How ThingsDB operates

Content

In this document I will be researching how ThingsDB works. I will find out and write down the general ways ThingsDB works so I can get comfortable with the program itself and so that other researches will be done more easily as I'm more familiar with the platform. This platform will contain information on how I started it and short explanations on different topics in ThingsDB itself.

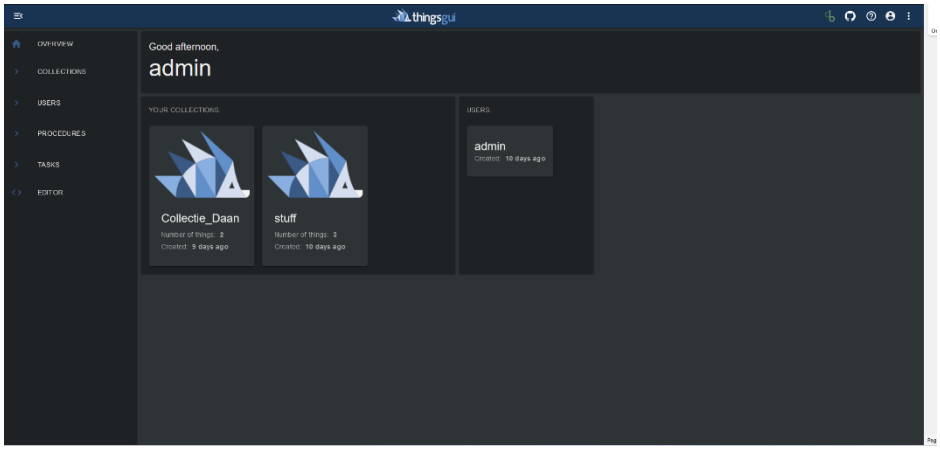
How does ThingsDB work?

The first problem I encountered is that I have a Windows computer, ThingsDB is not compatible for Windows so I had to use a different operating system that ThingsDB can actually run on. I ended up running a Linux System with Ubuntu as my stakeholders had advised me to use this as this was the easiest to do at the moment. You can find the code that is used to build ThingsDB from source in their document page (Source 1). I got my front- and backend running as seen below and I could start playing with ThingsDB and find out in what ways I could potentially make a Flow Tool on top of it.

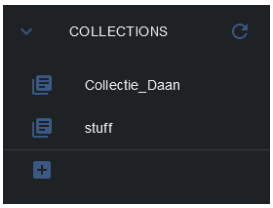
```
daan@DESKTOP-74HMGN5:~/ThingsDB/Debug$ THINGSDB_HTTP_API_PORT=9210 ./thingsdb
  _____ _   _                 ____  ____
 |_   _| |_|_|___ ___ ___    |    \| __ |
   | | |   | |   | . |_ -|   |  |  | __ -|
   |_| |_|_|_|_|_|_  |___|___/|____/|____|   version: 1.3.0+debug
                 |___|
[I 2022-09-16 09:04:17] running on: linux/amd64
[D 2022-09-16 09:04:17] path is successfully locked with a new lock file (/home/daan/.thingsdb/)
```

```
^Cdaan@DESKTOP-74HMGN5:~/ThingsDB/Debug$ ./things-gui_1.2.1_linux_amd64.bin
open .env: no such file or directory
2022/09/16 10:27:33 Serving at http://localhost:5000/
```

When going to the designated localhost you will come to see the front page of ThingsGUI. Where you can see your collections that you've made, which users you have made and a sidebar that redirects you to different pages.

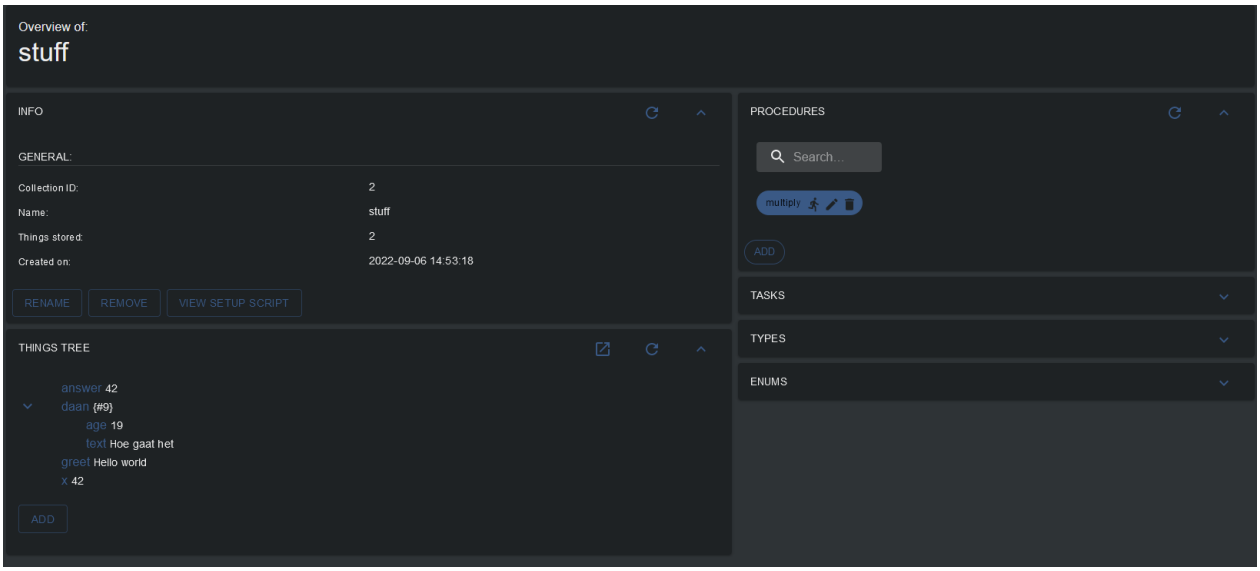


Collections

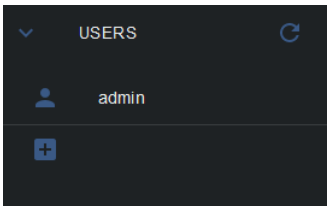


When pressing on Collections you will first get a selection of collections that you've already made and a button which will let you add another collection very easily.

When pressing on one of these collections you will get an overview of the collection, with general information about the collections. You can also find the things tree that showcases what answers have been submitted and the procedures, tasks, types and enums that you have already made in the collection.

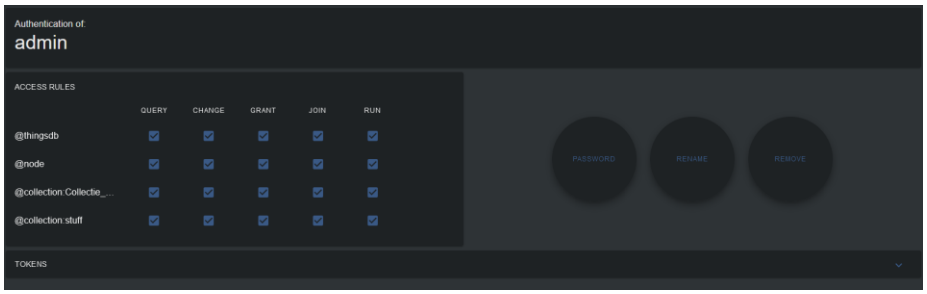


Users

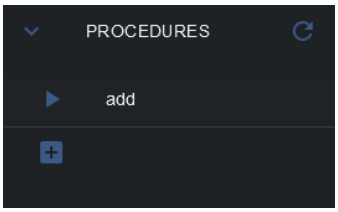


When opening Users you get to see a list of people that you have created, you can also add people here easily by pressing the add button and filling in a name.

When pressing a name you will get to see the authentication of this specific account, you get to see the access rules in which you can fill in the specific rights that this person has for differen scopes. You can easily check and uncheck them and the user will immediately notice that he loses or gains a specific right for the scope that you filled it in for. You can also give a user a token on this page.

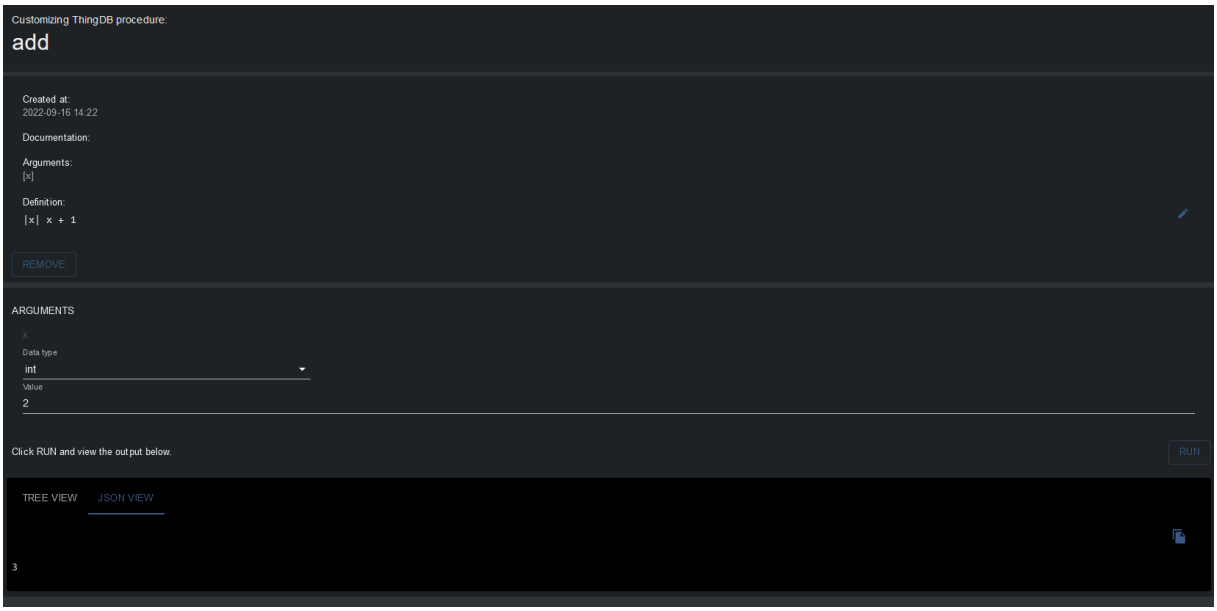


Procedures



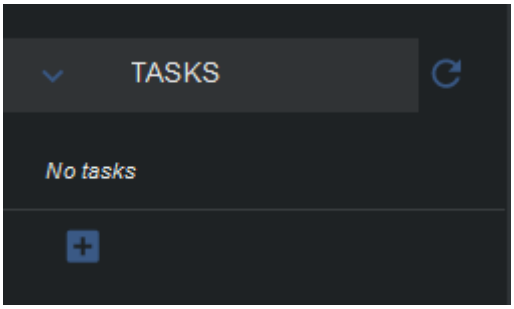
When pressing procedures on the sidebar you can find the general procedures that you have made, these can be used in the ThingsDB scope.

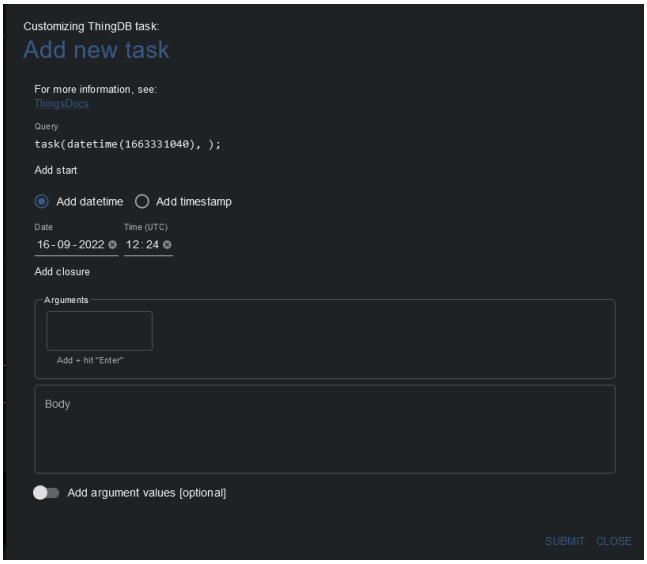
When pressing on the procedure you can see a variety of information, such as the name, when it's created and what you put into the procedure. You can even put in an argument yourself to test if it works. And you'll see an answer given in either TREE view or a JSON view.



Tasks

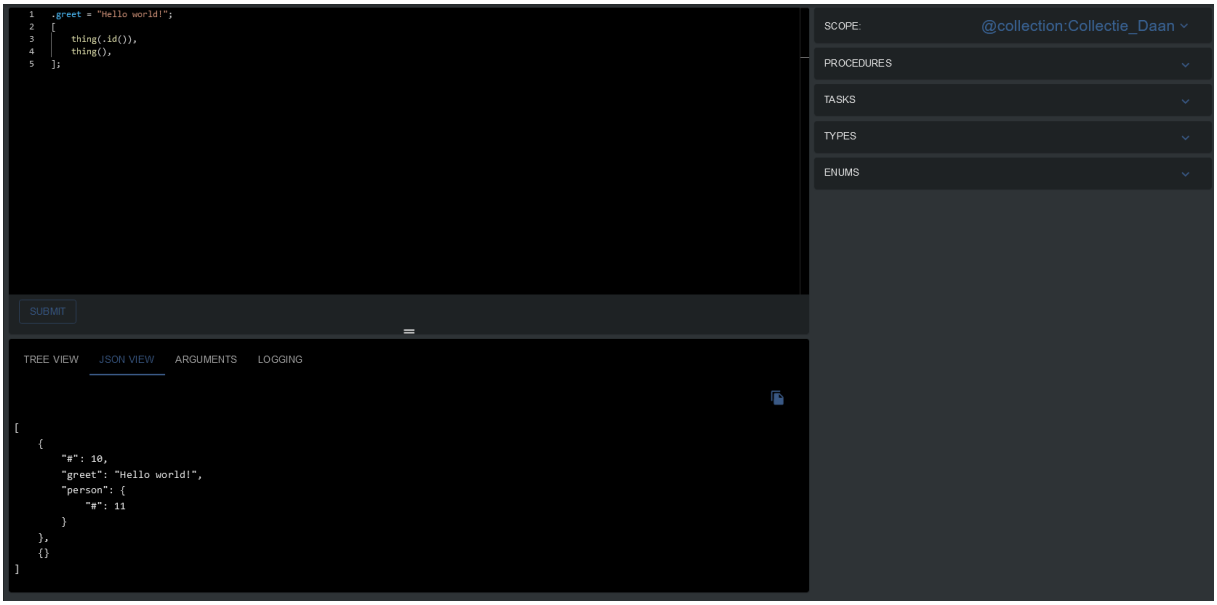
When opening tasks you can see all your tasks that you've made, tasks are made for repeating procedures that can be automated on a specific time slot. You can create a new task by adding arguments and filling in the body what needs to happen with the arguments.





Editor

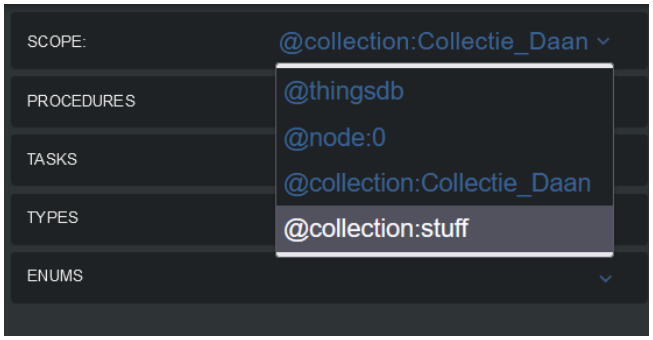
The editor gives you the opportunity to code in the ThingsDB language that you can find in their docs page (Source 1). As you can see you can submit your code and you can return an answer in TREE view, JSON view, arguments or logging. On the right you can see the scopes, procedures, tasks, types and enums that can also be found on the sidebar we talked about earlier.



You can also click on the different scopes, they are divided in 3 different scopes;

ThingsDB Scope:

In the ThingsDB scope you can manage collections, users, access and nodes.



Node Scope:

The Node scope can be used to query node statistics, counters or make node specific changes.

Collection Scope:

The collection scope can be used to manage data within a collection, but most of the functions in the collections API can be used in the ThingsDB and Node scope aswell.

Sources

1. https://docs.thingsdb.net/v1/
2. https://thingsdb.net/
3. Jeroen van der Heijden, Stakeholder