context**: Shows session state and working bin

- **Bin Quick Stats**: Overview statistics (total bins, most active, etc.)

4. Bottom Status Area

- **Recent Activity Bar**: Horizontal scrolling list of last few operations
- **System Status Strip**: Compact status indicators for database, AI, voice
- **Session Info**: Active session time and total item count
- **All information condensed into 2 horizontal strips for space efficiency**

5. Current Bin Contents Panel (Right Panel)

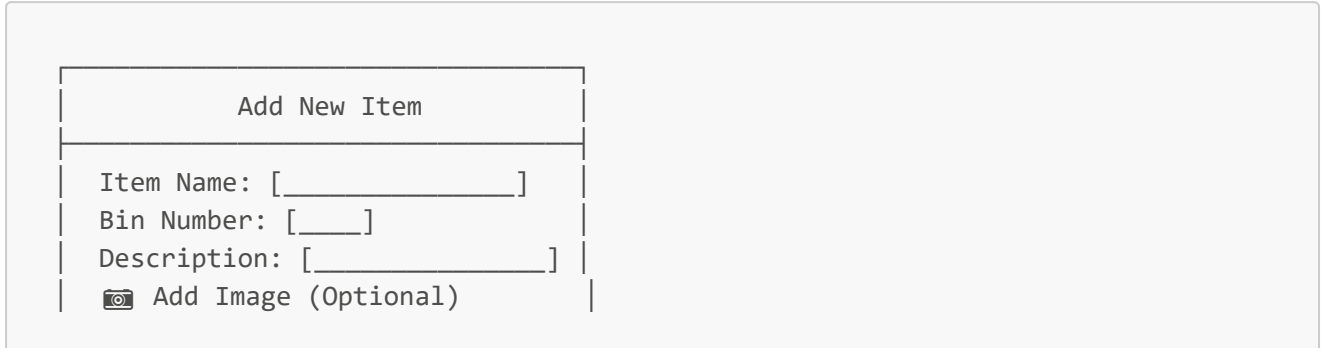
- **Dynamic Updates**: Automatically shows contents of the most recently accessed bin
- **Context Awareness**: Updates when user adds/removes/moves items to/from the displayed bin
- **Visual Indicators**:
    - Recently added items show "(just added)" annotation
    - Recently modified items are highlighted
    - Items that were just moved show "(moved from bin X)" temporarily
- **Interactive Elements**:
    - Refresh button to manually update contents
    - Full List button opens modal with complete bin inventory
    - Click on item name to search for similar items
- **Smart Behavior**:
    - Persists across page refreshes (remembers last bin)
    - Shows "No bin accessed yet" message on first visit
    - Handles empty bins gracefully with "Bin X is empty" message

6. Footer

- **Help Text**: Example commands
- **Keyboard Shortcuts**: Hints for power users

Modal Dialogs

Quick Add Modal



```
│                                    │
│     [Cancel]    [Add Item]         │
└────────────────────────────────────┘
```

Search Results Modal

```
┌──────────────────────────────────────────────────┐
│                 Search Results                   │
├──────────────────────────────────────────────────┤
│  🔍 Found 3 items for "screws":                  │
│                                                  │
│  📦 Bin 3: screws (95% match) 📷                 │
│     [🖼️ View Images] [📷 Add Image]              │
│                                                  │
│  📦 Bin 7: wood screws (87% match)               │
│     [📷 Add Image]                               │
│                                                  │
│  📦 Bin 2: machine screws (82% match) 📷         │
│     [🖼️ View Images] [📷 Add Image]              │
│                                                  │
│           [Close Results]                        │
└──────────────────────────────────────────────────┘
```

Disambiguation Modal

```
┌──────────────────────────────────────────┐
│          Multiple Items Found            │
├──────────────────────────────────────────┤
│  Which item did you mean?                │
│                                          │
│  ○ screws in bin 3 (95% match)           │
│  ○ screws in bin 7 (87% match)           │
│  ○ wood screws in bin 2 (75% match)      │
│                                          │
│     [Cancel]    [Select Item]            │
└──────────────────────────────────────────┘
```

Full Bin Contents Modal

```
┌──────────────────────────────────────────────────┐
│              📦 Bin 5 - Complete Contents        │
├──────────────────────────────────────────────────┤
│  🔍 Filter: [_______________] 🔄 Refresh         │
│                                                  │
│  📋 All Items (5 total, 2 with images):          │
```

```
│                                                    │
│  • screws (just added) 📷 - Added 2 min ago        │
│    [🖼 View] [📷 Add] [✎ Edit]                      │
│  • washers - Added 1 day ago                       │
│    [📷 Add Image] [✎ Edit]                         │
│  • springs - Added 3 days ago                      │
│    [📷 Add Image] [✎ Edit]                         │
│  • bolts 📷 - Added 1 week ago                     │
│    [🖼 View] [📷 Add] [✎ Edit]                      │
│  • nuts - Added 1 week ago                         │
│    [📷 Add Image] [✎ Edit]                         │
│                                                    │
│  📊 Bin Statistics:                                │
│  • Total Items: 5 • Items with Images: 2           │
│  • Last Activity: 2 minutes ago                    │
│  • Most Common: Hardware items                     │
│                                                    │
│  🔧 Quick Actions:                                 │
│  [➕ Add Item] [🤖 Smart Upload] [🖼 Gallery]       │
│  [🤖🔍 Search Similar] [↔ Move All]                │
│                                                    │
│                  [Close]                           │
└────────────────────────────────────────────────────┘
```

Image Gallery Modal

```
┌──────────────────────────────────────────────────────┐
│              🖼 Image Gallery - Bin 5                │
├──────────────────────────────────────────────────────┤
│  📷 Images (3 total) | 🔍 Filter: [__________]       │
│                                                      │
│  ┌──────────────────────────────────────────────┐    │
│  │ ┌─────┐ ┌─────┐ ┌─────┐                      │    │
│  │ │ 📷  │ │ 📷  │ │ 📷  │                      │    │
│  │ │Thumb│ │Thumb│ │Thumb│                      │    │
│  │ │ 1   │ │ 2   │ │ 3   │                      │    │
│  │ └─────┘ └─────┘ └─────┘                      │    │
│  │ screws  bolts   washers                      │    │
│  │ 2m ago  1w ago  3d ago                       │    │
│  └──────────────────────────────────────────────┘    │
│                                                      │
│  Selected: screws image                              │
│  ┌──────────────────────────────────────────────┐    │
│  │                                              │    │
│  │          [Large Image Preview]               │    │
│  │                                              │    │
│  └──────────────────────────────────────────────┘    │
│                                                      │
│  🔧 Actions:                                         │
│  [🔍 Analyze] [✎ Edit Item] [🗑 Delete]              │
```

```
│  [📤 Download] [🔗 Copy Link]                          │
│                                                        │
│     [📷 Add New Image]              [Close]            │
└────────────────────────────────────────────────────────┘
```

Voice Settings Modal

```
┌──────────────────────────────────────────────────────┐
│                🎤 Voice Settings                     │
├──────────────────────────────────────────────────────┤
│                                                      │
│  🎙️ Voice Input (PTT):                               │
│  ○ Enabled    ○ Disabled                             │
│  Shortcut: [Spacebar ▼]                              │
│  □ Audio feedback on start/stop                      │
│                                                      │
│  🔊 Voice Output:                                    │
│  ○ Enabled    ○ Disabled                             │
│  Volume: [████████░] 80%                             │
│  Speed: [██████░░] 1.2x                              │
│                                                      │
│  🎛️ Voice Provider:                                  │
│  ○ Browser (Free, Fast)                              │
│  ○ OpenAI (Premium Quality)                          │
│                                                      │
│  OpenAI Voice: [Alloy ▼]                             │
│  (Nova, Echo, Fable, Onyx, Shimmer)                  │
│                                                      │
│  🧪 Test Voice:                                      │
│  [🎤 Test Input] [🔊 Test Output]                    │
│                                                      │
│     [Reset to Defaults]    [Save Settings]           │
└──────────────────────────────────────────────────────┘
```

Responsive Design Notes

Desktop (1200px+)

- Full split layout as shown above
- All panels visible simultaneously

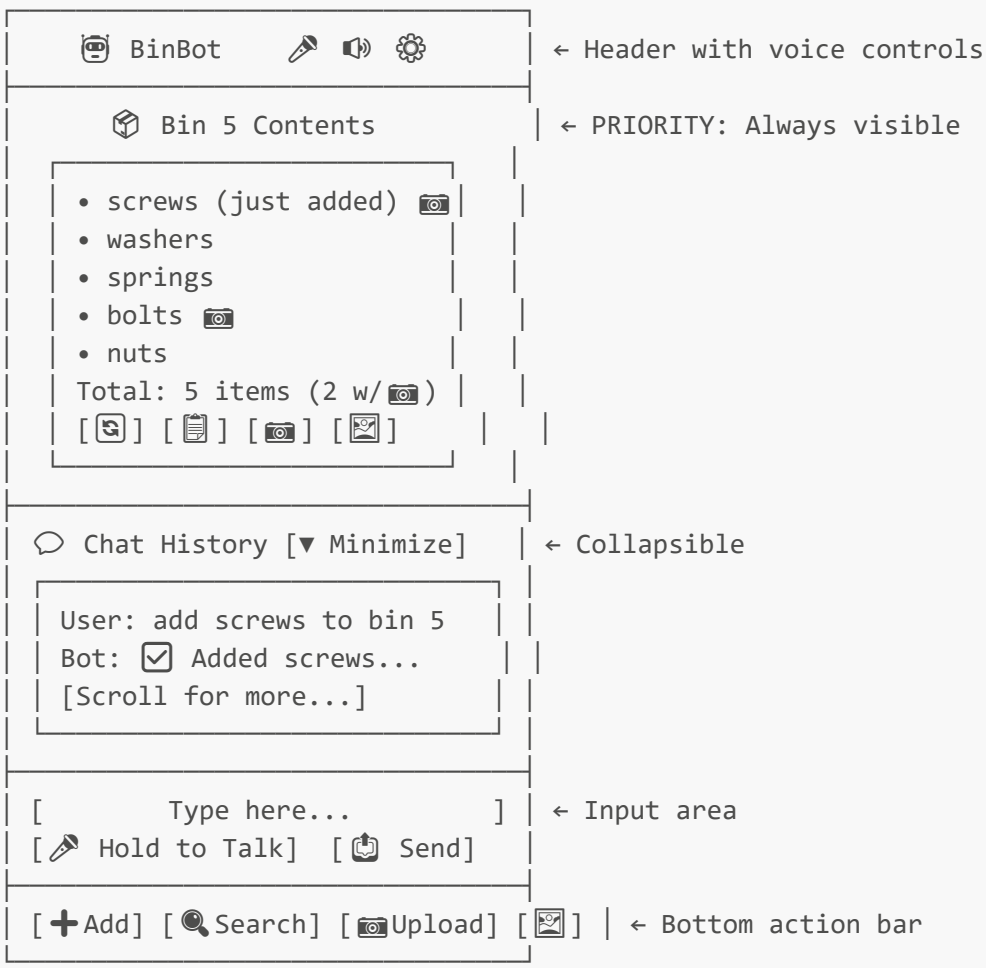
Tablet (768px - 1199px)

- Stack panels vertically
- Chat on top, info panel below
- Collapsible sections

Mobile (< 768px)

- **Priority Layout**: Current bin contents prominently displayed at top
- **Sticky Bin View**: Current bin info always visible while scrolling
- **Collapsible Chat**: Chat history can be minimized to save space
- **Bottom Actions**: Quick action buttons in bottom navigation bar
- **Voice-First**: PTT button prominent and easily accessible
- **Swipe Navigation**: Swipe between bin view, chat, and actions

Mobile Layout Wireframe



Mobile-Specific Features

Current Bin Priority

- **Always Visible**: Bin contents stay at top, never hidden
- **Sticky Header**: Bin name and item count remain visible while scrolling
- **Quick Refresh**: Pull-to-refresh gesture updates bin contents
- **Visual Emphasis**: Larger text and icons for bin contents

Space-Efficient Design

- **Collapsible Sections**: Chat history can be minimized when not needed

- **Swipe Gestures**: Swipe left/right to switch between active bins
- **Bottom Sheet**: Full bin contents modal slides up from bottom
- **Compact Actions**: Action buttons optimized for thumb navigation

Touch-Optimized Interactions

- **Large PTT Button**: Easy to press and hold with thumb
- **Voice-First Flow**: Voice input prioritized over typing on small screens
- **Haptic Feedback**: Vibration confirms PTT activation and actions
- **One-Handed Use**: All primary functions accessible with thumb

Color Scheme Suggestions

Primary Colors

- **Brand Blue**: #2563eb (buttons, links)
- **Success Green**: #10b981 (success messages)
- **Warning Orange**: #f59e0b (warnings)
- **Error Red**: #ef4444 (errors)

Background Colors

- **Main Background**: #f8fafc (light gray)
- **Panel Background**: #ffffff (white)
- **Chat User**: #dbeafe (light blue)
- **Chat Bot**: #f1f5f9 (light gray)

Text Colors

- **Primary Text**: #1f2937 (dark gray)
- **Secondary Text**: #6b7280 (medium gray)
- **Muted Text**: #9ca3af (light gray)

Image Handling Features

Simplified Image Upload Workflow

1. **Upload Trigger**: User drags image to upload area or clicks to browse
2. **Auto-Analysis**: System automatically analyzes image using AI vision
3. **Chat Integration**: AI describes what it sees and adds image to conversation context
4. **Natural Commands**: User can then use voice/text to decide what to do with identified items
    - "add the mouse to bin 7"
    - "put everything in bin 4"
    - "just add the pen to bin 2"
5. **Context Retention**: AI remembers image contents for follow-up commands
6. **Automatic Association**: Images are linked to items when they're created

Image Search Integration

- **Search Results**: Items with images show 📷 indicator in search results
- **Image Preview**: Click image indicator to view thumbnail in search results
- **Image Actions**: "View Images" and "Add Image" buttons for each search result
- **Visual Context**: Images help users identify correct items when multiple matches exist

Post-Creation Image Association

- **Add to Existing Items**: "📷 Add Image" button available for any item
- **Multiple Images**: Items can have multiple associated images
- **Primary Image**: First or designated image serves as primary thumbnail
- **Image Management**: Edit, delete, or reorder images through gallery interface

Image Display Patterns

- **List Views**: 📷 icon indicates items with images, count shows total images
- **Gallery View**: Grid of thumbnails with item names and timestamps
- **Detail View**: Large image preview with metadata and action buttons
- **Search Integration**: Images appear in search results and help with disambiguation

Interactive Elements

Voice Interaction Design

Push-to-Talk (PTT) Behavior

1. **Ready State**: Gray microphone button with "Hold to Talk" text
2. **Active State**: Red pulsing microphone while held down, "Listening..." text
3. **Processing State**: Blue spinning microphone, "Processing..." text
4. **Error State**: Red microphone with X, error message displayed

Voice Output Control

- **Toggle Button**: Speaker icon with ON/OFF state clearly visible in header
- **Visual Feedback**: When voice output is OFF, responses show 🔇 icon
- **User Preference**: Setting persists across sessions
- **Quick Access**: Toggle available in both header and settings

PTT Implementation Details

- **Desktop**: Mouse down/up on PTT button or spacebar hold
- **Mobile**: Touch and hold gesture on PTT button
- **Keyboard Shortcut**: Spacebar (when not focused in text input)
- **Visual Feedback**: Button changes color and shows recording animation
- **Audio Feedback**: Optional beep on start/stop (configurable in settings)

Button States

- **Default**: Subtle shadow, hover lift

- **Hover**: Slight scale increase
- **Active**: Pressed appearance
- **Disabled**: Grayed out, no interaction

Loading States

- **Chat**: Typing indicator with dots
- **Search**: Spinner in results area
- **Voice**: Waveform animation

Accessibility Features

Keyboard Navigation

- Tab through all interactive elements
- Enter to activate buttons
- Escape to close modals
- Arrow keys for selection lists

Screen Reader Support

- Proper ARIA labels
- Live regions for dynamic content
- Semantic HTML structure
- Alt text for all icons

Voice Accessibility

- Voice commands work without mouse
- Audio feedback for all actions
- Configurable speech rate/voice

Technical Implementation Notes

Framework Suggestions

- **CSS Framework**: Tailwind CSS for rapid styling
- **Icons**: Heroicons or Lucide for consistency
- **Animations**: CSS transitions + Framer Motion for complex animations
- **Responsive**: Mobile-first approach

Performance Considerations

- Lazy load chat history
- Debounce search input
- Cache recent operations
- Optimize voice processing
- **Image Optimization**: Compress images, generate thumbnails, lazy load galleries
- **Smart Caching**: Cache image analysis results, thumbnail generation

- **Progressive Loading**: Load image previews before full resolution images

Image Technical Requirements

- **File Support**: JPG, PNG, WEBP formats with size limits (max 10MB)
- **Thumbnail Generation**: Small (150px), Medium (300px), Large (800px) variants
- **AI Integration**: OpenAI Vision API for automatic item identification
- **Storage**: Local filesystem with organized directory structure
- **Metadata**: Track image dimensions, file size, creation date, associated items
- **Security**: Validate file types, sanitize filenames, prevent malicious uploads

Would you like me to modify any aspects of this wireframe or create additional detailed views for specific components?