

*Alpha Release 1*

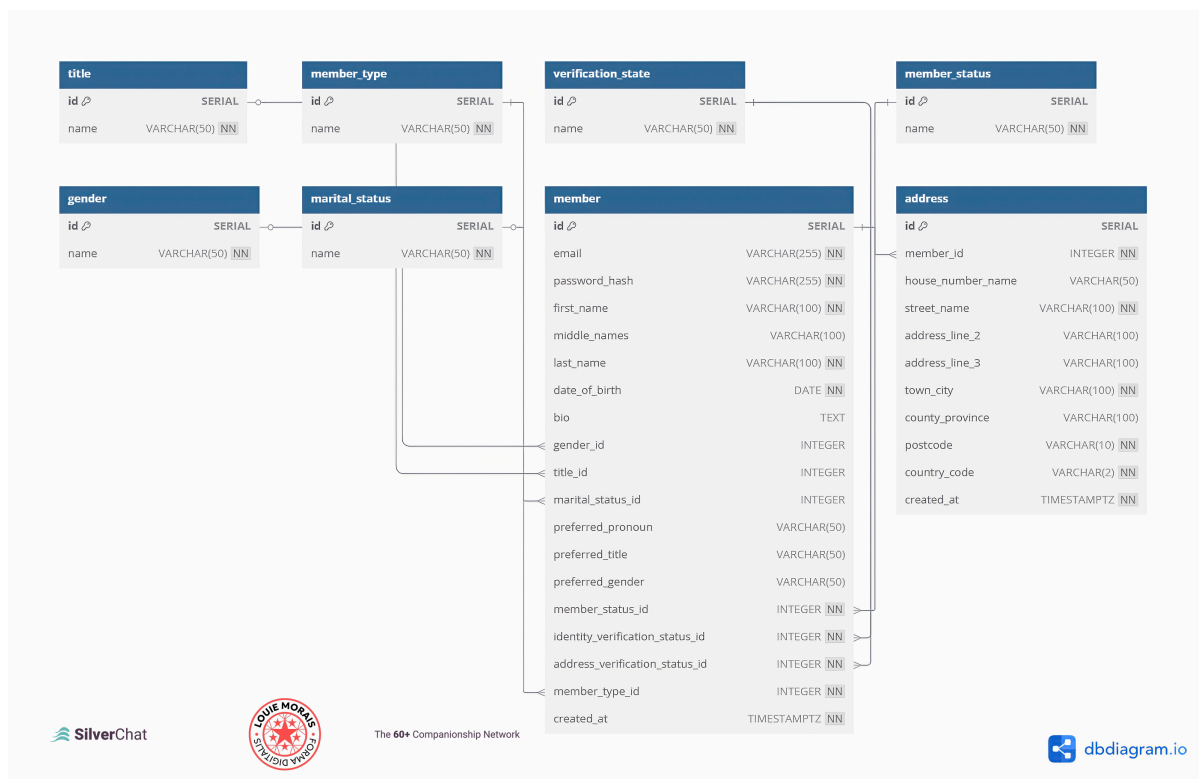
# Database Schema 1: Member Account & Profile

- Database Schema 1: Member Account & Profile
  - 1. Member Account & Profile Tables
    - 1.1. Lookup Tables
    - 1.2. Core Data Tables
  - 2. SQL Representation & Implementation Notes
    - 2.1. SQL Syntax
    - 2.2. DBML Syntax
    - 2.3. Knex.js Migration
  - 3. SilverChat Project Documentation
  - 4. External Sources
    - 4.1. Database Design for Social Networks (Schemas/Diagrams/ERMs/How Tos)
    - 4.2. Database GitHub Repos
    - 4.3. Database Infrastructure for Social Networks
    - 4.4. Database Design Software
    - 4.5. Facebook Reference

## 1. Member Account & Profile Tables

### SilverChat - Member Account & Profile Database (Target: Alpha Release 1)

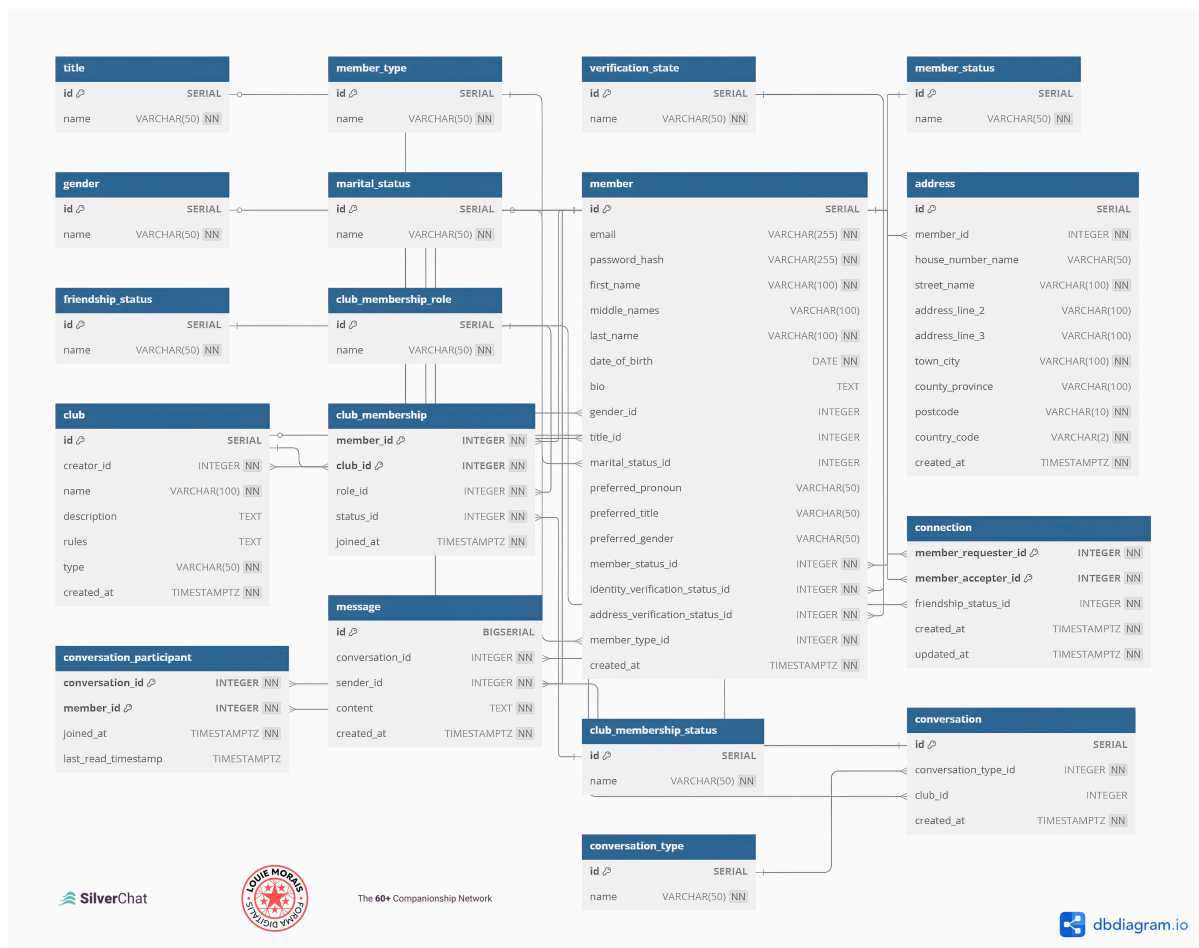
This schema defines the core tables required for member registration, authentication, basic profile information, status tracking, and address details for the SilverChat Alpha Release 1.



[View the live diagram on dbdiagram.io](#)

[\[BACK TO INDEX\]](#)

## Final Database Design - Alpha Releases 1, 2 & 3:



[View the live diagram on dbdiagram.io](#)

[\[BACK TO INDEX\]](#)

## 1.1. Lookup Tables

These tables provide predefined options for various fields, ensuring consistency.

Table: `title`

Column Name	Data Type	Constraints	Description	Example Values
<code>id</code>	<code>SERIAL</code>	<code>PRIMARY KEY</code>	Auto-incrementing unique identifier for title.	1, 2, 3, 4, 5, 6, 7, 8, 9
<code>name</code>	<code>VARCHAR(50)</code>	<code>UNIQUE NOT NULL</code>	Name of the title option.	'Mr', 'Mrs', 'Ms', 'Miss', 'Mx', 'Dr', 'Prof', 'Prefer not to say', 'Other'

Table: `member_type` (Internal Use)

Column Name	Data Type	Constraints	Description	Example Values
<code>id</code>	<code>SERIAL</code>	<code>PRIMARY KEY</code>	Auto-incrementing unique identifier for type.	1, 2, 3, 4, 5
<code>name</code>	<code>VARCHAR(50)</code>	<code>UNIQUE NOT NULL</code>	Name of the member type (e.g., 'Standard').	'Standard', 'Former', 'Admin', 'Family', 'Supporter'

Table: `verification_state` (Used for identity and address checks)

Column Name	Data Type	Constraints	Description	Example Values
<code>id</code>	<code>SERIAL</code>	<code>PRIMARY KEY</code>	Auto-incrementing unique identifier for state.	1, 2, 3, 4, 5
<code>name</code>	<code>VARCHAR(50)</code>	<code>UNIQUE NOT NULL</code>	Name of a verification step state.	'Not Started', 'Pending Review', 'Verified', 'Failed', 'Requires Resubmission'

**Table:** member\_status (Internal Use - Overall account status)

Column Name	Data Type	Constraints	Description	Example Values
id	SERIAL	PRIMARY KEY	Auto-incrementing unique identifier for status.	1, 2, 3, 4, 5
name	VARCHAR(50)	UNIQUE NOT NULL	Name of the member account status (internal).	'Pending Verification', 'Active', 'Suspended', 'Under Investigation', 'Expelled'

**Table:** gender

Column Name	Data Type	Constraints	Description	Example Values
id	SERIAL	PRIMARY KEY	Auto-incrementing unique identifier for gender.	1, 2, 3, 4, 5
name	VARCHAR(50)	UNIQUE NOT NULL	Name of the gender option.	'Woman', 'Man', 'Non-binary', 'Prefer not to say', 'Other'

**Table:** marital\_status

Column Name	Data Type	Constraints	Description	Example Values
id	SERIAL	PRIMARY KEY	Auto-incrementing unique identifier for marital status.	1, 2, 3, 4, 5, 6
name	VARCHAR(50)	UNIQUE NOT NULL	Name of the marital status option.	'Single', 'Married', 'Civil Partnership', 'Divorced', 'Widowed', 'Prefer not to say'

## 1.2. Core Data Tables

These tables store the primary data about each member.

Table: `member`

Column Name	Data Type	Constraints	Description
<code>id</code>	<code>SERIAL</code>	<code>PRIMARY KEY</code>	Auto-incrementing unique identifier for the member.
<code>email</code>	<code>VARCHAR(255)</code>	<code>UNIQUE NOT NULL</code>	Member's unique email address (for login).
<code>password_hash</code>	<code>VARCHAR(255)</code>	<code>NOT NULL</code>	Securely hashed password.
<code>first_name</code>	<code>VARCHAR(100)</code>	<code>NOT NULL</code>	Member's first name(s).
<code>middle_names</code>	<code>VARCHAR(100)</code>		Member's middle name(s) (Optional).
<code>last_name</code>	<code>VARCHAR(100)</code>	<code>NOT NULL</code>	Member's last name(s).
<code>date_of_birth</code>	<code>DATE</code>	<code>NOT NULL</code>	Member's date of birth.
<code>bio</code>	<code>TEXT</code>		Short profile description (Optional).
<code>gender_id</code>	<code>INTEGER</code>		Foreign key to <code>gender</code> table (Optional/Nullable).
<code>title_id</code>	<code>INTEGER</code>		Foreign key to <code>title</code> table (Optional/Nullable).
<code>marital_status_id</code>	<code>INTEGER</code>		Foreign key to <code>marital_status</code> table (Optional/Nullable).
<code>preferred_pronoun</code>	<code>VARCHAR(50)</code>		Free-text preferred pronouns (Optional).
<code>preferred_title</code>	<code>VARCHAR(50)</code>		Free-text preferred title (Optional, e.g., if title is 'Other').
<code>preferred_gender</code>	<code>VARCHAR(50)</code>		Free-text preferred gender (Optional, e.g., if gender is 'Other').
<code>member_status_id</code>	<code>INTEGER</code>	<code>NOT NULL DEFAULT 1</code>	Foreign key to <code>member_status</code> table (Default: 'Pending Verification').
<code>identity_verification_status_id</code>	<code>INTEGER</code>	<code>NOT NULL DEFAULT 1</code>	Foreign key to <code>verification_state</code> (Default: 'Not Started').
<code>address_verification_status_id</code>	<code>INTEGER</code>	<code>NOT NULL DEFAULT 1</code>	Foreign key to <code>verification_state</code> (Default: 'Not Started').
<code>member_type_id</code>	<code>INTEGER</code>	<code>NOT NULL DEFAULT 1</code>	Foreign key to <code>member_type</code> table (Default: 'Standard').
<code>created_at</code>	<code>TIMESTAMP TZ</code>	<code>NOT NULL DEFAULT NOW()</code>	Timestamp of record creation.

Table: address

Column Name	Data Type	Constraints	Description
id	SERIAL	PRIMARY KEY	Auto-incrementing unique identifier for the address.
member_id	INTEGER	UNIQUE NOT NULL	Foreign key to member table (One-to-one). Deletes if member does.
house_number_name	VARCHAR(50)		House number or name.
street_name	VARCHAR(100)	NOT NULL	Street name.
address_line_2	VARCHAR(100)		Optional address line 2.
address_line_3	VARCHAR(100)		Optional address line 3.
town_city	VARCHAR(100)	NOT NULL	Town or city name.
county_province	VARCHAR(100)		County or province (Optional).
postcode	VARCHAR(10)	NOT NULL	Postcode (e.g., UK format).
country_code	VARCHAR(2)	NOT NULL DEFAULT 'GB'	ISO 3166-1 alpha-2 country code.
created_at	TIMESTAMPTZ	NOT NULL DEFAULT NOW()	Timestamp of record creation.

[\[BACK TO INDEX\]](#)

## 2. SQL Representation & Implementation Notes

The following SQL `CREATE TABLE` statements represent the database structure defined above. These are provided for illustrative and cross-referencing purposes. Actual implementation will use Knex.js migrations.

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## 2.1. SQL Syntax

-- Illustrative SQL for Schema 1 (Alpha Release 1) - Actual implementation via Knex Migrations

-- Lookup Tables

```
CREATE TABLE title (  
  id SERIAL PRIMARY KEY,  
  name VARCHAR(50) UNIQUE NOT NULL  
);
```

```
CREATE TABLE member_type (  
  id SERIAL PRIMARY KEY,  
  name VARCHAR(50) UNIQUE NOT NULL  
);
```

```
CREATE TABLE verification_state (  
  id SERIAL PRIMARY KEY,  
  name VARCHAR(50) UNIQUE NOT NULL  
);
```

```
CREATE TABLE member_status (  
  id SERIAL PRIMARY KEY,  
  name VARCHAR(50) UNIQUE NOT NULL  
);
```

```
CREATE TABLE gender (  
  id SERIAL PRIMARY KEY,  
  name VARCHAR(50) UNIQUE NOT NULL  
);
```

```
CREATE TABLE marital_status (  
  id SERIAL PRIMARY KEY,  
  name VARCHAR(50) UNIQUE NOT NULL  
);
```

-- Core Data Tables

```
CREATE TABLE member (  
  id SERIAL PRIMARY KEY,  
  email VARCHAR(255) UNIQUE NOT NULL,  
  password_hash VARCHAR(255) NOT NULL,  
  first_name VARCHAR(100) NOT NULL,  
  middle_names VARCHAR(100),  
  last_name VARCHAR(100) NOT NULL,  
  date_of_birth DATE NOT NULL,  
  bio TEXT,  
  gender_id INTEGER,  
  title_id INTEGER,  
  marital_status_id INTEGER,  
  preferred_pronoun VARCHAR(50),  
  preferred_title VARCHAR(50),  
  preferred_gender VARCHAR(50),  
  member_status_id INTEGER NOT NULL DEFAULT 1,  
  identity_verification_status_id INTEGER NOT NULL DEFAULT 1,  
  address_verification_status_id INTEGER NOT NULL DEFAULT 1,  
  member_type_id INTEGER NOT NULL DEFAULT 1,  
  created_at TIMESTAMPTZ NOT NULL DEFAULT NOW(),
```

-- Foreign Key Constraints

```
FOREIGN KEY (gender_id) REFERENCES gender(id),  
FOREIGN KEY (title_id) REFERENCES title(id),
```

```

FOREIGN KEY (marital_status_id) REFERENCES marital_status(id),
FOREIGN KEY (member_status_id) REFERENCES member_status(id),
FOREIGN KEY (identity_verification_status_id) REFERENCES verification_state(id),
FOREIGN KEY (address_verification_status_id) REFERENCES verification_state(id),
FOREIGN KEY (member_type_id) REFERENCES member_type(id)
);

CREATE TABLE address (
    id SERIAL PRIMARY KEY,
    member_id INTEGER UNIQUE NOT NULL,
    house_number_name VARCHAR(50),
    street_name VARCHAR(100) NOT NULL,
    address_line_2 VARCHAR(100),
    address_line_3 VARCHAR(100),
    town_city VARCHAR(100) NOT NULL,
    county_province VARCHAR(100),
    postcode VARCHAR(10) NOT NULL,
    country_code VARCHAR(2) NOT NULL DEFAULT 'GB',
    created_at TIMESTAMPTZ NOT NULL DEFAULT NOW(),

    -- Foreign Key Constraint
    FOREIGN KEY (member_id) REFERENCES member(id) ON DELETE CASCADE
);

```

---

[\[BACK TO INDEX\]](#)

## 2.2. DBML Syntax

```

// SilverChat - Schema 1: Member Account & Profile (Alpha Release 1)
// DBML Schema Definition

// --- Lookup Tables ---

Table title {
    id SERIAL [pk]
    name VARCHAR(50) [unique, not null]
}

Table member_type {
    id SERIAL [pk]
    name VARCHAR(50) [unique, not null, note: 'Internal Use: Standard, Former, Admin, Family, Supporter']
}

Table verification_state {
    id SERIAL [pk]
    name VARCHAR(50) [unique, not null, note: 'Used for identity and address checks: Not Started, Pending Review, Verified, Failed, Requires Resubmission']
}

Table member_status {
    id SERIAL [pk]
    name VARCHAR(50) [unique, not null, note: 'Internal Use - Overall account status: Pending Verification, Active, Suspended, Under Investigation, Expelled']
}

Table gender {
    id SERIAL [pk]

```



```

    name VARCHAR(50) [unique, not null, note: 'Woman, Man, Non-binary, Prefer not to say,
Other']
}

Table marital_status {
    id SERIAL [pk]
    name VARCHAR(50) [unique, not null, note: 'Single, Married, Civil Partnership,
Divorced, widowed, Prefer not to say']
}

// --- Core Data Tables ---

Table member {
    id SERIAL [pk]
    email VARCHAR(255) [unique, not null]
    password_hash VARCHAR(255) [not null]
    first_name VARCHAR(100) [not null]
    middle_names VARCHAR(100)
    last_name VARCHAR(100) [not null]
    date_of_birth DATE [not null]
    bio TEXT
    gender_id INTEGER [ref: > gender.id]
    title_id INTEGER [ref: > title.id]
    marital_status_id INTEGER [ref: > marital_status.id]
    preferred_pronoun VARCHAR(50)
    preferred_title VARCHAR(50) [note: 'Free-text if title is Other']
    preferred_gender VARCHAR(50) [note: 'Free-text if gender is Other']
    member_status_id INTEGER [not null, default: 1, ref: > member_status.id, note:
'Default: Pending Verification']
    identity_verification_status_id INTEGER [not null, default: 1, ref: >
verification_state.id, note: 'Default: Not Started']
    address_verification_status_id INTEGER [not null, default: 1, ref: >
verification_state.id, note: 'Default: Not Started']
    member_type_id INTEGER [not null, default: 1, ref: > member_type.id, note: 'Default:
Standard']
    created_at TIMESTAMPTZ [not null, default: `NOW()`]
}

Table address {
    id SERIAL [pk]
    member_id INTEGER [unique, not null] // FK defined via explicit Ref below
    house_number_name VARCHAR(50)
    street_name VARCHAR(100) [not null]
    address_line_2 VARCHAR(100)
    address_line_3 VARCHAR(100)
    town_city VARCHAR(100) [not null]
    county_province VARCHAR(100)
    postcode VARCHAR(10) [not null]
    country_code VARCHAR(2) [not null, default: 'GB']
    created_at TIMESTAMPTZ [not null, default: `NOW()`]

    indexes {
        member_id [unique]
    }
}

// --- Relationships ---
Ref address_member: address.member_id > member.id [delete: cascade]

```

## 2.3. Knex.js Migration

This code represents the content of the first migration file (e.g.,

`YYYYMMDDHHMMSS_create_alpha1_schema.js`) generated via `npx knex migrate:make`

`create_alpha1_schema`. It uses the Knex.js schema builder API to create the tables defined in this schema document.

```
// migrations/YYYYMMDDHHMMSS_create_alpha1_schema.js

exports.up = function(knex) {
  return knex.schema
    // 1. Lookup Tables
    .createTable('title', function(table) {
      table.increments('id').primary(); // SERIAL PRIMARY KEY
      table.string('name', 50).unique().notNullable();
    })
    .createTable('member_type', function(table) {
      table.increments('id').primary();
      table.string('name', 50).unique().notNullable();
    })
    .createTable('verification_state', function(table) {
      table.increments('id').primary();
      table.string('name', 50).unique().notNullable();
    })
    .createTable('member_status', function(table) {
      table.increments('id').primary();
      table.string('name', 50).unique().notNullable();
    })
    .createTable('gender', function(table) {
      table.increments('id').primary();
      table.string('name', 50).unique().notNullable();
    })
    .createTable('marital_status', function(table) {
      table.increments('id').primary();
      table.string('name', 50).unique().notNullable();
    })
    // 2. Core Data Tables
    .createTable('member', function(table) {
      table.increments('id').primary(); // SERIAL PRIMARY KEY
      table.string('email', 255).unique().notNullable();
      table.string('password_hash', 255).notNullable();
      table.string('first_name', 100).notNullable();
      table.string('middle_names', 100);
      table.string('last_name', 100).notNullable();
      table.date('date_of_birth').notNullable();
      table.text('bio');

      table.integer('gender_id').unsigned().references('id').inTable('gender').onDelete('SET NULL').onUpdate('CASCADE'); // Optional FK

      table.integer('title_id').unsigned().references('id').inTable('title').onDelete('SET NULL').onUpdate('CASCADE'); // Optional FK

      table.integer('marital_status_id').unsigned().references('id').inTable('marital_status').onDelete('SET NULL').onUpdate('CASCADE'); // Optional FK
      table.string('preferred_pronoun', 50);
      table.string('preferred_title', 50);
    });
};
```

```

    table.string('preferred_gender', 50);

    table.integer('member_status_id').unsigned().notNullable().defaultTo(1).references('id')
    ).inTable('member_status').onDelete('RESTRICT').onUpdate('CASCADE'); // Default: Pending
    Verification

    table.integer('identity_verification_status_id').unsigned().notNullable().defaultTo(1).
    references('id').inTable('verification_state').onDelete('RESTRICT').onUpdate('CASCADE');
    // Default: Not Started

    table.integer('address_verification_status_id').unsigned().notNullable().defaultTo(1).r
    eferences('id').inTable('verification_state').onDelete('RESTRICT').onUpdate('CASCADE');
    // Default: Not Started

    table.integer('member_type_id').unsigned().notNullable().defaultTo(1).references('id').
    inTable('member_type').onDelete('RESTRICT').onUpdate('CASCADE'); // Default: Standard
    table.timestamp('created_at', { useTz: true
    }).notNullable().defaultTo(knex.fn.now()); // TIMESTAMPTZ DEFAULT NOW()

    // Add indexes for frequently queried columns if needed later (e.g., email)
    table.index('email');
  })
  .createTable('address', function(table) {
    table.increments('id').primary();

    table.integer('member_id').unsigned().unique().notNullable().references('id').inTable('
    member').onDelete('CASCADE').onUpdate('CASCADE'); // One-to-one with CASCADE delete
    table.string('house_number_name', 50);
    table.string('street_name', 100).notNullable();
    table.string('address_line_2', 100);
    table.string('address_line_3', 100);
    table.string('town_city', 100).notNullable();
    table.string('county_province', 100);
    table.string('postcode', 10).notNullable();
    table.string('country_code', 2).notNullable().defaultTo('GB');
    table.timestamp('created_at', { useTz: true
    }).notNullable().defaultTo(knex.fn.now());

    // Index on member_id is created automatically by .unique()
    table.index('postcode'); // Index postcode for potential searches
  });
};

exports.down = function(knex) {
  return knex.schema
    // Drop tables in reverse order of creation due to dependencies
    .dropTableIfExists('address')
    .dropTableIfExists('member')
    // Drop lookup tables last
    .dropTableIfExists('marital_status')
    .dropTableIfExists('gender')
    .dropTableIfExists('member_status')
    .dropTableIfExists('verification_state')
    .dropTableIfExists('member_type')
    .dropTableIfExists('title');
};

```

[\[BACK TO INDEX\]](#)

## 3. SilverChat Project Documentation

- [SilverChat Project Scope \(README\) | GitHub](#)
- [SilverChat Technical Architecture | GitHub](#)
- **THIS DOCUMENT:** *SilverChat Database Schema 1: Member Account and Profile*
- [SilverChat Database Schema 2: Member Networking | GitHub](#)
- [SilverChat Database Schema 3: Member Messaging | GitHub](#)

[\[BACK TO INDEX\]](#)

## 4. External Sources

### 4.1. Database Design for Social Networks (Schemas/Diagrams/ERMs/How Tos)

- [Facebook database schema | Reverse engineering by Anatoly Lu... | Flickr](#)
- [Database schema for Social Networking Platform - Surfside Media](#)
- [Building a Social Network: Part I | by Kenneth Reilly | ITNEXT](#)
- [Social network schema design in DynamoDB - Amazon DynamoDB](#)
- [Building a social Media Platform: How should the database schema be designed to efficiently store user data, content, and interactions? | by Brecht Corbeel | Medium](#)
- [SQLAlchemy: Designing a Social Network Database Schema - Sling Academy](#)
- [Databases, SQL Server, and Data Models Examples](#)
- [mysql - Implementing Comments and Likes in database - Stack Overflow](#)
- [How to Design Database for Social Media Platform | GeeksforGeeks](#)
- [How to Design Database for Followers-Following Systems in Social Media Apps? | GeeksforGeeks](#)
- [How to Design ER Diagrams for Social Media Networks | GeeksforGeeks](#)
- [Resources: Database Design for Social Network - Code Doodle](#)
- [Design Database For Social Network System In MySQL | Tutorials24x7](#)

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[\[BACK TO INDEX\]](#)

### 4.2. Database GitHub Repos

- [Messenger Database Design Concept](#)
- [The Social Network System Database Design in MySQL to manage the Users, Friends, Follower, Messages, and Groups.](#)

---

[\[BACK TO INDEX\]](#)

## 4.3. Database Infrastructure for Social Networks

- A thorough insight into the databases used @Facebook - Scaleyourapp
- Which database is best for creating a social networking application? - Quora
- MySQL vs. MongoDB: The Pros and Cons When Building a Social Network

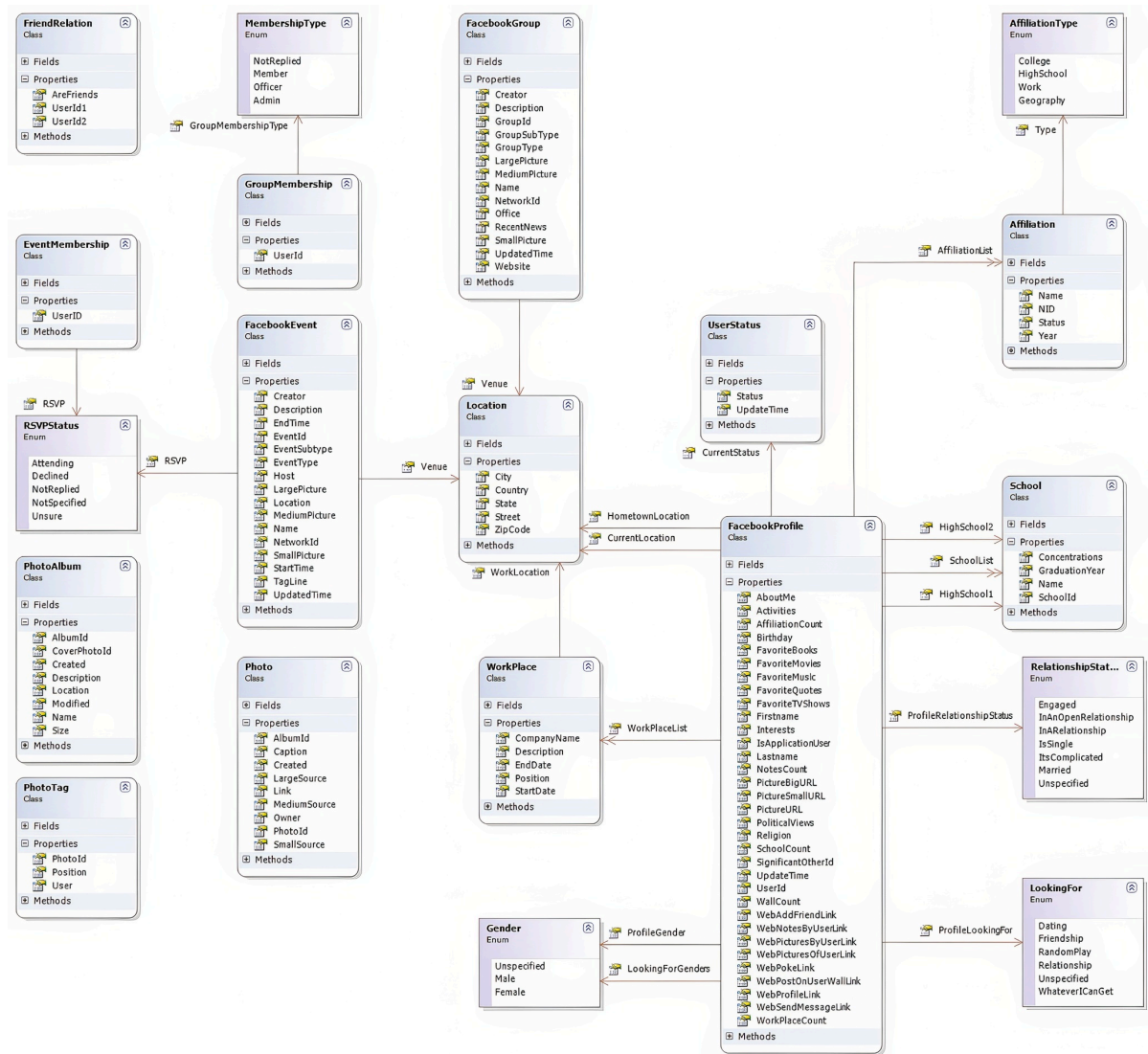
[\[BACK TO INDEX\]](#)

## 4.4. Database Design Software

- Top 10 Free Database Diagram Design Tools in 2025

[\[BACK TO INDEX\]](#)

## 4.5. Facebook Reference



[\[BACK TO INDEX\]](#)