

LoomLite v4.0 - Quick Reference Guide

One-Page Cheat Sheet for Developers

Core Concepts

Concept	Description
Galaxy View	Multi-document cluster visualization (Canvas)
Solar System	Single document concept graph (D3 Force)
Mind Map	Hierarchical concept tree (D3 Tree)
Surface Viewer	Right panel with 3 tabs (Ontology, Document, Analytics)
Event Bus	Central pub/sub system for module communication
Focus Mode	Double-click to expand panels to 90% (v4.0)
Semantic Centering	Triple-click to center/zoom graphs (v4.0)

File Structure

```
frontend/
├── index.html           # Main entry point
├── eventBus.js          # Core pub/sub system
├── galaxyView.js        # Multi-document view
├── dualVisualizer.js    # Solar System view
├── mindMapView.js       # Mind Map view
├── surfaceViewer.js     # Right panel (3 tabs)
├── fileSystemSidebar.js # Left sidebar
├── searchBar.js         # Search input
├── dynamicFoldersPanel.js # Folder tree
├── systemStatus.js      # Health dashboard
└── quadrantFocus.js     # Focus mode (v4.0)
```

Color Palette

Color	Hex	Usage
Deep Black	#0a0a0a	Body background
Dark Grey	#0c0c0c	Toolbar
Panel Grey	#181818	Panels
Primary Text	#e6e6e6	Main text
Secondary Text	#9a9a9a	Labels
Yellow Accent	#fad643	Buttons, highlights
Error Red	#ef4444	Errors

API Endpoints

Method	Endpoint	Purpose
POST	/api/ingest/file	Upload document
GET	/doc/{id}/ontology	Get concepts + relations
GET	/doc/{id}/text	Get document text
GET	/api/search?q={query}	Semantic search
GET	/folders	List all documents
GET	/system/status	Health check

Base URL: `https://loomlite-production.up.railway.app`



Event Bus Events

Document Events

```
bus.emit('documentFocus', { docId });  
bus.emit('conceptSelected', { conceptId, concept, ... });
```

Search Events

```
bus.emit('searchResults', { results });  
bus.emit('searchCleared', {});
```

Focus Mode Events (v4.0)

```
bus.emit('panelFocused', { panelId });  
bus.emit('panelUnfocused', { panelId });  
bus.emit('centerMindMap', {});  
bus.emit('centerSolarSystem', {});
```



User Interactions

Click Actions

Action	Effect
Single Click	Select concept/document
Double Click	Enter/exit focus mode
Triple Click	Center/zoom graph (Mind Map/Solar only)
Click Outside	Exit focus mode
Press Esc	Exit focus mode

Focus Mode Targets

- Solar System View (visualizer-top)

- Mind Map View (visualizer-bottom)
 - Document Viewer (surface-viewer)
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Key Functions

Event Bus

```
bus.emit(eventName, detail);    // Emit event
bus.on(eventName, callback);    // Subscribe
setCurrentDocId(docId);         // Set active doc
setCurrentConceptId(conceptId); // Set active concept
```

Focus Mode

```
initQuadrantFocus();           // Initialize system
getFocusedPanel();             // Get current focus
isPanelFocused(panelId);       // Check if focused
focusPanel(panelId);          // Programmatic focus
unfocusPanel();               // Programmatic unfocus
```

Visualization

```
await initGalaxyView();        // Init Galaxy
await drawDualVisualizer(docId); // Init Solar
await initMindMapView(docId);   // Init Mind Map
initSurfaceViewer();           // Init Surface Viewer
```

CSS Transitions

```
/* Standard transitions */
transition: all 0.15s cubic-bezier(0.25, 0.1, 0.25, 1);

/* Focus mode transitions */
transition: all 0.4s cubic-bezier(0.4, 0, 0.2, 1);

/* Centering animations */
transition: all 0.6s cubic-bezier(0.4, 0, 0.2, 1);
```



Deployment

Local Development

```
git clone https://github.com/Legend1280/loomlite.git
cd loomlite/frontend
npx http-server -p 8080
```

Vercel (Frontend)

- Auto-deploy from GitHub `main` branch
- Root: `/frontend`
- Build: None (static site)

Railway (Backend)

- Auto-deploy from GitHub `main` branch
- Root: `/backend`
- Framework: FastAPI



Debugging

Console Logs

```
// Enable verbose logging
localStorage.setItem('debug', 'true');

// Check event bus activity
bus.on('*', (event) => console.log('Event:', event));

// Check focus mode state
console.log(getFocusedPanel());
```

Common Issues

Issue	Solution
Blank visualizations	Check API response in Network tab
Click not working	Check if element has <code>pointer-events: none</code>
Focus mode stuck	Press Esc or refresh page
Search not highlighting	Check if results array is valid



Performance Targets

Metric	Target	Current
Initial Load	< 2s	~1.2s
Galaxy Render	< 500ms	~300ms
Solar Render	< 300ms	~200ms
Mind Map Render	< 400ms	~250ms
Search Latency	< 200ms	~150ms
Focus Transition	400ms	400ms



Keyboard Shortcuts

Shortcut	Action
Esc	Exit focus mode
Ctrl+F	Focus search bar
Ctrl+U	Open upload dialog



Dependencies

Library	Version	Purpose
D3.js	7.9.0	Visualization
Force-Collide	Custom	Galaxy view

No build tools required - Pure vanilla JavaScript!



Quick Start Checklist

- ☐ Clone repository
 - ☐ Review `index.html` structure
 - ☐ Understand event bus in `eventBus.js`
 - ☐ Explore Galaxy View in `galaxyView.js`
 - ☐ Test focus mode (double-click panels)
 - ☐ Test centering (triple-click Mind Map/Solar)
 - ☐ Review API integration
 - ☐ Check color palette consistency
 - ☐ Test all view modes
 - ☐ Deploy to Vercel
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Documentation Files

1. **LoomLite_v4.0_Developer_Handoff.md** - Complete system documentation
 2. **LoomLite_v4.0_System_Diagrams.md** - Visual flow diagrams
 3. **LoomLite_v4.0_Quick_Reference.md** - This file (cheat sheet)
 4. **v4.0_Quadrant_Focus_Complete.md** - Focus mode feature docs
 5. **v2.3_Emoji_Removal_Complete.md** - UI polish docs
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Links

- **Production:** <https://loomlite.vercel.app>
 - **Repository:** <https://github.com/Legend1280/loomlite>
 - **Backend API:** <https://loomlite-production.up.railway.app>
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Pro Tips

1. **Use Event Bus** - Always emit events for cross-module communication
 2. **Check Console** - All modules log initialization and key actions
 3. **Test Focus Mode** - Double-click any visualization to expand
 4. **Use Centering** - Triple-click to reset zoom on Mind Map/Solar
 5. **Inspect Network** - Check API responses for data structure
 6. **Read Comments** - Inline code comments explain complex logic
 7. **Follow Patterns** - New modules should follow existing patterns
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Version 4.0 Highlights

- ✓ **Dynamic Quadrant Focus** - Double-click to expand panels
 - ✓ **Semantic Centering** - Triple-click to center/zoom
 - ✓ **Unified Color Palette** - Dark mode with yellow accent
 - ✓ **Clean UI** - No emoji, professional icons
 - ✓ **Smooth Transitions** - 400ms focus, 600ms centering
 - ✓ **Event-Driven** - Decoupled modules via event bus
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Quick Reference v1.0 / LoomLite v4.0 / October 26, 2025