ICOM6034 GROUP REPORT

GROUP T

Member: CHENG Lang 3035396393

I. Overview

This project is a simple forum-like “Travel Ideas” website that allows registered users to view, create, modify, and query posts based on tags and destinations. It in addition provides a real-time exchange rate conversion tool that helps the user plan their potential overseas travel.

II. Web API

This project has one API mashed up, which is the Convert API provided by NeutrinoAPI.com. This API enables currency conversion using up-to-date exchange rate data. The API accepts three parameters: currency to convert from, the amount, and currency to convert to. The currencies are represented by their ISO currency codes. The API then return a dictionary containing the resultant amount. Below is an example code snippet using JavaScript fetch() that converts 10 GBP to HKD:

```
const url = 'https://community-neutrino-currency-
conversion.p.rapidapi.com/convert';
const options = {
        method: 'POST',
```

```
        headers: {
                'content-type': 'application/x-www-form-urlencoded',
                'X-RapidAPI-Key':
'3d6c64329cmshf5aaddfc4949c88p137a52jsn159af5c687c7',
                'X-RapidAPI-Host': 'community-neutrino-currency-
conversion.p.rapidapi.com'
        },
        body: new URLSearchParams({
                'from-value': '10',
                'from-type': 'GBP',
                'to-type': 'HKD'
        })
};

try {
        const response = await fetch(url, options);
        const result = await response.text();
        console.log(result);
} catch (error) {
        console.error(error);
}
```

It is however worth noting that the project uses the free version of this API, which has a hard limit of 10 calls per day.

III. Technologies

The frontend of this project is built from scratch with React 18, and a significant number of components are built using the Ant Design library. CSS3 is used in styling. All components are functional and thus use hooks to update their states.

Hooks also handle the client-side rendering updates. The backend of this project is built with Django, or more specifically, built around Django Rest Framework. The client interacts with the server through REST APIs only, this means frontend and backend are separated – which is a big part of the "mobile first" strategy. Such backend design enables future development of a mobile application. The project runs on an Apache server and a MySQL DBMS, which are both offered by XAMPP. The Django ORM system automatically handles all migrations. This project also relies on git for version control.

IV. Functional Specifications

The project is developed according to specs of the provide Group Project Specifications. It therefore, provides functions below:

1. User account creation

   One can register an account by providing a username, an email, and a password.

2. Posts ("Travel Ideas") Management

   A user, when logged in, can edit or delete any post they created. They may also create new posts.

3. Searching of travel ideas

   A user can search travel ideas by tags or destinations. They will get results even if the search keyword only matches a substring of a destination. The result list

of travel ideas will display the title, destination, tags and last time of update of the thread. The result page also displays the total count of results.

4. Data validations

   Client-side validations are applied to forms, covering user creation, user login, create post, edit post and currency conversion. Same validation rules are applied by the server as well.

5. Web API mashup (Currency Conversion)

   A web API is used to provide online currency coversion service.

V. System design description

In general, the project follows a strategy of frontend-backend separation and use of RESTful APIs. For example, search queries are done with GET requests and url parameters (e.g. /ideas/all/?keyword=Tokyo), update queries are done using POST and deleting a thread would invoke a DELETE request. User authentication is done via token authentication.

The frontend makes heavy use of local storage to enable more client-side rendering and client-side caching, which reduces the request need to be made to the server, relieving server load. Using local storage to pass information between views also reduces state change and thus reducing the number of re-renders needed. HTML5 standards are followed where applicable, however all

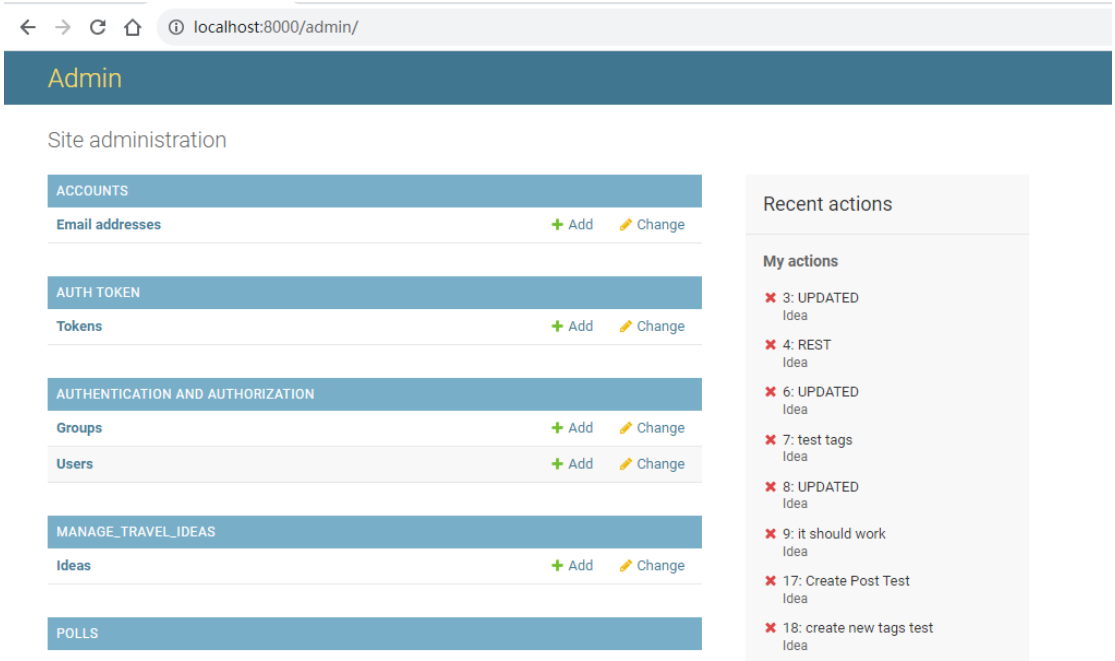
components are essentially written in JSX.

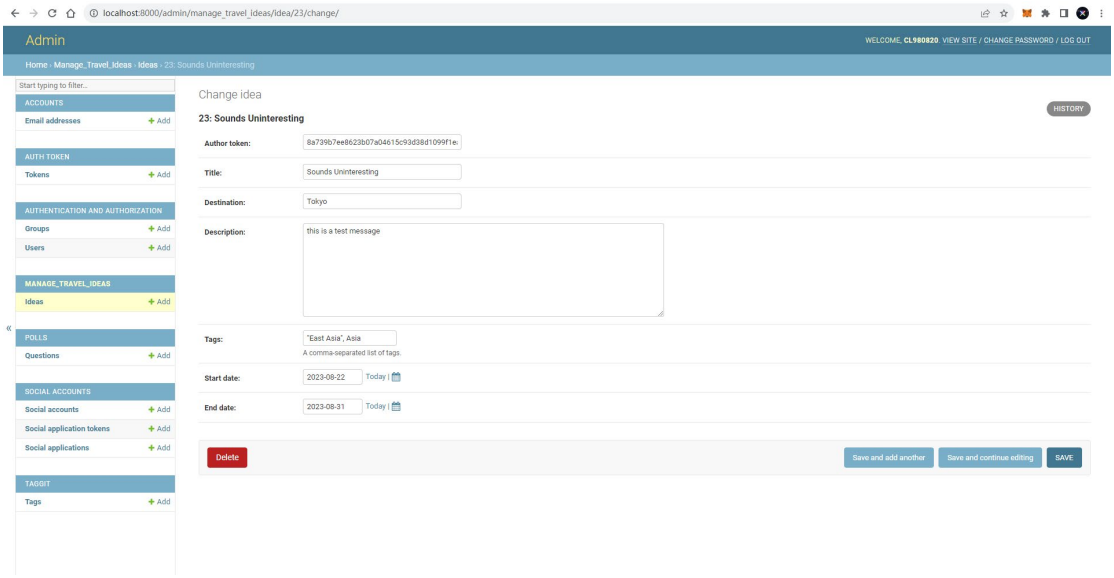
Backend APIs:

Travel_Idea(7 APIs)

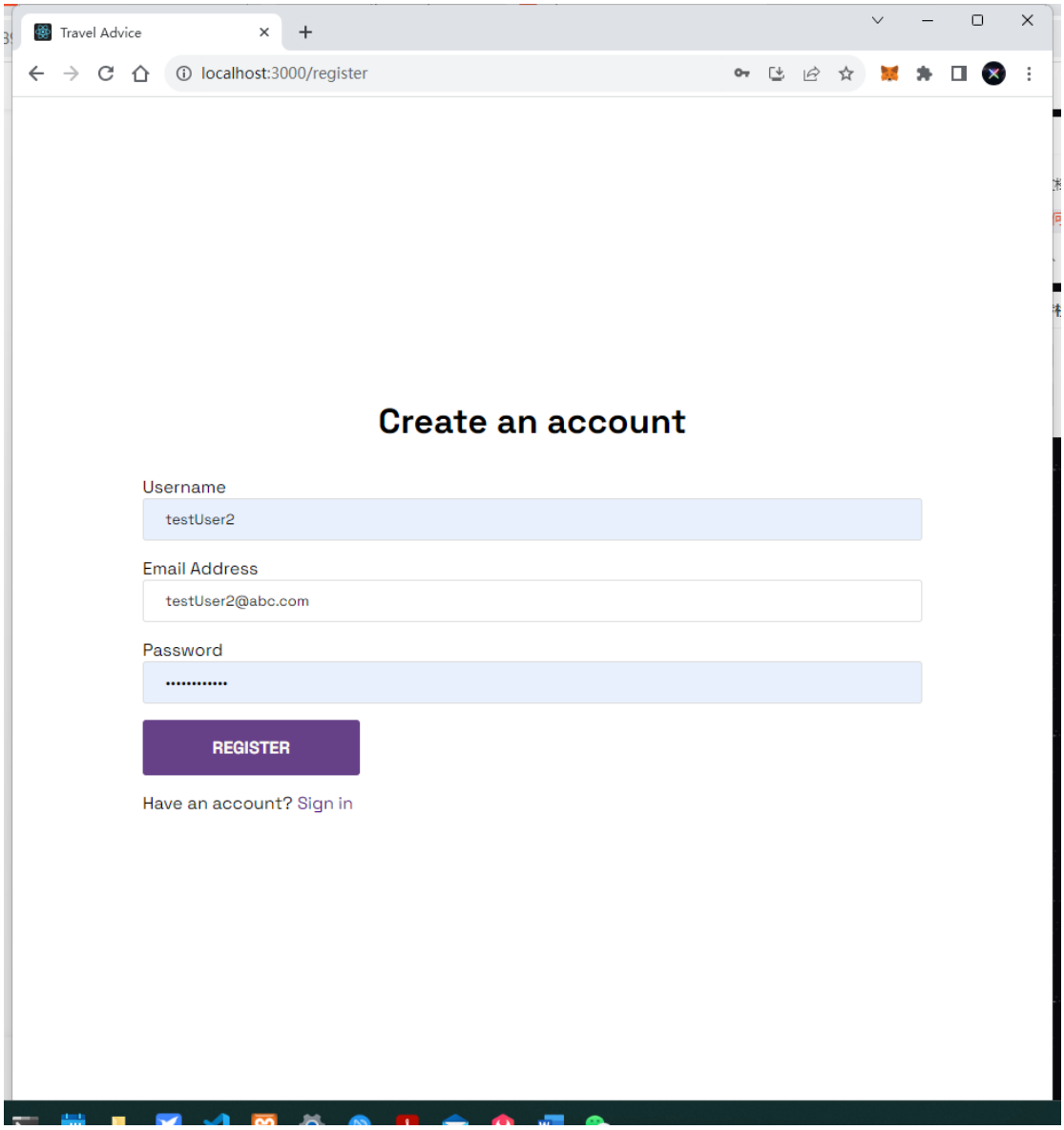
Name	Method	Path	Folder
Register	POST	/ideas/rest-auth/registration	Travel_Idea
Login	POST	/ideas/rest-auth/login	Travel_Idea
API LIST(deprecated)	GET	/ideas/	Travel_Idea
Query Ideas	GET	/ideas/all/	Travel_Idea
Create Idea	POST	/ideas/create	Travel_Idea
Edit Idea	POST	/ideas/update/<int:pk>	Travel_Idea
Delete Idea	DELETE	/idea/<int:pk>/delete	Travel_Idea

Admin Site (super user only):

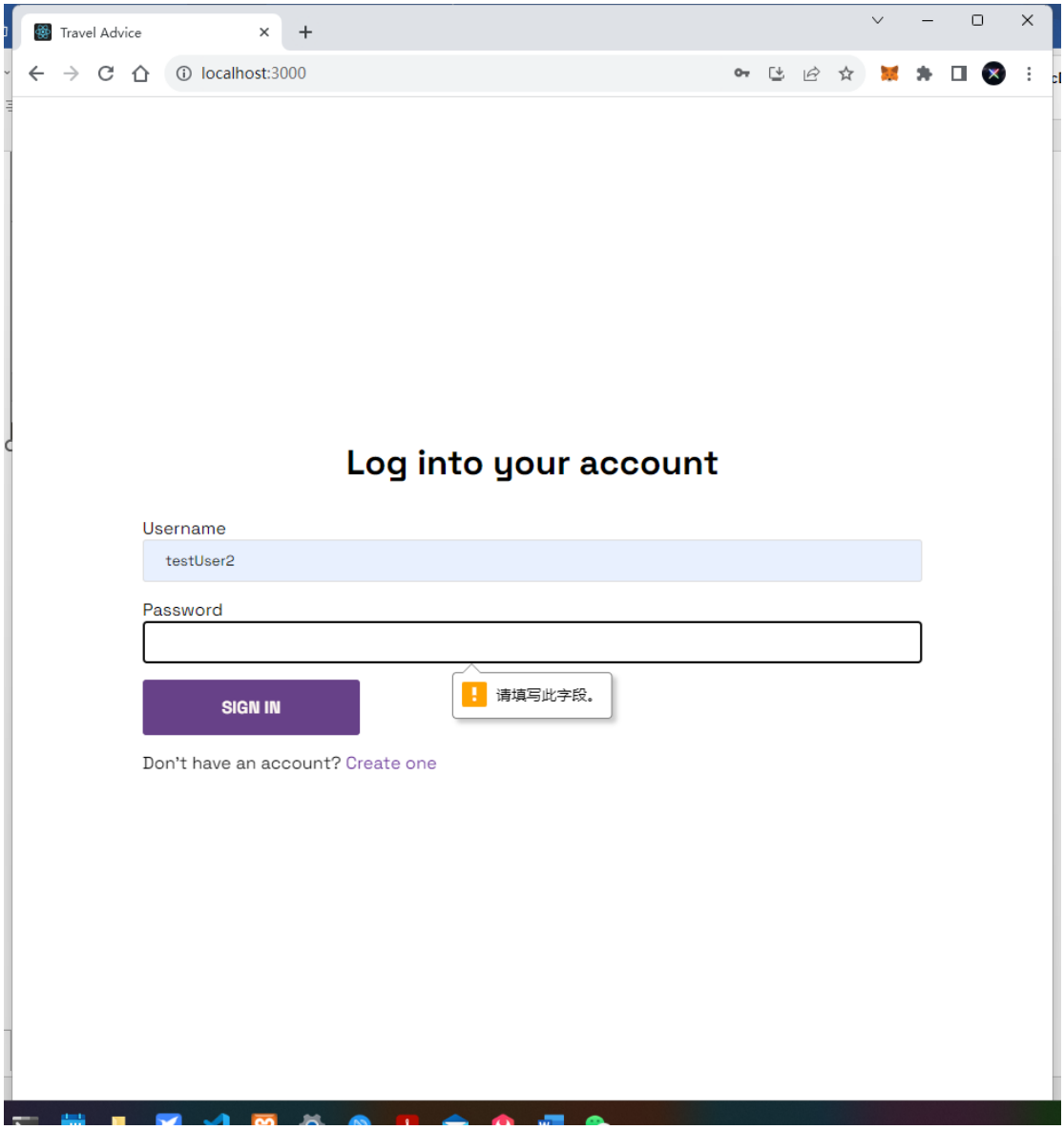




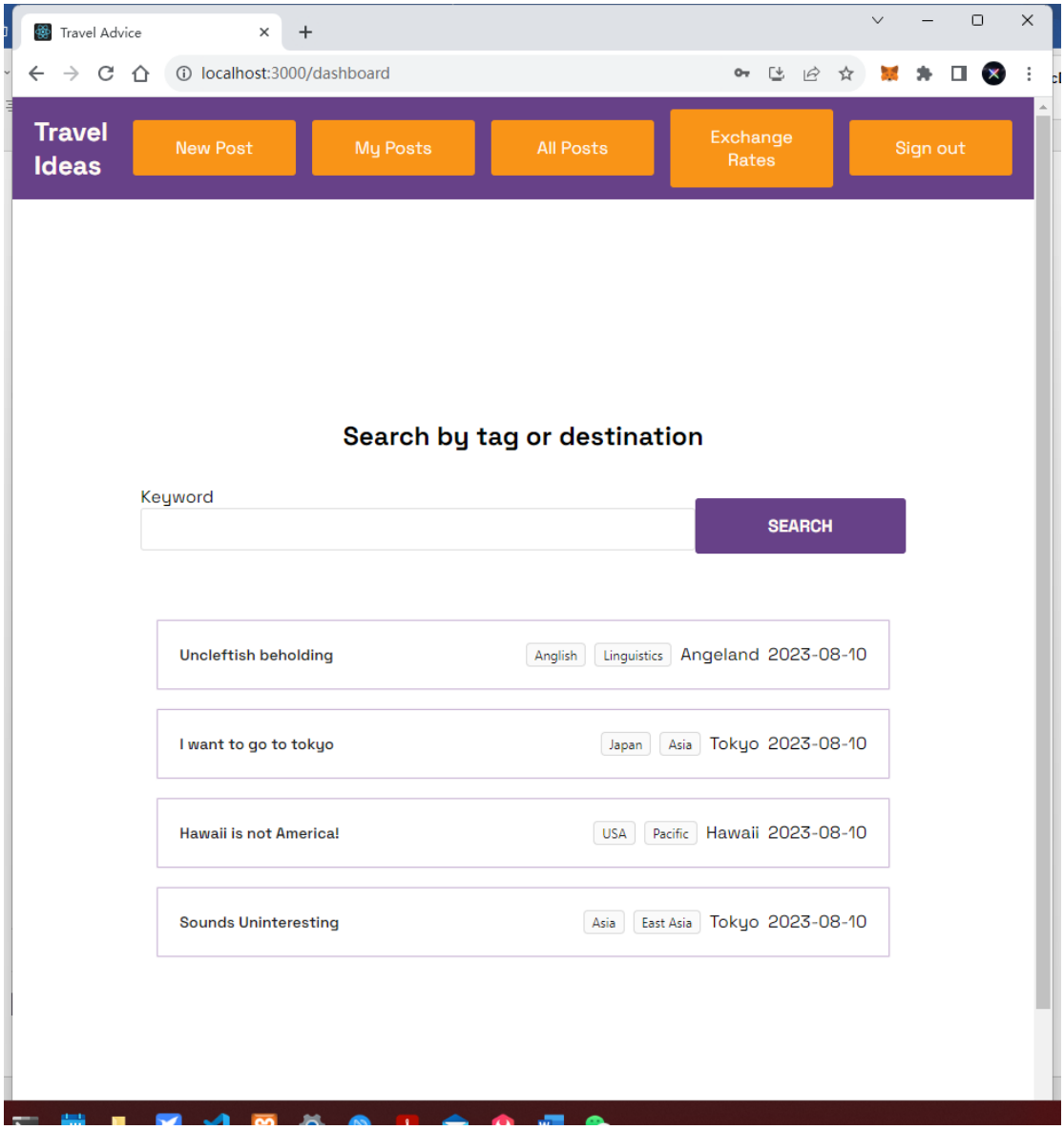
Frontend Design:


Travel Advice
localhost:3000/register
Create an account
Username
testUser2
Email Address
testUser2@abc.com
Password
REGISTER
Have an account? Sign in

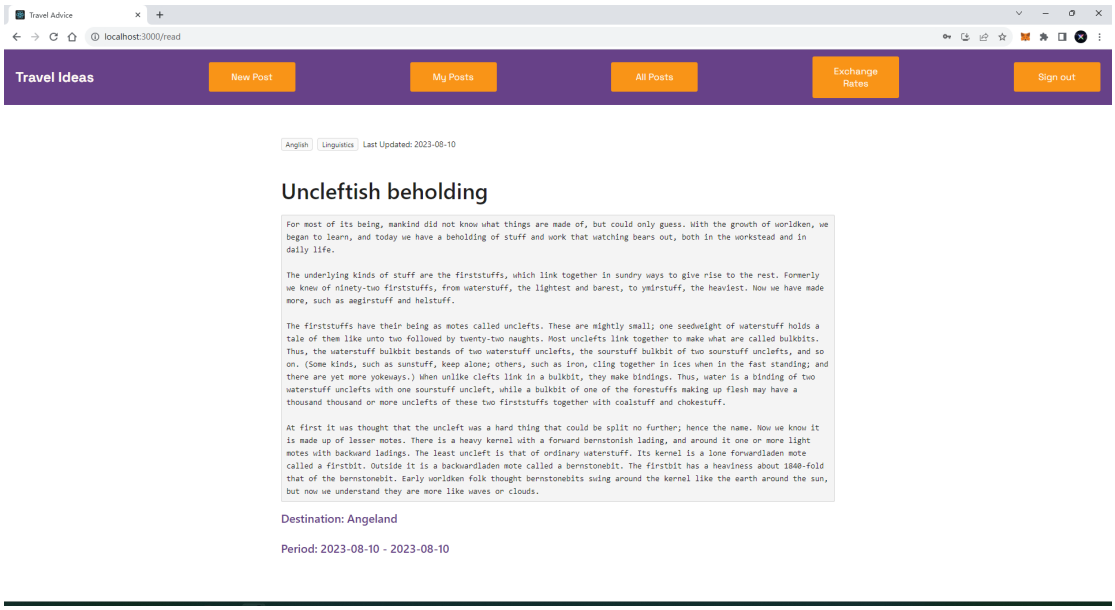
Register


Travel Advice
localhost:3000
Log into your account
Username
testUser2
Password
SIGN IN
请填写此字段。
Don't have an account? Create one

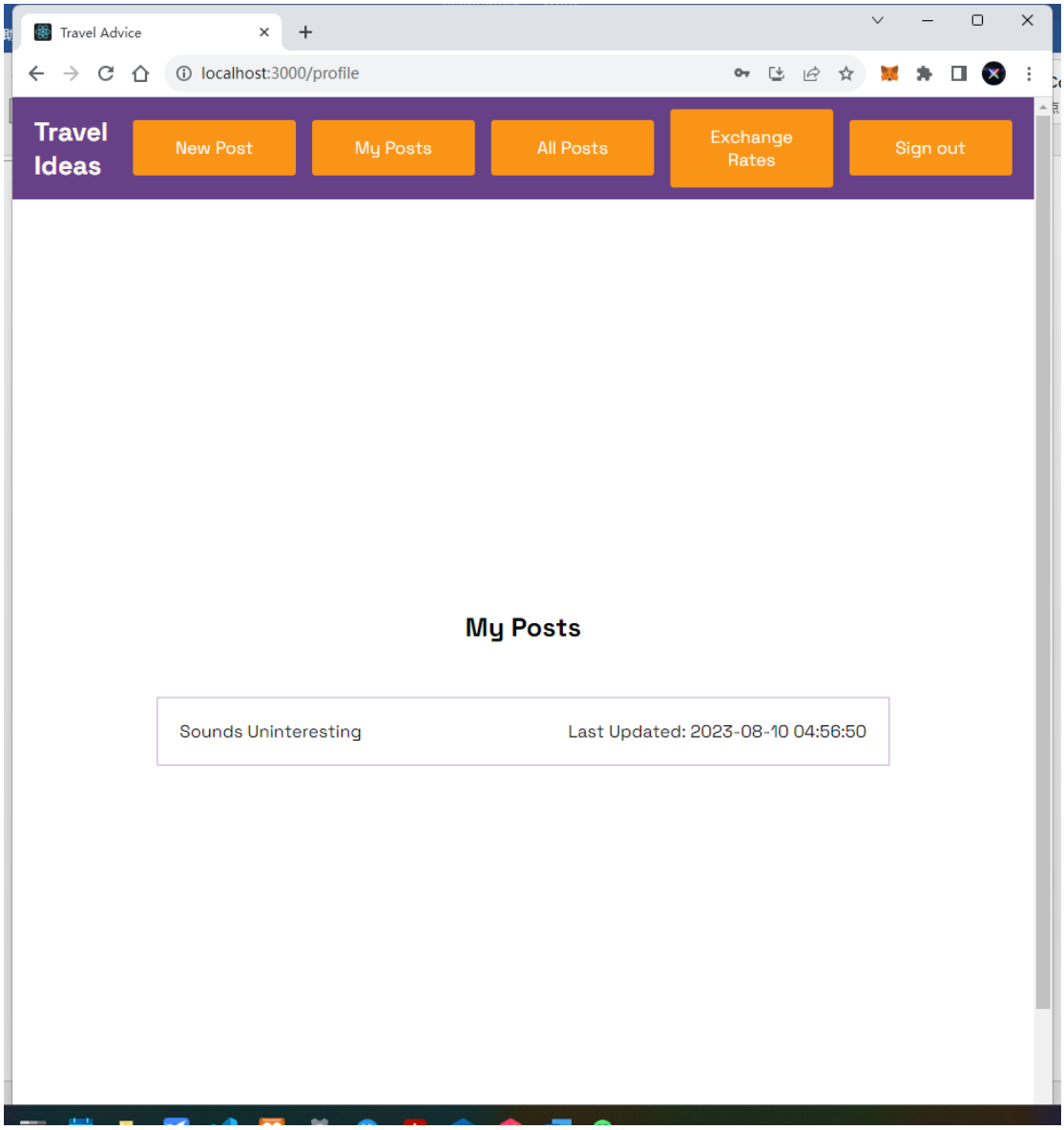
Sign In



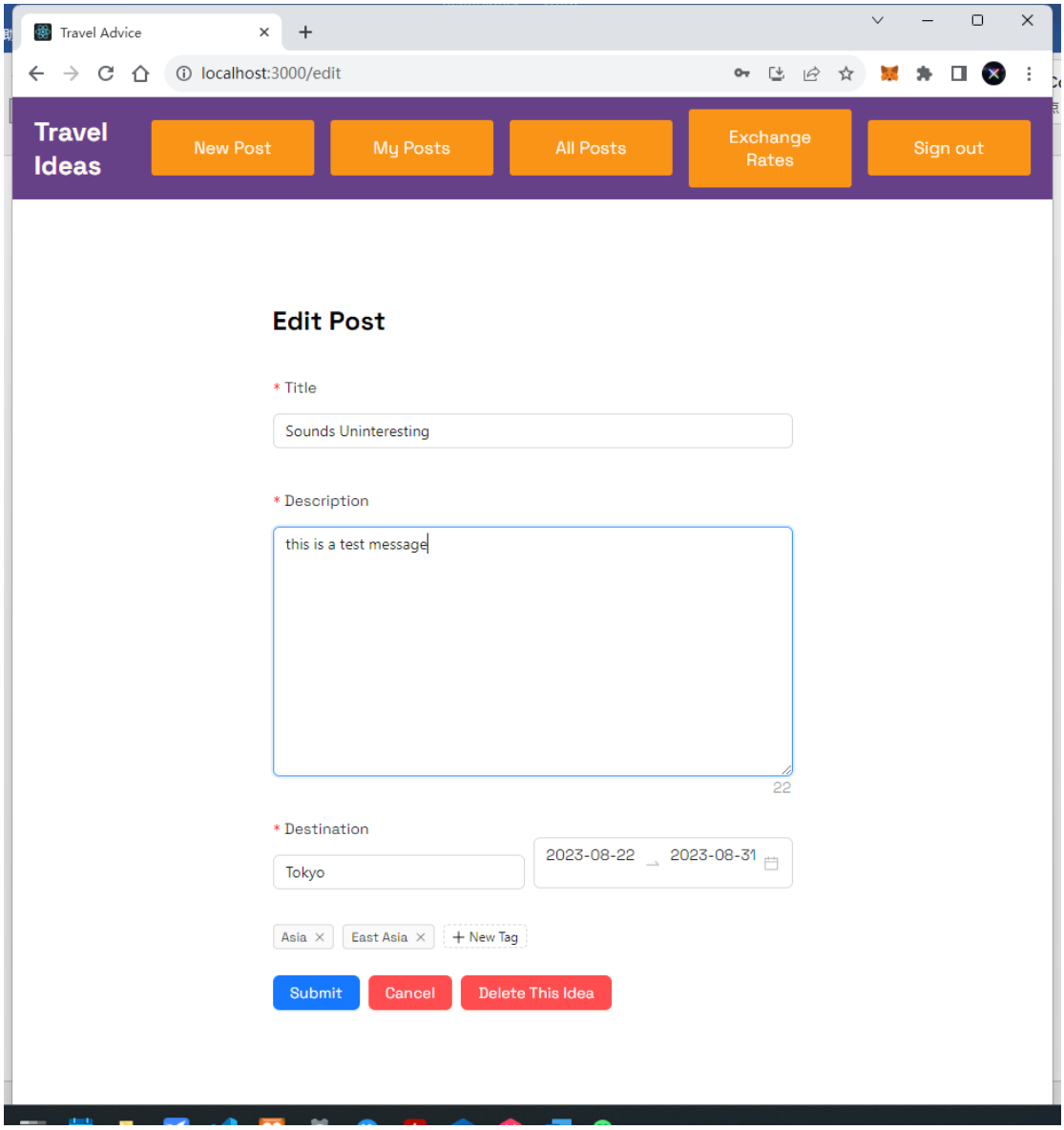
Dashboard (“first screen”)


Travel Advice
localhost:3000/read
Travel Ideas
New Post
My Posts
All Posts
Exchange Rates
Sign out
Anglish
Linguistics
Last Updated: 2023-08-10
Uncleftish beholding
For most of its being, mankind did not know what things are made of, but could only guess. With the growth of worldken, we began to learn, and today we have a beholding of stuff and work that watching bears out, both in the workstead and in daily life.
The underlying kinds of stuff are the firststuffs, which link together in sundry ways to give rise to the rest. Formerly we knew of ninety-two firststuffs, from waterstuff, the lightest and barest, to ymirstuff, the heaviest. Now we have made more, such as aegirstuff and helstuff.
The firststuffs have their being as motes called unclefts. These are mightly small; one seedweight of waterstuff holds a tale of them like unto two followed by twenty-two naughts. Most unclefts link together to make what are called bulkbits. Thus, the waterstuff bulkbit bestands of two waterstuff unclefts, the sourstuff bulkbit of two sourstuff unclefts, and so on. (Some kinds, such as sunstuff, keep alone; others, such as iron, cling together in ices when in the fast standing; and there are yet more yokeways.) When unlike clefts link in a bulkbit, they make bindings. Thus, water is a binding of two waterstuff unclefts with one sourstuff uncleft, while a bulkbit of one of the forestuffs making up flesh may have a thousand thousand or more unclefts of these two firststuffs together with coalstuff and chokestuff.
At first it was thought that the uncleft was a hard thing that could be split no further; hence the name. Now we know it is made up of lesser motes. There is a heavy kernel with a forward bernstonish lading, and around it one or more light motes with backward ladings. The least uncleft is that of ordinary waterstuff. Its kernel is a lone forwardladen mote called a firstbit. Outside it is a backwardladen mote called a bernstonebit. The firstbit has a heaviness about 1840-fold that of the bernstonebit. Early worldken folk thought bernstonebits swing around the kernel like the earth around the sun, but now we understand they are more like waves or clouds.
Destination: Angeland
Period: 2023-08-10 - 2023-08-10

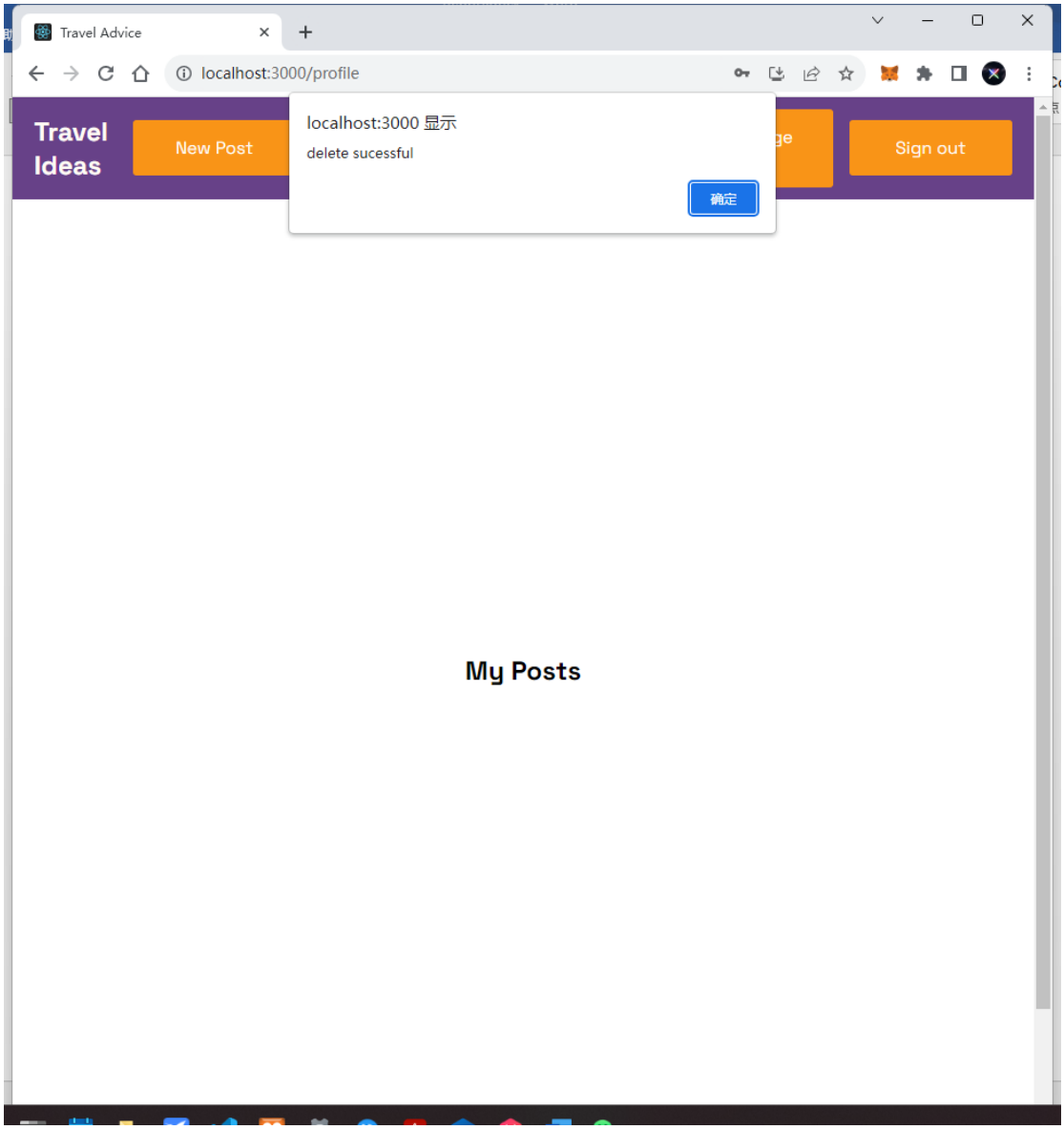
Read Post



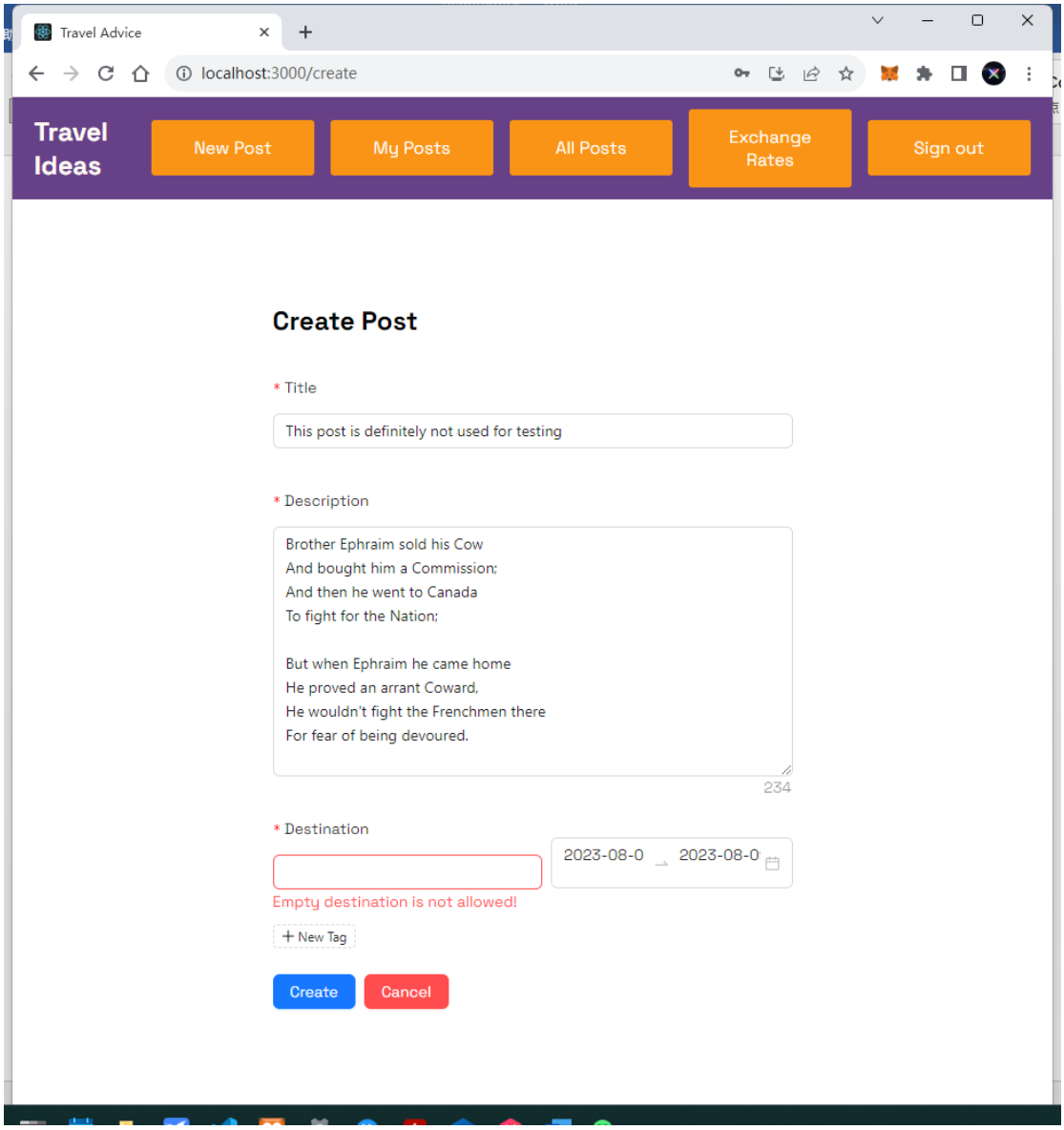
View My Posts (Click to edit)


Travel Advice
localhost:3000/edit
Travel Ideas
New Post
My Posts
All Posts
Exchange Rates
Sign out
Edit Post
* Title
Sounds Uninteresting
* Description
this is a test message
22
* Destination
Tokyo
2023-08-22 2023-08-31
Asia
East Asia
+ New Tag
Submit
Cancel
Delete This Idea

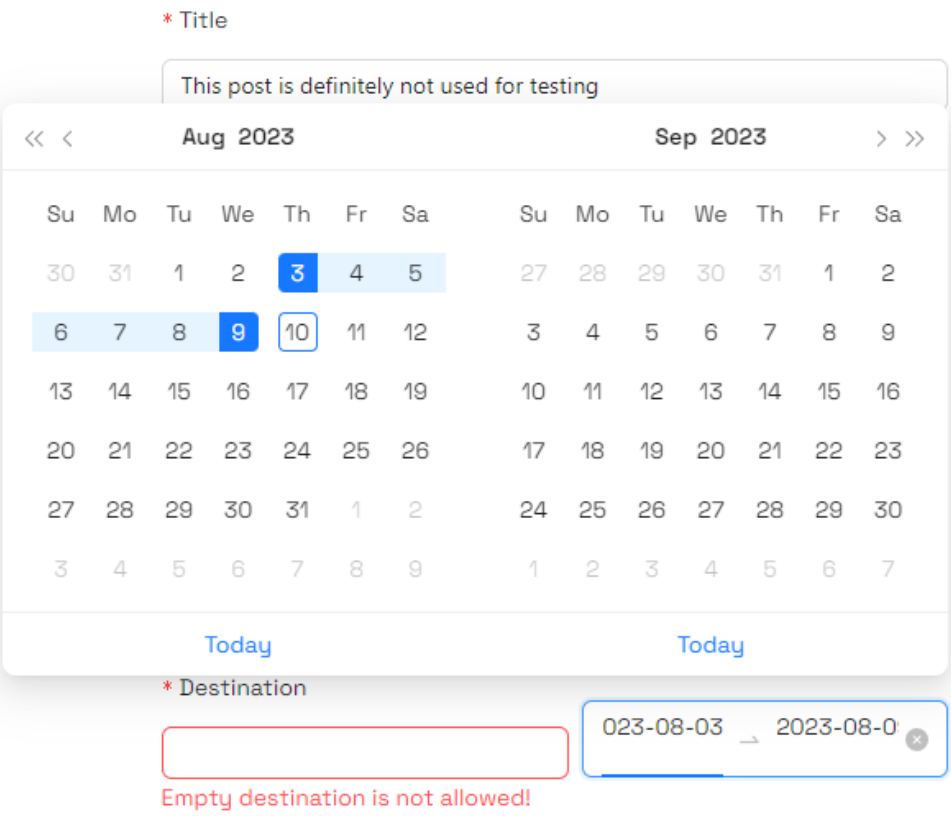
Modify Post



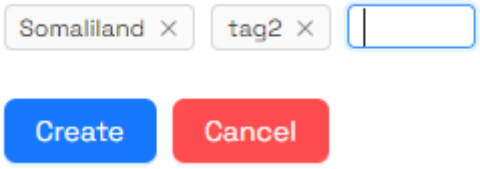
Deleted the only post



Create New Post



Date Range Picker



Create/Remove tags

Search by tag or destination

Keyword

yo

SEARCH

Uncleftish beholding — Anglish, Linguistics — Angeland 2023-08-10

I want to go to tokyo — Japan, Asia — Tokyo 2023-08-10

Hawaii is not America! — USA, Pacific — Hawaii 2023-08-10

This post is definitely not used for testing — tag2, Somaliland — Tokyo 2023-08-10

Korea is the best country in the world — Japan, DPRK — Kyoto 2023-08-10

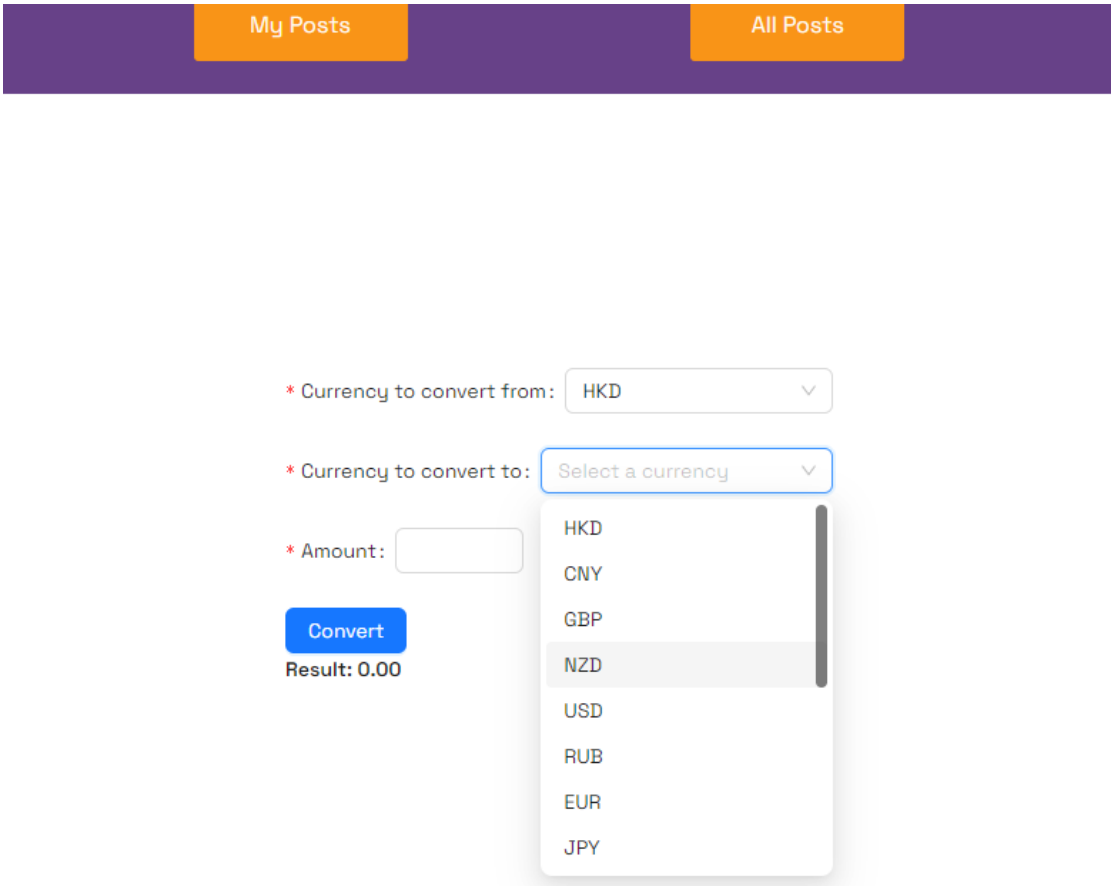
3 results found

I want to go to tokyo — Japan, Asia — Tokyo 2023-08-10

This post is definitely not used for testing — tag2, Somaliland — Tokyo 2023-08-10

Korea is the best country in the world — Japan, DPRK — Kyoto 2023-08-10

Search



Currency Convertor

VI. Database Structure

It is worth pointing out that under Django, the developer does not explicitly design the table, but rather design the models, and let Django handles the creation and update of tables.

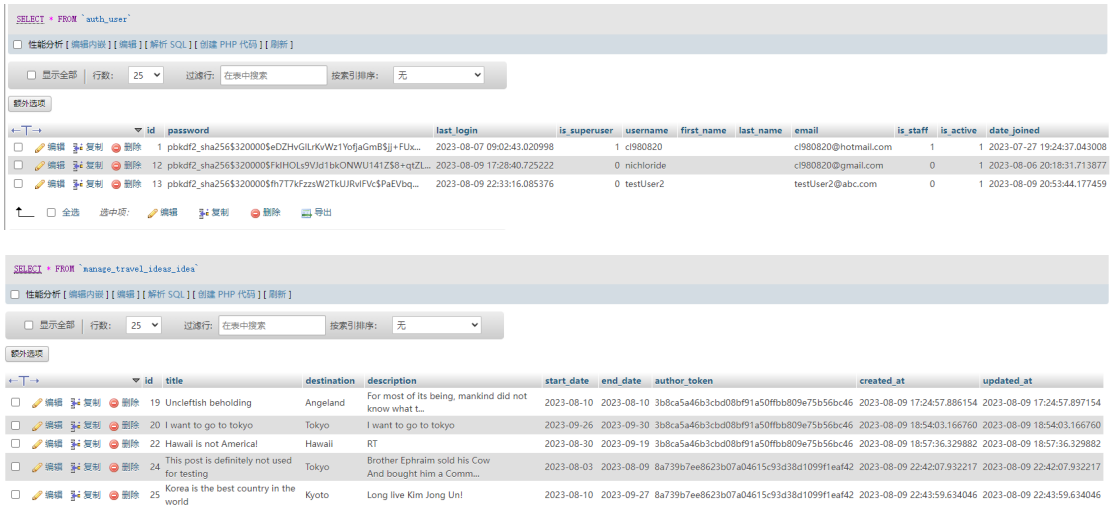
User model has the following fields of concern: email, password, username, is_superuser..

Idea model has the following fields of concern: author_token, title, destination, description, start_date, end_date, tags (an array, it is however a foreign key in

actual database implementation).

id and creation time fields are automatically generated for both models.

Detailed tables:



SELECT * FROM `auth_user`

性能分析 [编辑内嵌] [编辑] [解析 SQL] [创建 PHP 代码] [刷新]

显示全部 | 行数: 25 过滤行: 在表中搜索 按索引排序: 无

额外选项

	id	password	last_login	is_superuser	username	first_name	last_name	email	is_staff	is_active	date_joined
编辑 复制 删除	1	pbkdf2_sha256$320000$eDZHvGlLrKvWz1YofjaGmB$jJ+FUx...	2023-08-07 09:02:43.020998	1	cl980820			cl980820@hotmail.com	1	1	2023-07-27 19:24:37.043008
编辑 复制 删除	12	pbkdf2_sha256$320000$FkIHOLs9VJd1bkONWU141Z$8+qtZL...	2023-08-09 17:28:40.725222	0	nichloride			cl980820@gmail.com	0	1	2023-08-06 20:18:31.713877
编辑 复制 删除	13	pbkdf2_sha256$320000$fh7T7kFzzsW2TkUJRvlFVc$PaEVbq...	2023-08-09 22:33:16.085376	0	testUser2			testUser2@abc.com	0	1	2023-08-09 20:53:44.177459

全选 选中项: 编辑 复制 删除 导出

SELECT * FROM `manage_travel_ideas_idea`

性能分析 [编辑内嵌] [编辑] [解析 SQL] [创建 PHP 代码] [刷新]

显示全部 | 行数: 25 过滤行: 在表中搜索 按索引排序: 无

额外选项

	id	title	destination	description	start_date	end_date	author_token	created_at	updated_at
编辑 复制 删除	19	Uncleftish beholding	Angeland	For most of its being, mankind did not know what t...	2023-08-10	2023-08-10	3b8ca5a46b3cbd08bf91a50ffbb809e75b56bc46	2023-08-09 17:24:57.886154	2023-08-09 17:24:57.897154
编辑 复制 删除	20	I want to go to tokyo	Tokyo	I want to go to tokyo	2023-09-26	2023-09-30	3b8ca5a46b3cbd08bf91a50ffbb809e75b56bc46	2023-08-09 18:54:03.166760	2023-08-09 18:54:03.166760
编辑 复制 删除	22	Hawaii is not America!	Hawaii	RT	2023-08-30	2023-09-19	3b8ca5a46b3cbd08bf91a50ffbb809e75b56bc46	2023-08-09 18:57:36.329882	2023-08-09 18:57:36.329882
编辑 复制 删除	24	This post is definitely not used for testing	Tokyo	Brother Ephraim sold his Cow And bought him a Comm...	2023-08-03	2023-08-09	8a739b7ee8623b07a04615c93d38d1099f1eaf42	2023-08-09 22:42:07.932217	2023-08-09 22:42:07.932217
编辑 复制 删除	25	Korea is the best country in the world	Kyoto	Long live Kim Jong Un!	2023-08-10	2023-09-27	8a739b7ee8623b07a04615c93d38d1099f1eaf42	2023-08-09 22:43:59.634046	2023-08-09 22:43:59.634046

```
SELECT * FROM `taggit_tag`
```

性能分析 [编辑内嵌] [编辑] [解析 SQL] [创建 PHP 代码] [刷新]

显示全部 | 行数: 25 过滤行: 在表中搜索

额外选项

		id	name	slug
☐	编辑 复制 删除	7	test	test
☐	编辑 复制 删除	8	hk	hk
☐	编辑 复制 删除	9	idea	idea
☐	编辑 复制 删除	10	test --- 001	test-001
☐	编辑 复制 删除	11	rest	rest
☐	编辑 复制 删除	12	hey	hey
☐	编辑 复制 删除	13	placeholder tag	placeholder-tag
☐	编辑 复制 删除	14	updated tags	updated-tags
☐	编辑 复制 删除	15	3rd tag	3rd-tag
☐	编辑 复制 删除	16	hahaha	hahaha
☐	编辑 复制 删除	17	Anglish	anglish
☐	编辑 复制 删除	18	Linguistics	linguistics
☐	编辑 复制 删除	19	Japan	japan
☐	编辑 复制 删除	20	Asia	asia
☐	编辑 复制 删除	21	USA	usa
☐	编辑 复制 删除	22	Pacific	pacific
☐	编辑 复制 删除	23	East Asia	east-asia
☐	编辑 复制 删除	24	tag2	tag2
☐	编辑 复制 删除	25	Somaliland	somaliland
☐	编辑 复制 删除	26	DPRK	dprk

	id	object_id	content_type_id	tag_id
编辑 复制 删除	36	19	9	17
编辑 复制 删除	37	19	9	18
编辑 复制 删除	38	20	9	19
编辑 复制 删除	39	20	9	20
编辑 复制 删除	40	22	9	21
编辑 复制 删除	41	22	9	22
编辑 复制 删除	44	24	9	24
编辑 复制 删除	45	24	9	25
编辑 复制 删除	47	25	9	19
编辑 复制 删除	46	25	9	26

VII. Work Distribution

Not applicable for one-man group. Individual report lists modules implemented in more detail.

VIII. How to run project

After setting up the DB using the provided SQL dump, open travel_advice\backend\travel_advice\travel_advice\settings.py and modify DATABASES setting to match your own.

Under travel_advice\backend\travel_advice:

pip3 install -r requirements.txt (recommend using a virtual environment)

python3 manage.py runserver

The server runs at localhost:8000 by default, go to localhost:8000/admin for admin page access. The superuser credentials are:

Username: cl980820

Password: 980820

You may create your own superuser.

Under travel_advice\backend\travel_advice, run **npm install**, and then **npm start** to launch the frontend at localhost:3000.