# ModularSys Database - Data Dictionary

## How to Convert to DOCX:

1. Open this file in Microsoft Word

2. Select all tables

3. Use "Convert Text to Table" feature

4. Or copy-paste into Word and format as tables

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## 1. Users Table

|  |  |  |  |
| --- | --- | --- | --- |
| Field Name | Data Type | Length | Description |
| ------------ | ----------- | -------- | ------------- |
| Id (PK) | Int - AI | 9 | User's unique identifier (Primary Key, Auto-Increment) |
| Username | Varchar | 50 | User's login username (Unique) |
| PasswordHash | Varchar | 255 | Encrypted password using BCrypt |
| Email | Varchar | 100 | User's email address |
| FirstName | Varchar | 50 | User's first name |
| LastName | Varchar | 50 | User's last name |
| RoleId (FK) | Int | 9 | Foreign Key to Roles table |
| DepartmentId (FK) | Int | 9 | Foreign Key to Departments table |
| CreatedAt | DateTime | - | Record creation timestamp |
| CreatedBy | Varchar | 50 | Username who created the record |
| UpdatedAt | DateTime | - | Last update timestamp |
| UpdatedBy | Varchar | 50 | Username who last updated the record |
| IsDeleted | Bit | 1 | Soft delete flag (0=Active, 1=Deleted) |
| DeletedAt | DateTime | - | Deletion timestamp |
| DeletedBy | Varchar | 50 | Username who deleted the record |

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## 2. Roles Table

| Field Name | Data Type | Length | Description |

|------------|-----------|--------|-------------|

| RoleId (PK) | Int - AI | 9 | Role's unique identifier (Primary Key, Auto-Increment) |

| RoleName | Varchar | 50 | Role name (e.g., Admin, Manager, Staff) - Unique |

| Description | Varchar | 255 | Role description and responsibilities |

| CreatedAt | DateTime | - | Record creation timestamp |

| CreatedBy | Varchar | 50 | Username who created the role |

| UpdatedAt | DateTime | - | Last update timestamp |

| UpdatedBy | Varchar | 50 | Username who last updated the role |

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## 3. Permissions Table

| Field Name | Data Type | Length | Description |

|------------|-----------|--------|-------------|

| PermissionId (PK) | Int - AI | 9 | Permission's unique identifier (Primary Key, Auto-Increment) |

| PermissionName | Varchar | 100 | Permission name (e.g., Users.View, Products.Create) - Unique |

| Description | Varchar | 255 | Permission description |

| Category | Varchar | 50 | Permission category (Users, Products, Orders, etc.) |

| Icon | Varchar | 50 | Icon name for UI display |

| DisplayOrder | Int | 9 | Display order in UI |

| IsSystemPermission | Bit | 1 | System permission flag (1=System, 0=Custom) |

| CreatedAt | DateTime | - | Record creation timestamp |

| CreatedBy | Varchar | 50 | Username who created the permission |

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## 4. RolePermissions Table (Junction Table)

| Field Name | Data Type | Length | Description |

|------------|-----------|--------|-------------|

| RoleId (PK, FK) | Int | 9 | Foreign Key to Roles table (Composite Primary Key) |

| PermissionId (PK, FK) | Int | 9 | Foreign Key to Permissions table (Composite Primary Key) |

| GrantedAt | DateTime | - | Timestamp when permission was granted |

| GrantedBy | Varchar | 50 | Username who granted the permission |

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## 5. Departments Table

| Field Name | Data Type | Length | Description |

|------------|-----------|--------|-------------|

| DepartmentId (PK) | Int - AI | 9 | Department's unique identifier (Primary Key, Auto-Increment) |

| DepartmentName | Varchar | 100 | Department name (e.g., Sales, IT, Finance) - Unique |

| Description | Varchar | 255 | Department description |

| CreatedAt | DateTime | - | Record creation timestamp |

| CreatedBy | Varchar | 50 | Username who created the department |

| UpdatedAt | DateTime | - | Last update timestamp |

| UpdatedBy | Varchar | 50 | Username who last updated the department |

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## 6. Categories Table

| Field Name | Data Type | Length | Description |

|------------|-----------|--------|-------------|

| CategoryId (PK) | Int - AI | 9 | Category's unique identifier (Primary Key, Auto-Increment) |

| Name | Varchar | 100 | Category name (e.g., Electronics, Accessories) - Unique |

| Description | Varchar | 500 | Category description |

| CreatedAt | DateTime | - | Record creation timestamp |

| CreatedBy | Varchar | 50 | Username who created the category |

| UpdatedAt | DateTime | - | Last update timestamp |

| UpdatedBy | Varchar | 50 | Username who last updated the category |

| IsDeleted | Bit | 1 | Soft delete flag (0=Active, 1=Deleted) |

| DeletedAt | DateTime | - | Deletion timestamp |

| DeletedBy | Varchar | 50 | Username who deleted the record |

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## 7. Products Table

| Field Name | Data Type | Length | Description |

|------------|-----------|--------|-------------|

| ProductId (PK) | Int - AI | 9 | Product's unique identifier (Primary Key, Auto-Increment) |

| Name | Varchar | 200 | Product name |

| SKU | Varchar | 50 | Stock Keeping Unit - Unique product code |

| Description | Text | - | Detailed product description |

| CategoryId (FK) | Int | 9 | Foreign Key to Categories table |

| CostPrice | Decimal | 18,2 | Product cost price (purchase price) |

| SellingPrice | Decimal | 18,2 | Product selling price (retail price) |

| QuantityOnHand | Int | 9 | Current stock quantity |

| ReorderLevel | Int | 9 | Minimum stock level before reorder alert |

| CreatedAt | DateTime | - | Record creation timestamp |

| CreatedBy | Varchar | 50 | Username who created the product |

| UpdatedAt | DateTime | - | Last update timestamp |

| UpdatedBy | Varchar | 50 | Username who last updated the product |

| IsDeleted | Bit | 1 | Soft delete flag (0=Active, 1=Deleted) |

| DeletedAt | DateTime | - | Deletion timestamp |

| DeletedBy | Varchar | 50 | Username who deleted the record |

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## 8. SalesOrders Table

| Field Name | Data Type | Length | Description |

|------------|-----------|--------|-------------|

| SalesOrderId (PK) | Int - AI | 9 | Sales order's unique identifier (Primary Key, Auto-Increment) |

| OrderNumber | Varchar | 50 | Unique order number (e.g., SO-20250101-001) |

| CustomerName | Varchar | 200 | Customer's full name |

| CustomerEmail | Varchar | 100 | Customer's email address |

| CustomerPhone | Varchar | 20 | Customer's phone number |

| SubTotal | Decimal | 18,2 | Order subtotal (before discounts and tax) |

| DiscountAmount | Decimal | 18,2 | Total discount amount applied |

| TaxAmount | Decimal | 18,2 | Total tax amount |

| ShippingCost | Decimal | 18,2 | Shipping/delivery cost |

| TotalAmount | Decimal | 18,2 | Final total amount (SubTotal - Discount + Tax + Shipping) |

| Status | Varchar | 20 | Order status (Pending, Completed, Cancelled) |

| OrderDate | DateTime | - | Order creation date |

| CreatedAt | DateTime | - | Record creation timestamp |

| CreatedBy | Varchar | 50 | Username who created the order |

| UpdatedAt | DateTime | - | Last update timestamp |

| UpdatedBy | Varchar | 50 | Username who last updated the order |

| IsDeleted | Bit | 1 | Soft delete flag (0=Active, 1=Deleted) |

| DeletedAt | DateTime | - | Deletion timestamp |

| DeletedBy | Varchar | 50 | Username who deleted the record |

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## 9. SalesOrderLines Table

| Field Name | Data Type | Length | Description |

|------------|-----------|--------|-------------|

| SalesOrderLineId (PK) | Int - AI | 9 | Order line's unique identifier (Primary Key, Auto-Increment) |

| SalesOrderId (FK) | Int | 9 | Foreign Key to SalesOrders table |

| ProductId (FK) | Int | 9 | Foreign Key to Products table |

| Quantity | Int | 9 | Quantity of product ordered |

| UnitPrice | Decimal | 18,2 | Price per unit at time of order |

| DiscountAmount | Decimal | 18,2 | Discount applied to this line |

| LineTotal | Decimal | 18,2 | Line total (Quantity × UnitPrice - Discount) |

| CreatedAt | DateTime | - | Record creation timestamp |

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## 10. PurchaseOrders Table

| Field Name | Data Type | Length | Description |

|------------|-----------|--------|-------------|

| PurchaseOrderId (PK) | Int - AI | 9 | Purchase order's unique identifier (Primary Key, Auto-Increment) |

| OrderNumber | Varchar | 50 | Unique order number (e.g., PO-20250101-001) |

| SupplierName | Varchar | 200 | Supplier's company name |

| SupplierEmail | Varchar | 100 | Supplier's email address |

| SupplierPhone | Varchar | 20 | Supplier's phone number |

| SubTotal | Decimal | 18,2 | Order subtotal |

| TaxAmount | Decimal | 18,2 | Total tax amount |

| ShippingCost | Decimal | 18,2 | Shipping/delivery cost |

| TotalAmount | Decimal | 18,2 | Final total amount (SubTotal + Tax + Shipping) |

| Status | Varchar | 20 | Order status (Pending, Received, Cancelled) |

| OrderDate | DateTime | - | Order creation date |

| CreatedAt | DateTime | - | Record creation timestamp |

| CreatedBy | Varchar | 50 | Username who created the order |

| UpdatedAt | DateTime | - | Last update timestamp |

| UpdatedBy | Varchar | 50 | Username who last updated the order |

| IsDeleted | Bit | 1 | Soft delete flag (0=Active, 1=Deleted) |

| DeletedAt | DateTime | - | Deletion timestamp |

| DeletedBy | Varchar | 50 | Username who deleted the record |

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## 11. PurchaseOrderLines Table

| Field Name | Data Type | Length | Description |

|------------|-----------|--------|-------------|

| PurchaseOrderLineId (PK) | Int - AI | 9 | Order line's unique identifier (Primary Key, Auto-Increment) |

| PurchaseOrderId (FK) | Int | 9 | Foreign Key to PurchaseOrders table |

| ProductId (FK) | Int | 9 | Foreign Key to Products table |

| Quantity | Int | 9 | Quantity of product ordered |

| UnitCost | Decimal | 18,2 | Cost per unit at time of order |

| LineTotal | Decimal | 18,2 | Line total (Quantity × UnitCost) |

| CreatedAt | DateTime | - | Record creation timestamp |

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## 12. InventoryTransactions Table

| Field Name | Data Type | Length | Description |

|------------|-----------|--------|-------------|

| InventoryTransactionId (PK) | Int - AI | 9 | Transaction's unique identifier (Primary Key, Auto-Increment) |

| TransactionNumber | Varchar | 50 | Unique transaction number (e.g., TXN-20250101-ABC123) |

| ProductId (FK) | Int | 9 | Foreign Key to Products table |

| TransactionDate | DateTime | - | Transaction date and time |

| TransactionType | Varchar | 20 | Type (Sale, Purchase, Adjustment, Return, Transfer) |

| QuantityBefore | Int | 9 | Stock quantity before transaction |

| QuantityChange | Int | 9 | Quantity change (negative for outbound, positive for inbound) |

| QuantityAfter | Int | 9 | Stock quantity after transaction |

| UnitCost | Decimal | 18,2 | Cost per unit at time of transaction |

| Amount | Decimal | 18,2 | Total monetary value of transaction |

| Reason | Varchar | 255 | Reason for adjustment/transfer |

| BatchNumber | Varchar | 50 | Batch or lot number |

| Reference | Varchar | 100 | Reference to related order/document |

| ReferenceId | Int | 9 | ID of related order |

| Notes | Text | - | Additional notes |

| CreatedAt | DateTime | - | Record creation timestamp |

| CreatedBy | Varchar | 50 | Username who created the transaction |

| UpdatedAt | DateTime | - | Last update timestamp |

| UpdatedBy | Varchar | 50 | Username who last updated the transaction |

| IsDeleted | Bit | 1 | Soft delete flag (0=Active, 1=Deleted) |

| DeletedAt | DateTime | - | Deletion timestamp |

| DeletedBy | Varchar | 50 | Username who deleted the record |

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## 13. RevenueTransactions Table

| Field Name | Data Type | Length | Description |

|------------|-----------|--------|-------------|

| RevenueTransactionId (PK) | Int - AI | 9 | Revenue transaction's unique identifier (Primary Key, Auto-Increment) |

| Amount | Decimal | 18,2 | Transaction amount (positive for income, negative for expense) |

| Source | Varchar | 50 | Revenue source (Sale, Purchase, Adjustment) |

| Reference | Varchar | 100 | Reference to related order/document |

| TransactionDate | DateTime | - | Transaction date and time |

| CreatedAt | DateTime | - | Record creation timestamp |

| CreatedBy | Varchar | 50 | Username who created the transaction |

| IsDeleted | Bit | 1 | Soft delete flag (0=Active, 1=Deleted) |

| DeletedAt | DateTime | - | Deletion timestamp |

| DeletedBy | Varchar | 50 | Username who deleted the record |

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## 14. SyncConfigurations Table

| Field Name | Data Type | Length | Description |

|------------|-----------|--------|-------------|

| SyncConfigurationId (PK) | Int - AI | 9 | Configuration's unique identifier (Primary Key, Auto-Increment) |

| EntityName | Varchar | 100 | Entity name to sync (e.g., Product, SalesOrder) - Unique |

| IsEnabled | Bit | 1 | Sync enabled flag (1=Enabled, 0=Disabled) |

| Priority | Int | 9 | Sync priority order (lower number = higher priority) |

| Direction | Varchar | 20 | Sync direction (Bidirectional, LocalToCloud, CloudToLocal) |

| LastSyncedAt | DateTime | - | Last successful sync timestamp |

| CreatedAt | DateTime | - | Record creation timestamp |

| UpdatedAt | DateTime | - | Last update timestamp |

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## 15. SyncLogs Table

| Field Name | Data Type | Length | Description |

|------------|-----------|--------|-------------|

| SyncLogId (PK) | Int - AI | 9 | Log entry's unique identifier (Primary Key, Auto-Increment) |

| SessionId | UniqueIdentifier | 36 | Sync session GUID |

| EntityName | Varchar | 100 | Entity name being synced |

| Operation | Varchar | 20 | Operation type (Push, Pull, Conflict) |

| Status | Varchar | 20 | Operation status (Success, Failed, Warning) |

| ErrorMessage | Text | - | Error message if failed |

| RecordsProcessed | Int | 9 | Number of records processed |

| StartedAt | DateTime | - | Operation start timestamp |

| CompletedAt | DateTime | - | Operation completion timestamp |

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## 16. SyncMetadata Table

| Field Name | Data Type | Length | Description |

|------------|-----------|--------|-------------|

| SyncMetadataId (PK) | Int - AI | 9 | Metadata's unique identifier (Primary Key, Auto-Increment) |

| EntityName | Varchar | 100 | Entity name |

| EntityId | Varchar | 50 | Entity's primary key value |

| LastSyncedAt | DateTime | - | Last sync timestamp for this entity |

| DataHash | Varchar | 64 | Hash of entity data for change detection |

| SyncDirection | Varchar | 20 | Last sync direction |

| Status | Varchar | 20 | Sync status (Completed, Pending, Failed) |

| CreatedAt | DateTime | - | Record creation timestamp |

| UpdatedAt | DateTime | - | Last update timestamp |

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## Database Summary

\*\*Total Tables:\*\* 16 active tables

\*\*Table Categories:\*\*

- \*\*Core System:\*\* 5 tables (User, Role, Permission, RolePermission, Department)

- \*\*Inventory:\*\* 8 tables (Category, Product, SalesOrder, SalesOrderLine, PurchaseOrder, PurchaseOrderLine, InventoryTransaction, RevenueTransaction)

- \*\*Sync System:\*\* 3 tables (SyncConfiguration, SyncLog, SyncMetadata)

\*\*Key Conventions:\*\*

- \*\*PK\*\* = Primary Key

- \*\*FK\*\* = Foreign Key

- \*\*AI\*\* = Auto-Increment

- \*\*Decimal(18,2)\*\* = 18 digits total, 2 decimal places

- \*\*Bit\*\* = Boolean (0 or 1)

- \*\*Soft Delete\*\* = Records marked as deleted but not physically removed

\*\*Naming Conventions:\*\*

- Primary Keys: TableName + "Id" (e.g., UserId, ProductId)

- Foreign Keys: Referenced table name + "Id" (e.g., CategoryId, RoleId)

- Timestamps: CreatedAt, UpdatedAt, DeletedAt

- Audit Fields: CreatedBy, UpdatedBy, DeletedBy (stores username)

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\*\*Generated:\*\* 2025-10-01

\*\*System:\*\* ModularSys ERP

\*\*Version:\*\* 1.0