

```

// COLLECTION: Chats
[
  {
    _id: "chatId_123",      // ObjectId
    chat_type: "direct",   // string

    users: [
      // note: this is using the ** Extended Reference Pattern **
      // - this stores the most important information here and then an
      id to go fetch more information if needed
      {
        first_name: "Bob",    // string
        last_name: "Joe",    // string
        user_id: "userId_0"   // ObjectId
      },
      {
        first_name: "John",   // string
        last_name: "Doe",     // string
        user_id: "userId_1"   // ObjectId
      }
    ],

    // note: this is using the ** Subset Pattern **
    // - this data is duplicated from the Messages collection and only
    stores the 10 most recent messages so they're retrieved immediately when
    getting the chat
    recent_messages: [
      {
        _id: "messageId_0",           // ObjectId
        chat_id: "chatId_456",       // ObjectId

        content: "Hello!",           // string
        pinned: false,               // boolean

        date_sent: "2025-10-13T15:14:05.781Z", // ISODateString
        sender: "userId_0"           // ObjectId
      }
    ]
  }
]

```

```

    },
    {
        // note: this is using the ** Inheritance Pattern **
        // - this document has all the same fields shared with direct chats
        // but it has some unique fields to group chats
        _id: "chatId_456",           // ObjectId
        chat_type: "group",          // string

        users: [
            {
                first_name: "Bob",    // string
                last_name: "Joe",     // string
                user_id: "userId_0"   // ObjectId
            },
            {
                first_name: "John",   // string
                last_name: "Doe",     // string
                user_id: "userId_1"   // ObjectId
            }
        ],

        recent_messages: [],

        // fields specific to group chats
        group_name: "Study Group",    // string
        admin: "userId_0",            // ObjectId
        logo: "<binary image data>",  // Buffer
        background: "#111",           // string
        banned_users: [               // ObjectId[]
            "userId_15",
            "userId_16"
        ],
        invited_users: [             // ObjectId[]
            "userId_4",
            "userId_5"
        ],
        visible: true                // boolean
    }
}

```

```

];

// COLLECTION: Messages
[
  {
    _id: "messageId_0",          // ObjectId
    chat_id: "chatId_123",      // ObjectId

    content: "Hello!",          // string
    pinned: false,              // boolean

    date_sent: "2025-10-13T15:14:05.781Z", // ISODateString
    sender: "userId_0"          // ObjectId
  }
]

// COLLECTION: Users
[
  {
    _id: "userId_1",            // ObjectId

    username: "johndoe01",      // string
    first_name: "John",         // string
    last_name: "Doe",           // string
    email: "johndoe@example.com", // string
    profile_photo: "<binary image data>", // Buffer

    friends: [
      { // ** Extended Reference Pattern **
        first_name: "Jane",      // string
        last_name: "Smith",      // string
        user_id: "userId_2"      // ObjectId
      }
    ],

    blocked_users: [
      { // ** Extended Reference Pattern **
        first_name: "Bob",       // string

```

```

        last_name: "Joe",           // string
        user_id: "userId_0"        // ObjectId
    }
]

// COLLECTION: Requests -- ** Inheritance Pattern **
[
    {
        _id: "requestId_0",        // ObjectId
        type: "friend_request",    // string

        sender: "sender_id",       // ObjectId
        receiver: "receiver_id",   // ObjectId
        status: "pending"          // string
    },
    {
        _id: "requestId_1",        // ObjectId
        type: "chat_invite",       // string

        sender: "sender_id",       // ObjectId
        receiver: "receiver_id",   // ObjectId
        status: "pending",         // string

        // fields specific to chat invites
        chat_id: "chatId_0"        // ObjectId
    }
]

// COLLECTION: Posts (public posts)
[
    {
        _id: "postId_0",           // ObjectId

        content: "Hi everyone!",   // string
        poster: "userId_0",        // ObjectId
    }
]

```

```
    date_posted: "2025-10-13T15:14:05.781Z" // ISODateString
  },
  { // this one is a comment
    _id: "postId_2", // ObjectId
    parent_id: "postId_0", // ObjectId

    content: "Hello!", // string
    poster: "userId_1", // ObjectId

    date_posted: "2025-10-13T15:14:05.781Z" // ISODateString
  }
]
```