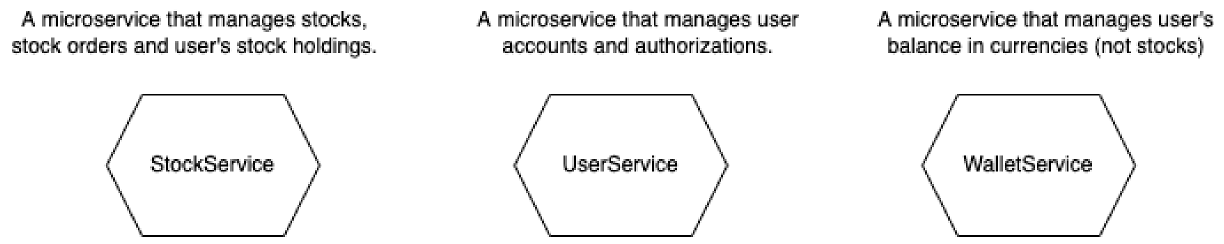
Our microservices architecture


A microservice that manages stocks, stock orders and user's stock holdings.
StockService
A microservice that manages user accounts and authorizations.
UserService
A microservice that manages user's balance in currencies (not stocks)
WalletService

Our REST API endpoints list

UserService ENDPOINTS

POST	/users/register	**Registers a user in the system**
POST	/users/login	**Logins a user in the system**
GET*	/users	**Returns a list of users in the system** Add query (type="investor" || type="broker") to limit to investors or brokers.
GET*	/users/:userId	**Returns a user's profile by id.**
PUT*	/users/:userId	**Updates user's profile details.**
GET*	/authorizations	**Returns a user's authorizations list**
GET*	/authorizations/:authorizationId	**Returns authorization's details by id**
POST*	/authorizations	**Create an authorization** Request body needs to have a type (Capital authorization or StockHolding authorization)
PUT*	/authorizations/:authorizationId/revoke	**User can revoke an authorization access**

WalletService ENDPOINTS

GET*	/balance	**Returns a user’s balance**
PUT**	/balance	**Update user’s balance** called when selling/buying stocks from the StockService
GET*	/transactions	**Returns a user’s transaction list**
GET*	/transactions/:transactionId	**Returns a user’s transaction by id**
POST*	/transactions	**Creates a new transaction.** Request body needs to have a type (type = “deposit” || type = “withdraw”)

StockService ENDPOINTS

GET	/stocks	**Returns a list of stocks in the system**
GET	/stocks/:stockId	**Returns a stock by its id**
GET*	/stockholdings	**Returns a user’s stockholdings lists**
GET*	/stockholdings/:stockholdingId	**Returns a specific stockholding Id.**
PUT*	/stockholdings/:stockholdingId	**Update commitedAmount when authorizing brokers**
GET*	/orders	**Returns a user’s order list**
GET*	/orders/:orderId	**Return a user’s order by id**
POST*	/orders	**Creates an order to buy/sell stocks** If the request is done by a broker, the request body should include “authorizationId”, otherwise leave null. Only investors can create an automated order (if the authorizationId exists, the request will return invalid).
PUT*	/orders/:orderId	**Update an order’s status. If it’s not completed yet, you can set the status to cancelled.**

*** All requests with (*) are authenticated requests. You need to be logged in to execute them. The user’s id (which is the user’s authentication in our simplified case) will be included on the http authentication header.**
**** System requests. Not accessible from public users.**

This architecture of microservices allows us to decouple different business logic into logical components that can be deployed separately, while also achieving **low coupling**.

In this architecture, only the POST /orders has high coupling, due to the fact that it needs to verify the authorization details when a request is received from a broker as well as update the states on both microservices. Getting a user’s balance also relies on different microservices, because the user’s profile is fetched from the UserService while the balance is retrieved from the WalletService.