

# BizSuite Application Flow Chart

## 1. User Authentication Flow

flowchart TD A[User Access] --> B{Has Account?} B -->|No| C[Registration Page] B -->|Yes| D[Login Page] C --> E[Create Account] E --> F[Enter Details] F --> G[Create Organization] G --> H[Select Subscription] H --> I[Dashboard] D --> J[Enter Credentials] J --> K{Valid?} K -->|No| D K -->|Yes| I

## 2. Organization Management Flow

flowchart TD A[Organization Context] --> B{User Role} B -->|Super Admin| C[Manage All Organizations] B -->|Admin| D[Manage Single Organization] B -->|Other Roles| E[Use Organization] C --> F[Create/Edit/Delete Organizations] C --> G[Manage Subscriptions] C --> H[Configure Payment Gateways] D --> I[Manage Users] D --> J[Configure Settings] D --> K[Manage Modules] E --> L[Access Permitted Modules]

## 3. Module Access Flow

flowchart TD A[Module Access] --> B{Check Subscription} B -->|Basic| C[Core Modules] B -->|Standard| D[Extended Modules] B -->|Premium| E[All Modules] C --> F[Sales/POS/Inventory] D --> F D --> G[Purchases/CRM/Reports] E --> F E --> G E --> H[Accounting/WhatsApp/Advanced]

## 4. Data Flow Architecture

flowchart TD A[Frontend Components] --> B[React Contexts] B --> C[API Services] C --> D[Auth Service] C --> E[Organization Service] C --> F[Module Services] D --> G[JWT Auth] E --> H[Tenant Context] F --> I[Module Data] G --> J[(Database)] H --> J I --> J

## File Interaction Flow

### Frontend Structure

### 1. Entry Points

- └─ src/main.tsx (Application Entry)
- └─ src/App.tsx (Root Component)
- └─ src/Index.tsx (Route Definitions)

### 2. Context Providers

- └─ AuthContext.tsx (Authentication State)
- └─ TenantContext.tsx (Organization State)
- └─ Module Contexts (POSSContext, etc.)

### 3. Core Components

- └─ layout/ (Layout Components)
  - └─ AppLayout.tsx
  - └─ TenantSelector.tsx
- └─ ui/ (Shared UI Components)

### 4. Module Components

- └─ accounting/
- └─ inventory/
- └─ sales/
- └─ purchases/
- └─ etc...

## Backend Structure

### 1. Entry Points

- └─ server.js (Main Server)
- └─ routes/index.js (Route Registry)

### 2. Core Components

- └─ controllers/ (Business Logic)
- └─ utils/config/ (Configurations)
- └─ utils/models/ (Data Models)

### 3. Module Routes

- └─ superadmin/
  - └─ payment-gateway/
  - └─ subscriptionplan/
- └─ [module-specific-routes]/

## Application Startup Process

sequenceDiagram participant U as User participant F as Frontend participant A as Auth Service participant T as Tenant Service participant B as Backend API participant D as Database U->>F: Access Application F->>A: Check Authentication A->>B: Validate Token B->>D: Query User Data D-->>B: User Data B-->>A: Auth Status A->>T: Load Organization Context T->>B: Fetch Org Data B->>D: Query Org Data D-->>B: Org Data B-->>T: Organization Context T-->>F: Ready State F-->>U: Render Dashboard

## Module Interaction Process

sequenceDiagram participant C as Component participant S as Service Layer participant A as API Client participant B as Backend participant D as Database C->>S: Request Data S->>A: Make API Call A->>B: HTTP Request B->>D: Database Query D-->>B: Query Result B-->>A: API Response A-->>S: Processed Data S-->>C: Updated UI State

## Key Files and Their Responsibilities

### 1. Authentication Flow

- `src/pages/Login.tsx`: Login interface
- `src/contexts/AuthContext.tsx`: Auth state management
- `src/services/userService.ts`: Auth API calls
- `backend/controllers/auth`: Auth logic

### 2. Organization Management

- `src/contexts/TenantContext.tsx`: Organization state
- `src/services/organizationService.ts`: Organization API calls
- `backend/controllers/superadmin`: Organization management

### 3. Module Access

- `src/components/ProtectedRoute.tsx`: Access control
- `src/pages/modules/*`: Module interfaces
- `backend/routes/[module]`: Module APIs

### 4. Data Flow

- `src/services/*`: API service layers
- `src/models/*`: Data type definitions
- `backend/utils/models`: Database models
- `backend/controllers/*`: Business logic

## Working Process

### 1. User Access

Login/Register  
↓  
Authentication  
↓  
Organization Selection  
↓  
Module Access

## 2. Data Operations

UI Action  
↓  
Service Call  
↓  
API Request  
↓  
Database Operation  
↓  
Response Processing  
↓  
UI Update

## 3. State Management

Context Providers  
↓  
Global State  
↓  
Component Props  
↓  
Local State  
↓  
UI Rendering

## 4. Module Integration

Module Routes

↓

Access Check

↓

Data Fetching

↓

Component Rendering

↓

User Interaction