

**САНКТ-ПЕТЕРБУРГСКИЙ НАЦИОНАЛЬНЫЙ  
ИССЛЕДОВАТЕЛЬСКИЙ УНИВЕРСИТЕТ ИТМО**

**Дисциплина:** Бэк-энд разработка

Отчет

Практическая работа 2

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## Задача

- Продумать свою собственную модель пользователя
- Реализовать набор из CRUD-методов для работы с пользователями средствами Express + Sequelize
- Написать запрос для получения пользователя по id/email

## Ход работы

Модель пользователя:

```
'use strict';

const crypto = require('crypto');

const {
  Model
} = require('sequelize');

1 usage
function encodePassword(password, salt) {
  return crypto.createHash( algorithm: 'sha256').update( data: password + salt).digest( encoding: 'base64');
}

module.exports = (sequelize, DataTypes) => {
  2 usages
  class User extends Model {
    /**
     * Helper method for defining associations.
     * This method is not a part of Sequelize lifecycle.
     * The `models/index` file will call this method automatically.
     */
  }
  2 usages
}
```

```

User.init( attributes: {
  firstName: DataTypes.STRING,
  lastName: DataTypes.STRING,
  email: DataTypes.STRING,
  password: {
    type: DataTypes.STRING,
    set(value) {
      // Store hash generated from raw password and salt
      this.setDataValue('password', encodePassword(value, this.salt));
    }
  },
  salt: DataTypes.STRING
}, options: {
  defaultScope: {
    // Do not return salt and password
    attributes: {exclude: ['password', 'salt']},
  },
  hooks: {
    beforeCreate: (instance :M, options :...) => {
      instance.salt = crypto.randomBytes( size: 16).toString( encoding: 'base64');
    }
  }
}

```

```

}, options: {
  defaultScope: {
    // Do not return salt and password
    attributes: {exclude: ['password', 'salt']},
  },
  hooks: {
    beforeCreate: (instance :M, options :...) => {
      instance.salt = crypto.randomBytes( size: 16).toString( encoding: 'base64');
    }
  },
  sequelize,
  modelName: 'User',
});
return User;
};

```

Представления:

```

1  const express = require('express');
2  const bodyParser = require('body-parser')
3  const db = require('./models');
4
5  const app = express();
6  const port = 5000;
7
8  // Parse application/x-www-form-urlencoded
9  app.use(bodyParser.urlencoded({ extended: false }))
10 // Parse application/json
11 app.use(bodyParser.json())
12
13
14 app.get('/api/users/:id', async (req :... , res : Response<ResBody, LocalsObj> ) => {
15   const user = await db.User.findPk(req.params.id);
16
17   if (user) {
18     res.send(user.toJSON());
19   }
20
21   res.status( code: 404).send( body: {"detail": "User not found"});
22
23 })

```

```

app.get('/api/users', async (req :... , res : Response<ResBody, LocalsObj> ) => {
  const users = await db.User.findAll();
  res.send(users);
})

app.post( path: '/api/users', handlers: async (req :... , res : Response<ResBody, LocalsObj> ) => {
  try {
    const user = await db.User.create(req.body);
    await user.reload();
    res.send(user.toJSON());
  } catch (e) {
    console.log(e);
    res.status( code: 400 ).send( body: {"detail": "Failed to create user"});
  }
})

```

```

39
40 app.put( path: '/api/users/:id', handlers: async (req :... , res : Response<ResBody, LocalsObj> ) => {
41   const user = await db.User.findById(req.params.id);
42   if (user) {
43     try {
44       user.update(req.body, {where: {id: req.params.id}});
45       user.reload();
46       res.send(user.toJSON());
47     } catch (e) {
48       console.log(e);
49       res.status( code: 400 ).send( body: {"detail": "Failed to update user"});
50     }
51   } else {
52     res.status( code: 404 ).send( body: {"detail": "User not found"});
53   }
54
55 })
56

```

```

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http://localhost:5000/api/users

Save

POST http://localhost:5000/api/users Send

Params Authorization Headers (8) **Body** Pre-request Script Tests Settings Cookies

none form-data x-www-form-urlencoded raw binary GraphQL JSON Beautify

```
1 {"firstName": "foo", "lastName": "bar", "email": "foobar@example.com", "password": "12345"}
2
```

Body Cookies Headers (7) Test Results 200 OK 233 ms 386 B Save Response

Pretty Raw Preview Visualize JSON

```
1 {
2   "id": 4,
3   "firstName": "foo",
4   "lastName": "bar",
5   "email": "foobar@example.com",
6   "createdAt": "2022-06-07T03:54:25.832Z",
7   "updatedAt": "2022-06-07T03:54:25.832Z"
8 }
```

## Чтение:

http://localhost:5000/api/users

Save

GET http://localhost:5000/api/users Send

Params Authorization Headers (8) **Body** Pre-request Script Tests Settings Cookies

Query Params

	KEY	VALUE	DESCRIPTION	...	Bulk Edit
	Key	Value	Description		

Body Cookies Headers (7) Test Results 200 OK 301 ms 388 B Save Response

Pretty Raw Preview Visualize JSON

```
1 [
2   {
3     "id": 1,
4     "firstName": "foo",
5     "lastName": "bar",
6     "email": "foobar@example.com",
7     "createdAt": "2022-06-07T03:23:35.776Z",
8     "updatedAt": "2022-06-07T03:23:35.776Z"
9   }
10 ]
```

http://localhost:5000/api/users/1

Save

GET

http://localhost:5000/api/users/1

Send

Params

Authorization

Headers (8)

Body

Pre-request Script

Tests

Settings

Cookies

Query Params

	KEY	VALUE	DESCRIPTION		Bulk Edit
	Key	Value	Description		

Body

Cookies

Headers (7)

Test Results

200 OK 35 ms 386 B

Save Response

Pretty

Raw

Preview

Visualize

JSON

1

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"id": 1,

"firstName": "foo",

"lastName": "bar",

"email": "foobar@example.com",

"createdAt": "2022-06-07T03:23:35.776Z",

"updatedAt": "2022-06-07T03:23:35.776Z"

Изменение:

http://localhost:5000/api/users/1

PUT



http://localhost:5000/api/users/1

Params

Authorization

Headers (8)

Body ●

Pre-request Script

Tests

Settings

● none

● form-data

● x-www-form-urlencoded

● raw

● binary

● GraphQL

JSC

```
1 {"firstName": "new_name", "password": "new_password"}
2 |
```

Body

Cookies

Headers (7)

Test Results



Pretty

Raw

Preview

Visualize

JSON



```
1 {
2   "id": 1,
3   "firstName": "new_name",
4   "lastName": "bar",
5   "email": "foobar@example.com",
6   "createdAt": "2022-06-07T03:23:35.776Z",
7   "updatedAt": "2022-06-07T03:42:17.048Z"
8 }
```

Удаление:

The screenshot displays a REST client interface with the following components:

- URL Bar:** Shows the URL `http://localhost:5000/api/users/2` and a `DELETE` method. Buttons for `Save` and `Send` are present.
- Request Configuration:** Includes tabs for `Params`, `Authorization`, `Headers (8)`, `Body` (selected), `Pre-request Script`, `Tests`, and `Settings`. The `Body` tab shows a JSON payload: `{ "firstName": "foo", "lastName": "bar", "email": "foobar@example.com", "password": "12345" }`. Below the payload are radio buttons for `none`, `form-data`, `x-www-form-urlencoded`, `raw` (selected), `binary`, and `GraphQL`. A `JSON` dropdown and a `Beautify` button are also visible.
- Response Section:** Shows the response status `200 OK`, time `22 ms`, and size `260 B`. A `Save Response` button is present. The response body is displayed in a `Pretty` format, showing a JSON object: `{ "detail": "User deleted" }`.

## Вывод

Я поработал с моделями средствами ORM Sequelize и созданию API средствами Express.