# Database Modeling Tool UI Specification

Erwin Data Modeler Functionality with Linear.app Premium Design

## 1. Overview

This application layout combines erwin Data Modeler functionality with a modern, premium design inspired by Linear.app. The UI is clean, minimal, and intuitive, with a focus on usability and visual hierarchy. The layout uses generous whitespace, subtle shadows, and muted colors to create a premium feel while maintaining all the powerful features of erwin DM.

## 2. Global Layout

### 2.1 Column 1 – Left-hand Global Tree (200px)

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│ 📊 Dashboard │

│ 🗂️ Model Explorer │ ← Collapsed by default

│ 👥 Users │

│ ⚙️ Settings │

└─────────────────────┘

**Design Features:**

* **Modern minimal icons** with consistent stroke width
* **Inter font family** for clean typography
* **Subtle hover states** with gentle color transitions
* **Active item highlighting** using accent colors
* **Generous padding** for airy, premium feel

### 2.2 Column 2 – Main Workspace (Full remaining width)

#### Row 1 – Header Bar (48px height)

┌─────────────────────────────────────────────────────────────────┐

│ 🎯 ProductName │ Customer\_Order\_Model │ 🔍 Search 💡 🌙 👤 │

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**Layout & Styling:**

* **Left**: Small logo + product name (Inter 600, 16px)
* **Center**: Model name (Inter 600, 18px, prominent)
* **Right**: Global search, notifications, dark mode, profile
* **Background**: Panel background with subtle shadow
* **Icons**: Monochrome with accent color on hover

#### Row 2 – Main Tabs (40px height)

┌─────────────────────────────────────────────────────────────────┐

│ File │ Home │ View │ Diagram │ Actions │ Help │ │

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**Tab Styling:**

* **Typography**: Inter 600, 16px
* **Active state**: Accent underline (#6366F1 light / #818CF8 dark)
* **Hover state**: Light background shade
* **Smooth transitions** for state changes

#### Row 3 – Contextual Toolbar (56px height)

Changes based on active tab

**Home Tab Active:**

┌──────────────────────────────────────────────────────────────────┐

│ [🏢 Add Entity] [📝 Add Attribute] [🔗 Add Relationship] [📋 Note]│

│ │

│ [📊 Subject Area] [👁️ View] [⚡ Stored Proc] [🎯 Domain] │

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**Button Styling:**

* **Flat design** with premium colors
* **Rounded corners** (6px border radius)
* **Soft shadows** for elevation
* **Gentle hover feedback** with color transitions

#### Row 4 – Workspace Split (Remaining height)

##### Left Column – Model Tree (260px)

🗂️ Customer\_Order\_Model

├── 📋 Diagrams (3)

│ ├── 📊 Main Diagram ⭐

│ ├── 👥 User Management

│ └── 💳 Payment Flow

├── 🏢 Entities (8)

│ ├── 👤 Customer

│ ├── 🛒 Order

│ ├── 📦 Product

│ └── ... (5 more)

├── 🔗 Relationships (12)

├── 🔑 Keys & Indexes (24)

├── 👁️ Views (5)

├── 🎯 Domains (8)

└── 📋 Business Rules (18)

**Modern Styling:**

* **Typography**: Inter 400, 14px for items
* **Icons**: Minimal, consistent stroke (Lucide icons)
* **Colors**: Linear.app inspired palette
* **Hover states**: Subtle overlay (#E5E7EB light / #3A3A3A dark)
* **Active highlighting**: Accent color background

##### Center Column – Diagram Canvas (Flexible width)

**Multi-tab Interface:**

┌────────────────────────────────────────────────────────────────┐

│ 🗂️ Customer\_Order\_Model ❌ │ 📊 Product\_Catalog ❌ │ ➕ New │

├────────────────────────────────────────────────────────────────┤

│ 📊 Main Diagram ⭐ │ 👥 User Management │ 💳 Payment │ ➕ New │

├────────────────────────────────────────────────────────────────┤

│ │

│ [Floating Toolbar] [Mini-map] │

│ ┌─────┐ ┌─────────┐ │

│ │ ✋ │ │ ┌─────┐ │ │

│ │ 🏢 │ │ │ ▢ │ │ │

│ │ 🔗 │ Diagram Canvas │ │ │ │ │

│ │ 📝 │ │ └─────┘ │ │

│ └─────┘ └─────────┘ │

│ │

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**Canvas Styling:**

* **Background**: Primary background (#F9FAFB light / #181818 dark)
* **Grid lines**: Soft dashed lines (#E5E7EB light / #3A3A3A dark)
* **Entity cards**: Clean cards with separator lines between PK/non-PK

**Entity Representation:**

┌─────────────────────────┐

│ 👤 Customer │ ← Header with accent color

├─────────────────────────┤

│ 🔑 CustomerID (PK) │ ← Primary key section

│ 📧 Email (AK) │

├─────────────────────────┤ ← Visual separator line

│ 📝 FirstName │ ← Non-key attributes

│ 📝 LastName │

│ 📞 PhoneNumber │

└─────────────────────────┘

**Floating Toolbars:**

Model Activities (Top-left):

┌─────┐

│ ✋ │ ← Select/Move

│ 🏢 │ ← Add Entity

│ 🔗 │ ← Add Relationship

│ 📝 │ ← Add Note

│ 📦 │ ← Subject Area

└─────┘

View Controls (Bottom-left):

┌─────┐

│ 🔍➕ │ ← Zoom In

│ 🔍➖ │ ← Zoom Out

│ ⬜ │ ← Fit Screen

│ 🖥️ │ ← Full Screen

│ 🧭 │ ← Mini-map

└─────┘

**Toolbar Styling:**

* **Background**: Floating toolbar color with soft shadow
* **Rounded corners**: 8px border radius
* **Elevation**: Subtle shadow for depth
* **Icons**: 16px, theme-aware colors

**Mini-map:**

* **Size**: 120x80px
* **Position**: Top-right corner
* **Style**: Subtle border, semi-transparent viewport box
* **Background**: Panel background with soft shadow

##### Right Column – Property Pane (300px)

**Vertical Tab System:**

┌─┬─────────────────────────┐

│📋│ Entity Properties ▼ │ ← Active accordion

│🎨│ Name: Customer │

│🔑│ Physical: CUSTOMER │

│📊│ Definition: [text] │

│🔗│ ☑️ Complete │

│📋│ │

├─┼─────────────────────────┤

│📋│ Display Options ▶ │ ← Collapsed

│🎨│ │

│🔑│ │

└─┴─────────────────────────┘

**Tab Icons (24px width strip):**

* 📋 **General**: Primary properties
* 🎨 **Display**: Visual styling options
* 🔑 **Keys**: Key management
* 📊 **Data**: Data types, constraints
* 🔗 **Relations**: Relationship details
* 📋 **Rules**: Business rules, validation
* ⚙️ **Advanced**: Physical options

**Property Styling:**

* **Typography**: Inter 400, 14px for labels, 13px for values
* **Inputs**: Rounded corners, subtle borders
* **Accordions**: Smooth expand/collapse animations
* **Active tab**: Accent color highlight

## 3. Colors & Theme

| **Role / Element** | **Light Mode** | **Dark Mode** | **Notes** |
| --- | --- | --- | --- |
| **Page Background** | #F9FAFB | #181818 | Soft, neutral base |
| **Panel Background** | #FFFFFF | #242424 | Left tree, property pane |
| **Header Background** | #FFFFFF | #1F1F1F | Subtle shadow separation |
| **Accent Primary** | #6366F1 | #818CF8 | Buttons, active states |
| **Primary Text** | #111827 | #E4E4E4 | Main readable content |
| **Secondary Text** | #6B7280 | #A1A1AA | Subtle guidance text |
| **Borders/Lines** | #E5E7EB | #3A3A3A | Grid, separators |
| **Floating Elements** | #FFFFFF | #2C2C2C | Toolbars, mini-map |
| **Success** | #10B981 | #34D399 | Positive feedback |
| **Warning** | #F59E0B | #FBBF24 | Caution states |
| **Error** | #EF4444 | #F87171 | Error highlights |

## 4. Typography

| **Element** | **Font Family** | **Weight/Size** | **Notes** |
| --- | --- | --- | --- |
| **Main UI Text** | Inter | 400, 14-16px | Clean, readable |
| **Headers/Tabs** | Inter | 600, 16-18px | Bold but subtle |
| **Canvas Text** | Inter | 400, 12-14px | Diagram clarity |
| **Buttons/Menu** | Inter | 500, 14px | Medium weight |
| **Labels/Hints** | Inter | 400, 12px | Subtle guidance |

**Design Principles:**

* **Generous line height** (1.5) for readability
* **Consistent spacing** using 8px grid system
* **Minimal font variations** for clean hierarchy

## 5. Component Styling

### 5.1 Premium Design Elements

**Shadows & Elevation:**

* **Floating toolbars**: box-shadow: 0 4px 12px rgba(0, 0, 0, 0.1)
* **Panel separation**: box-shadow: 0 1px 3px rgba(0, 0, 0, 0.05)
* **Active elements**: box-shadow: 0 2px 8px rgba(99, 102, 241, 0.15)

**Border Radius:**

* **Buttons**: 6px
* **Panels**: 8px
* **Toolbars**: 8px
* **Input fields**: 4px

**Transitions:**

* **Hover states**: transition: all 0.2s ease
* **Panel expansions**: transition: height 0.3s ease
* **Theme switching**: transition: background-color 0.3s ease

### 5.2 Interactive States

**Hover Effects:**

* **Subtle color shifts** maintaining accessibility
* **Gentle elevation changes** for clickable elements
* **Smooth animations** (200ms duration)

**Active States:**

* **Accent color highlighting** for selected items
* **Slight depth changes** for pressed buttons
* **Clear visual feedback** for all interactions

## 6. Premium UI Principles (Linear.app Inspired)

### 6.1 Whitespace Philosophy

* **Generous spacing** improves visual hierarchy
* **8px grid system** for consistent alignment
* **Breathing room** around all interactive elements

### 6.2 Subtlety & Refinement

* **Muted color palette** reduces visual fatigue
* **Minimal iconography** with consistent stroke weights
* **Soft shadows** create depth without distraction

### 6.3 Visual Hierarchy

* **Bold headers** (600 weight) for primary navigation
* **Medium buttons** (500 weight) for actions
* **Regular text** (400 weight) for content
* **Subtle secondary text** for guidance

### 6.4 Consistency & Polish

* **Unified design system** across all components
* **Coherent interaction patterns** throughout
* **Smooth animations** for state changes
* **Accessible color contrast** in all themes

### 6.5 Intuitive Flow

* **Contextual toolbars** show relevant actions
* **Progressive disclosure** through accordions
* **Clear navigation** with breadcrumbs and tabs
* **Floating elements** feel integrated and purposeful

This design creates a premium, professional tool that combines the powerful functionality of erwin Data Modeler with the clean, modern aesthetic that makes Linear.app so appealing to users.

# Model Tree - Premium Design Specification

Linear.app Inspired with Complete Erwin DM Functionality

## Overall Structure (260px width)

### Visual Layout

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│ 🗂️ Customer\_Order\_Model │ ← Root node (Inter 600, 16px)

├─────────────────────────────────────┤

│ ▼ 📋 Diagrams (3) │ ← Expandable category

│ │ 📊 Main Diagram ⭐ │ ← Active diagram indicator

│ │ 👥 User Management │

│ │ 💳 Payment Flow │

│ └ ➕ New Diagram │ ← Quick action

├─────────────────────────────────────┤

│ ▼ 🏢 Entities (8) │

│ │ 👤 Customer │

│ │ 🛒 Order │

│ │ 📦 Product │

│ │ 🏷️ Category │

│ │ 💳 Payment │

│ │ 📄 OrderLine │

│ │ 🏠 Address │

│ │ 👥 User │

├─────────────────────────────────────┤

│ ▶ 🔗 Relationships (12) │ ← Collapsed category

├─────────────────────────────────────┤

│ ▶ 🔑 Keys & Indexes (24) │

├─────────────────────────────────────┤

│ ▶ 👁️ Views (5) │

├─────────────────────────────────────┤

│ ▶ 🎯 Domains (8) │

├─────────────────────────────────────┤

│ ▶ ⚡ Stored Procedures (12) │

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│ ▶ 🔧 Functions (6) │

├─────────────────────────────────────┤

│ ▶ 📋 Business Rules (18) │

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## Premium Styling Details

### Root Node (Model Name)

/\* Root container \*/

background: rgba(99, 102, 241, 0.05) /\* Subtle accent tint \*/

border-left: 3px solid #6366F1 (light) / #818CF8 (dark)

padding: 12px 16px

margin-bottom: 8px

/\* Typography \*/

font: Inter 600, 16px

color: #111827 (light) / #E4E4E4 (dark)

letter-spacing: -0.02em /\* Tight tracking for headers \*/

/\* Icon styling \*/

.model-icon {

margin-right: 8px

color: #6366F1 (light) / #818CF8 (dark)

}

### Category Headers (Expandable Sections)

/\* Category container \*/

padding: 10px 16px

cursor: pointer

transition: all 0.2s ease

border-radius: 6px

margin: 2px 0

/\* Typography \*/

font: Inter 500, 14px

color: #374151 (light) / #D1D5DB (dark)

/\* Hover state \*/

background: rgba(99, 102, 241, 0.05)

color: #111827 (light) / #E4E4E4 (dark)

/\* Expand/collapse chevron \*/

.chevron {

transition: transform 0.2s ease

margin-right: 8px

color: #6B7280 (light) / #9CA3AF (dark)

}

.expanded .chevron {

transform: rotate(90deg)

}

/\* Count badges \*/

.count-badge {

background: #F3F4F6 (light) / #374151 (dark)

color: #6B7280 (light) / #9CA3AF (dark)

font: Inter 400, 12px

padding: 2px 8px

border-radius: 12px

margin-left: auto

}

### Item Nodes (Entities, Relationships, etc.)

/\* Item container \*/

padding: 8px 16px 8px 32px /\* Extra left padding for hierarchy \*/

cursor: pointer

transition: all 0.15s ease

border-radius: 4px

margin: 1px 0

/\* Typography \*/

font: Inter 400, 14px

color: #374151 (light) / #D1D5DB (dark)

/\* Hover state \*/

background: #F9FAFB (light) / #2D2D2D (dark)

color: #111827 (light) / #E4E4E4 (dark)

/\* Selected state \*/

background: rgba(99, 102, 241, 0.1)

color: #111827 (light) / #E4E4E4 (dark)

border-left: 2px solid #6366F1 (light) / #818CF8 (dark)

/\* Icon styling \*/

.item-icon {

margin-right: 8px

width: 16px

height: 16px

}

## Detailed Category Breakdowns

### 📋 Diagrams Section (Expanded)

▼ 📋 Diagrams (3)

│ 📊 Main Diagram ⭐ ← Active indicator

│ 👥 User Management

│ 💳 Payment Flow

│ ─────────────────────────

│ ➕ New Diagram ← Quick action separator

**Styling for Diagram Items:**

* **Active diagram**: Star indicator (⭐) with accent color
* **Quick actions**: Subtle separator line above
* **Icons**: Specific diagram type icons (📊 for ER diagrams, 👥 for user flows)

### 🏢 Entities Section (Expanded)

▼ 🏢 Entities (8)

│ 👤 Customer ← Semantic icons

│ 🛒 Order

│ 📦 Product

│ 🏷️ Category

│ 💳 Payment

│ 📄 OrderLine

│ 🏠 Address

│ 👥 User

│ ─────────────────────────

│ ➕ Add Entity

**Entity Icon Strategy:**

* **Customer**: 👤 (person)
* **Order**: 🛒 (shopping cart)
* **Product**: 📦 (package)
* **Category**: 🏷️ (tag)
* **Payment**: 💳 (credit card)
* **OrderLine**: 📄 (document)
* **Address**: 🏠 (house)
* **User**: 👥 (people)

### 🔗 Relationships Section (Collapsed → Expanded)

▼ 🔗 Relationships (12)

│ Customer\_Order (1:M) ← Cardinality display

│ Order\_OrderLine (1:M)

│ Product\_OrderLine (M:M)

│ Product\_Category (M:1)

│ Order\_Payment (1:1)

│ Customer\_Address (1:M)

│ User\_Customer (1:1)

│ ... (5 more)

│ ─────────────────────────

│ ➕ Add Relationship

**Relationship Styling:**

* **Cardinality display**: Secondary text color, smaller font (Inter 400, 12px)
* **Relationship naming**: ParentEntity\_ChildEntity convention
* **Grouped by type**: Identifying vs Non-identifying (with subtle visual distinction)

### 🔑 Keys & Indexes Section (Expanded)

▼ 🔑 Keys & Indexes (24)

├─ ▼ 🔑 Primary Keys (8)

│ │ 🔑 Customer.CustomerID

│ │ 🔑 Order.OrderID

│ │ 🔑 Product.ProductID

│ │ ... (5 more)

├─ ▼ 🎯 Alternate Keys (4)

│ │ 🎯 Customer.Email

│ │ 🎯 Product.SKU

│ │ ... (2 more)

├─ ▼ 🔗 Foreign Keys (12)

│ │ 🔗 Order.CustomerID

│ │ 🔗 OrderLine.OrderID

│ │ ... (10 more)

└─ ▼ 📑 Indexes (16)

│ 📑 IX\_Customer\_LastName

│ 📑 IX\_Order\_Date

│ ... (14 more)

**Multi-level Hierarchy:**

* **Sub-categories**: Nested with additional indentation (48px from left)
* **Entity.Attribute notation**: Clear ownership indication
* **Key type icons**: Distinct icons for each key type

## Interactive Behaviors

### Expand/Collapse Animation

/\* Container animation \*/

.category-content {

overflow: hidden

transition: max-height 0.3s ease-in-out

}

.category-content.collapsed {

max-height: 0

}

.category-content.expanded {

max-height: 500px /\* Generous max for smooth animation \*/

}

/\* Fade-in animation for items \*/

.category-item {

opacity: 0

transform: translateY(-4px)

animation: fadeInUp 0.2s ease forwards

}

.category-item:nth-child(1) { animation-delay: 0.05s }

.category-item:nth-child(2) { animation-delay: 0.1s }

.category-item:nth-child(3) { animation-delay: 0.15s }

/\* Stagger animation for smooth reveal \*/

@keyframes fadeInUp {

to {

opacity: 1

transform: translateY(0)

}

}

### Context Menu (Right-click)

/\* Context menu styling \*/

.context-menu {

background: #FFFFFF (light) / #2C2C2C (dark)

border: 1px solid #E5E7EB (light) / #3A3A3A (dark)

border-radius: 8px

box-shadow: 0 4px 12px rgba(0, 0, 0, 0.15)

padding: 4px 0

min-width: 180px

}

.context-menu-item {

padding: 8px 16px

font: Inter 400, 14px

color: #374151 (light) / #D1D5DB (dark)

cursor: pointer

transition: background 0.15s ease

}

.context-menu-item:hover {

background: #F9FAFB (light) / #374151 (dark)

color: #111827 (light) / #E4E4E4 (dark)

}

.context-menu-separator {

height: 1px

background: #E5E7EB (light) / #3A3A3A (dark)

margin: 4px 0

}

### Context Menu Options by Item Type:

**Entity Context Menu:**

* ✏️ Rename
* 🎨 Change Color
* 📋 Properties
* 🔄 Duplicate
* 📊 Add to Diagram
* 🗑️ Delete
* ─────────────
* ➕ Add Attribute
* 🔗 Add Relationship

**Relationship Context Menu:**

* ✏️ Rename
* 📋 Properties
* 🔄 Reverse Direction
* 📊 Show in Diagram
* 🗑️ Delete

**Diagram Context Menu:**

* ✏️ Rename
* 📊 Open
* 🔄 Duplicate
* 📤 Export
* 🗑️ Delete
* ─────────────
* ⭐ Set as Main

## Search & Filter Integration

### Search Overlay

/\* Search input at top of tree \*/

.tree-search {

position: sticky

top: 0

background: rgba(255, 255, 255, 0.95) (light) / rgba(36, 36, 36, 0.95) (dark)

backdrop-filter: blur(8px)

padding: 12px 16px

border-bottom: 1px solid #E5E7EB (light) / #3A3A3A (dark)

margin-bottom: 8px

}

.search-input {

width: 100%

border: 1px solid #E5E7EB (light) / #3A3A3A (dark)

border-radius: 6px

padding: 8px 12px 8px 36px

font: Inter 400, 14px

background: #FFFFFF (light) / #1F1F1F (dark)

}

.search-icon {

position: absolute

left: 24px

top: 50%

transform: translateY(-50%)

color: #6B7280 (light) / #9CA3AF (dark)

}

### Filter States

* **Search active**: Highlight matching items, fade non-matches
* **Filter by type**: Show only selected categories
* **Recent items**: Star or clock icon for recently accessed

## Responsive Behaviors

### Drag & Drop Support

/\* Drag preview \*/

.drag-preview {

background: #FFFFFF (light) / #2C2C2C (dark)

border: 2px dashed #6366F1 (light) / #818CF8 (dark)

border-radius: 6px

padding: 8px 16px

font: Inter 500, 14px

box-shadow: 0 4px 12px rgba(99, 102, 241, 0.25)

}

/\* Drop zones \*/

.drop-zone {

border: 2px dashed transparent

transition: border-color 0.2s ease

}

.drop-zone.drag-over {

border-color: #6366F1 (light) / #818CF8 (dark)

background: rgba(99, 102, 241, 0.05)

}

### Keyboard Navigation

* **Arrow keys**: Navigate between items
* **Enter**: Open/select item
* **Space**: Toggle expand/collapse
* **F2**: Rename selected item
* **Delete**: Delete selected item
* **Ctrl+F**: Focus search

This design creates a premium, intuitive model tree that maintains all the functionality of erwin DM while providing the clean, modern experience users expect from Linear.app. The hierarchical structure is clear, interactions are smooth, and the visual design supports productivity while looking professional.