

NationBuilder Programming Challenge

Design and Test File

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1. Overview

The project use Ruby On Rails to develop.

https://github.com/yuzhangcmu/ChatRoom_REST_API

Because "type" and "date" is reserved by the SQL, so I use "event_type" and "event_date" to replace them.

2. How to run

Enter the "code" folder, then run "rails s" to run the server.

Then we can access the web server through the URL:

<http://127.0.0.1:3000/events>

3. Test Cases

● Submit Event

The Test Tool:

chrome-extension://hgmloofddffdnphfgcellkdfbfbjeloo/RestClient.html#RequestPlace:default

submit URL:

<http://127.0.0.1:3000/events>

User enters the room:

{"event_date": "2015-12-30T23:59:59Z", "user": "Alice", "event_type": "enter"}

Result:

Status **200 OK**  Loading time: 38 ms

Request headers

```
User-Agent: Mozilla/5.0 (Macintosh; Intel Mac OS X 10_9_5) AppleWebKit/537.36 (KHTML, like Gecko) Chrome/39.0.2171.95 Safari/537.36
Origin: chrome-extension://hgmlloofddfdnphgcellkdfbfbjeloo
Content-Type: application/json
Accept: /*
Accept-Encoding: gzip, deflate
Accept-Language: en-US,en;q=0.8,zh-CN;q=0.6,zh-TW;q=0.4
Cookie: request_method=GET;
        _first_app_session=SVV3c1BsVGxTQ0NVaDdsSUI0eINYVzRjSXVydzJGS2Jjb2VHC
        -d9a1ee2c3c36a3eda3329f6258cfda0666d4a8e9
```

Response headers

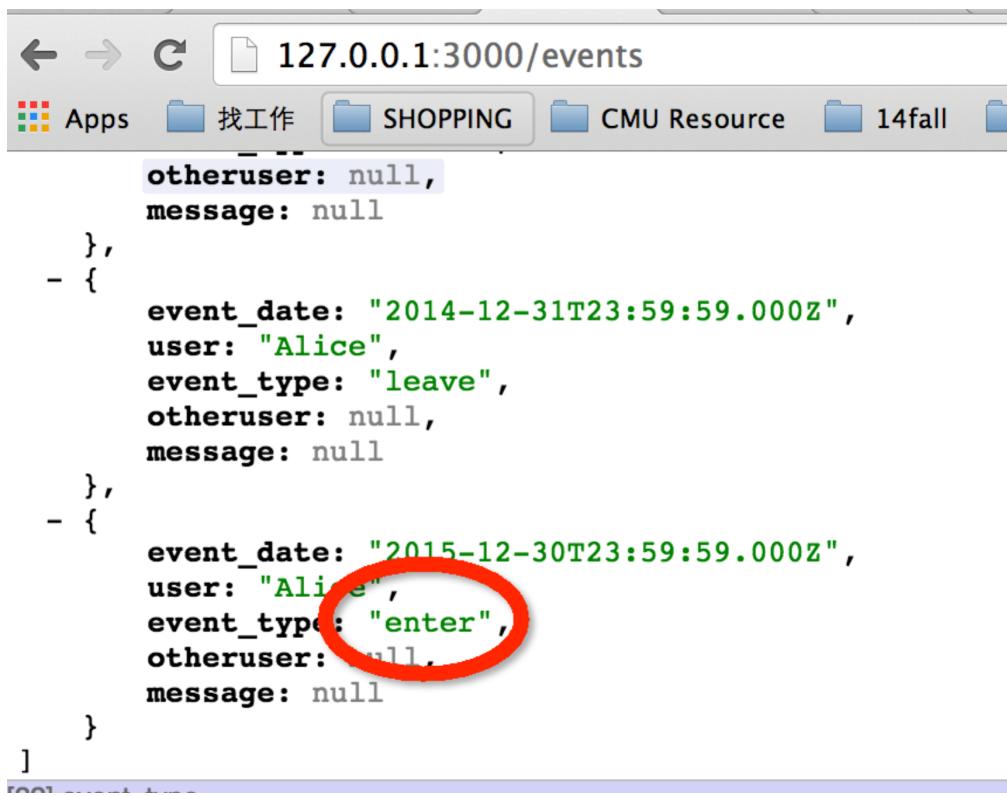
```
X-Frame-Options: SAMEORIGIN
X-Xss-Protection: 1; mode=block
X-Content-Type-Options: nosniff
X-UA-Compatible: chrome=1
Content-Type: application/json; charset=utf-8
Etag: "0f0479874bf6f4a7281099b15df27c27"
Cache-Control: max-age=0, private, must-revalidate
X-Request-Id: 68740493-177a-438e-b89f-1aeeac42b034
X-Runtime: 0.011247
Server: WEBrick/1.3.1 (Ruby/2.0.0/2013-06-27)
Date: Tue, 17 Feb 2015 03:50:35 GMT
Content-Length: 15
Connection: Keep-Alive
Set-Cookie: request_method=POST; path=/
Set-Cookie: _first_app_session=VS9sT3JBVMVM2cjQvQTBYN3JIU3IRVkJNdydExYMKFweEhXMjNV
        -7310a3d8e6f25ad928995bd04f5f5825ad4f3911; path=/; HttpOnly
```

Raw JSON Response

[Copy to clipboard](#) [Save as file](#)

```
{  
    status: "ok"  
}
```

The enter event is added to the list:



```
127.0.0.1:3000/events
[{"otheruser": null, "message": null}, {"event_date: "2014-12-31T23:59:59.000Z", "user": "Alice", "event_type": "leave", "otheruser": null, "message": null}, {"event_date: "2015-12-30T23:59:59.000Z", "user": "Alice", event_type: "enter", "otheruser": null, "message": null}]
```

User comments in a room:

```
{"event_date": "2015-12-30T23:59:59Z", "user": "Alice", "event_type": "comment", "message": "hello, this is a sample message"}
```

Status	200 OK ⓘ Loading time: 25 ms
Request headers	User-Agent: Mozilla/5.0 (Macintosh; Intel Mac OS X 10_9_5) AppleWebKit/537.36 (KHTML, like Gecko) Chrome/39.0.2171.95 Safari/537.36 Origin: chrome-extension://hgmloofddfdnphfgcellkdfbjeloo Content-Type: application/json ⚡ Accept: */* Accept-Encoding: gzip, deflate Accept-Language: en-US,en;q=0.8,zh-CN;q=0.6,zh-TW;q=0.4 Cookie: request_method=GET; _first_app_session=a3hHY09vajdTZ0NqaTdRRFdNa25VNjh6d'-46dbdbf81cb981e5aad2a610084098db617782e1
Response headers	X-Frame-Options: SAMEORIGIN X-Xss-Protection: 1; mode=block X-Content-Type-Options: nosniff X-UA-Compatible: chrome=1 Content-Type: application/json; charset=utf-8 ⚡ Etag: "0f0479874bf6f4a7281099b15df27c27" Cache-Control: max-age=0, private, must-revalidate ⚡ X-Request-Id: e496aaaf1-e236-4a3f-8744-4dab8ece4f5b X-Runtime: 0.008533 Server: WEBrick/1.3.1 (Ruby/2.0.0/2013-06-27) ⚡ Date: Tue, 17 Feb 2015 03:53:31 GMT ⚡ Content-Length: 15 ⚡ Connection: Keep-Alive Set-Cookie: request_method=POST; path=/ Set-Cookie: _first_app_session=NURNayt5aUxEbnNiU1cwb2hYWFRWb2F'-dd96a16e49d68efe3d58a2a269358a56064ef4ad; path=/; HttpOnly

Raw	JSON	Response
Copy to clipboard Save as file	<pre>{ status: "ok" }</pre>	

The event is added into the list:

```

- {
    event_date: "2015-12-30T23:59:59.000Z",
    user: "Alice",
    event_type: "comment",
    otheruser: null,
    message: "hello, this is a sample message"
}

```

User “high-fives” another user:

```
{"event_date": "2015-12-30T23:59:59Z", "user": "Alice", "event_type": "highfive", "otheruser": "Bob"}
```

REPLY:

Status	200 OK	Loading time: 32 ms
Request headers	User-Agent: Mozilla/5.0 (Macintosh; Intel Mac OS X 10_9_5) AppleWebKit/537.36 (KHTML, like Gecko) Chrome/39.0.2171.95 Safari/537.36 Origin: chrome-extension://hgmloofddfdnphfgcellkdfbjeloo Content-Type: application/json Accept: */* Accept-Encoding: gzip, deflate Accept-Language: en-US,en;q=0.8,zh-CN;q=0.6,zh-TW;q=0.4 Cookie: request_method=GET; _first_app_session=eXMzYVdYMm54c052OXVkdko3S1Azb1hWW-79e2f524aa0b0b363435e3efb64a46e09af46e66	

Raw	JSON	Response
Copy to clipboard Save as file		
<pre>{ status: "ok" }</pre>		

The result:

```

- {
    event_date: "2015-12-30T23:59:59.000Z",
    user: "Alice",
    event_type: "highfive",
    otheruser: "Bob",
    message: null
}
1

```

User leaves the room:

```
{"event_date": "2014-12-31T23:59:59Z", "user": "Alice", "event_type": "leave"}
```

Payload

Raw	Form	Files (0)	Payload
Encode payload Decode payload <pre>{"event_date": "2014-12-31T23:59:59Z", "user": "Alice", "event_type": "leave"}</pre>			

application/json

Result:

Status **200 OK** loading time: 176 ms

Request headers

- ↳ Status: 200 OK
- ↳ User-Agent: Mozilla/5.0 (Macintosh; Intel Mac OS X 10_9_5) AppleWebKit/537.36 (KHTML, like Gecko) Chrome/40.0.2214.111 Safari/537.36
- ↳ Origin: chrome-extension://hgmlloofddfdnphfgcellkdfbjeloo
- ↳ Content-Type: application/json
- ↳ Accept: */*
- ↳ Accept-Encoding: gzip, deflate
- ↳ Accept-Language: en-US,en;q=0.8,zh-CN;q=0.6,zh-TW;q=0.4
- ↳ Cookie: request_method=POST;
- ↳ _first_app_session=ZzdNN0ZhZG5SUjZqUVJndEFrcHFLREdPTmpSbWgxVnh1U1c2V3pWdVJPeEhGV3JTZEIkRkNETINmQJMT3REc1ICd2hHV2Y2VvhxVkt-b5771d3fe8b3cc5909fade30d9794d8712db99c2

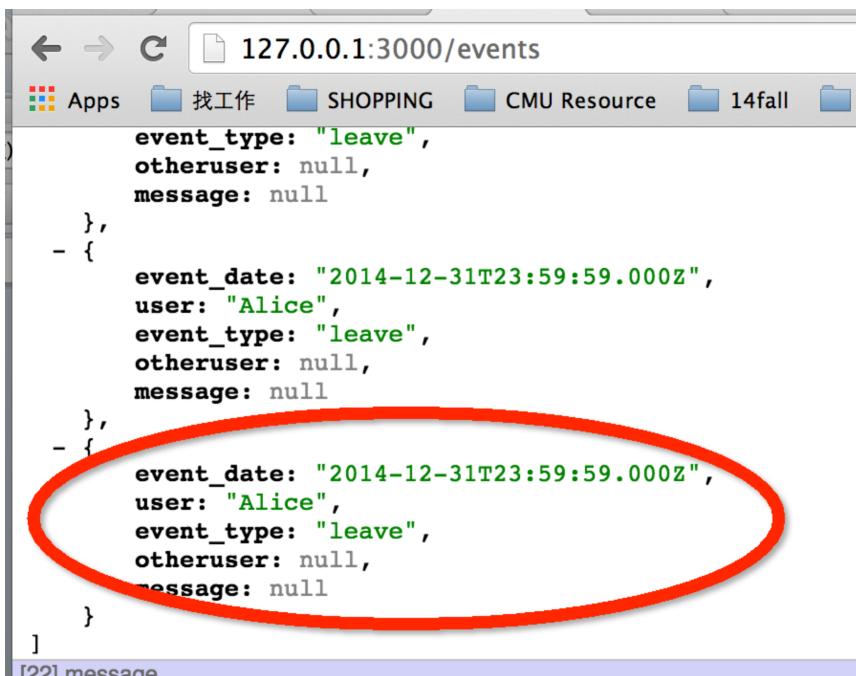
Response headers

- ↳ Status: 200 OK
- ↳ X-Frame-Options: SAMEORIGIN
- ↳ X-Xss-Protection: 1; mode=block
- ↳ X-Content-Type-Options: nosniff
- ↳ X-UA-Compatible: chrome=1
- ↳ Content-Type: application/json; charset=utf-8
- ↳ Etag: "0f0479874bf6f4a728109b15d27c27"
- ↳ Cache-Control: max-age=0, private, must-revalidate
- ↳ X-Request-Id: 3cfb292-2fac-4869-b112-5a335c31aa43
- ↳ X-Runtime: 0.158527
- ↳ Server: WEBrick/1.3.1 (Ruby/2.0.0/2013-06-27)
- ↳ Date: Tue, 17 Feb 2015 03:47:04 GMT
- ↳ Content-Length: 15
- ↳ Connection: Keep-Alive
- ↳ Set-Cookie: _first_app_session=ejFXU1ZHNkw0ZC1ORkiUYIQS1RYMG8xOVhnRHlUFZ6UmJbjg4alh4NWxPUGNreXBBWVZzQzVkn2NOSTE3ZHRkcVlrTk5kRUh1MHNC-0132bb00660597f2e65c2c9a2e4a69ebbd2de0f6; path=/; HttpOnly

Response

Raw	JSON	Response
Copy to clipboard Save as file <pre>{ status: "ok" }</pre>		

The event is added to the event list:



```

    event_type: "leave",
    otheruser: null,
    message: null
  },
  - {
    event_date: "2014-12-31T23:59:59.000Z",
    user: "Alice",
    event_type: "leave",
    otheruser: null,
    message: null
  },
  - {
    event_date: "2014-12-31T23:59:59.000Z",
    user: "Alice",
    event_type: "leave",
    otheruser: null,
    message: null
  }
]

```

• Event Details

GET /events?from=DATE&to=DATE

1. Test Case 1:

<http://127.0.0.1:3000/events?from=2015-02-15T23:53:00Z&to=2015-02-16T23:53:55Z>

The result:

Response headers	X-Frame-Options: SAMEORIGIN X-Xss-Protection: 1; mode=block X-Content-Type-Options: nosniff X-UA-Compatible: chrome=1 Content-Type: application/json; charset=utf-8 Etag: "1cf6fb5f1883c8667c3d1ac5cb09195" Cache-Control: max-age=0, private, must-revalidate X-Request-Id: 3fe486a6-430b-4c4a-8d53-5d39768316f0 X-Runtime: 0.090287 Server: WEBrick/1.3.1 (Ruby/2.0.0/2013-06-27) Date: Tue, 17 Feb 2015 04:22:26 GMT Content-Length: 565 Connection: Keep-Alive Set-Cookie: <code>_first_app_session=d2R6eXRFSGdkSnpKZmJCelNMQIU2NVZza1Fsb1RmMC9rWnRz-2cae60b3089cf8abebcd359e55967794f5c477e0; path=/; HttpOnly</code>
------------------	--

```
[  
  • {  
      o event_date: "2015-02-15T23:53:00.000Z",  
      o user: "Alice",  
      o event_type: "enter",  
      o otheruser: "",  
      o message: ""  
    },  
  • {  
      o event_date: "2015-02-15T23:54:00.000Z",  
      o user: "Alice",  
      o event_type: "comment",  
      o otheruser: "",  
      o message: "Hello, world!"  
    },  
  • {  
      o event_date: "2015-02-15T23:54:00.000Z",  
      o user: "Alice",  
      o event_type: "highfive",  
      o otheruser: "Bob",  
      o message: ""  
    },  
  },  
  • {  
      o event_date: "2015-02-15T23:57:00.000Z",  
      o user: "Alice",  
      o event_type: "leave",  
      o otheruser: "",  
      o message: ""  
    },  
  • {  
      o event_date: "2015-02-15T23:53:00.000Z",  
      o user: "Atom",  
      o event_type: "enter",  
      o otheruser: "",  
      o message: ""  
    }]
```

```

        } ,

    • {
        ○ event_date: "2015-02-15T23:54:00.000Z",
        ○ user: "Atom",
        ○ event_type: "comment",
        ○ otheruser: "",
        ○ message: "Hi, I am atom"

    } ,

    • {
        ○ event_date: "2015-02-16T07:37:00.000Z",
        ○ user: "Atom",
        ○ event_type: "enter",
        ○ otheruser: "",
        ○ message: ""

    } ,

    • {
        ○ event_date: "2015-02-16T10:36:00.000Z",
        ○ user: "Zhu",
        ○ event_type: "enter",
        ○ otheruser: "",
        ○ message: ""

    } ,

    • {
        ○ event_date: "2015-02-16T10:36:00.000Z",
        ○ user: "Atom",
        ○ event_type: "leave",
        ○ otheruser: "",
        ○ message: ""

    }
]


```

2. Test Case 2:

<http://127.0.0.1:3000/events?from=2015-02-15T23:53:00Z&to=2015-02-15T23:54:00Z>

[4:55Z](#)

The result:

```
[{"event_date": "2015-02-15T23:53:00.000Z", "user": "Alice", "event_type": "enter", "otheruser": "", "message": ""}, {"event_date": "2015-02-15T23:54:00.000Z", "user": "Alice", "event_type": "comment", "otheruser": "", "message": "Hello, world!"}, {"event_date": "2015-02-15T23:54:00.000Z", "user": "Alice", "event_type": "highfive", "otheruser": "Bob", "message": ""}, {"event_date": "2015-02-15T23:53:00.000Z", "user": "Atom", "event_type": "enter", "otheruser": "", "message": ""}, {"event_date": "2015-02-15T23:54:00.000Z", "user": "Atom", "event_type": "comment", "otheruser": "", "message": "Hi, I am atom"}]
```

• Event Summary

[GET /summary?from=DATE&to=DATE&by=TIMEFRAME](#)

First show all the date:

<http://127.0.0.1:3000/events>

```
[  
  • {  
    ○ event_date: "2015-02-15T23:53:00.000Z",  
    ○ user: "Alice",  
    ○ event_type: "enter",  
    ○ otheruser: "",  
    ○ message: ""  
  
  },  
  
  • {  
    ○ event_date: "2015-02-15T23:54:00.000Z",  
    ○ user: "Alice",  
    ○ event_type: "comment",  
    ○ otheruser: "",  
    ○ message: "Hello, world!"  
  
  },  
  
  • {  
    ○ event_date: "2015-02-15T23:54:00.000Z",  
    ○ user: "Alice",  
    ○ event_type: "highfive",  
    ○ otheruser: "Bob",  
  }
```

```
        ○ message: ""

    } ,

• {
    ○ event_date: "2015-02-15T23:57:00.000Z",
    ○ user: "Alice",
    ○ event_type: "leave",
    ○ otheruser: "",
    ○ message: ""

} ,

• {
    ○ event_date: "2015-02-15T23:53:00.000Z",
    ○ user: "Atom",
    ○ event_type: "enter",
    ○ otheruser: "",
    ○ message: ""

} ,

• {
    ○ event_date: "2015-02-15T23:54:00.000Z",
    ○ user: "Atom",
    ○ event_type: "comment",
    ○ otheruser: "",
    ○ message: "Hi, I am atom"

} ,

• {
    ○ event_date: "2015-02-16T07:37:00.000Z",
    ○ user: "Atom",
    ○ event_type: "enter",
    ○ otheruser: "",
    ○ message: ""

} ,

• {
    ○ event_date: "2015-02-16T10:36:00.000Z",
    ○ user: "Zhu",
    ○ event_type: "enter",
```

```
        },
    },
    {
        event_date: "2015-02-16T10:36:00.000Z",
        user: "Atom",
        event_type: "leave",
        otheruser: "",
        message: ""
    },
    {
        event_date: "2007-12-31T23:59:59.000Z",
        user: "Alice",
        event_type: "enter",
        otheruser: null,
        message: null
    },
    {
        event_date: "2014-12-31T23:59:59.000Z",
        user: "Alice",
        event_type: "enter",
        otheruser: null,
        message: null
    },
    {
        event_date: "2014-12-31T23:59:59.000Z",
        user: "Alice",
        event_type: "enter",
        otheruser: null,
        message: null
    },
    {
        event_date: "2014-12-31T23:59:59.000Z",
        user: "Alice"
    }
}
```

```
        ○ event_type: "enter",
        ○ otheruser: null,
        ○ message: null

    } ,

• {
    ○ event_date: "2014-12-31T23:59:59.000Z",
    ○ user: "Alice",
    ○ event_type: "enter",
    ○ otheruser: null,
    ○ message: null

} ,

• {
    ○ event_date: "2014-12-31T23:59:59.000Z",
    ○ user: "Alice",
    ○ event_type: "enter",
    ○ otheruser: null,
    ○ message: null

} ,

• {
    ○ event_date: "2014-12-31T23:59:59.000Z",
    ○ user: "Alice",
    ○ event_type: "comment",
    ○ otheruser: null,
    ○ message: "hello, this is a sample message"

} ,

• {
    ○ event_date: "2014-12-31T23:59:59.000Z",
    ○ user: "Alice",
    ○ event_type: "comment",
    ○ otheruser: null,
    ○ message: "hello, this is a sample message"

} ,

• {
    ○ event_date: "2014-12-31T23:59:59.000Z",
```

```
        ○ user: "Alice",
        ○ event_type: "highfive",
        ○ otheruser: "Bob",
        ○ message: null

    } ,

• {
    ○ event_date: "2014-12-31T23:59:59.000Z",
    ○ user: "Alice",
    ○ event_type: "leave",
    ○ otheruser: null,
    ○ message: null

} ,

• {
    ○ event_date: "2014-12-31T23:59:59.000Z",
    ○ user: "Alice",
    ○ event_type: "leave",
    ○ otheruser: null,
    ○ message: null

} ,

• {
    ○ event_date: "2014-12-31T23:59:59.000Z",
    ○ user: "Alice",
    ○ event_type: "leave",
    ○ otheruser: null,
    ○ message: null

} ,

• {
    ○ event_date: "2014-12-31T23:59:59.000Z",
    ○ user: "Alice",
    ○ event_type: "leave",
    ○ otheruser: null,
    ○ message: null

} ,

• {
```

```
        ○ event_date: "2014-12-31T23:59:59.000Z",
        ○ user: "Alice",
        ○ event_type: "leave",
        ○ otheruser: null,
        ○ message: null

    } ,

• {
    ○ event_date: "2014-12-31T23:59:59.000Z",
    ○ user: "Alice",
    ○ event_type: "leave",
    ○ otheruser: null,
    ○ message: null

} ,

• {
    ○ event_date: "2015-12-30T23:59:59.000Z",
    ○ user: "Alice",
    ○ event_type: "enter",
    ○ otheruser: null,
    ○ message: null

} ,

• {
    ○ event_date: "2015-12-30T23:59:59.000Z",
    ○ user: "Alice",
    ○ event_type: "comment",
    ○ otheruser: null,
    ○ message: "hello, this is a sample message"

} ,

• {
    ○ event_date: "2015-12-30T23:59:59.000Z",
    ○ user: "Alice",
    ○ event_type: null,
    ○ otheruser: "Bob",
    ○ message: null

} ,
```

```
• {  
  o event_date: "2015-12-30T23:59:59.000Z",  
  o user: "Alice",  
  o event_type: "highfive",  
  o otheruser: "Bob",  
  o message: null  
},  
  
• {  
  o event_date: "2015-12-30T23:59:59.000Z",  
  o user: "Alice",  
  o event_type: "highfive",  
  o otheruser: "Bob",  
  o message: null  
}  
]
```

TIMEFRAME: Hour:

1. <http://127.0.0.1:3000/summary?from=2013-02-15T23:53:00Z&to=2016-02-15T23:53:55Z&by=hour>

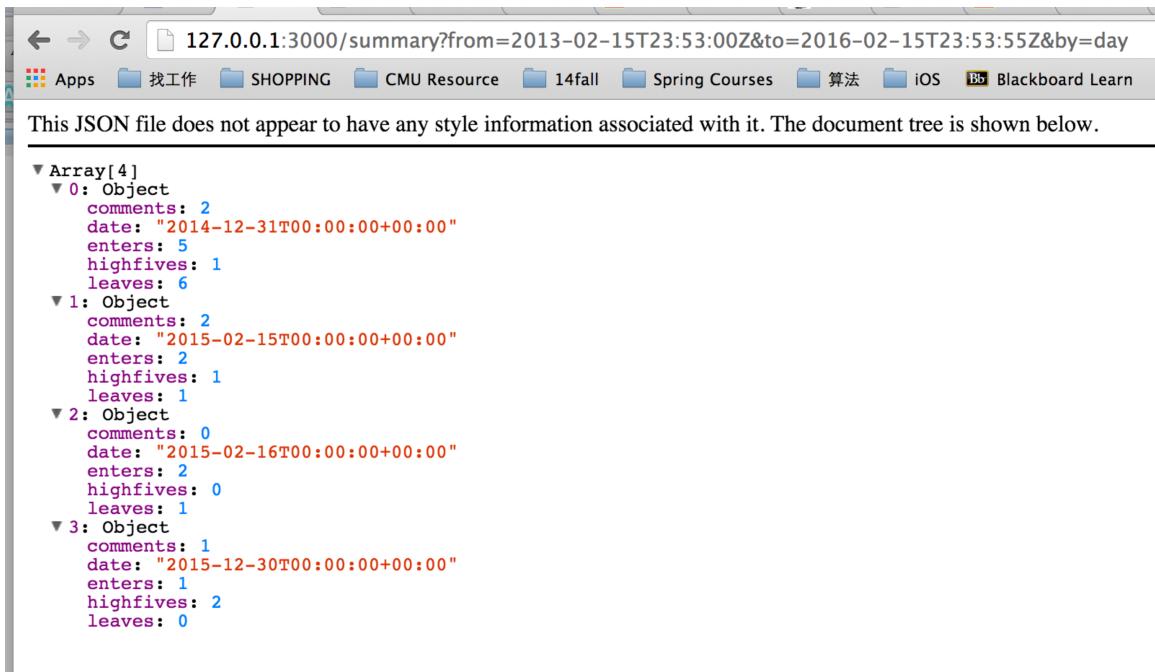
```
127.0.0.1:3000/summary?from=2013-02-15T23:53:00Z&to=2016-02-15T23:53:55Z&by=hour
[{"date": "2014-12-31T23:00:00+00:00", "enters": 5, "leaves": 6, "comments": 2, "highfives": 1}, {"date": "2015-02-15T23:00:00+00:00", "enters": 2, "leaves": 1, "comments": 2, "highfives": 1}, {"date": "2015-02-16T07:00:00+00:00", "enters": 1, "leaves": 0, "comments": 0, "highfives": 0}, {"date": "2015-02-16T10:00:00+00:00", "enters": 1, "leaves": 1, "comments": 0, "highfives": 0}, {"date": "2015-12-30T23:00:00+00:00", "enters": 1, "leaves": 0, "comments": 1, "highfives": 2}],
```

3. <http://127.0.0.1:3000/summary?from=2013-02-15T23:53:00Z&to=2015-02-15T23:53:55Z&by=hour>

```
127.0.0.1:3000/summary?from=2013-02-15T23:53:00Z&to=2015-02-15T23:53:55Z&by=hour
[{"date": "2014-12-31T23:00:00+00:00", "enters": 5, "leaves": 6, "comments": 2, "highfives": 1}, {"date": "2015-02-15T23:00:00+00:00", "enters": 2, "leaves": 1, "comments": 2, "highfives": 1}],
```

TIMEFRAME: Day:

<http://127.0.0.1:3000/summary?from=2013-02-15T23:53:00Z&to=2016-02-15T23:53:55Z&by=day>



This JSON file does not appear to have any style information associated with it. The document tree is shown below.

```
▼ Array[4]
  ▼ 0: Object
    comments: 2
    date: "2014-12-31T00:00:00+00:00"
    enters: 5
    highfives: 1
    leaves: 6
  ▼ 1: Object
    comments: 2
    date: "2015-02-15T00:00:00+00:00"
    enters: 2
    highfives: 1
    leaves: 1
  ▼ 2: Object
    comments: 0
    date: "2015-02-16T00:00:00+00:00"
    enters: 2
    highfives: 0
    leaves: 1
  ▼ 3: Object
    comments: 1
    date: "2015-12-30T00:00:00+00:00"
    enters: 1
    highfives: 2
    leaves: 0
```

TIMEFRAME: Minute:

<http://127.0.0.1:3000/summary?from=2013-02-15T23:53:00Z&to=2016-02-15T23:53:55Z&by=minute>

```
[  
  • {  
      o date: "2014-12-31T23:59:00+00:00",  
      o enters: 5,  
      o leaves: 6,  
      o comments: 2,  
      o highfives: 1  
    },  
  • {  
      o date: "2015-02-15T23:53:00+00:00",  
      o enters: 2,  
      o leaves: 0,  
      o comments: 0,  
      o highfives: 0
```

```
        } ,  
  
    • {  
        o date: "2015-02-15T23:54:00+00:00",  
        o enters: 0,  
        o leaves: 0,  
        o comments: 2,  
        o highfives: 1  
  
    } ,  
  
    • {  
        o date: "2015-02-15T23:57:00+00:00",  
        o enters: 0,  
        o leaves: 1,  
        o comments: 0,  
        o highfives: 0  
  
    } ,  
  
    • {  
        o date: "2015-02-16T07:37:00+00:00",  
        o enters: 1,  
        o leaves: 0,  
        o comments: 0,  
        o highfives: 0  
  
    } ,  
  
    • {  
        o date: "2015-02-16T10:36:00+00:00",  
        o enters: 1,  
        o leaves: 1,  
        o comments: 0,  
        o highfives: 0  
  
    } ,  
  
    • {  
        o date: "2015-12-30T23:59:00+00:00",  
        o enters: 1,  
        o leaves: 0,  
        o comments: 1,  
        o highfives: 2
```

}

]