



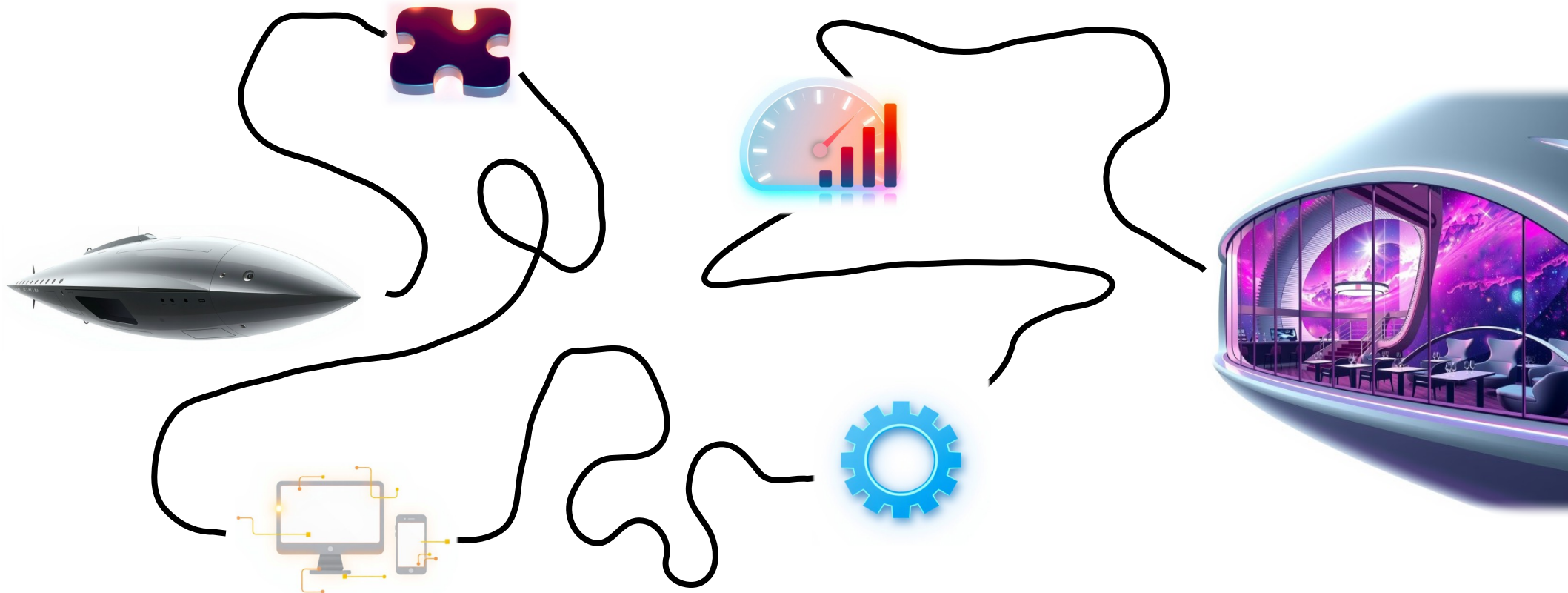
So Long, and Thanks for All the SDKs

Meet Trixinity!

Mostly Harmless... But Worth Listening To

- Michael Thiele
 - Fullstack and Product developer
 - 10 years IT consultant
- Benedict Benken
 - Fullstack developer
 - 6 years of experience with Kotlin (Multiplatform)
 - 4 years developer and admin experience with Matrix
 - privacy and IT security enthusiast
- Own Matrix Startup: connect2x GmbH
 - Development of Timmy, a TI messenger for the medical industry

Navigating the Matrixverse



A Hitchhiker's Guide to Choosing Your Multiplatform Matrix Client SDK

	matrix-rust-sdk	matrix-dart-sdk	Trixinity
Licence	Apache-2	AGPL-3	Apache-2
Language	Rust	Dart	Kotlin
Targets	Native	Native, JS, WASM	JVM, JS, Native, WASM (planned)
Bindings	Kotlin, Swift, Python, Ruby	-	Possible, but not implemented yet
Extensibility	Type safe custom events	custom events via JSON	Type safe custom events, DI
Reactivity	Many as Observables	Some as Streams (usually onSync)	Everything as Flow
Local database/ offline support	Exchangeable (e. g. SQLite, IndexedDB), except Timeline	Exchangeable (e. g. SQLite, IndexedDB)	Exchangeable (e. g. SQL, IndexedDB, Realm), with reactive in-memory-cache
Media	Exchangeable media store, streamable	Not streamable	Exchangeable media store (e. g. filesystem, OPFS), streamable
UI helpers	Room list, Timeline, Sync	-	High level view models in trixinity-messenger (AGPL-3)

The Next Step in Our Exploration: Why another SDK?

- Back in January 2020 there were few multiplatform SDKs to choose from
- Mostly no strict typing of events and REST endpoints
- No or difficult extensibility (own event types)
- No generic application purpose (Client, Server, etc.)

Kotlin - A delightful new addition to the endless realm of choices

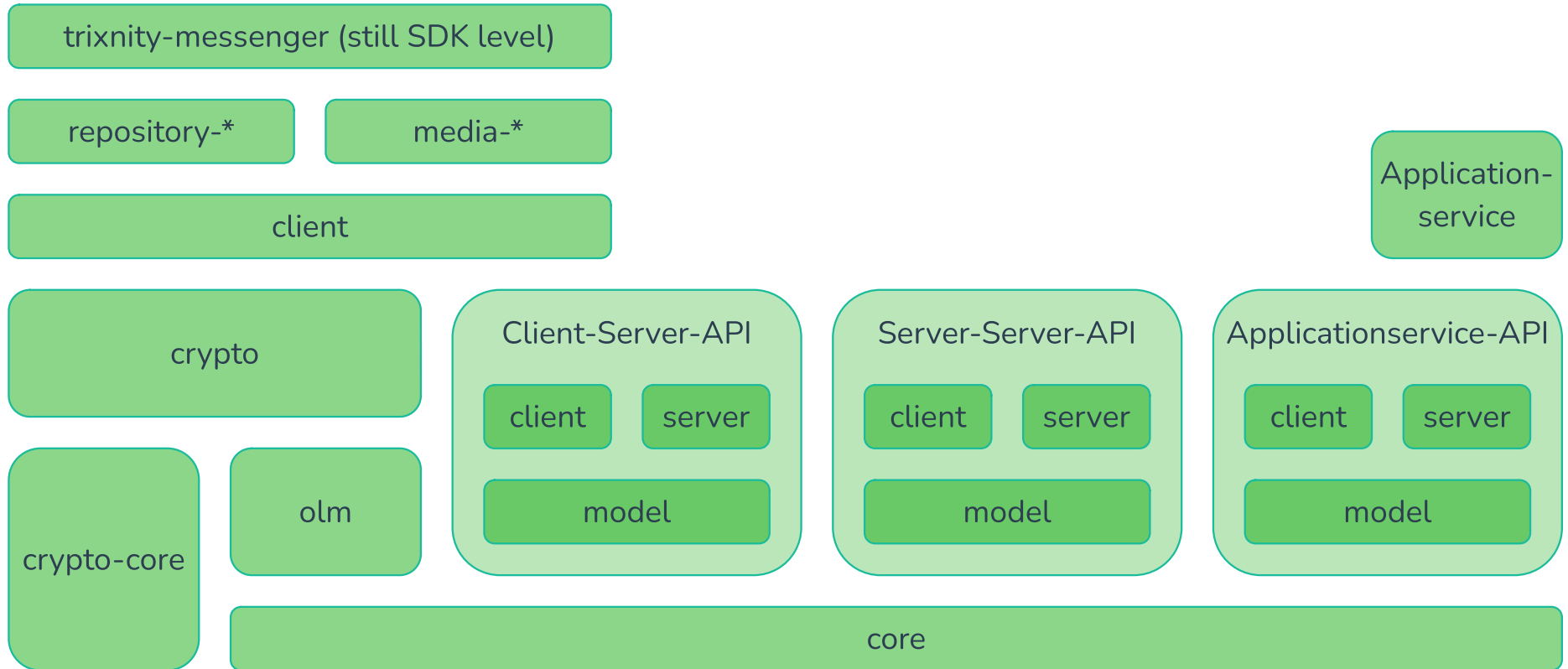
- Statically typed programming language
- Compiles to JVM, JS, Native and WebAssembly → high interoperability
- Common code base between platforms
- Platform-specific implementations possible
 - Access to platform-specific APIs (Android, iOS, Browser, etc.)
 - Use of platform-specific libraries (Maven, npm, C)
- Allows you to create your own DSLs
- Coroutines and Flows

Everything's reactive - Even the universe can't stay static

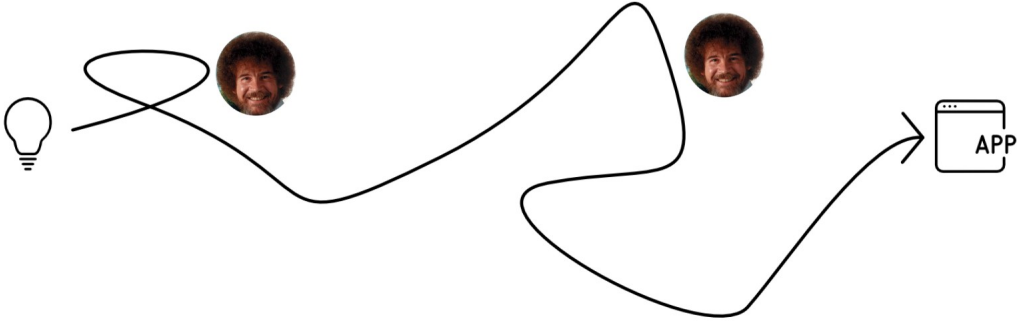
```
matrixClient.user.getAll(roomId) // Flow<Set<RoomUser>?>
matrixClient.user.canInviteUser(userId, roomId) // Flow<Boolean>
matrixClient.user.getAccountData<DirectEventContent>() // Flow<DirectEventContent>
matrixClient.room.getTimelineEvent(eventId) // Flow<TimelineEvent?>
matrixClient.room.getTimelineEvents(startFromEventId) // Flow<Flow<TimelineEvent>>
matrixClient.verification.getSelfVerificationMethods() // Flow<SelfVerificationMethods>
matrixClient.notifications.getNotifications() // Flow<Notification>
matrixClient.key.getTrustLevel(userId) // Flow<UserTrustLevel>
...
```



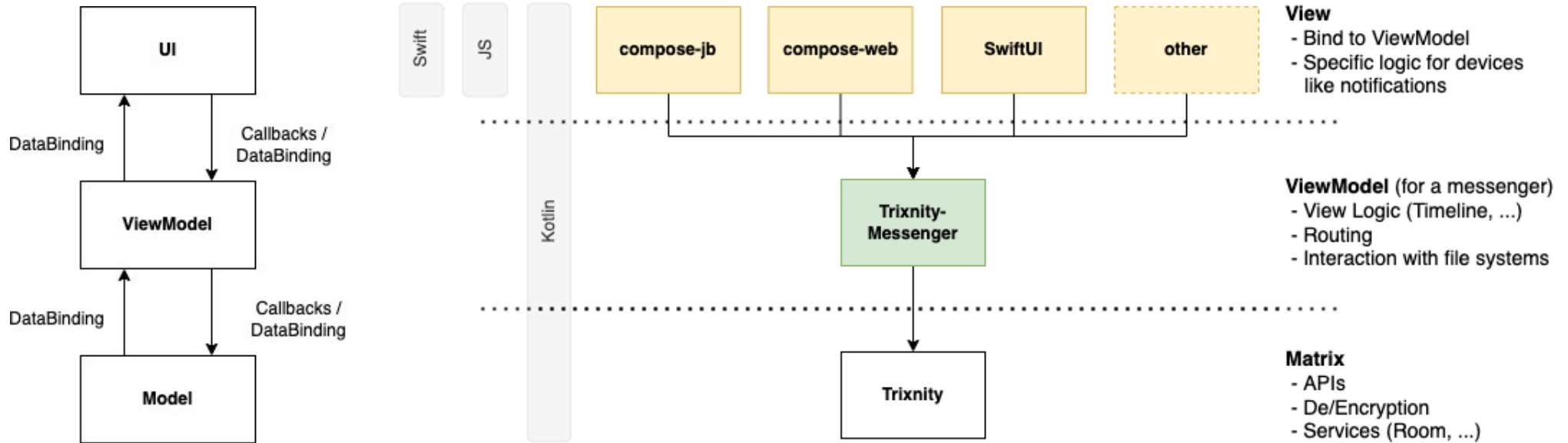
Shaping the SDK - The Art of Digital Terraforming



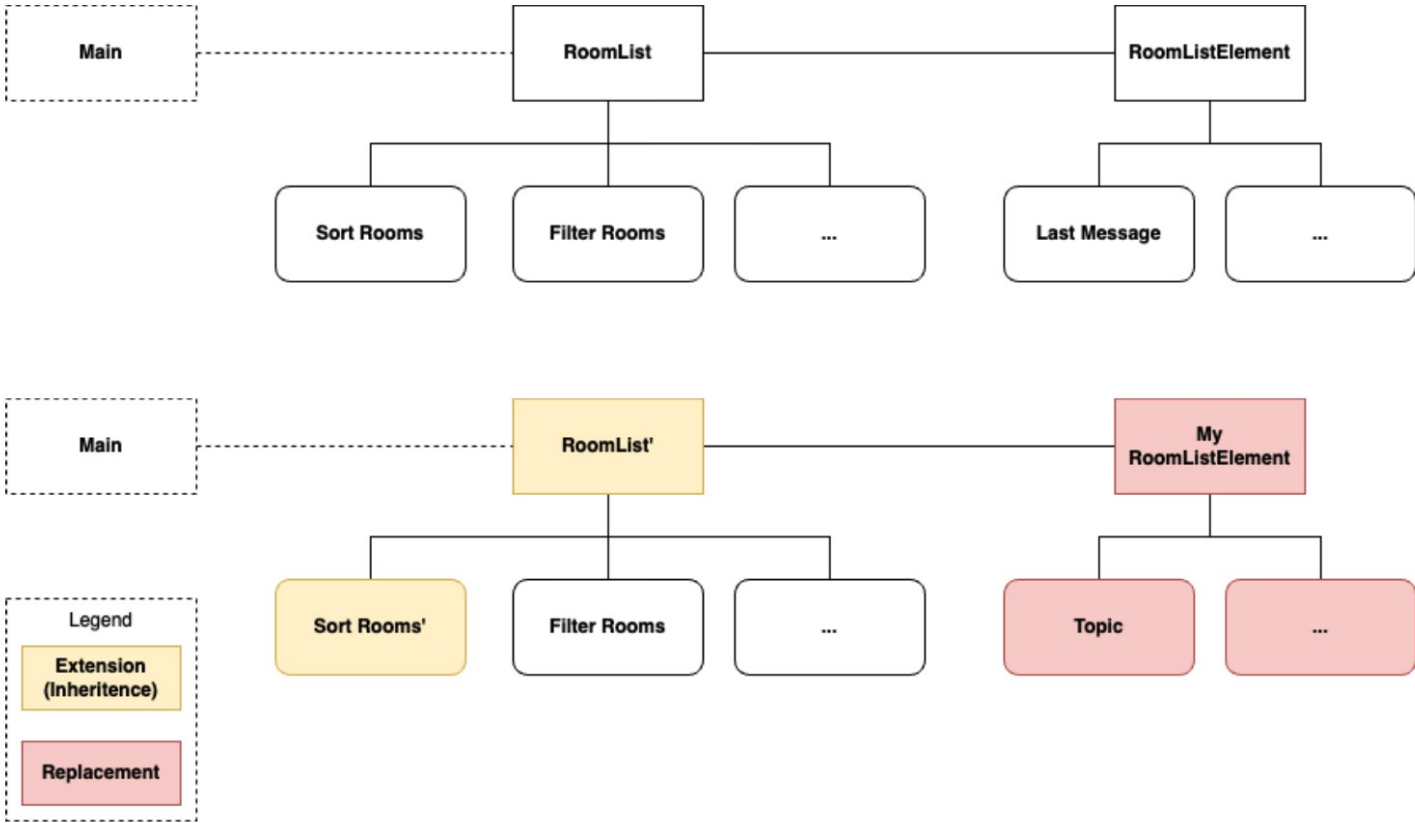
Cosmic Oopsies



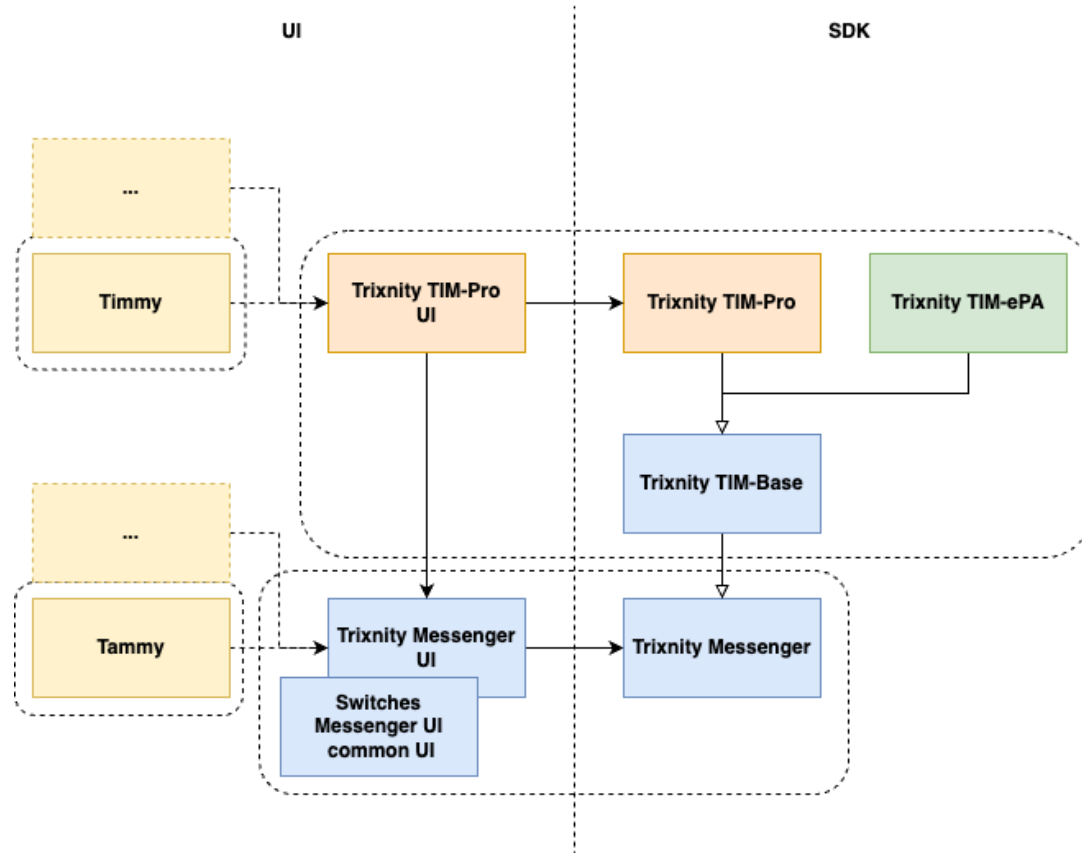
How to Build a Matrix Messenger Without Losing Your Towel



The Infinite Improbability Customization Drive



Extend Your Spaceship With New Features



Projects, Pan-Galactic Ventures, and the Towel-Waving Triumphs

- Tammy: <https://gitlab.com/connect2x/tammy>
- Homeserver: <https://gitlab.com/omnichat1/kognition>
- Android Matrix Client: <https://github.com/alexispurslane/neo>
- Mensa bot: <https://github.com/dfuchss/MensaBot>
- Matrix join links for non public rooms: <https://github.com/dfuchss/MatrixJoinLink>
- Reminder Bot: <https://github.com/dfuchss/YARB>
- Bot helpers: <https://github.com/dfuchss/matrix-bot-base>
- SMS <> Matrix Android-Bridge: <https://github.com/MangoCubes/remotrix>

DEMO

Try it out and contribute!

#trixnity:imbitbu.de

<https://trixnity.gitlab.io>

<https://gitlab.com/connect2x/trixnity-messenger>