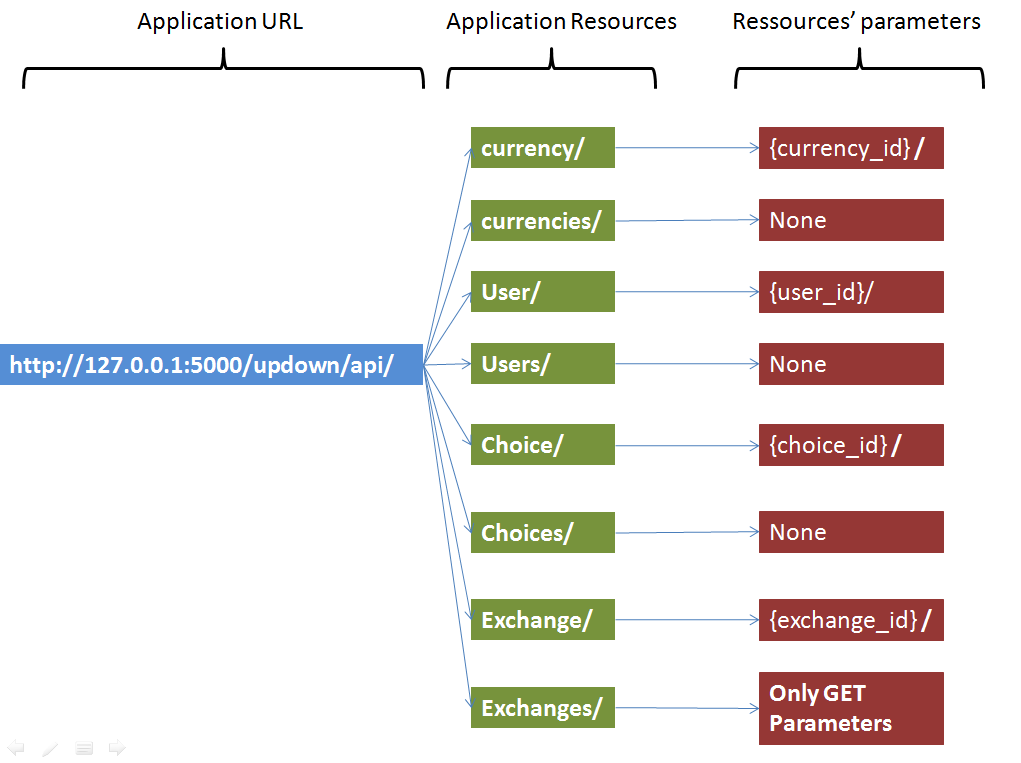
**RESTful API design**

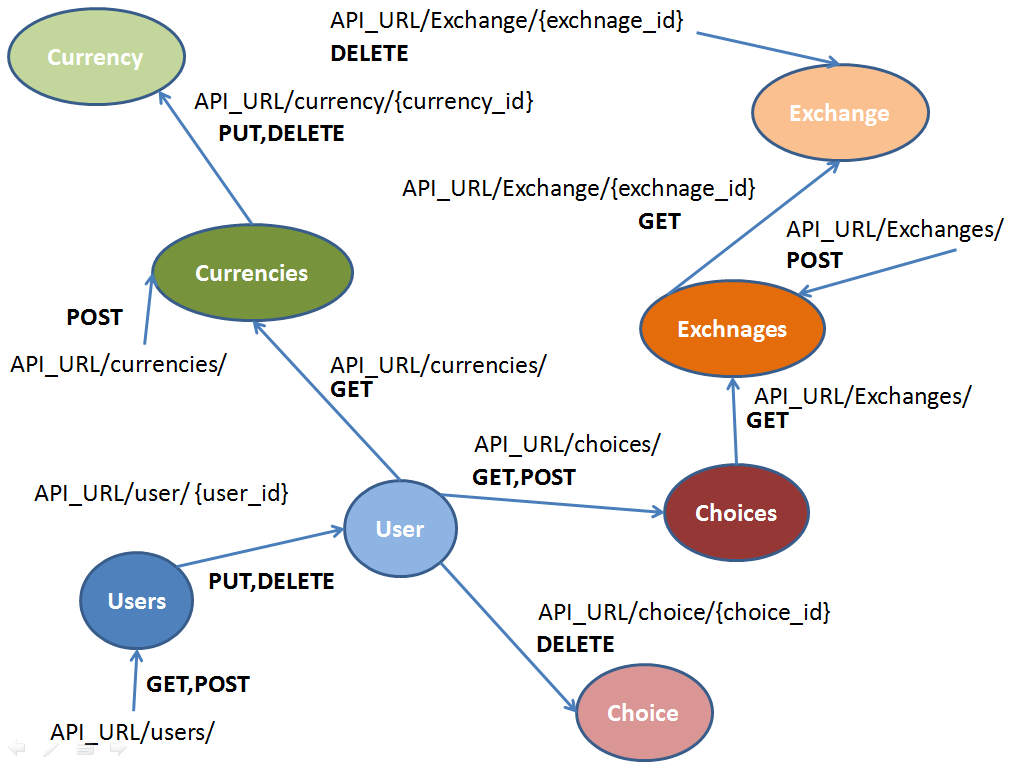
## Resources, hierarchies and relations:

|  |  |  |
| --- | --- | --- |
| Resource Name | Resource url | Resource Description |
| Currency | http://127.0.0.1:5000/updown/api/currency/{currency\_id} | Manipulate a currency PUT, DELETE using it is id |
| Currencies | http://127.0.0.1:5000/updown/api/currencies/ | GET list of all currencies or add new currency |
| User | http://127.0.0.1:5000/updown/api/user/{user\_id} | Manipulate a user PUT, DELETE using it is id |
| Users | http://127.0.0.1:5000/updown/api/users/ | GET list of all users or add new user |
| Choice | http://127.0.0.1:5000/updown/api/choice/{choice\_id} | Manipulate choices parameter based on user preferences of currencies exchange (DELETE,GET) |
| Choices | http://127.0.0.1:5000/updown/api/choices/ | List a user choices of currencies exchange preferences, add new entry (POST, GET) |
| Exchange | http://127.0.0.1:5000/updown/api/exchange/{exchange\_id} | DELETE,GET a currency exchange entry using its id |
| Exchanges | http://127.0.0.1:5000/updown/api/exchange/?currency\_from={ currency\_from }&currency\_to={ currency\_to }&date={date\_from}&date={date\_to}&rate={rate}/ | GET list of currencies’ exchanges rates, the selection based on the currencies and the date. Add new exchange rate |

A tree diagram showing the **URL hierarchy:**

****

**A state diagram of your application:**

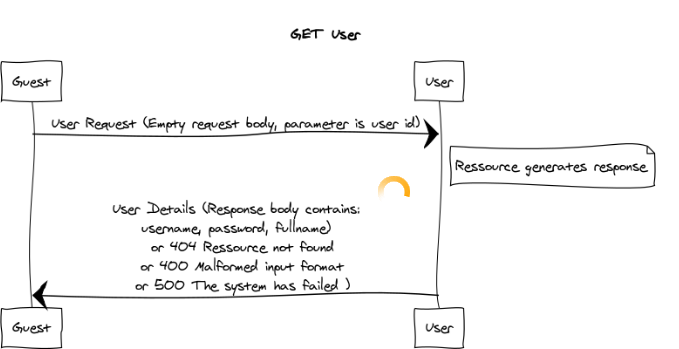


### Uniform interface :

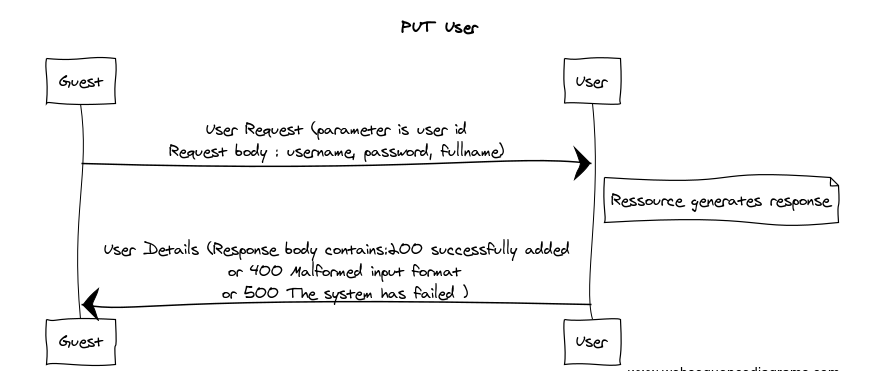
|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Ressource Name | GET | POST | PUT | DELETE |
| User | Get the username, password, fullname of the user with the parameter user\_id | None | Update the user with the parameter user\_id. It updates the user password and fullname | Delete the user with the parameter user\_id. |
| Users | Get all users from the DB. It Gets the users’ fullnames, usernames, and passwords | Add new user to the DB. It generates a new user\_id and give it a username, fullname and password from the json sent in the request body. | None | None |
| Currency | None | None | Update currency\_code and currency\_name of the currency with the currency\_id specified in the url | Delete the currency with the id currency\_id |
| Currencies | Get all currencies. It gets the currency\_id, currency\_code and currency\_name of each currency. | Create new currency with an auto generated currency\_id. The currency\_code and currency\_name are specified in the body of the POST request | None | None |
| Choice | Get the choice of the user based on username, date\_from, date\_to, currecy\_from and currency\_to specified as a GET parameters | None | None | Delete the user choice based on the choice\_id in the resource link |
| Choices | GET user all choices, based on user\_id. It Gets, choice\_id, currency\_from, currency\_to, date\_from, date\_to. | Create a new choice with an auto generate id. The user\_id, currency\_from, currency\_to, date\_from, date\_to are sent in the request body | None | None |
| Exchange | Get an exchange rate using an exchange\_id provided in the url. It gets the currency\_from, currency\_to, exact\_date and rate. | None | None | Delete the exchange rate with the id exchange\_id |
| Exchanges | GET list of exchanges based on the GET parameters : date\_from, date\_to, currency\_from, currency\_to.  It gets each exchange : exchange\_id, currency\_from, currency\_to, exact\_date and rate | Create a new exchange entry based on the parameters : currency\_from, currency\_to, exact\_date and rate provided in the request body | None | None |

Sequence diagrams : using tool <https://www.websequencediagrams.com/>

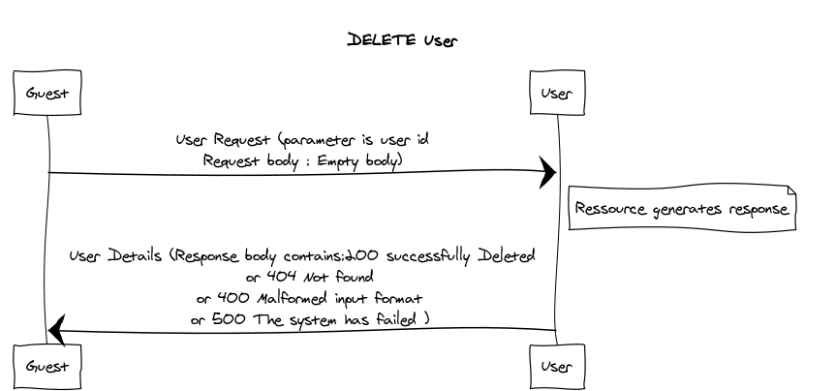
User GET:



User PUT:

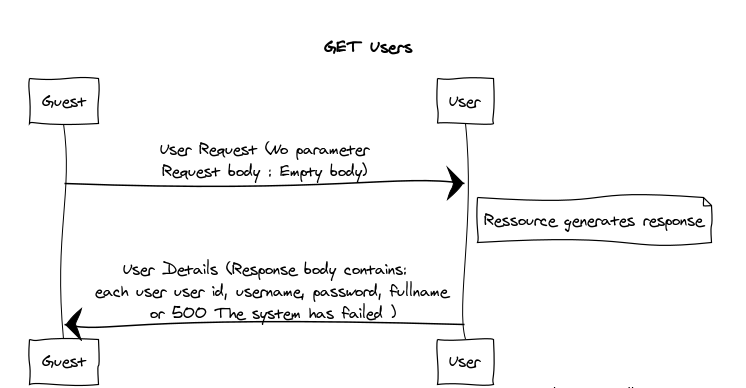


User DELETE:

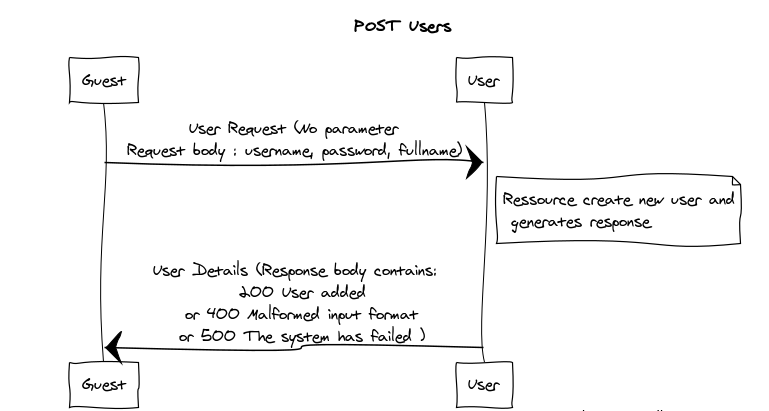


Users

GET

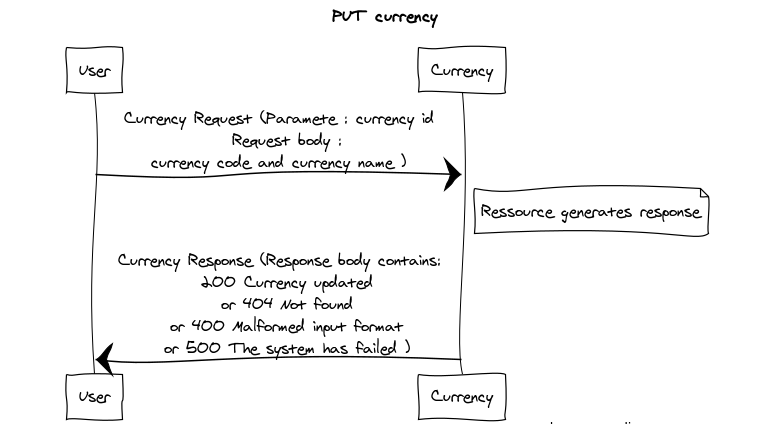


POST

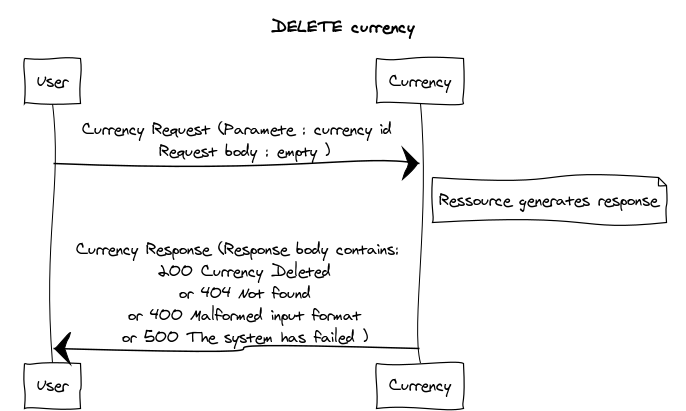


Currency

PUT

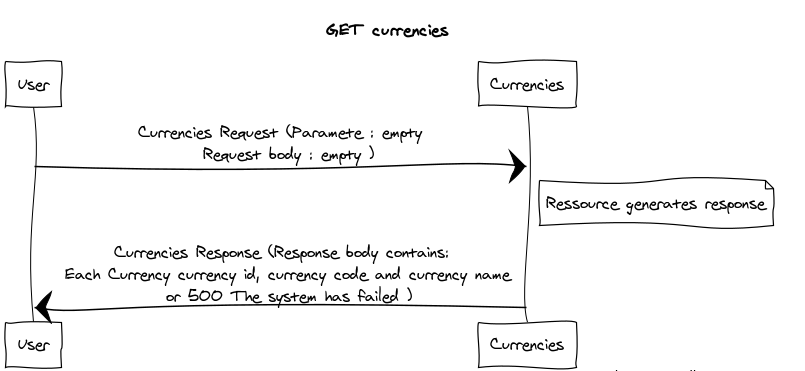


DELETE

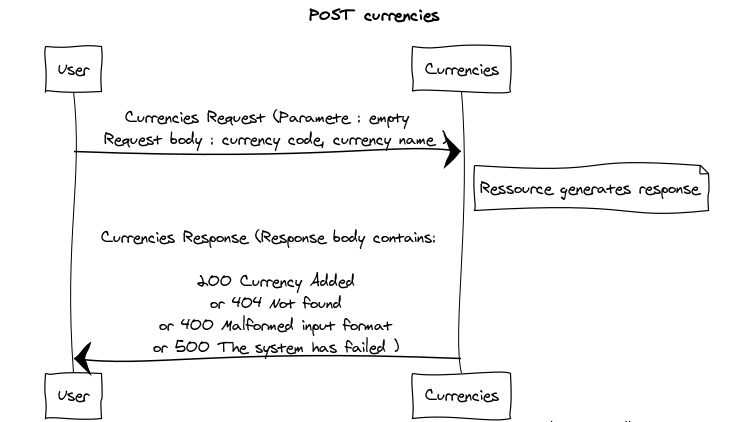


Currencies

GET

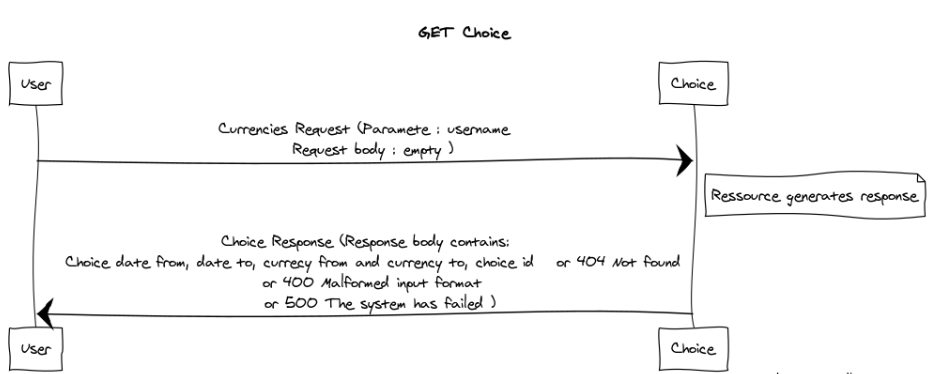


POST

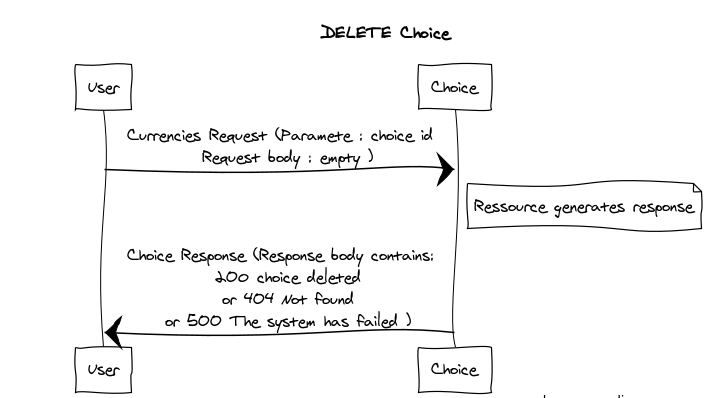


Choice

GET

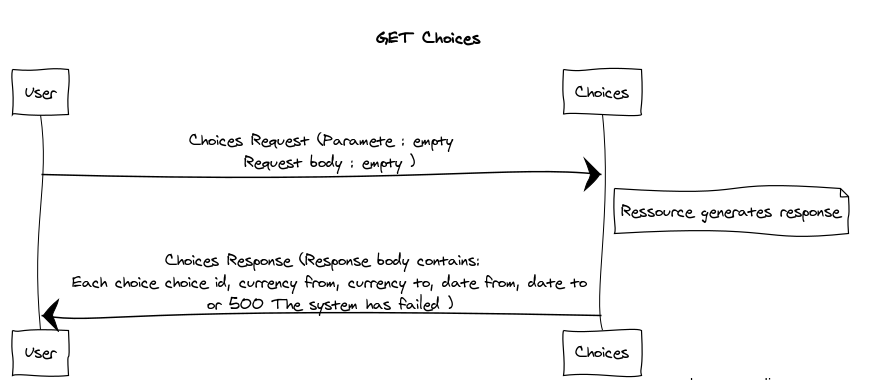


DELETE

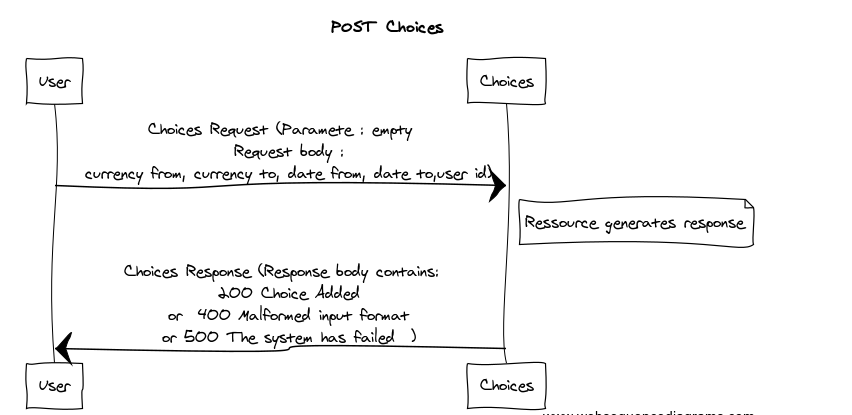


Choices

GET

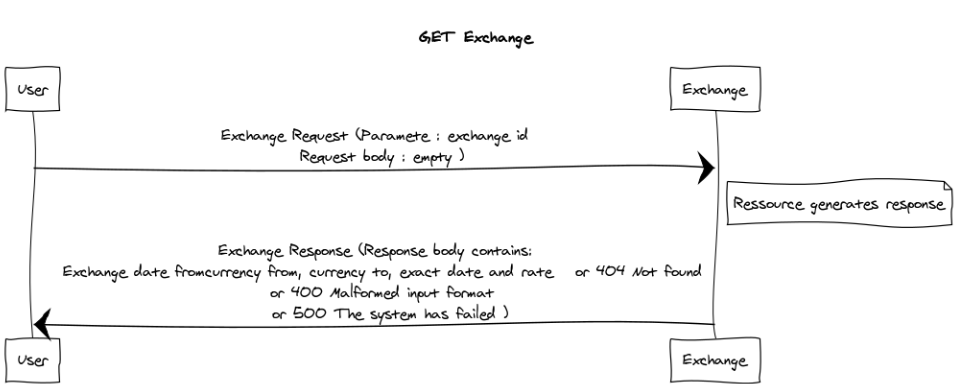


POST

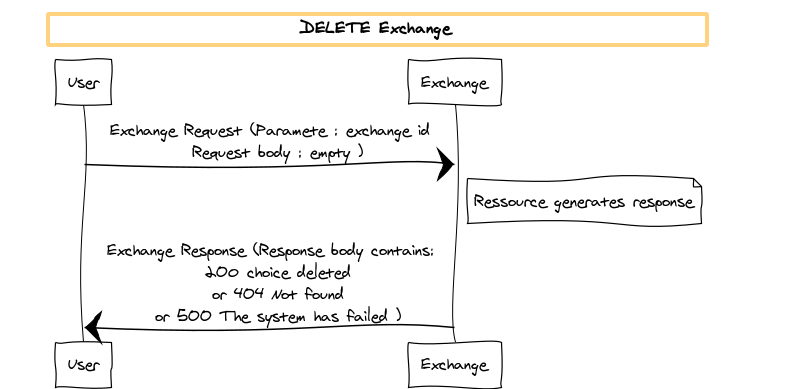


Exchange

GET

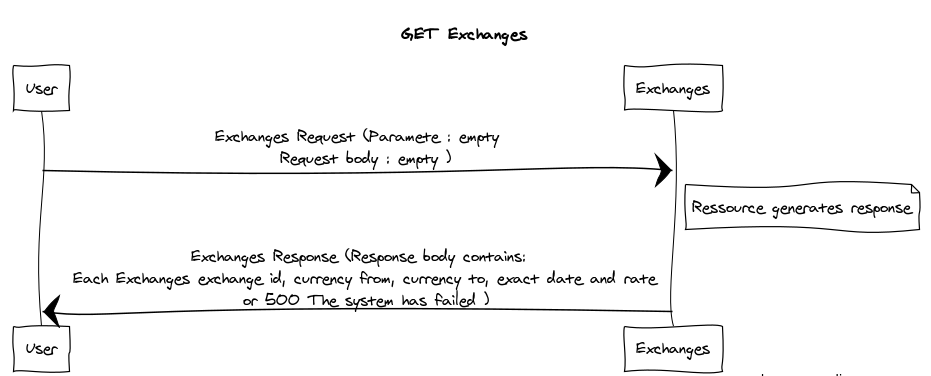


DELETE

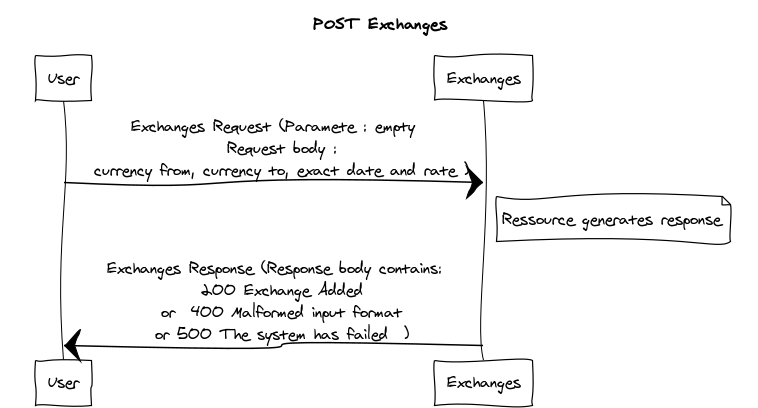


Exchange

GET



POST



### Hypermedia API : (Documentation)

PWP\_forum\_app\_complete.apib contains the blueprint. It ill be uploaded on the apiary.io for student url

## REST conformance

This API respects the ROA properties :

1. Addressability : Each of the resources has its unique url address (User, Users, Exchange, Exchanges, Currency, Currencies, Choice, Choices )
2. Each resource has its uniform interface according to the needs (GET, POST, DELETE, UPDATE)
3. Each resource is stateless where its does not change
4. Connectedness where resources link to each others.

Like :

Users links to each User, Choices

Currencies link to each Currency

Choices link to Choice

and Choice link to Exchanges