Microblog

Developed by Debmalya Jash

Developer : Debmalya Jash

Purpose

Thanks for providing this opportunity to develop this micro-blog sample application. This document is created to describe the changes made for micro blog development.

Github URL

https://github.com/debmalya/micro-blog-technical-test.git

Technology Stack

W3-CSS
W3-data
jQuery
Silex (1.3)
Twig (1.2)
PHP 5.6.24
doctrine/dbal (2.2)
SQLite
Nginx
Cent OS' 7

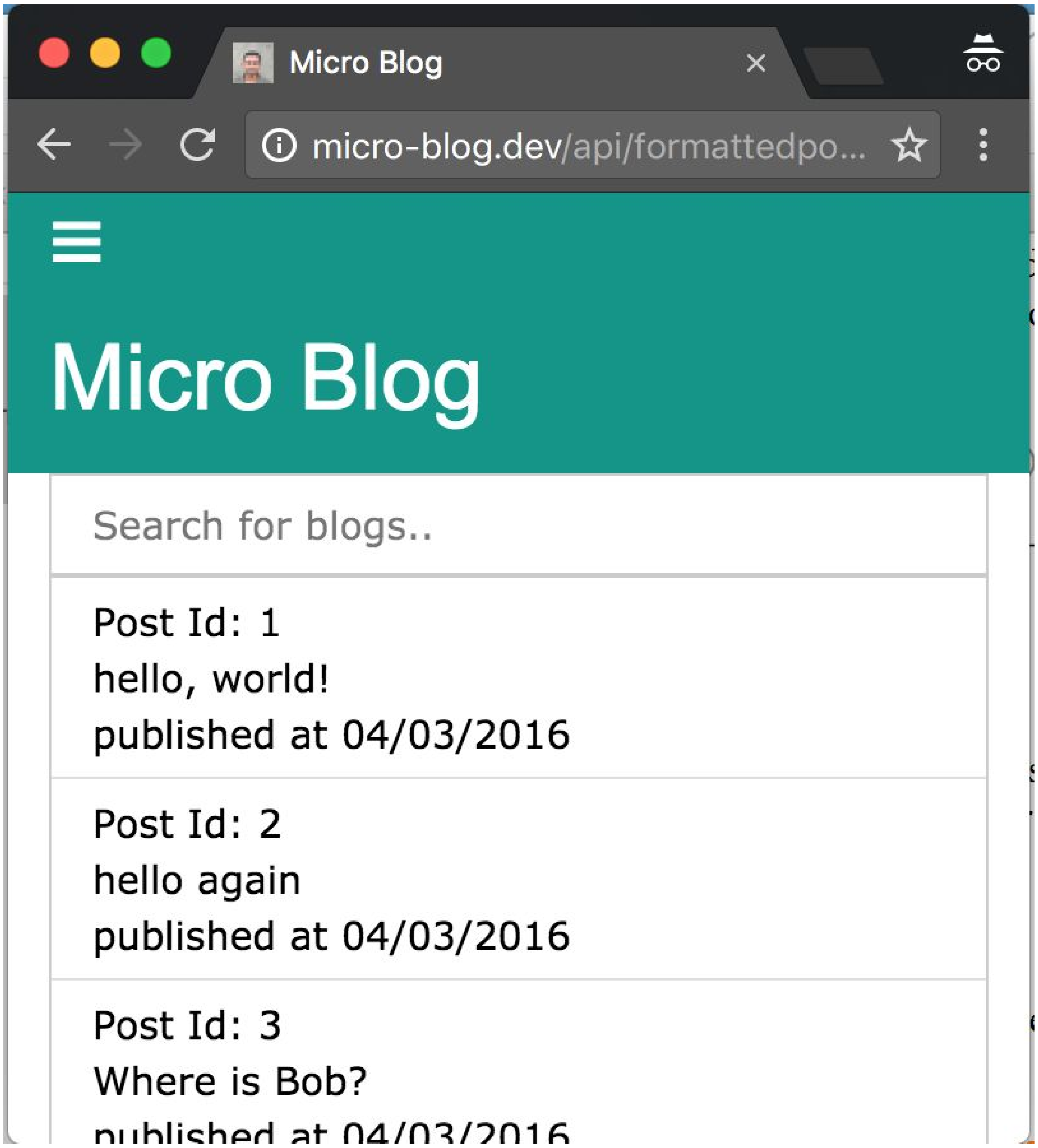
Developer : Debmalya Jash

Responsive Web Design

Functionality

Listing all blogs

/api/formattedposts/{format}



Micro Blog

Search for blogs..

Post Id: 1
hello, world!
published at 04/03/2016

Post Id: 2
hello again
published at 04/03/2016

Post Id: 3
Where is Bob?
published at 04/03/2016

Blogs.twig has following contents to display the blog posts.

```
{% if posts|length > 0 %}

                        <ul id="id01" class="w3-ul w3-border">

                                                {% for post in posts %}
```

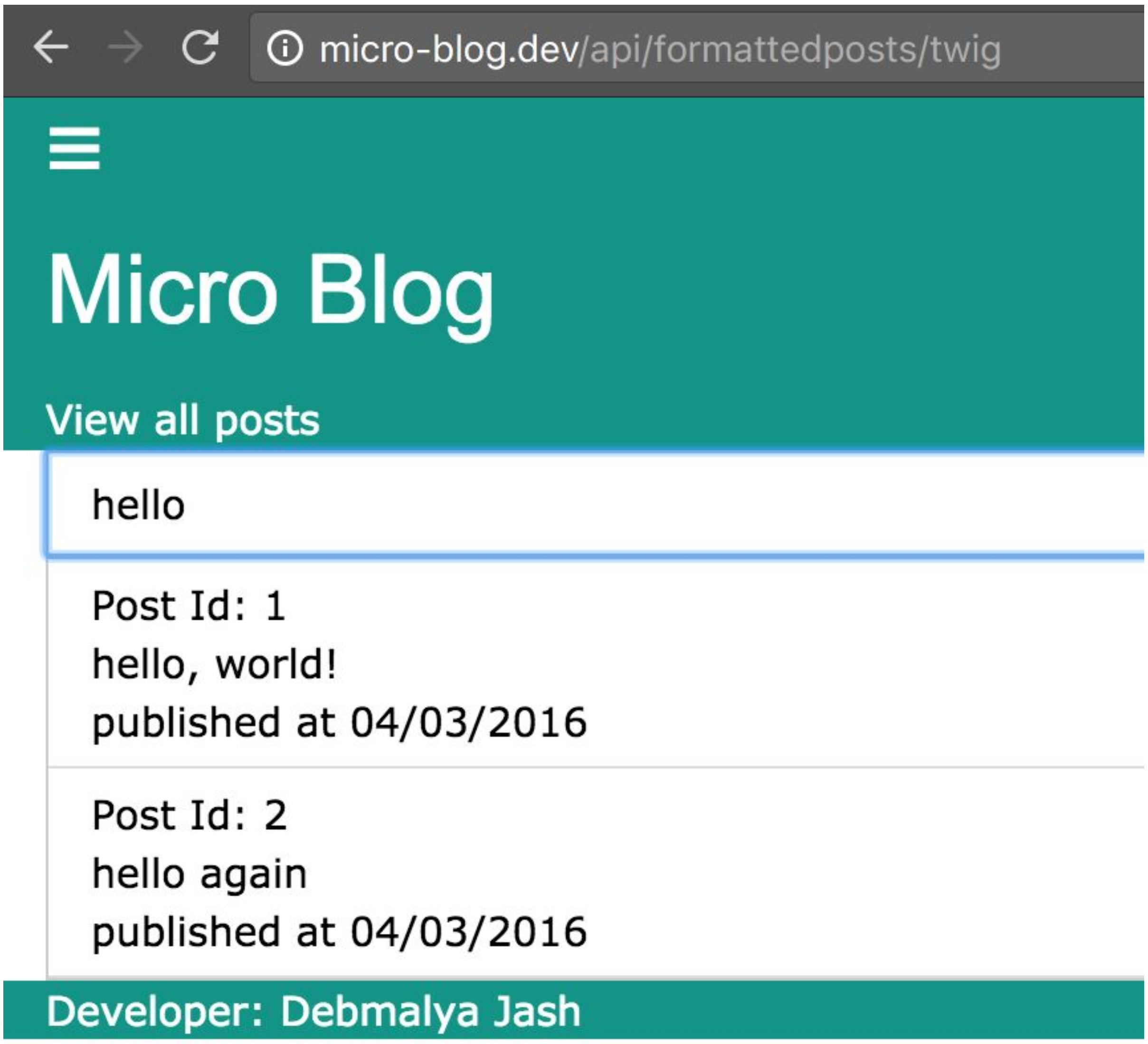
```
                                                                    <li>Post Id:
{{post.rowid}} <br> {{ post.content|nl2br }} <br> published at {{ post.date is empty
? "" : post.date|date("d/m/Y","Europe/London") }}</li>

                                                              {% endfor %}

                                                 </ul>

                                           {% endif %}
```

Functionality Search blogs



micro-blog.dev/api/formattedposts/twig

Micro Blog

View all posts

hello

Post Id: 1
hello, world!
published at 04/03/2016

Post Id: 2
hello again
published at 04/03/2016

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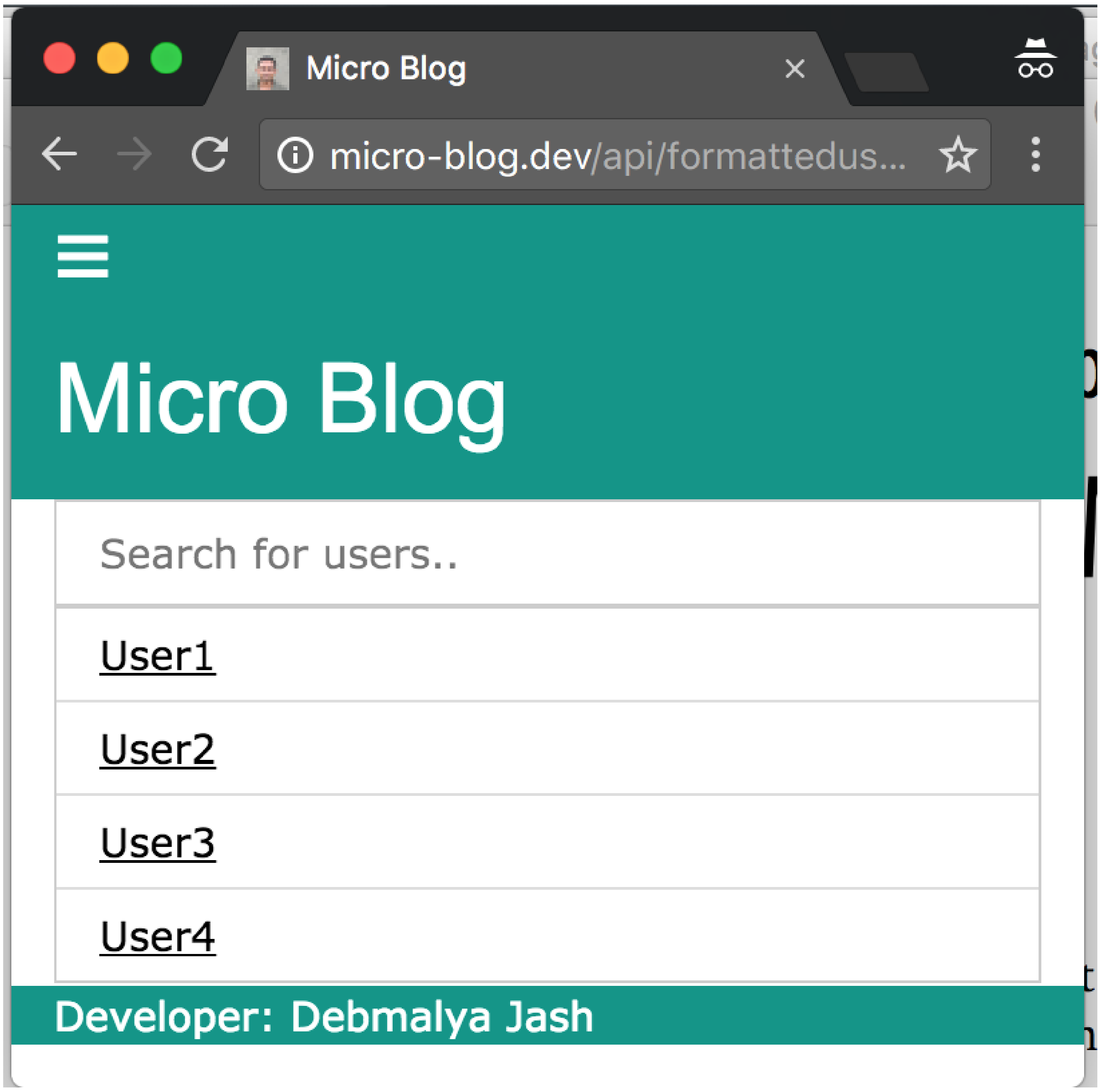
```
This search is case insensitive. I am using w3 css / data libraries for this.
```

Functionality get list of users



User1

User2

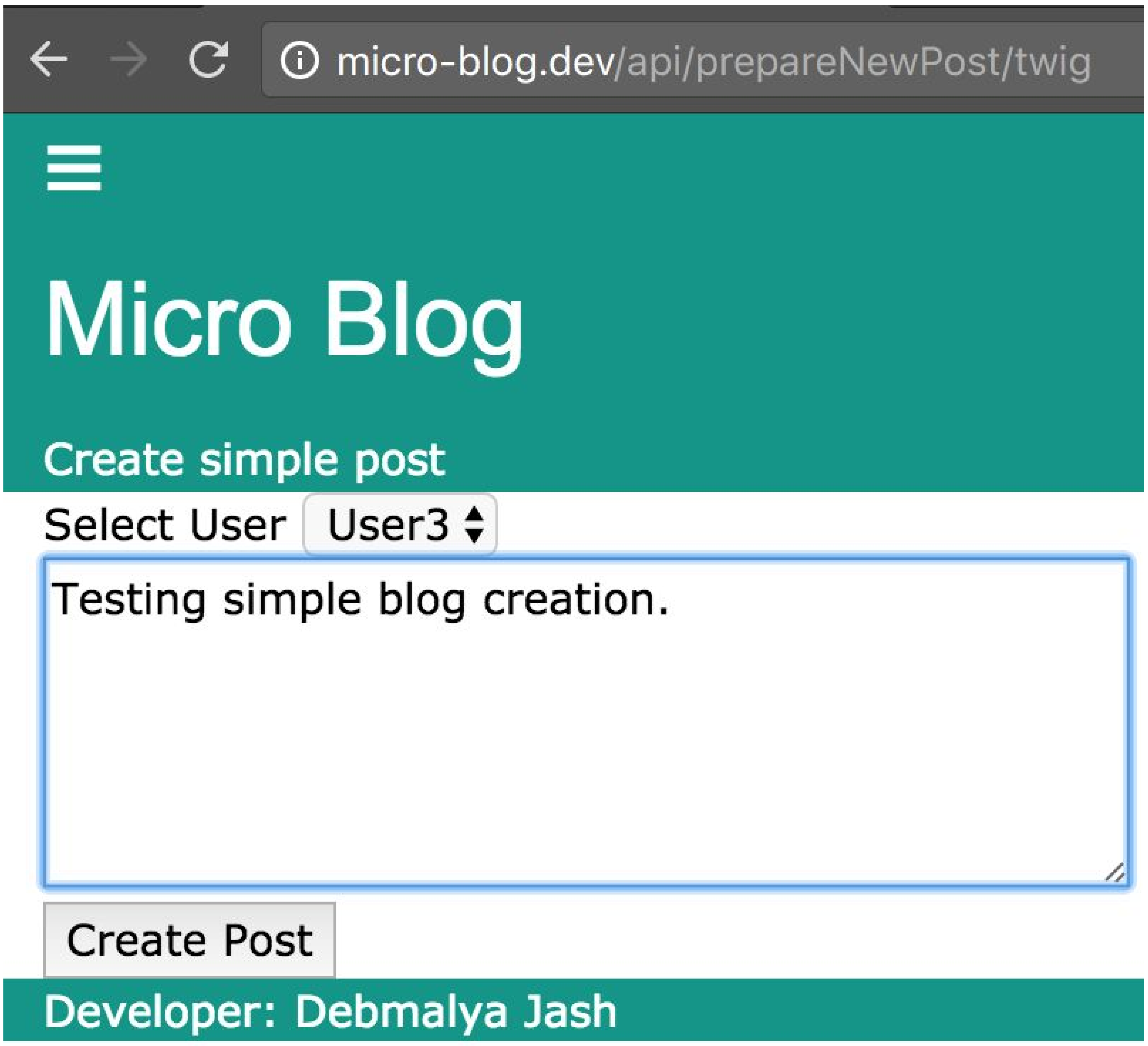
User3

User4

Developer: Debmalya Jash

Each user will be a link. On clicking on that user it will display the list of blogs posted by that user.

Create a simple post



micro-blog.dev/api/prepareNewPost/twig

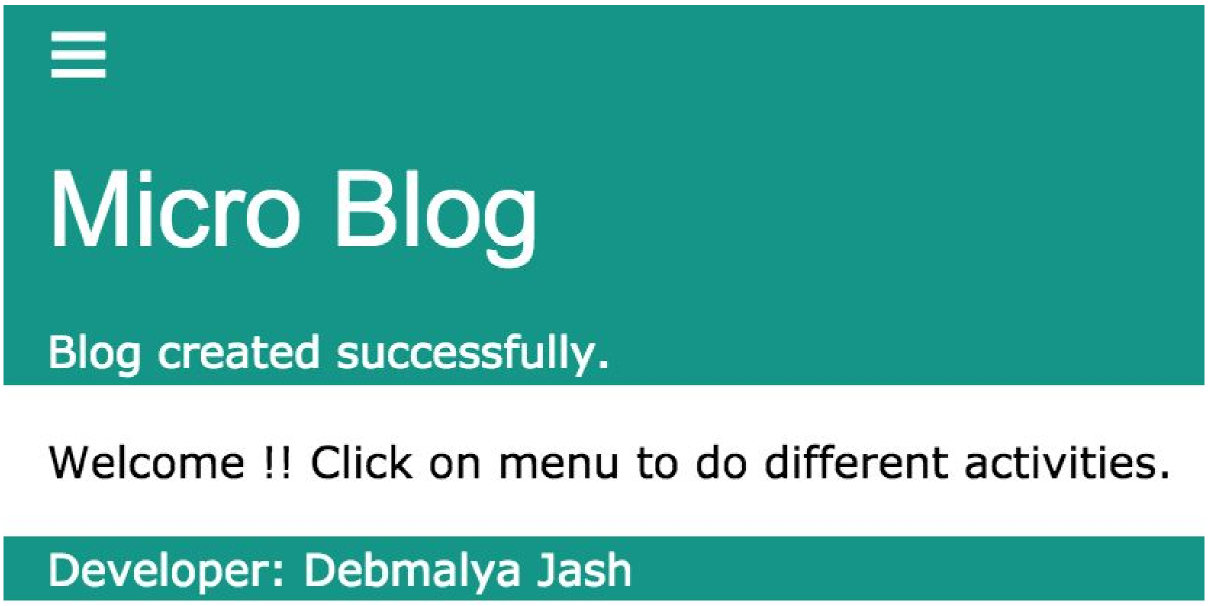
Micro Blog

Create simple post

Select User: User3

Testing simple blog creation.

Developer: Debmalya Jash



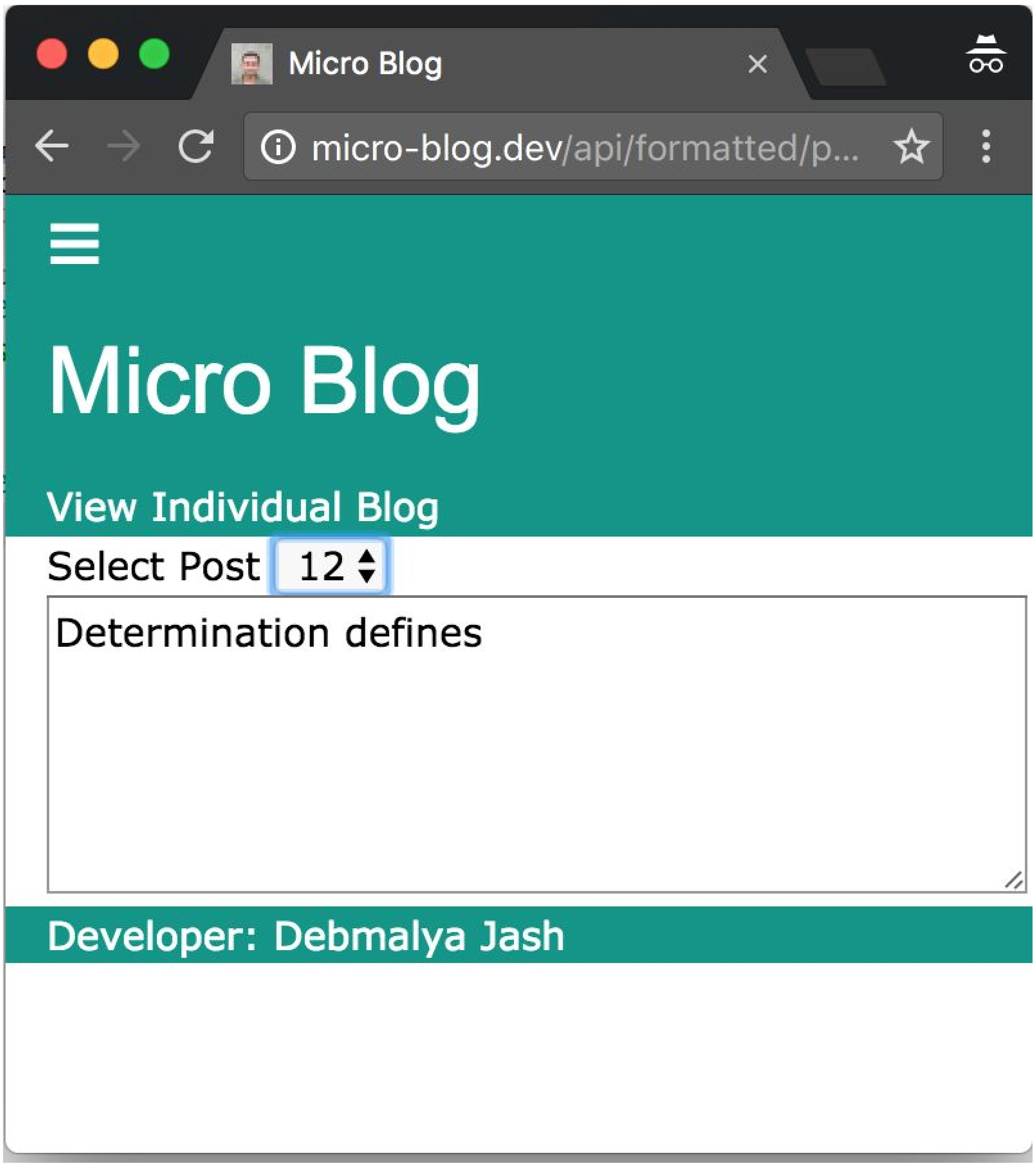
Micro Blog

Blog created successfully.

Welcome !! Click on menu to do different activities.

Developer: Debmalya Jash

View individual post


Micro Blog

micro-blog.dev/api/formatted/p...

Micro Blog

View Individual Blog

Select Post 12

Determination defines

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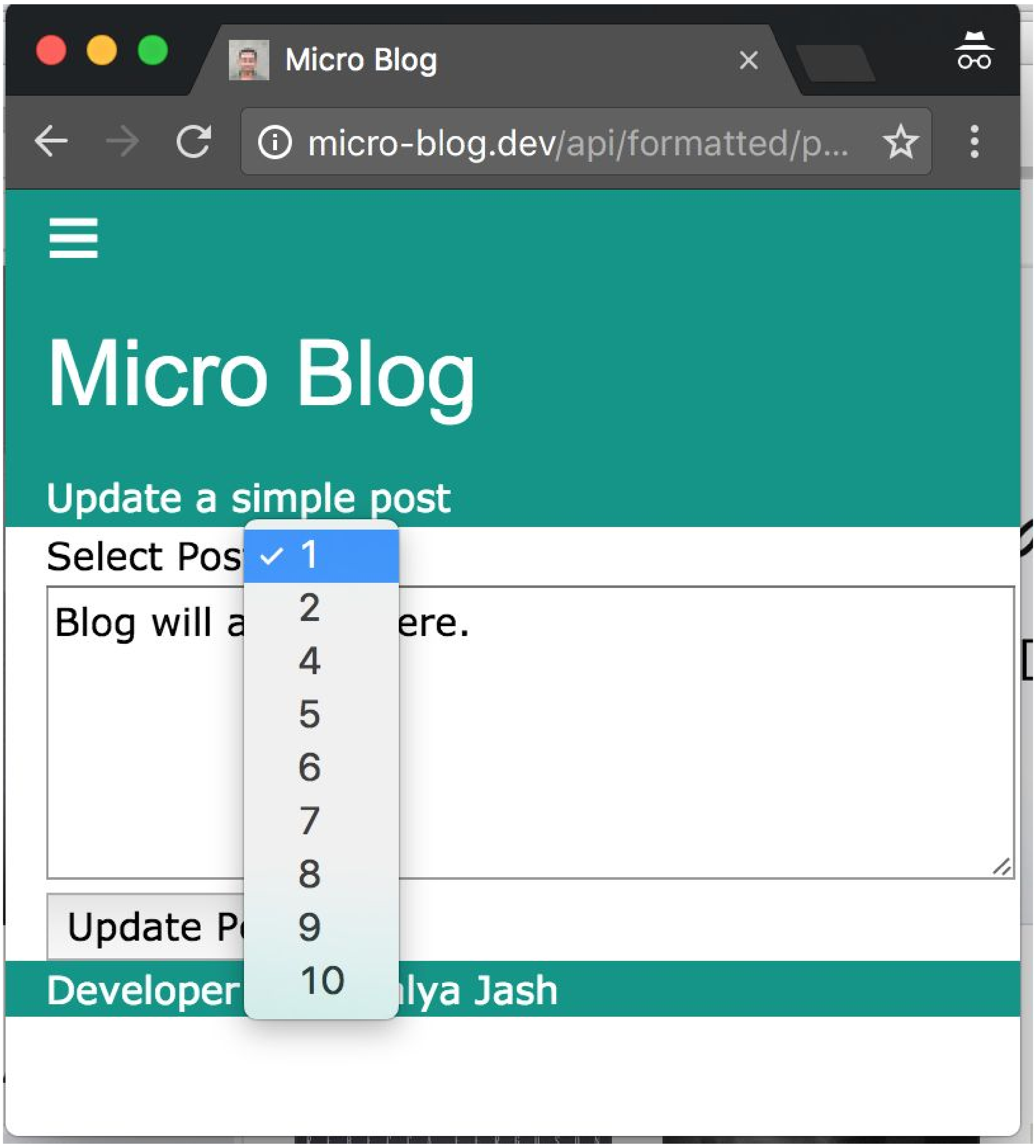
I have a drop down of rowid, on selecting a rowid that post will appear in the text box. Code for this is

```
 $("#post_id").change(function () {
        $.ajax({
            url: "/api/posts/id/"+ $(this).val()
        }).then(function (data) {
            $('#content').val(data.content);
        });
    });
```

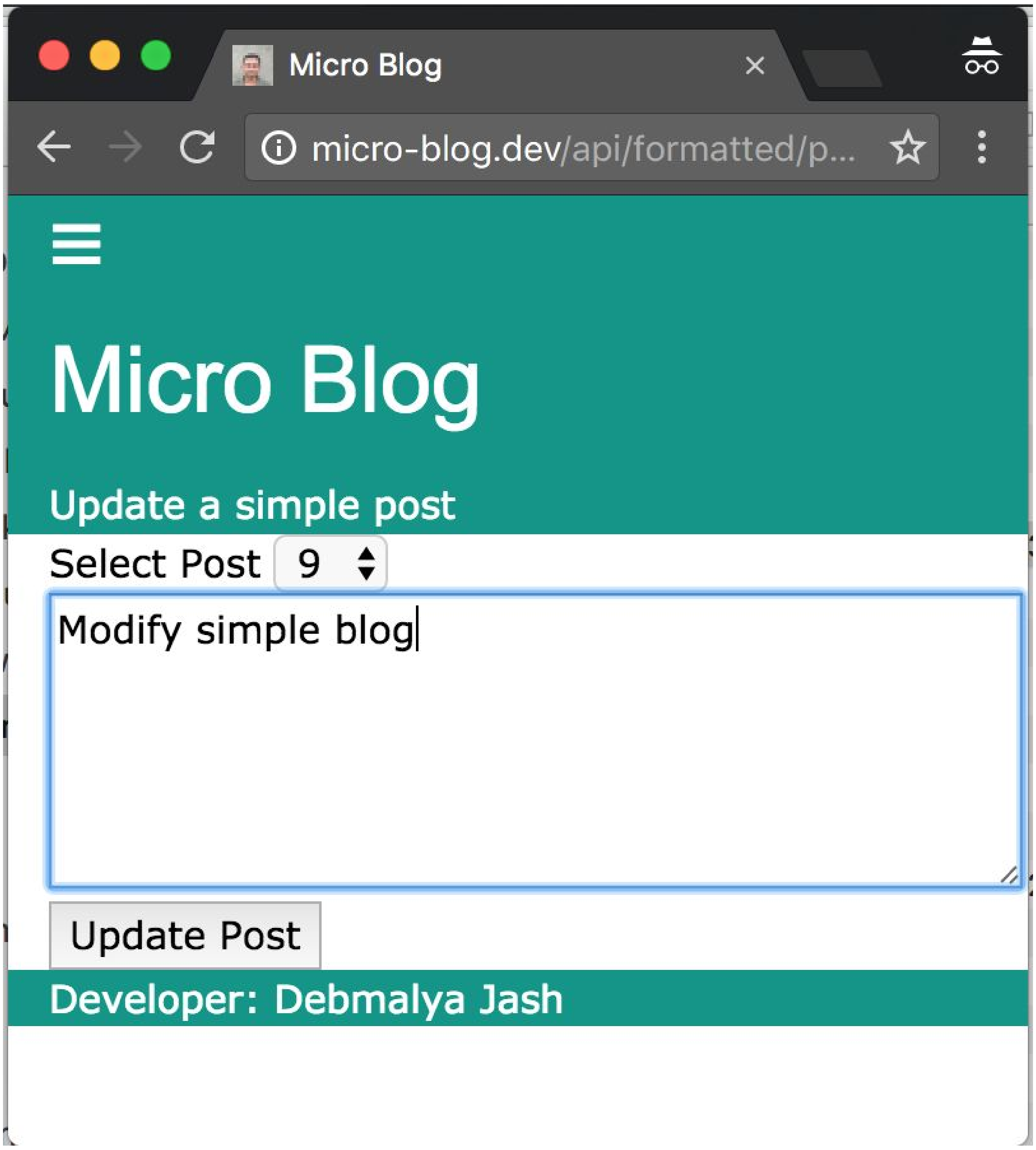
Developer : Debmalya Jash

Update a simple blog

From the menu select ‘update a simple blog’.
From the drop down select postid.

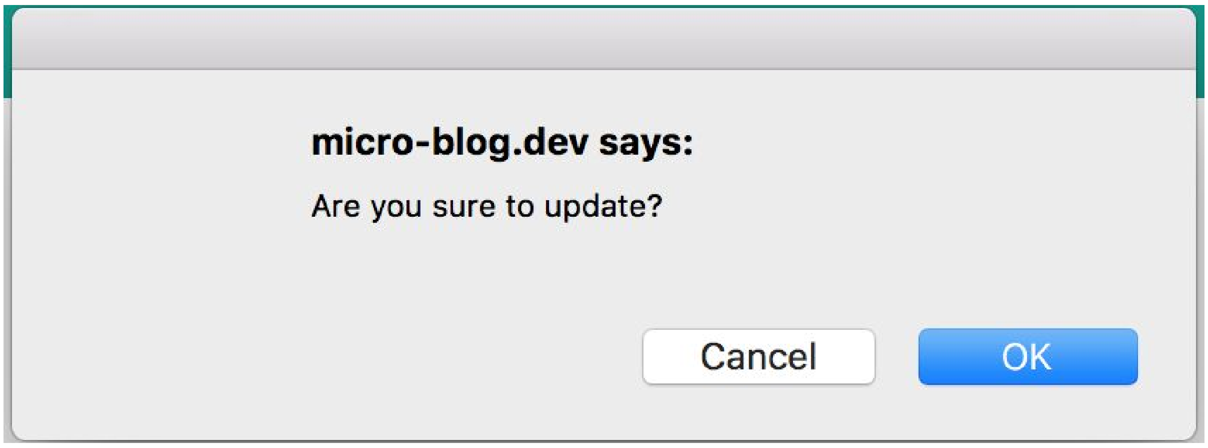


Modify the post.



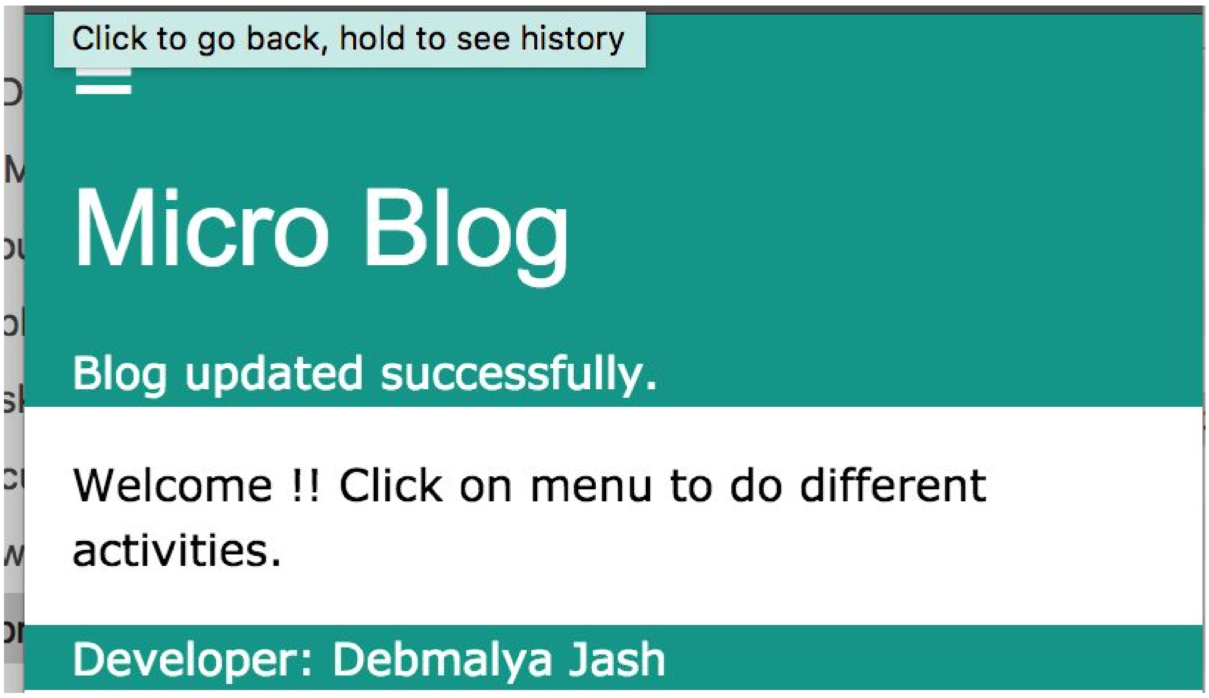
Modify simple blog

Click on ‘Update Post’.


micro-blog.dev says:

Are you sure to update?

Display of Status Message



Blog updated successfully.

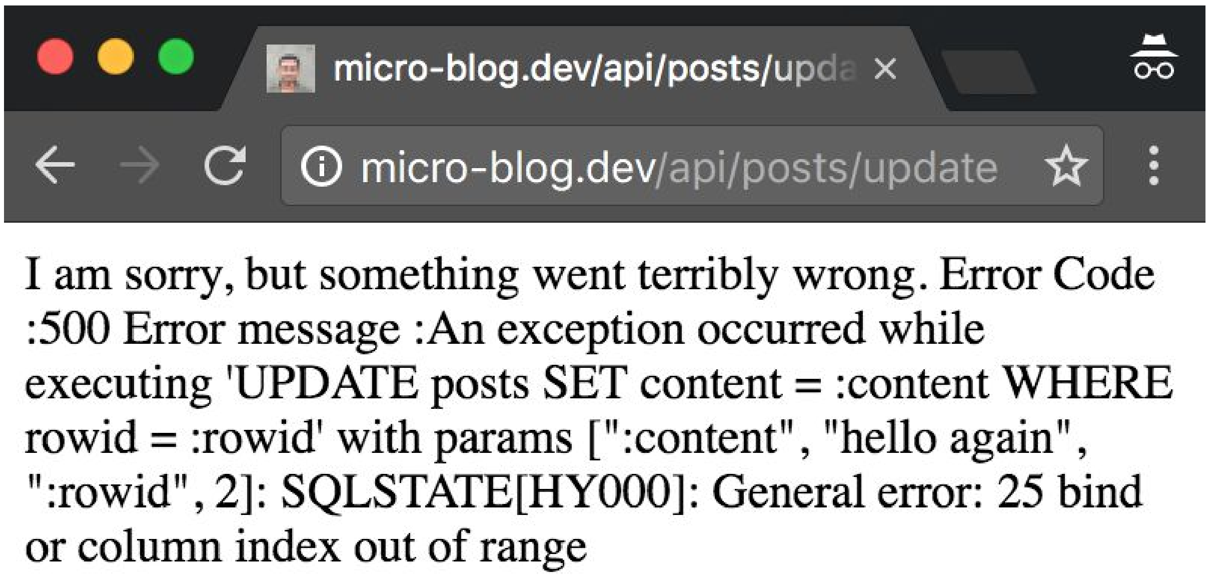
Welcome !! Click on menu to do different activities.

Developer: Debmalya Jash

Status message “Blog updated successfully”.

Display of Error Message

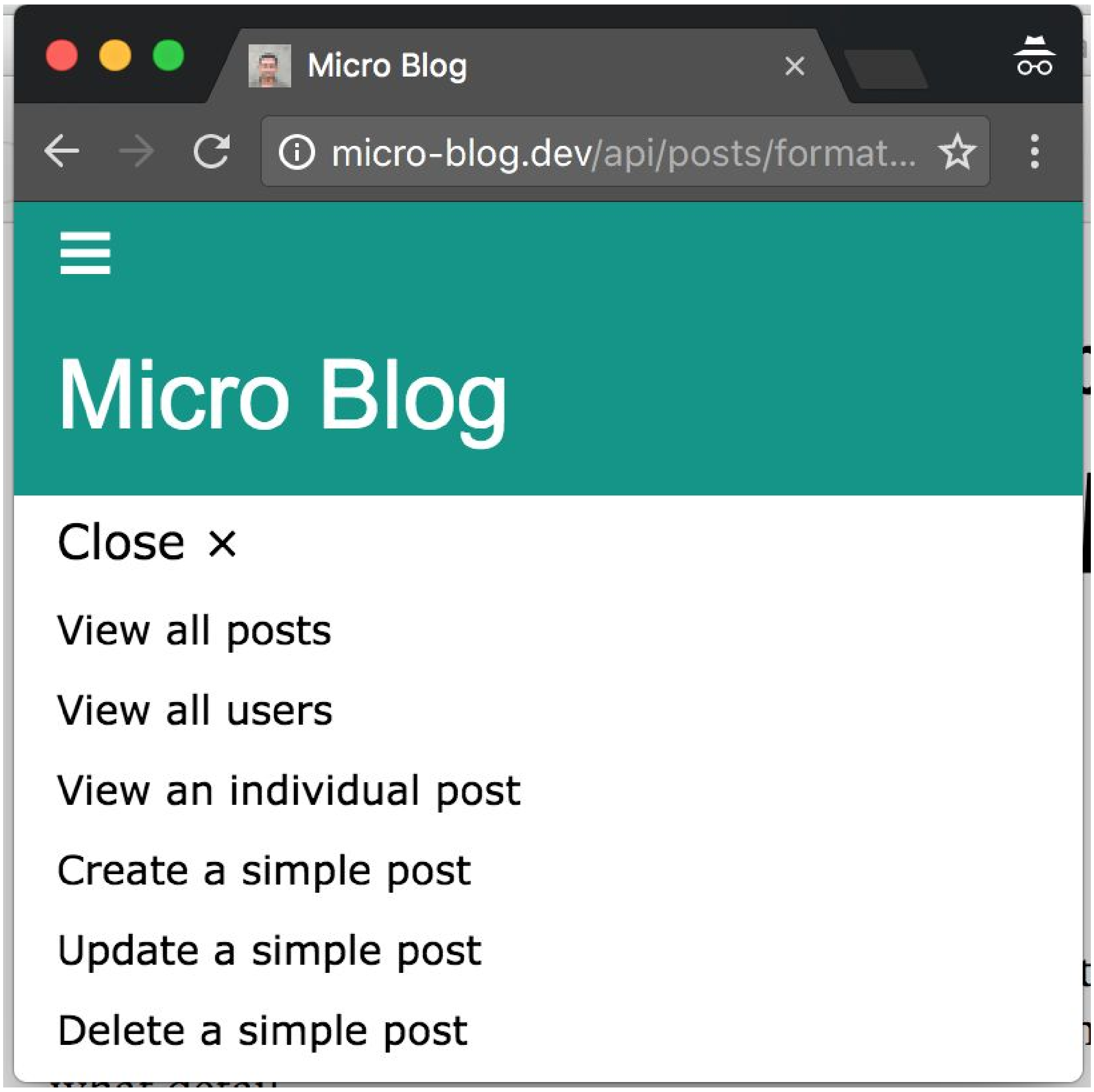
Sample error message screen.


micro-blog.dev/api/posts/upda
micro-blog.dev/api/posts/update

I am sorry, but something went terribly wrong. Error Code :500 Error message :An exception occurred while executing 'UPDATE posts SET content = :content WHERE rowid = :rowid' with params [":content", "hello again", ":rowid", 2]: SQLSTATE[HY000]: General error: 25 bind or column index out of range

I will try to represent the errors in prettier way.

Menu



List of APIs

API	Status	Description	Remarks
/api/posts	Modified	Existing	Provided checking if there is no post at all.
/api/formattedposts/{format}	New	To get posts in different format.	

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		Currently It supports twig template.	
/api/formattedusers/{format}	New	To get user details in different formats. Currently it supports twig template.	
/api/posts/user/{user_id}	Modified	Existing	Provided checking if there is any post for the user.
/api/posts/formatteduser/{user_id}/{format}	New	To get all the blogs of an user in different formats. Currently it supports twig template.	Each user has hyperlink. On clicking on the hyperlink all the blogs for that user will appear.
/api/posts/id/{post_id}	Modified	Existing	Provided checking if there is any post for the post id.
/api/formattedposts/{format}/{post_id}	New	To get post for the passed id in different format . Currently it supports twig template.	
/api/posts/new	New	To create new post	
/api/formattedposts/new	New	To create new post get specific template, currently supported template is ‘twig’.	
/api/prepareNewPost/{format}	New	To prepare template for create simple blog. It will populate the list of users.	
/api/posts/delete	New	To delete a post	
/api/posts/update	New	To update a post	
/api/postid	New	To get all rowids from posts	
/api/postid/{id}	New	To get content of a blog. Id is passed as parameter.	

List of views (twig templates)

Twig template name	Purpose	Remarks
blogs.twig	To display blogs	Try to merge these three into one. Based on some parameter either delete, update link button will appear.
create.post.twig	To create blog	
single_blog.view.twig	To view individual blog	
single_blog.update.twig	To update individual blog	
single_blog.delete.twig	To delete individual blog	
footer.twig	To display footer	
form.html	Trying with twig macro	
header.twig	To display header	
index.twig	To display the landing page	
user.link.twig	To display user. Each user is a link to display all of their blogs.	
users.twig	To display users without any link.	

List of javascripts

Javascript file name	Purpose	Remarks
jquery-3.1.1.min.js	jQuery library	To call web service, handling different event like form confirmation, drop down selection.
functionality1.js	To handle menu opening and closing.	
w3data14.js	W3data javascript library	W3 CSS and W3 data library used for responsive web designing. They are reported to be faster than

		bootstap.
blog_controller15.js	With the help of jQuery and w3data14.js here I handled web service call, form confirmation, on keyup event user search and blog search.	In future like to make it a full fledged controller. More separation of code from model.

API Web Service Changes

Functionality

Listing all posts

Changes in index.php

```
$app->get('/api/posts', function() use($app) {
    $sql = "SELECT rowid, * FROM posts";
    $posts = $app['db']->fetchAll($sql);

    if (count($posts) == 0) {
        return new Response("There is no post.", 404);
    }

    return $app['twig']->render('blogs.twig', array('posts' => $posts, ));
});
```

Create User table

use Doctrine\DBAL\Schema\Table;
// Create user table

```
    $schema = $app['db']->getSchemaManager();
    if (!$schema->tablesExist('users')) {
       $users = new Table('users');
       $users->addColumn('user_id', 'integer', array('unsigned' => true,
'autoincrement' => true));
       $users->setPrimaryKey(array('user_id'));
       $users->addColumn('user_name', 'string', array('length' => 32));
       $users->addUniqueIndex(array('user_name'));
       $schema->createTable($users);

       // insert sample rows
       $app['db']->insert('users', array( 'user_name' => 'User1',));
       $app['db']->insert('users', array( 'user_name' => 'User2',));
       $app['db']->insert('users', array( 'user_name' => 'User3',));
```

Developer : Debmalya Jash

```
        $app['db']->insert('users', array( 'user_name' => 'User4',));
    }
```

Get list of users (Added functionality)

```
$app->get('/api/users', function() use($app) {
    $sql = "SELECT rowid, * FROM users";
    $posts = $app['db']->fetchAll($sql);

    if (count($posts) == 0) {
        return new Response("There is no users.", 404);
    }

        return $app['twig']->render('users.twig', array('posts' => $posts, ));
});
```

Create a simple blog

```
$app->post('/api/posts/new', function (Request $request) use ($app) {
        $user_id = $request->request->get('user_id');
        $content = $request->request->get('content');

    $app['db']->insert('posts', array( 'content' => $content, 'user_id' =>
    (int)$user_id, 'date' => time()));
    $posts = array('message' => 'Blog created successfully.');
    return $app->json($posts, 200);
});
```

Where is error handling ? - I will try to put this in try catch block.
Where is retry mechanism? If there is database down, or network issue will it retry ?

View individual blog

To view individual blog i rely on following apis
/api/postid
/api/formatted/postid/{format}

Delete a simple blog

```
$app->delete('/api/posts/delete', function (Request $request) use ($app){
    $post_id = $request->request->get('post_id');
    $app['db']->delete('posts', array( 'rowid' => (int)$post_id,));
    $posts = array('message' => 'Blog deleted successfully.','rowid'=>$post_id);
    return $app->json($posts, 200);
});
```

Needs more error handling like database down, network issue etc. Have to implement retry mechanism (delayed retry, count retry (e.g. 3 times).

Developer : Debmalya Jash

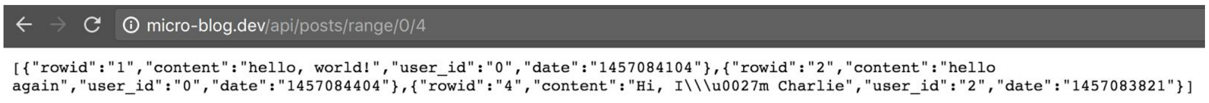
Update a simple blog

```
$app->put('/api/posts/update', function (Request $request) use ($app){
    $post_id = $request->request->get('post_id');
    $content = $request->request->get('content');
    $sql = "UPDATE posts SET content = :content WHERE rowid = :rowid";
    $app['db']->executeUpdate($sql, array($content,(int)$post_id));
    $posts = array('message' => 'Blog id $post_id updated successfully.');
    return $app->json($posts, 200);
});
```

Having Fun

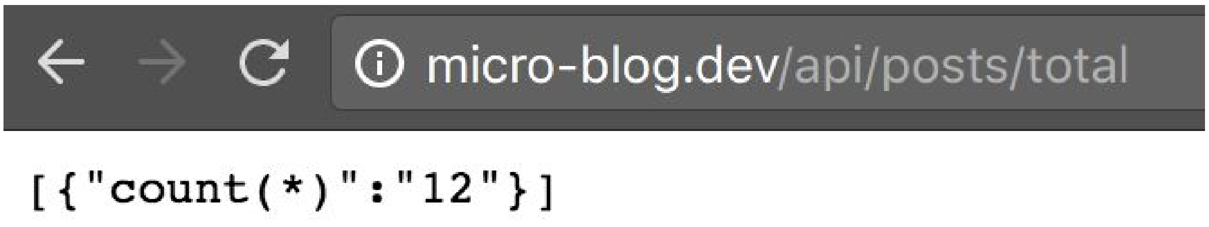
Making new API is fun. Let me have more fun. I want to have an api, which will give me the posts from particular range (rowid 0 to rowid 4). How will it look like?

```
$app->get('/api/posts/range/{from}/{to}', function($from,$to) use($app) {
    $sql = "SELECT rowid, * FROM posts where rowid >= ? and rowid <= ?";
    $posts = $app['db']->fetchAll($sql, array((int) $from,(int) $to));
    if (count($posts) == 0) {
        return new Response("There is no record.", 404);
    }

    return $app->json($posts, 200);
});
```



```
[{"rowid":"1","content":"hello, world!","user_id":"0","date":"1457084104"},{"rowid":"2","content":"hello
again","user_id":"0","date":"1457084404"},{"rowid":"4","content":"Hi, I\\\u0027m Charlie","user_id":"2","date":"1457083821"}]
```

```
/**
 * Get total number of posts.
 */
$app->get('/api/posts/total', function() use($app) {
    $sql = "SELECT count(*) FROM posts";
    $posts = $app['db']->fetchAll($sql);
    if (count($posts) == 0) {
        return new Response("There is no post.", 404);
    }

    return $app->json($posts, 200);
});
```



```
[{"count(*)":"12"}]
```

```php
/**
 * Get total number of posts group by user
 */
$app->get('/api/posts/group_by_user', function() use($app) {
    $sql = "SELECT user_id,count(*) FROM posts group by user_id";
    $posts = $app['db']->fetchAll($sql);
    if (count($posts) == 0) {
        return new Response("There is no post.", 404);
    }

    return $app->json($posts, 200);
});
```

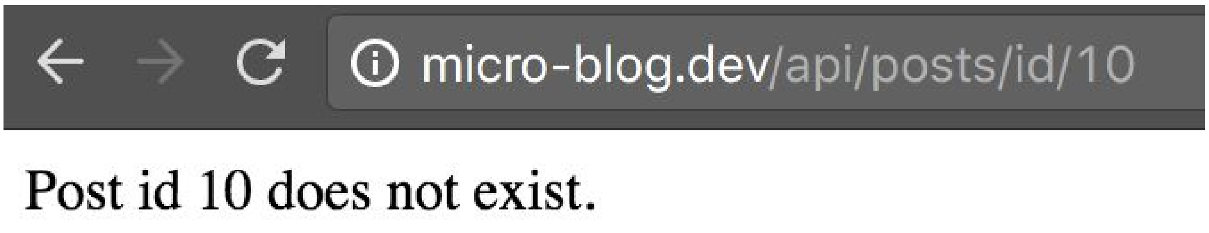
```
[{"user_id":"0","count(*)":"2"},{"user_id":"1","count(*)":"2"},{"user_id":"2","count(*)":"2"},{"user_id":"3","count(*)":"3"},{"user_id":"4","count(*)":"3"}]
```

Error handling

```php
$app->error(function (\Exception $e, $code) {
    return new Response('I am sorry, but something went terribly wrong.' . " Error
Code :" . $code . " Error message :" . $e->getMessage());
});
```

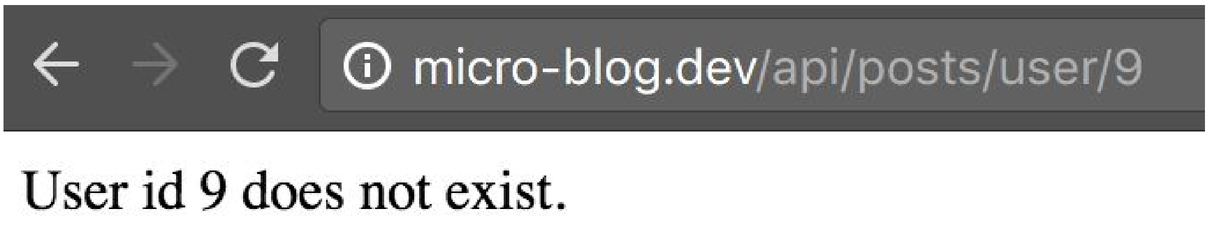
Validation

1. Post id must be a positive integer, ->assert('id', '\d+');
2. Error message for non existing post id.



```
Post id 10 does not exist.
```

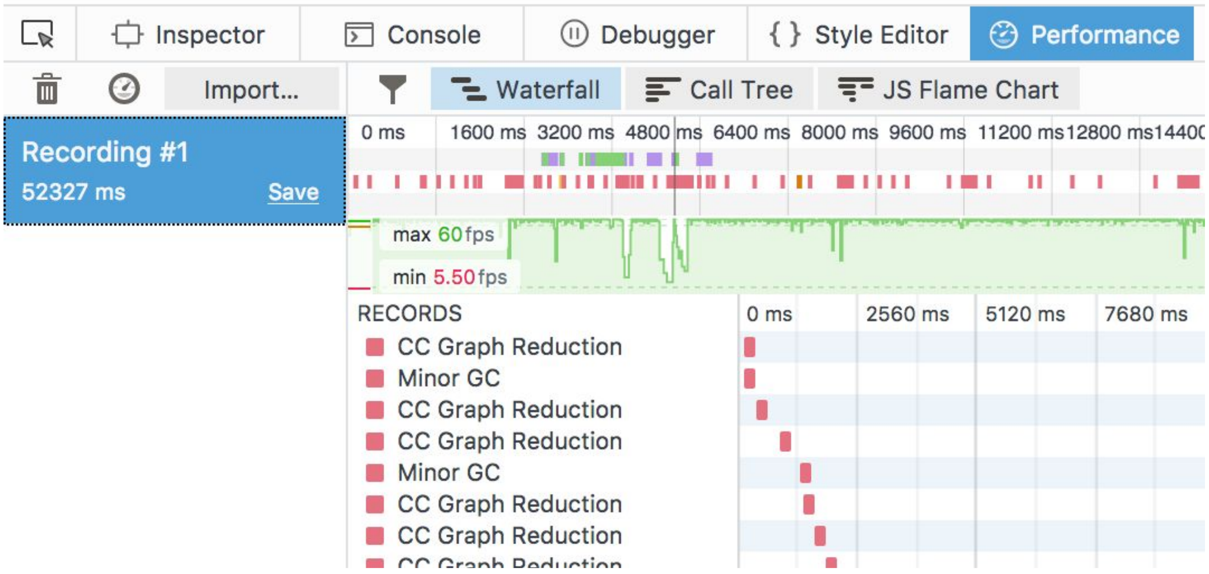
3. Error message for non existing user id.



micro-blog.dev/api/posts/user/9

User id 9 does not exist.

Performance



RECORDS
CC Graph Reduction
Minor GC
CC Graph Reduction
CC Graph Reduction
Minor GC
CC Graph Reduction
CC Graph Reduction
CC Graph Reduction

Will test more.

File List

File Name	Location	Purpose
index.php	src	Our model.
All javascripts files	src/assets/javascripts	Managing the show.
All twig files	src/views	The view of three musketeers MVC.

Before release checklist

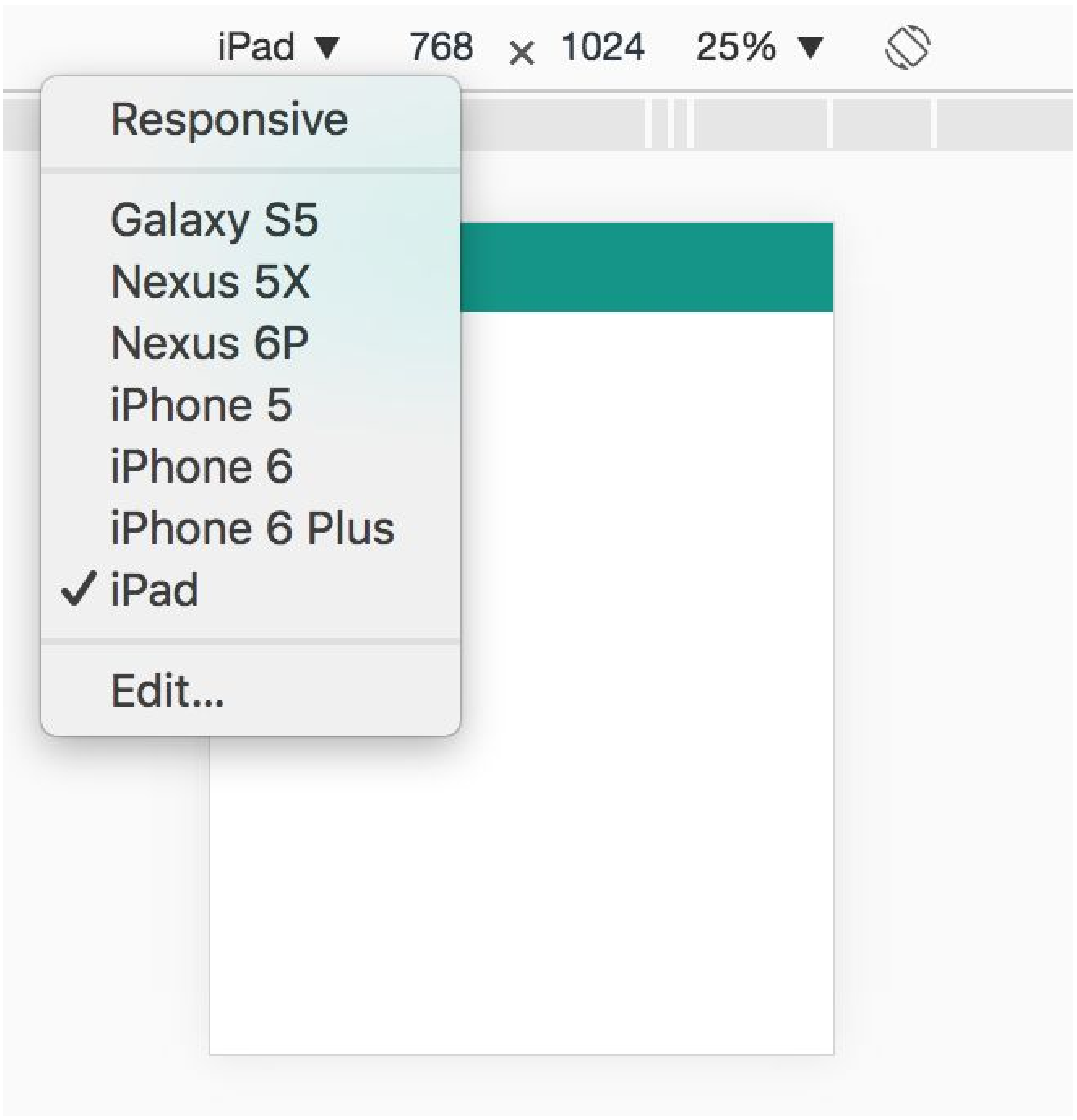
Developer : Debmalya Jash

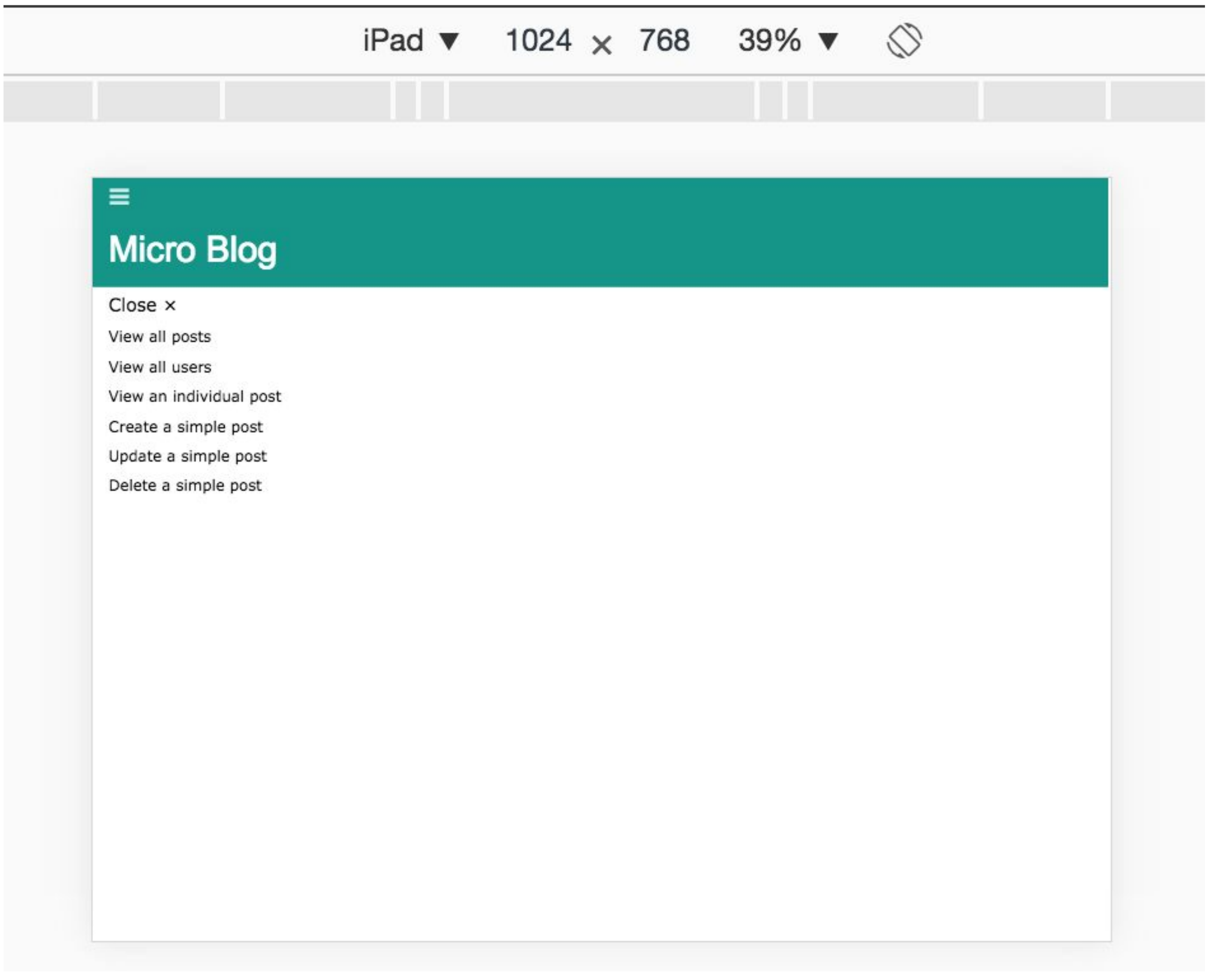
Functionality	OK ?
1. View all posts?	
2. View all Users?	
3. After getting all the list of users, click on the user link to check whether all his/her post appeared?	
4. Whether view individual post is working or not?	
5. Check whether create a simple post is working or not?	
6. Check whether update a simple post is working or not?	
7. Check whether delete a simple post is working or not?	

Check these functionalities in the following browser

Browser Name	OK?
IE	
Google Chrome	
Safari	
Firefox	

Check these functionalities in different screen resolution


iPad ▼
768 × 1024
25% ▼
Responsive
Galaxy S5
Nexus 5X
Nexus 6P
iPhone 5
iPhone 6
iPhone 6 Plus
✓ iPad
Edit...



Improvement

Lazy fetching and pagination.

Reduce communication with server. Communication with server should be as minimum as possible.

Service /Template Controller

```
Create a template controller or template engine, so that template provider (e.g.
twig) can be changed any time. Template provider change will be just a matter of
configuration and addition /modification of template files.
```

Reduce database communication

Use HttpCacheServiceProvider, to reduce database hit.

Developer : Debmalya Jash

Add test code

For this I can use phpunit or Web test case.

Twig macro

I can improve twig files by create a macro for the basic one, then extending on that.

Prevent SQL injection

Have to use htmpspecialcharacter

UTF-8 character handling

This one is not tested.