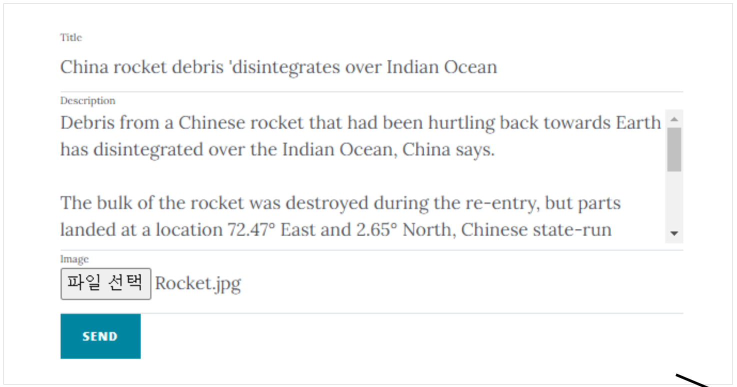
NodeJS 응용 II

UPLOADING AN IMAGE WITH EXPRESS

Uploading an Image



Title

China rocket debris 'disintegrates over Indian Ocean

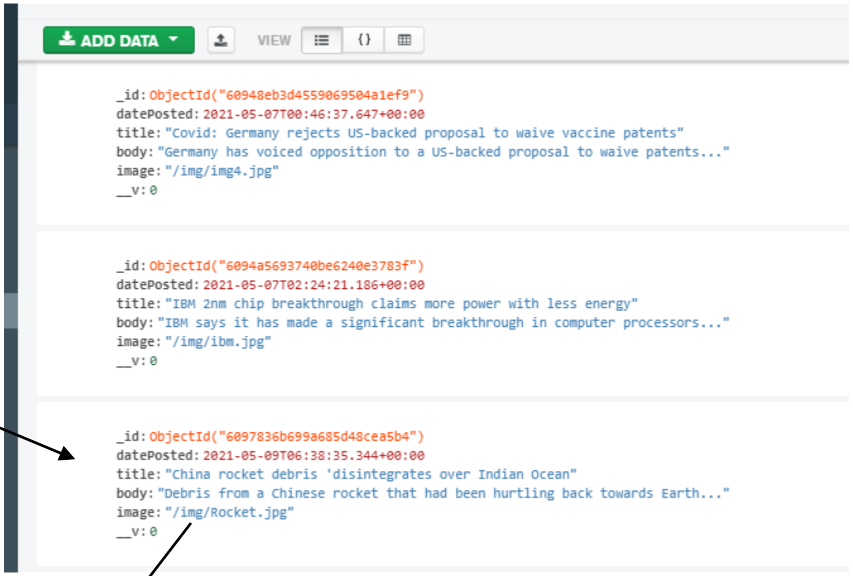
Description

Debris from a Chinese rocket that had been hurtling back towards Earth has disintegrated over the Indian Ocean, China says.

The bulk of the rocket was destroyed during the re-entry, but parts landed at a location 72.47° East and 2.65° North, Chinese state-run

Image

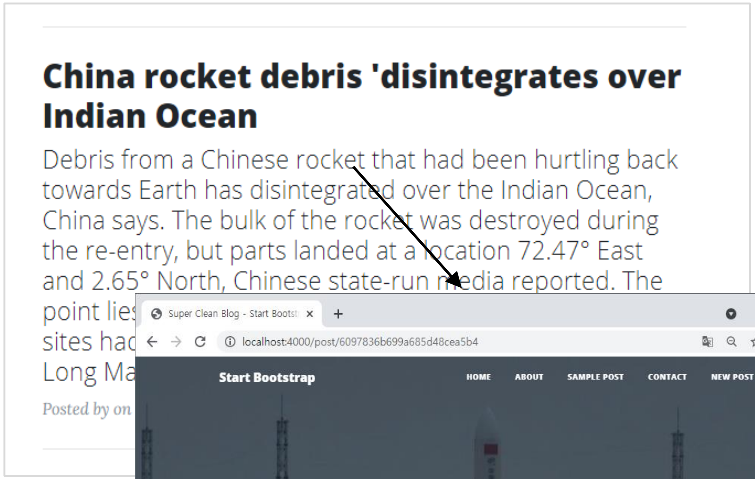
파일 선택 Rocket.jpg



```
_id: ObjectId("60948eb3d4559069504a1ef9")
datePosted: 2021-05-07T00:46:37.647+00:00
title: "Covid: Germany rejects US-backed proposal to waive vaccine patents"
body: "Germany has voiced opposition to a US-backed proposal to waive patents..."
image: "/img/img4.jpg"
__v: 0

_id: ObjectId("6094a5693740be6240e3783f")
datePosted: 2021-05-07T02:24:21.186+00:00
title: "IBM 2nm chip breakthrough claims more power with less energy"
body: "IBM says it has made a significant breakthrough in computer processors..."
image: "/img/ibm.jpg"
__v: 0

_id: ObjectId("6097836b699a685d48cea5b4")
datePosted: 2021-05-09T06:38:35.344+00:00
title: "China rocket debris 'disintegrates over Indian Ocean"
body: "Debris from a Chinese rocket that had been hurtling back towards Earth..."
image: "/img/Rocket.jpg"
__v: 0
```



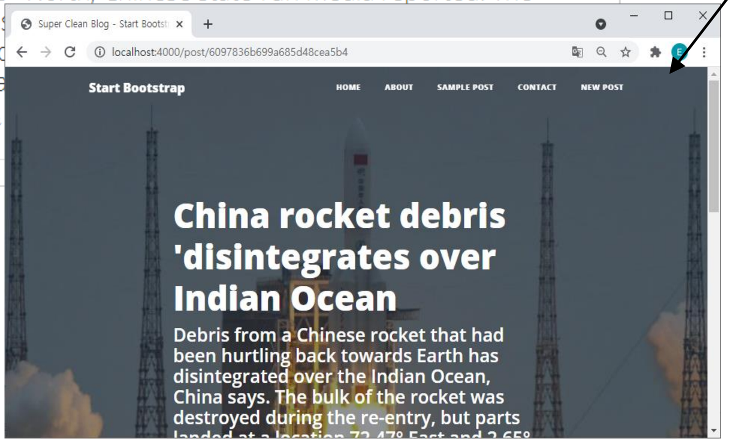
China rocket debris 'disintegrates over Indian Ocean

Debris from a Chinese rocket that had been hurtling back towards Earth has disintegrated over the Indian Ocean, China says. The bulk of the rocket was destroyed during the re-entry, but parts landed at a location 72.47° East and 2.65° North, Chinese state-run media reported. The point lies

sites had

Long Ma

Posted by on



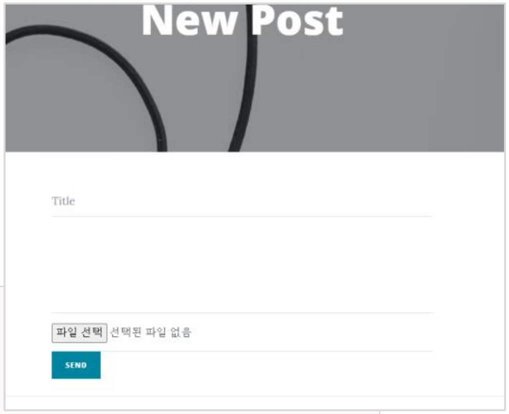
Super Clean Blog - Start Bootst
localhost:4000/post/6097836b699a685d48cea5b4
Start Bootstrap
HOME
ABOUT
SAMPLE POST
CONTACT
NEW POST

China rocket debris 'disintegrates over Indian Ocean

Debris from a Chinese rocket that had been hurtling back towards Earth has disintegrated over the Indian Ocean, China says. The bulk of the rocket was destroyed during the re-entry, but parts

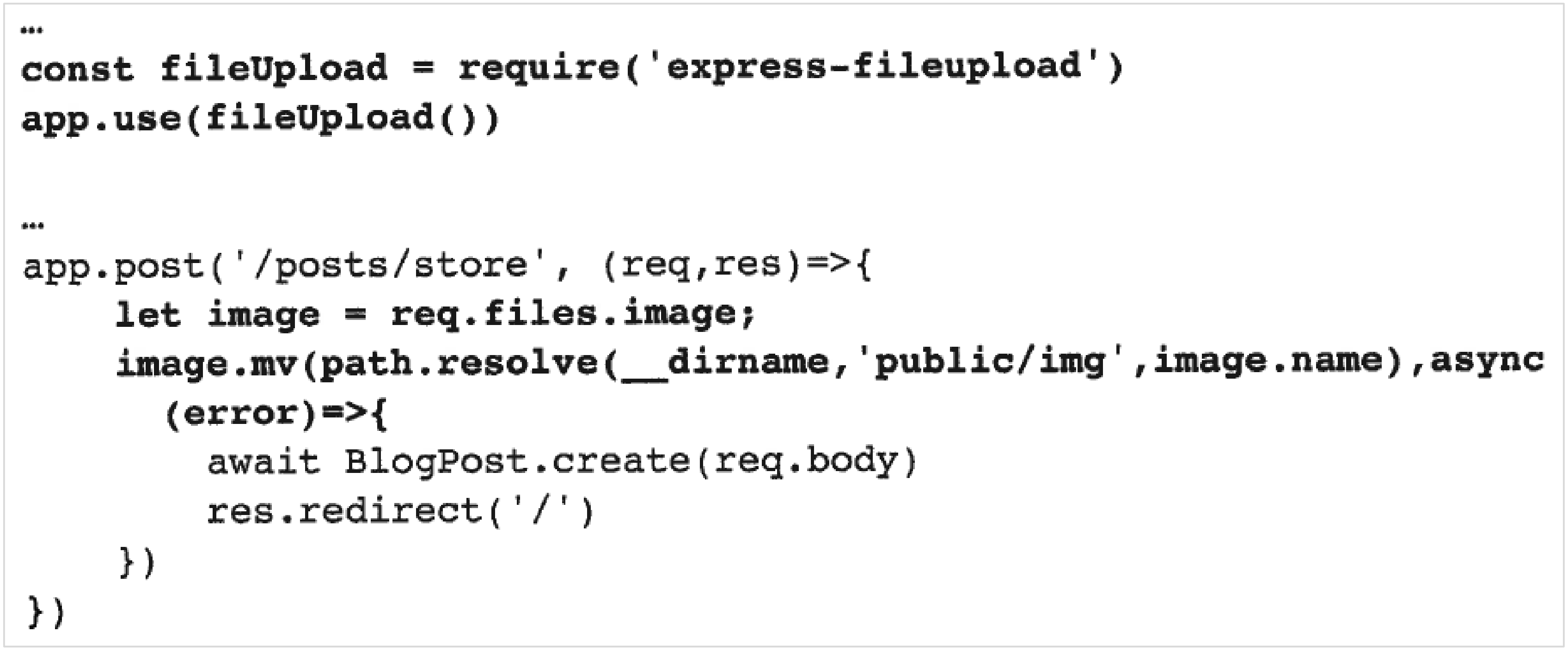
- **> npm install express-fileupload**

- **In create.ejs** : add the code



```
<form action="/posts/store" method="POST"
enctype="multipart/form-data">
    …
  <div class="control-group">
    <div class="form-group floating-label-form-group controls">
      <label>Image</label>
      <input type="file" class="form-control" id="image"
          name="image">
    </div>
  </div>
  <br>
  <div class="form-group">
    <button type="submit" class="btn btn-primary"
    id="sendMessageButton">Send</button>
  </div>
</form>
```

- **In index.js :**
  - In the request handler for '/posts/store', add:
  - **express—fileupload**
    - **adds the files property to the req object** so that we can access the uploaded files using **req.files**.



```
…
const fileUpload = require('express-fileupload')
app.use(fileUpload())


…
app.post('/posts/store', (req,res)=>{
    let image = req.files.image;
    image.mv(path.resolve(__dirname,'public/img',image.name),async
      (error)=>{
        await BlogPost.create(req.body)
        res.redirect('/')
    })
})
```

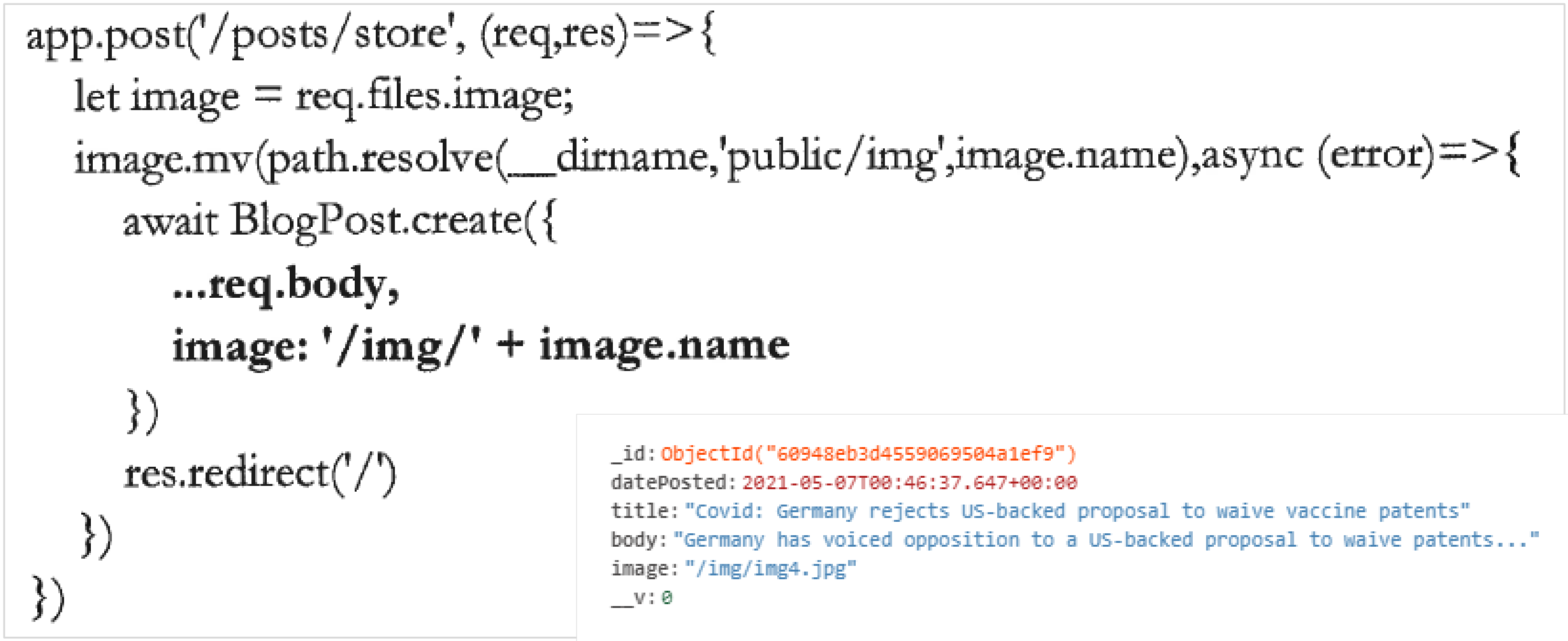
Saving Uploaded Images to DB

- **In BlogPost.js :**

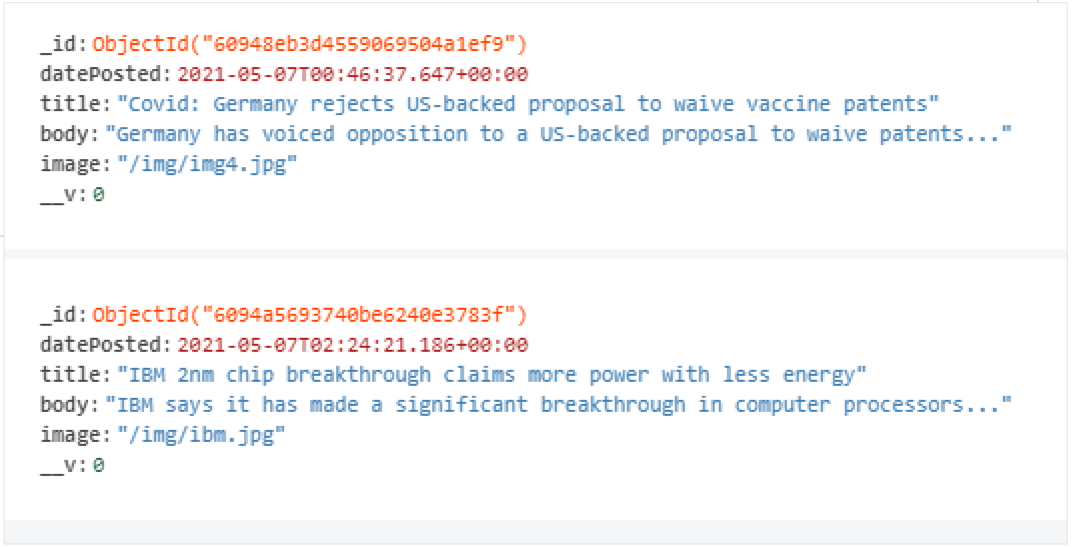
```
…
const BlogPostSchema = new Schema({
  title: String,
  body: String,
  username: String,
  datePosted:{
    type: Date,
    default: new Date()
  },
  image: String
 });
  …
```

In index.js

- Specify the full image file path to the BlogPost image attribute



```
app.post('/posts/store', (req,res)=>{
    let image = req.files.image;
    image.mv(path.resolve(__dirname,'public/img',image.name),async (error)=>{
        await BlogPost.create({
            ...req.body,
            image: '/img/' + image.name
        })
        res.redirect('/')
    })
})
```



```
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image: "/img/img4.jpg"
__v: 0
```

```
_id: ObjectId("6094a5693740be6240e3783f")
datePosted: 2021-05-07T02:24:21.186+00:00
title: "IBM 2nm chip breakthrough claims more power with less energy"
body: "IBM says it has made a significant breakthrough in computer processors..."
image: "/img/ibm.jpg"
__v: 0
```

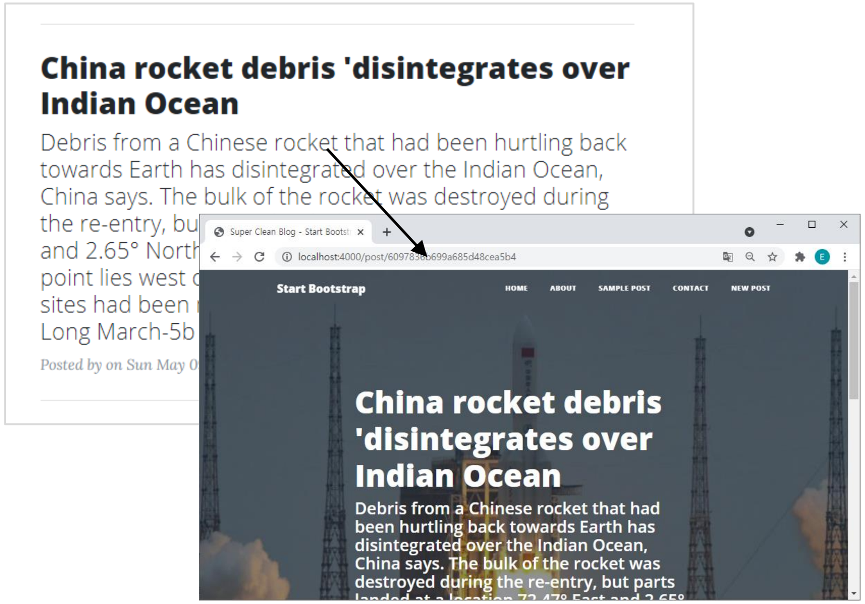
In Post.ejs :

- To display the image in the post view, change the hardcoded filepath from

```
<header class="masthead" style="background-image: url('img/post-bg.jpg')">
```

to:

```
<header class="masthead" style="background-image: url('<%= blogpost.image %>')">
```



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and 2.65° North
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Long March-5b

Posted by on Sun May 0

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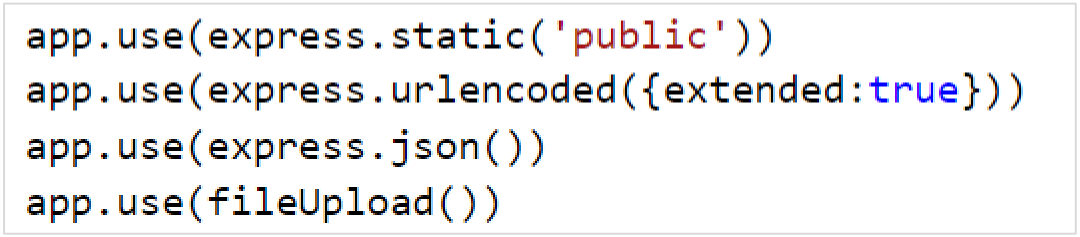
INTRODUCTION TO EXPRESS MIDDLEWARE

Middleware

- **The *use* registers a middleware** with our Express app



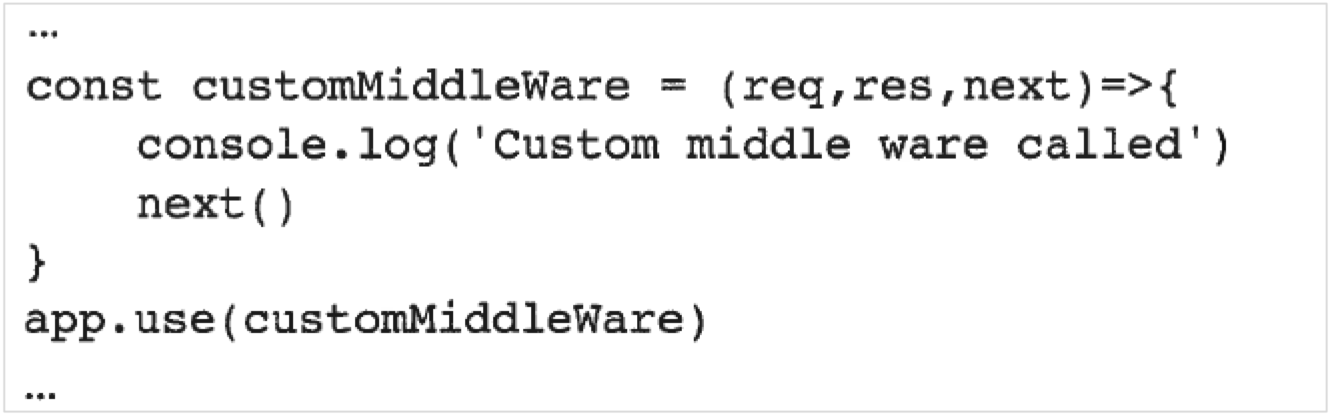
```
app.use(express.static('public'))
app.use(express.urlencoded({extended:true}))
app.use(express.json())
app.use(fileUpload())
```

- When a browser makes a request to a page, Express will execute all the **'use' statements sequentially before handling the request**

- **It might make changes to the request and response objects.**
  - ex) app.use(fileUpload())
    - It modifies the **request** object and adds the **request.files property** to it.

Custom Middleware

- ex)

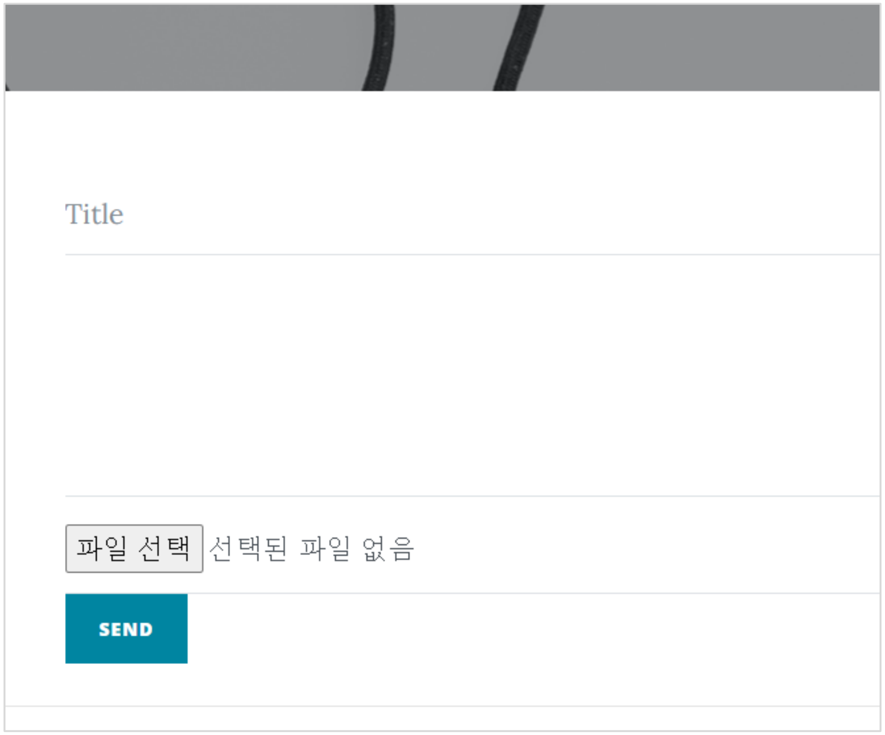


```
...
const customMiddleWare = (req,res,next)=>{
    console.log('Custom middle ware called')
    next()
}
app.use(customMiddleWare)
...
```

- next()
  - Tells Express that the middleware is done and Express should call the next middleware function
  - **All middlewares** called by app.use **calls next()**.

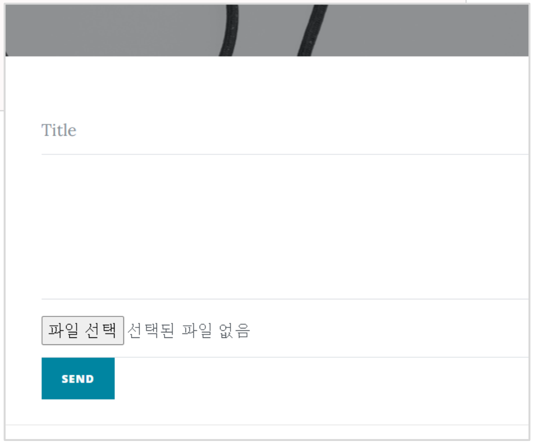
Registering Validation Middleware

- **Form validation**
  - When you run your app and to submit a create post form with one of the **fields missing**, you will be **re-directed** to the form page.



Checking for the validity of form field values (field not blank etc.) :

```
...
const validateMiddleWare = (req,res,next)=>{
    if(req.files == null || req.body.title == null || req.body.title == null){
        return res.redirect('/posts/new')
    }
    next()
}
...

...
app.use('/posts/store',validateMiddleWare)
...
```



Note: make sure the above statement is **after app.use(fileUpload())** since we depend on the req object having the files property.

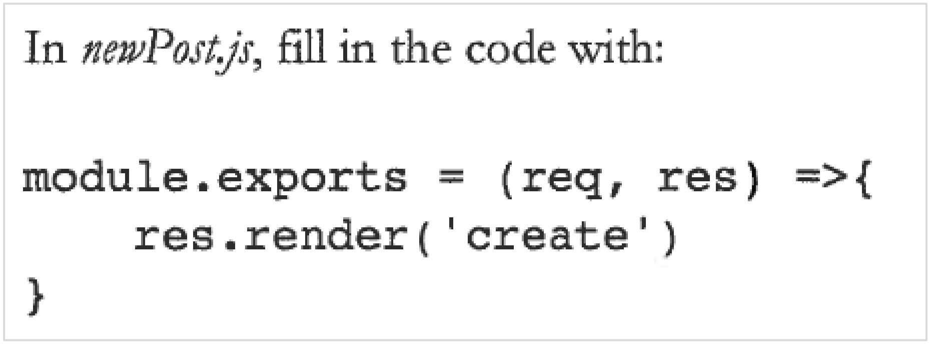
REFACTORING TO MVC

MVC Pattern

- **MVC** (Model-View-Controller)
  - A pattern in software design commonly used to implement **user interfaces, data**, and **controlling logic**.

- **Model**
  - Represents the structure of the data, the format and the constraints with which it is stored.
  - In essence, it is the **database** part of the application
- **View**
  - What is presented to the user
- **Controller**
  - Controls the requests of the user and then generates appropriate response rendered back to the user.

- Create a new folder **controllers**
  - In it, create a new file **newPost.js**


In *newPost.js*, fill in the code with:

```
module.exports = (req, res) =>{
    res.render('create')
}
```

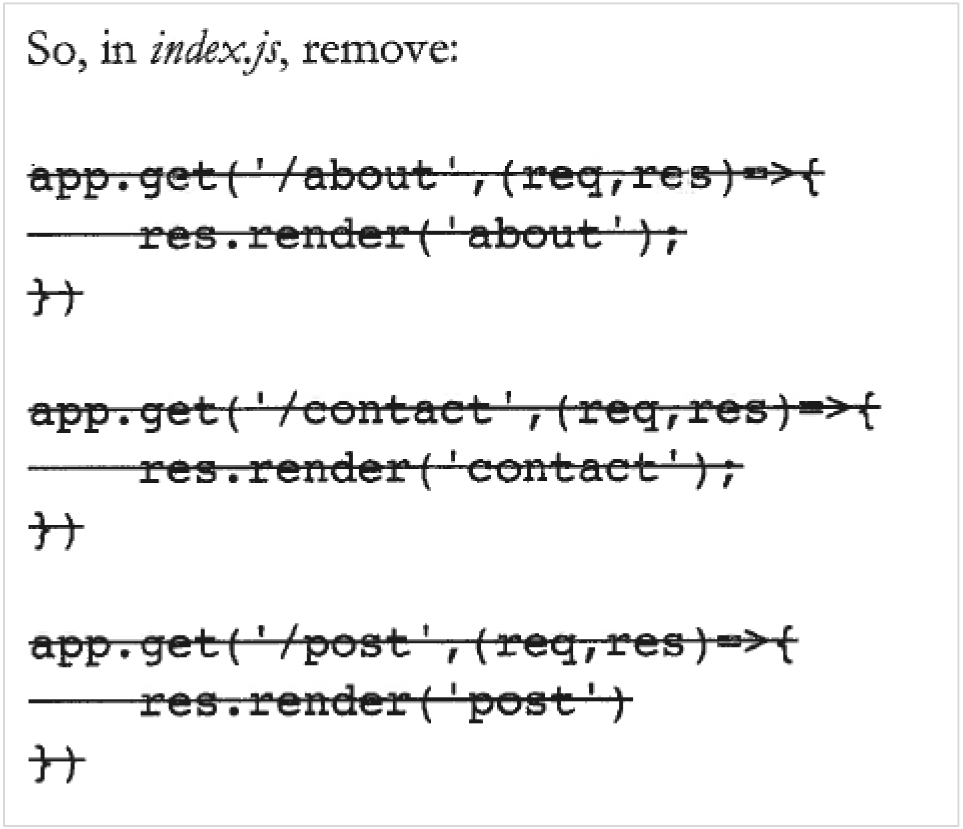
- **In index.js, replace the request handler**

```
app.get('/posts/new',(req,res)=>{
    res.render('create')
```

with:

```
const newPostController = require('./controllers/newPost')


…


app.get('/posts/new',newPostController)
```

- **Remove the About, Contact and Sample Post pages:**

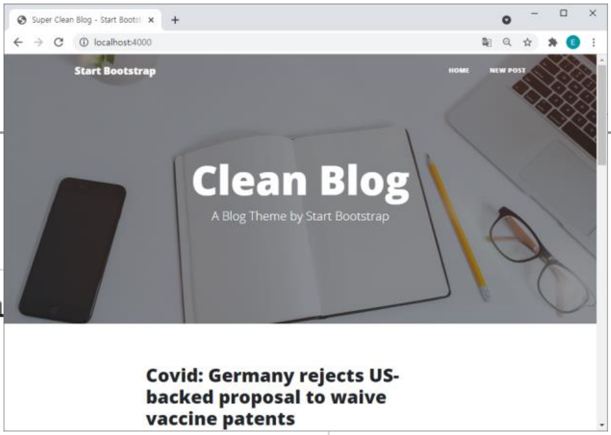


So, in *index.js*, remove:

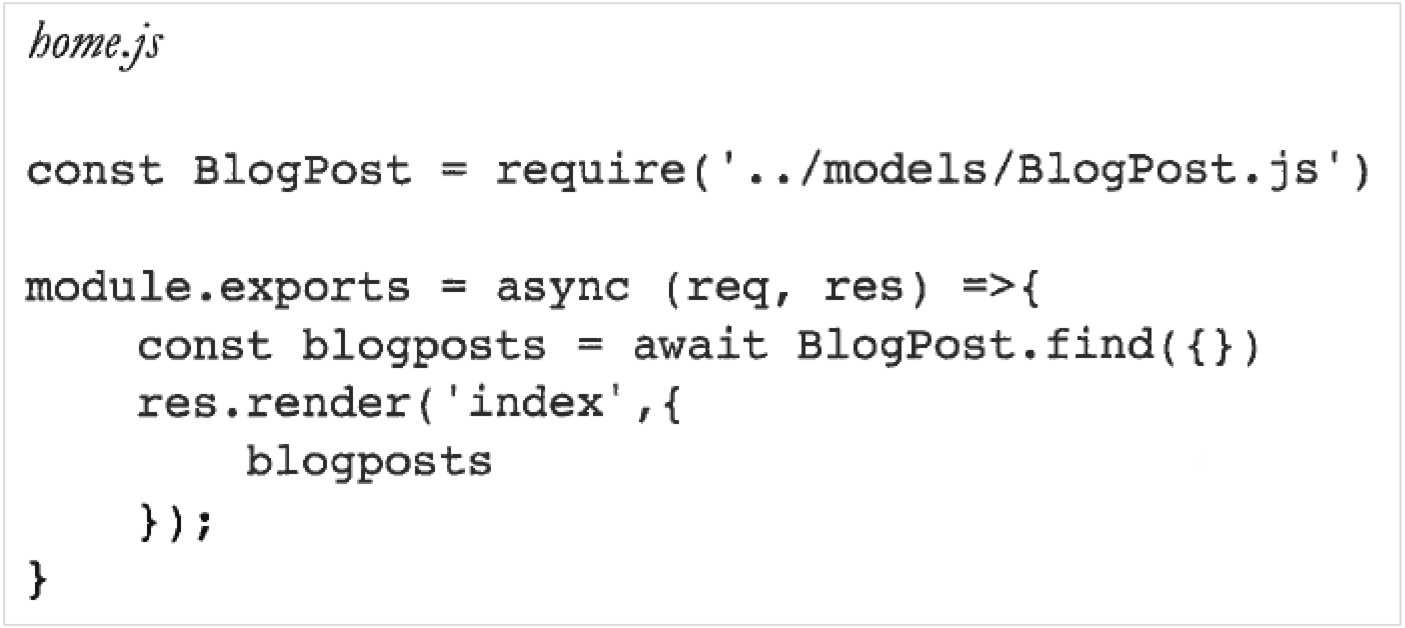
```
~~app.get('/about',(req,res)=>{~~
~~    res.render('about');~~
~~})~~

~~app.get('/contact',(req,res)=>{~~
~~    res.render('contact');~~
~~})~~

~~app.get('/post',(req,res)=>{~~
~~    res.render('post')~~
~~})~~
```

- **In navbar.ejs:**

```
      <div class="collapse navbar-collapse" id="navba
        <ul class="navbar-nav ml-auto">
          <li class="nav-item">
            <a class="nav-link" href="/">Home</a>
          </li>
~~          <li class="nav-item">~~
~~            <a class="nav-link" href="/about">About</a>~~
~~          </li>~~
~~          <li class="nav-item">~~
~~            <a class="nav-link" href="/post">Sample Post</a>~~
~~          </li>~~
~~          <li class="nav-item">~~
~~            <a class="nav-link" href="/contact">Contact</a>~~
~~          </li>~~
          <li class="nav-item">
              <a class="nav-link" href="/posts/new">New Post</a>
          </li>
        </ul>
      </div>
```


Super Clean Blog - Start Bootst
localhost:4000
Start Bootstrap
HOME
NEW POST
Clean Blog
A Blog Theme by Start Bootstrap
Covid: Germany rejects US-backed proposal to waive vaccine patents

- **In controllers folder,** create **home.js, storePost.js and getPost.js**



home.js

```
const BlogPost = require('../models/BlogPost.js')

module.exports = async (req, res) =>{
    const blogposts = await BlogPost.find({})
    res.render('index',{
        blogposts
    });
}
```

getPost.js

```
const BlogPost = require('../models/BlogPost.js')

module.exports = async (req,res)=>{
    const blogpost = await BlogPost.findById(req.params.id)
    console.log(blogpost)
    res.render('post',{
        blogpost
    });
}
```

storePost.js

```
const BlogPost = require('../models/BlogPost.js')
const path = require('path')

module.exports = (req,res)=>{
    let image = req.files.image;
    image.mv(path.resolve(__dirname,'..','public/img',image.name),async
(error)=>{
        await BlogPost.create({
            ...req.body,
            image: '/img/' + image.name
        })
        res.redirect('/')
    })
}
```

- **In index.js:**

```
~~const path = require('path')~~
~~const BlogPost = require('./models/BlogPost.js')~~

…
const homeController = require('./controllers/home')
const storePostController = require('./controllers/storePost')
const getPostController = require('./controllers/getPost')
…

 app.get('/',homeController)
 app.get('/post/:id',getPostController)
 app.post('/posts/store', storePostController)
```

Refactoring Validation Layer

- Create a **middleware** directory and in it, create a new file **validationMiddleware.js**
  - Cut and paste the validationMiddlevare function from **index.js** into validationMidleware.js :

```
module.exports = (req,res,next)=>{
    if(req.files == null || req.body.title == null || req.body.title == null){
        return res.redirect('/posts/new')
    }
    next()
}
```

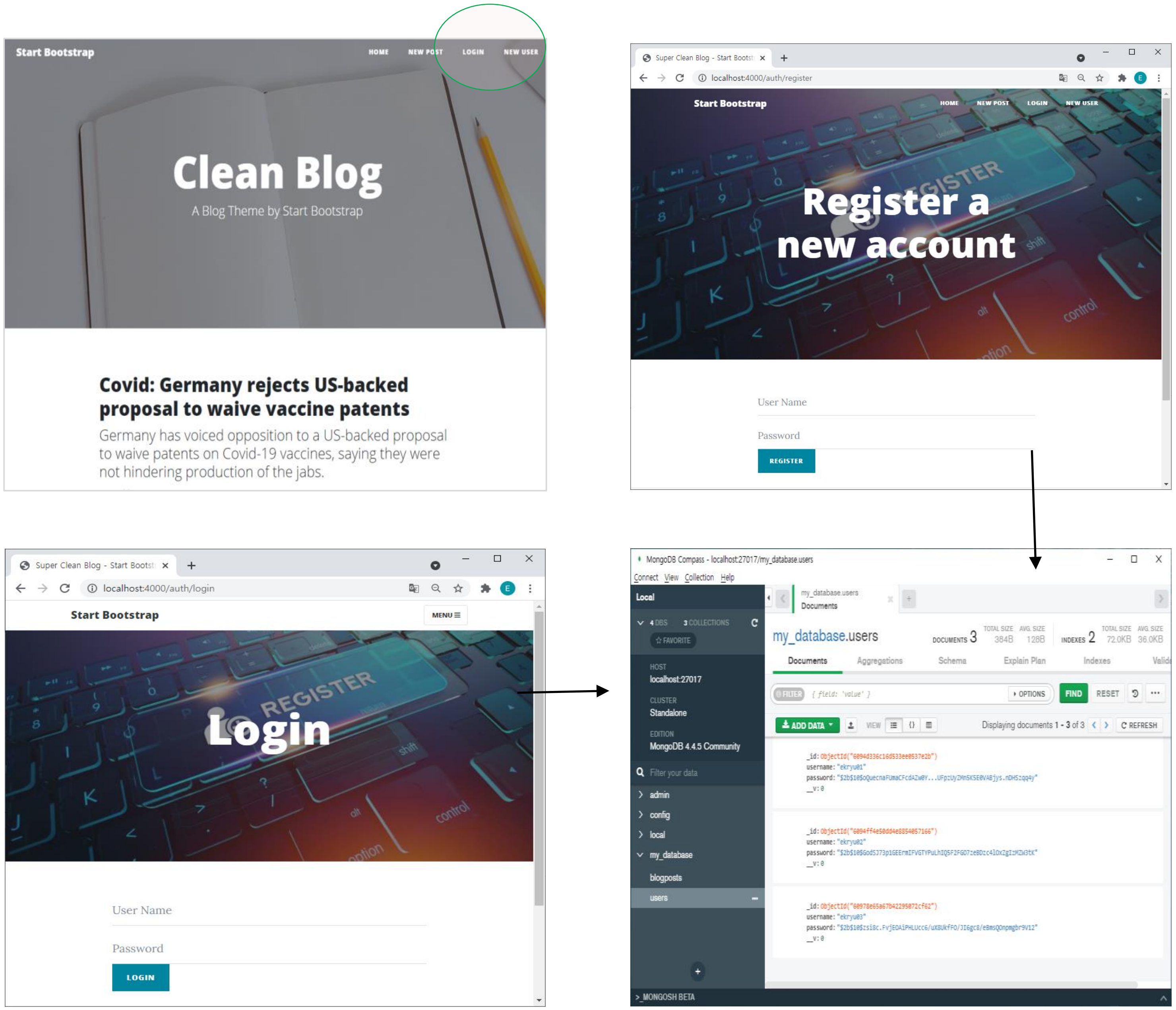
- **In index.js, import the middleware with:**

```
const validateMiddleware = require("./middleware/validateMiddleware");
```

Node.js, Express & MongDB Development

- APPLYING **MONGODB** TO Blog PROJECT
- **UPLOADING IMAGE** WITH EXPRESS
- INTRODUCTION TO EXPRESS **MIDDLEWARE**
- REFACTORING TO **MVC**
- **USER REGISTRATION**

USER REGISTRATION

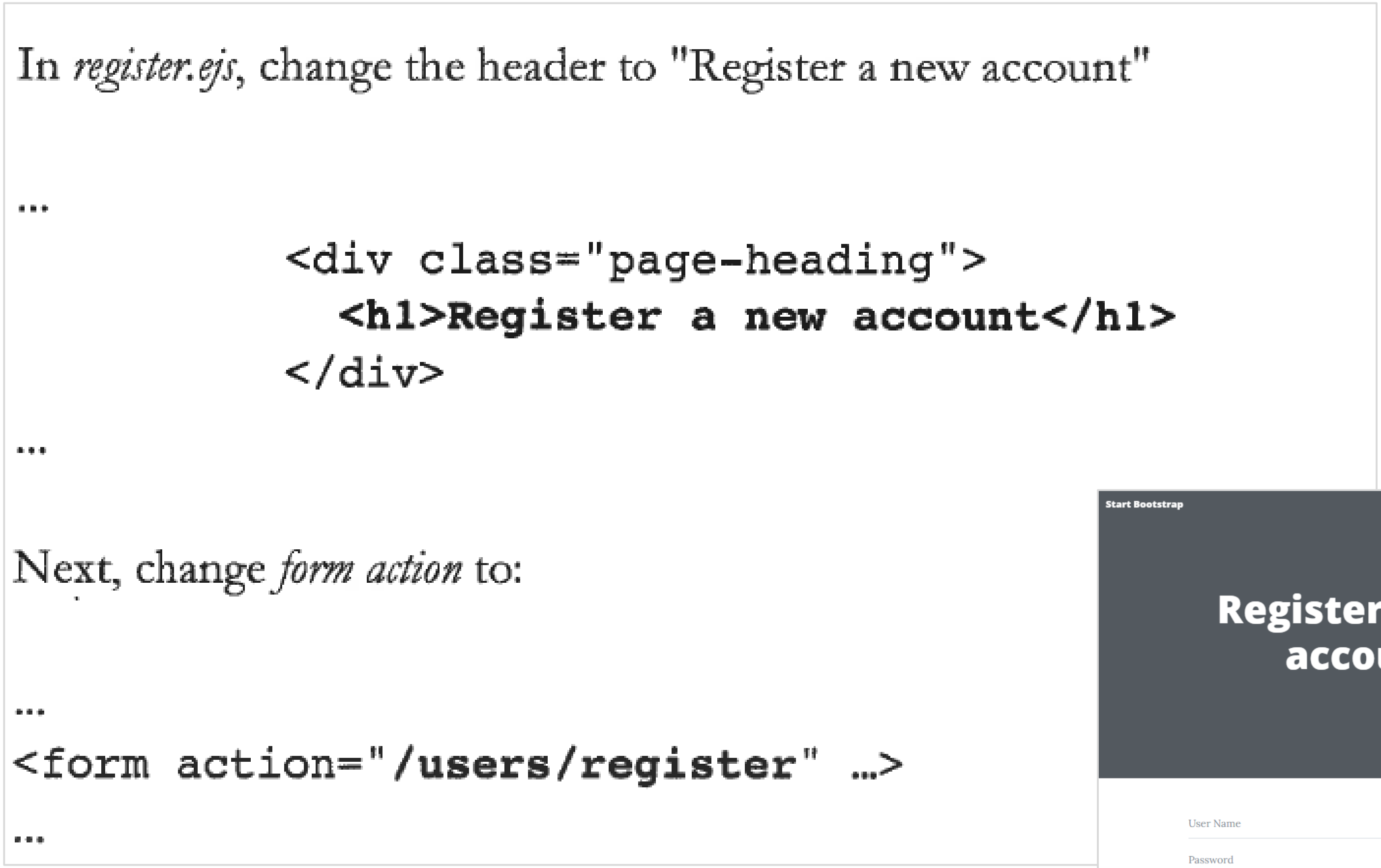


Covid: Germany rejects US-backed proposal to waive vaccine patents

Germany has voiced opposition to a US-backed proposal to waive patents on Covid-19 vaccines, saying they were not hindering production of the jabs.

```
_id: ObjectId("6094d336c16d533ee0537e2b")
username: "ekryu01"
password: "$2b$10$oQuecnaFUmaCFcdAZw0Y...UFpzUyZMn5K5E0VABjys.nDHSzqq4y"
__v: 0

_id: ObjectId("6094ff4e50dd4e8854057166")
username: "ekryu02"
password: "$2b$10$GodSJ73p1GEErmIFVGTYPuLhIQ5F2FGO7zeBDzc4lOxZgIzMZW3tK"
__v: 0

_id: ObjectId("60978e65a67b42295072cf62")
username: "ekryu03"
password: "$2b$10$zsi8c.FvjEOAiPHLUcc6/uX8UkfFO/JI6gc8/eBmsQOnpmgbr9V12"
__v: 0
```

- Create a new file **register.ejs** in 'views' folder (using create.ejs)

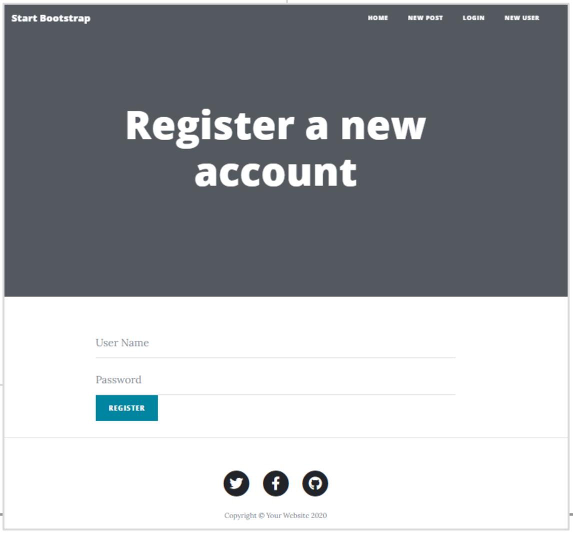


In *register.ejs*, change the header to "Register a new account"

```
...
              <div class="page-heading">
                <h1>Register a new account</h1>
              </div>
...
```

Next, change *form action* to:

```
...
<form action="/users/register" …>
...
```



- In the title field, change it to **username field** :

```
          <div class="control-group">
            <div class="form-group floating-label-form-group controls">
              <label>User Name</label>
              <input type="text" class="form-control" placeholder="User
Name" id="username" name="username">
            </div>
          </div>
```

- **Password field :** Duplicate the above code and rename it

```
<div class="control-group">
  <div class="form-group floating-label-form-group controls">
    <label>Password</label>
    <input type="password" class="form-control" placeholder="Password"
id="password" name="password">
  </div>
</div>
```

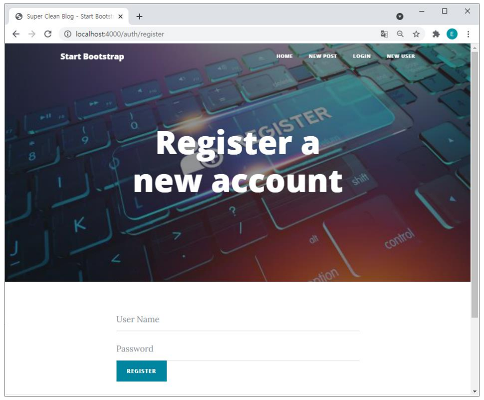
- Rename the submit button to **Register**

```
<div class="form-group">
  <button type="submit" class="btn btn-primary">Register</button>
</div>
```

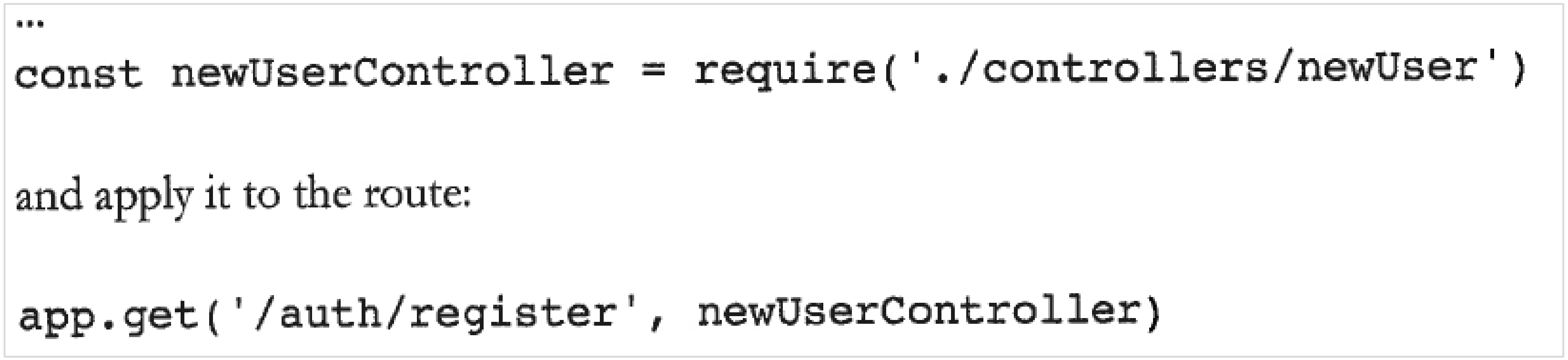
- Delete the code for description

- In controllers folder, create the **newUser.js :**

```
module.exports = (req, res) =>{
    res.render('register') // render register.ejs
}
```



- **In index.js**

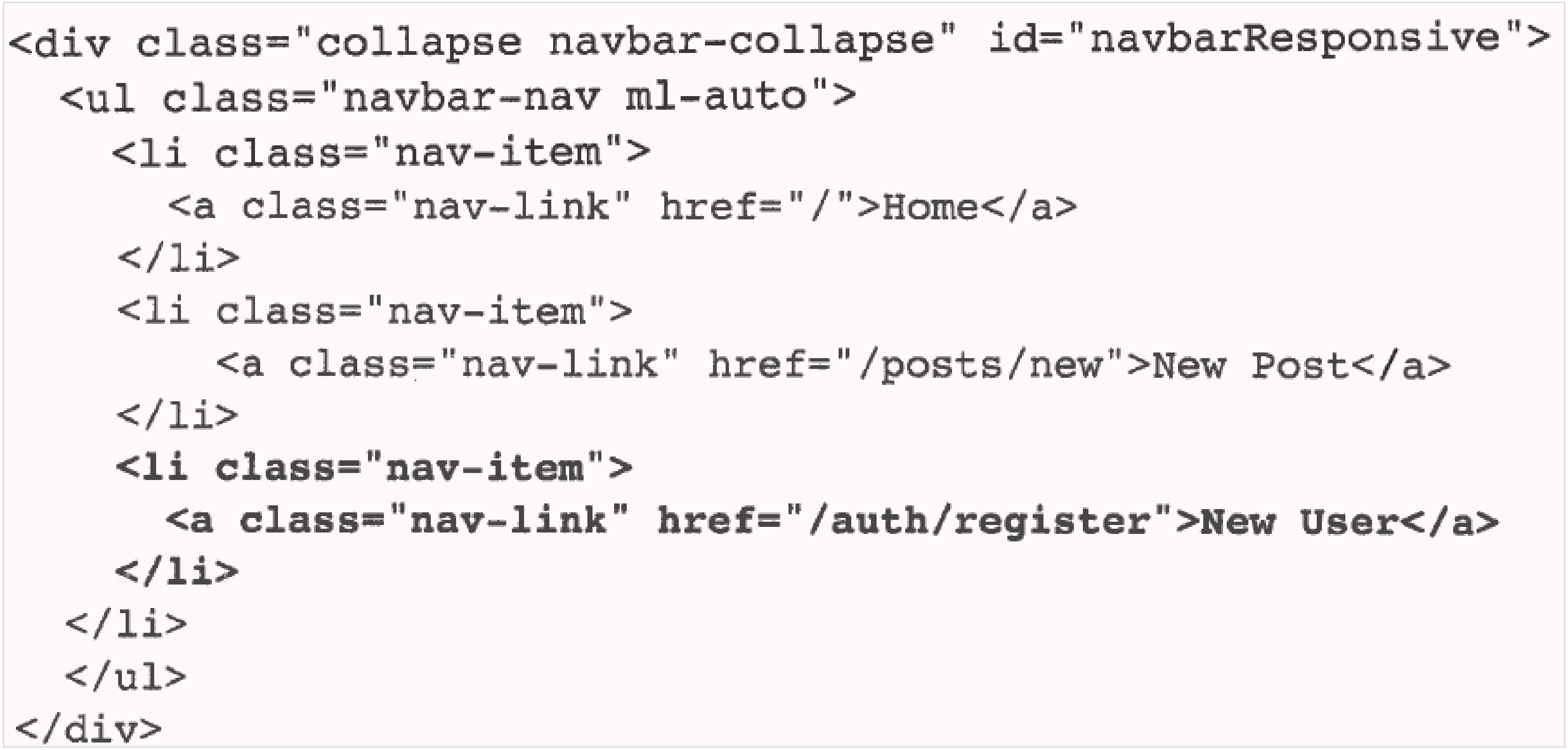


```
...
const newUserController = require('./controllers/newUser')
```

and apply it to the route:

```
app.get('/auth/register', newUserController)
```

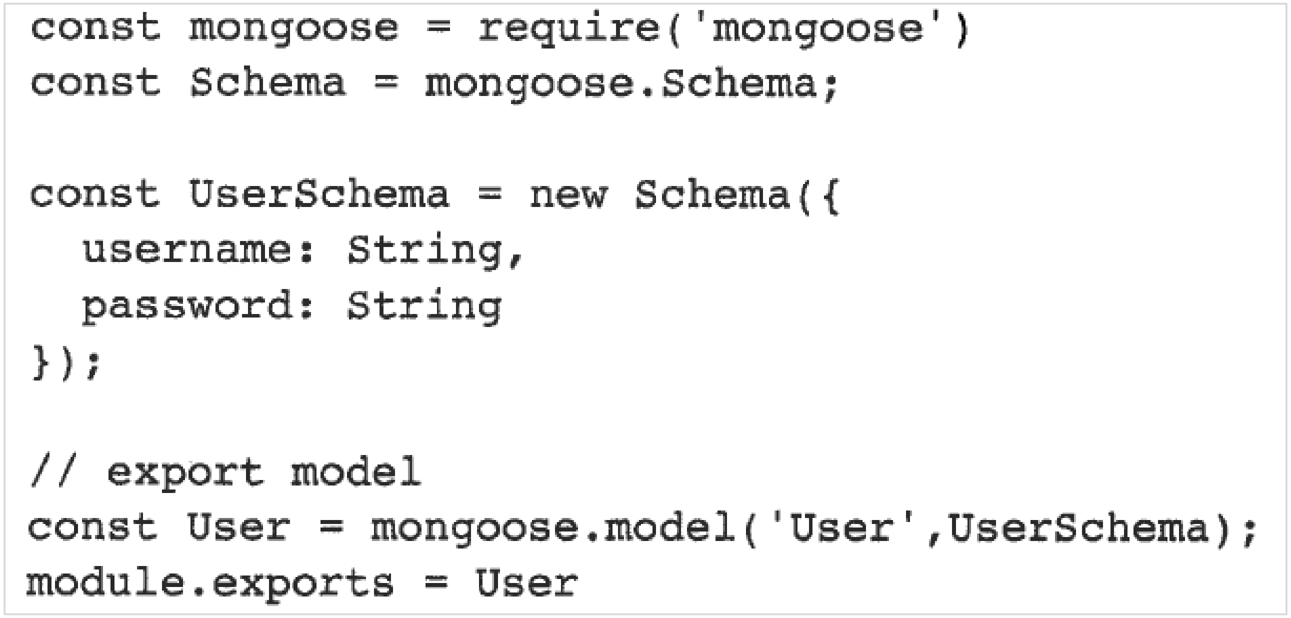
- **In views/layouts/navbar.ejs, add:**



```
<div class="collapse navbar-collapse" id="navbarResponsive">
  <ul class="navbar-nav ml-auto">
    <li class="nav-item">
      <a class="nav-link" href="/">Home</a>
    </li>
    <li class="nav-item">
        <a class="nav-link" href="/posts/new">New Post</a>
    </li>
    <li class="nav-item">
      <a class="nav-link" href="/auth/register">New User</a>
    </li>
  </li>
  </ul>
</div>
```

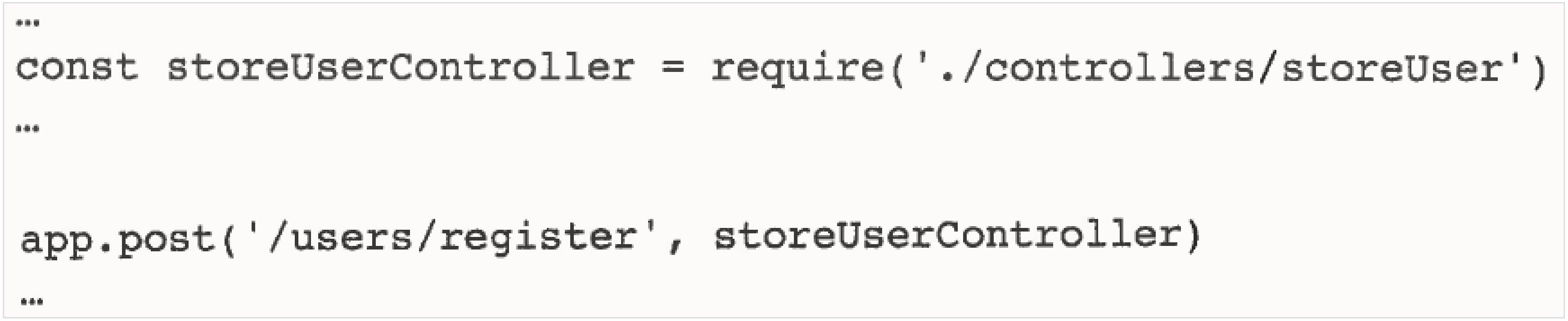
User Model

- **In models folder**, create a new file **User.js**
  - copy/edit contents from BlogPost.js to create the User schema:



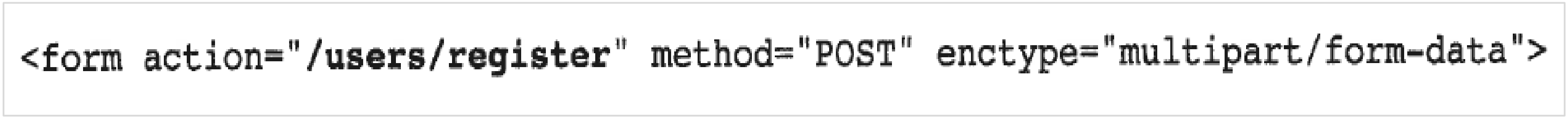
```
const mongoose = require('mongoose')
const Schema = mongoose.Schema;

const UserSchema = new Schema({
  username: String,
  password: String
});

// export model
const User = mongoose.model('User',UserSchema);
module.exports = User
```

- **In index.js :** Register a new route



```
…
const storeUserController = require('./controllers/storeUser')
…

app.post('/users/register', storeUserController)
…
```

- **In register.ejs :** Specify this same route in the form action of the register user form

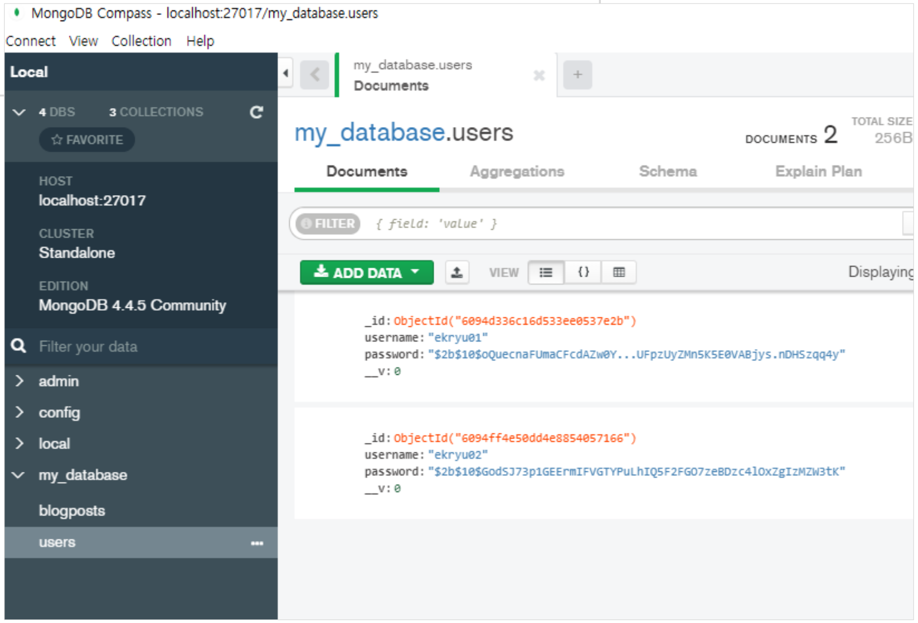


```
<form action="/users/register" method="POST" enctype="multipart/form-data">
```

Handle User Registration

- **In controllers folder :** Create a new file **storeUser.js**

```
const User = require('../models/User.js')
const path = require('path')

module.exports = (req,res)=>{
    User.create(req.body, (error, user) => {
        res.redirect('/')
    })
}
```



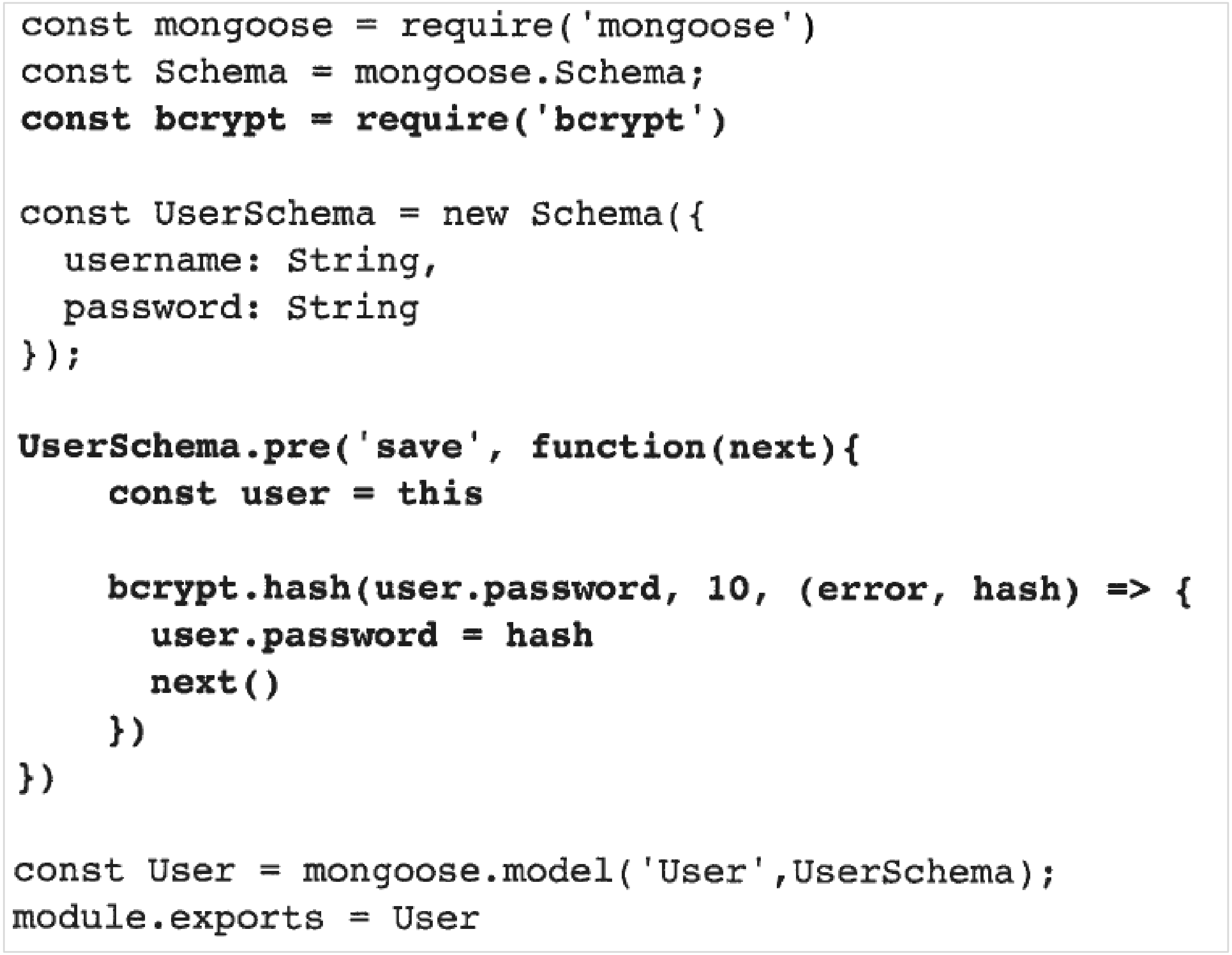
```
_id: ObjectId("6094d336c16d533ee0537e2b")
username: "ekryu01"
password: "$2b$10$oQuecnaFUmaCFcdAZw0Y...UFpzUyZMn5K5E0VABjys.nDHSzqq4y"
__v: 0

_id: ObjectId("6094ff4e50dd4e8854057166")
username: "ekryu02"
password: "$2b$10$GodSJ73p1GEErmIFVGTYPuLhIQ5F2FGO7zeBDzc4lOxZgIzMZW3tK"
__v: 0
```

Password Encryption

- **To encrypt a password before storing it**

```
> npm install bcrypt
```

- **In /models/ User.js :** add the codes:



```
const mongoose = require('mongoose')
const Schema = mongoose.Schema;
const bcrypt = require('bcrypt')

const UserSchema = new Schema({
  username: String,
  password: String
});

UserSchema.pre('save', function(next){
    const user = this

    bcrypt.hash(user.password, 10, (error, hash) => {
      user.password = hash
      next()
    })
})

const User = mongoose.model('User',UserSchema);
module.exports = User
```

Mongoose Validation

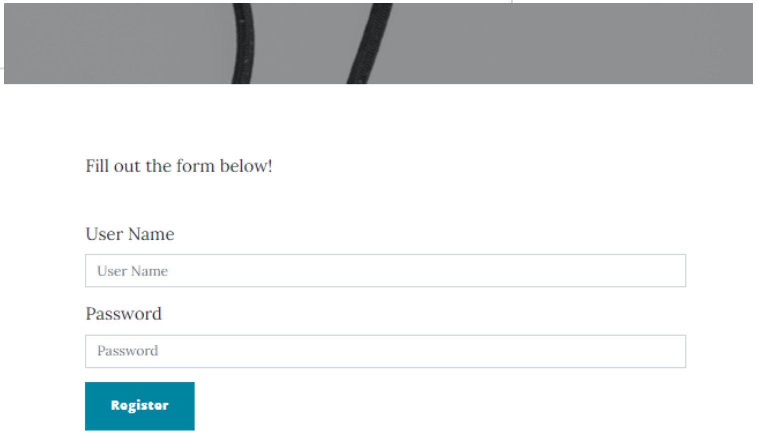
- **In User.js :**
  - To ensure that the **username** is **required** and **unique** in DB

```
...
const UserSchema = new Schema({
  username: String,
  password: String
});
...
```

```
const UserSchema = new Schema({
  username: {
    type: String,
    required: true,
    unique: true
  },
  password: {
    type: String,
    required: true
  }
});
```

- **In storeUser.js :** when there is an error, we will redirect back to the user register form

```
...
module.exports = (req,res)=>{
    User.create(req.body, (error, user) => {
        if(error){
            return res.redirect('/auth/register')
        }
        res.redirect('/')
    })
}
```



Fill out the form below!

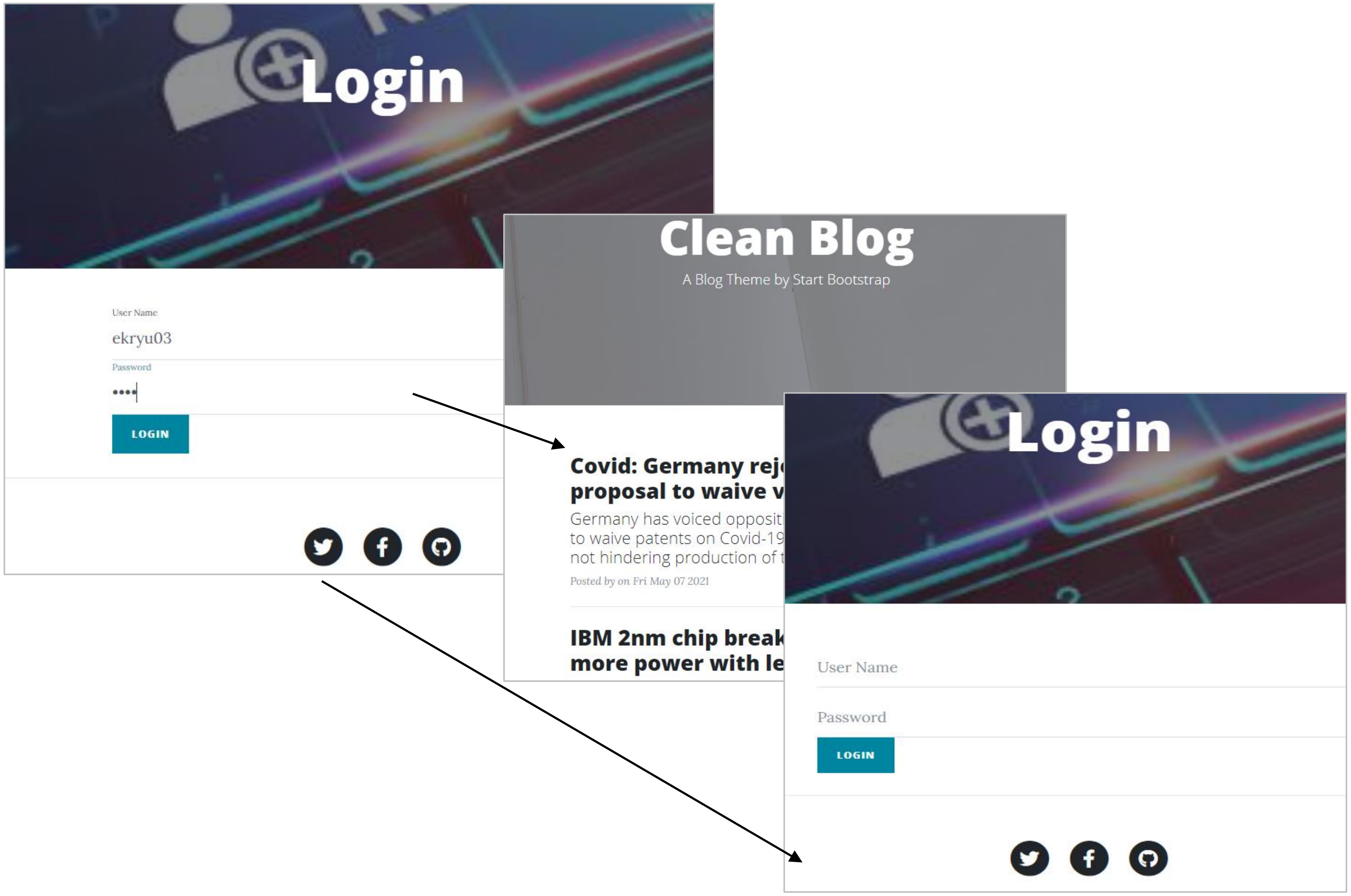
User Name

User Name

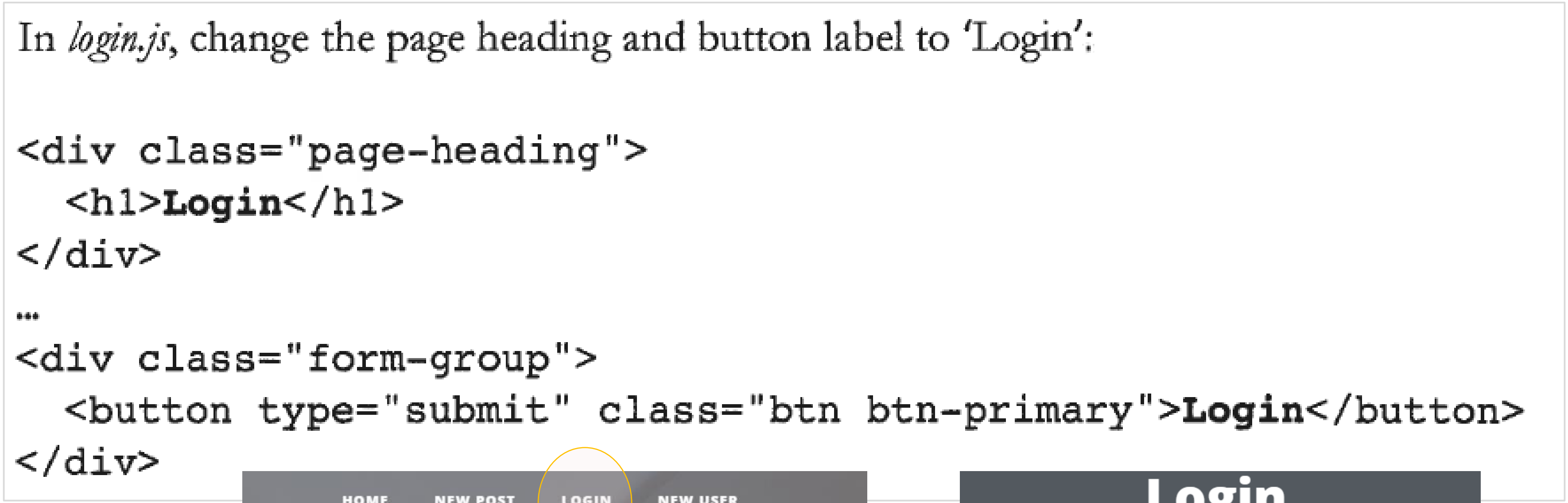
Password

Password

User Login Process

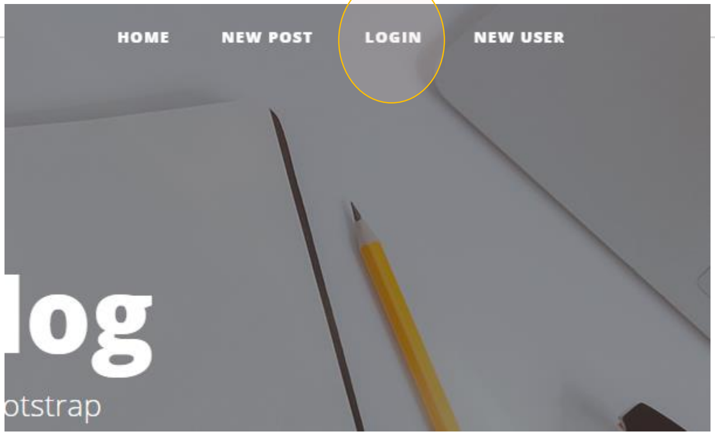


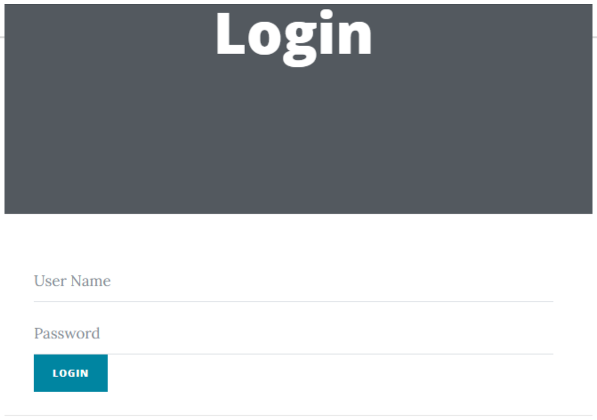
- In views folder, create a new file **login.ejs :** (copying register.ejs)

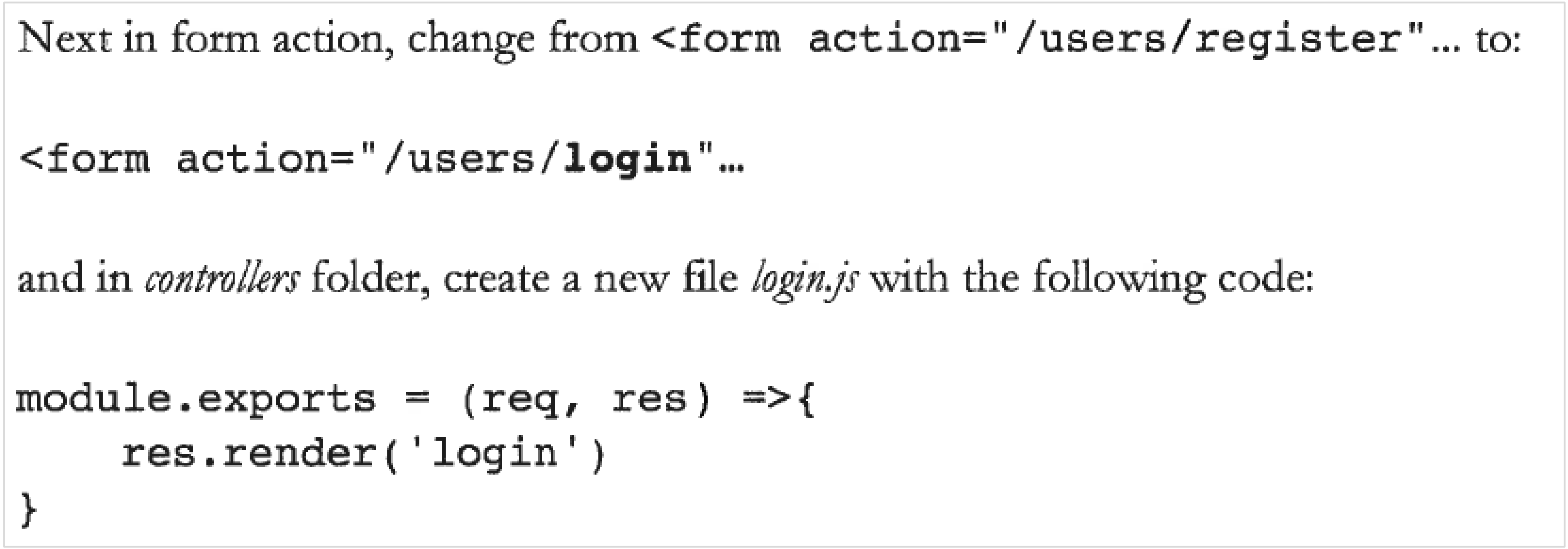


In *login.js*, change the page heading and button label to 'Login':

```
<div class="page-heading">
  <h1>Login</h1>
</div>
...
<div class="form-group">
  <button type="submit" class="btn btn-primary">Login</button>
</div>
```







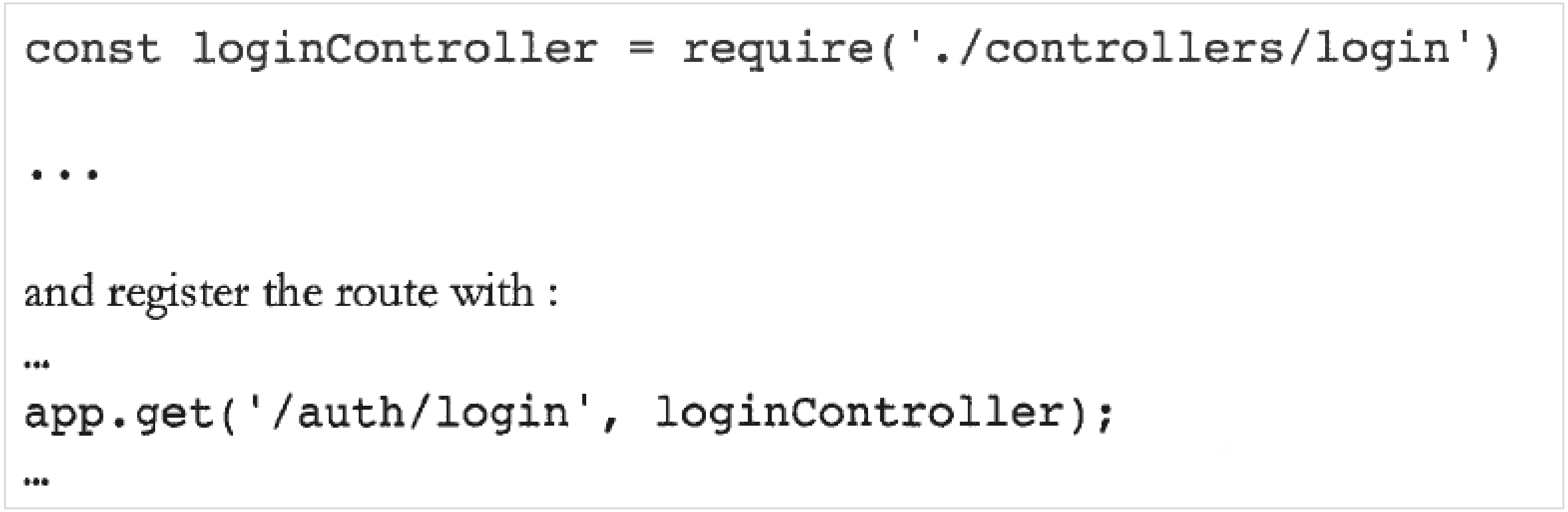
Next in form action, change from `<form action="/users/register"`... to:

`<form action="/users/`**`login`**`"`...

and in *controllers* folder, create a new file *login.js* with the following code:

```
module.exports = (req, res) =>{
    res.render('login')
}
```

- **In index.js :**

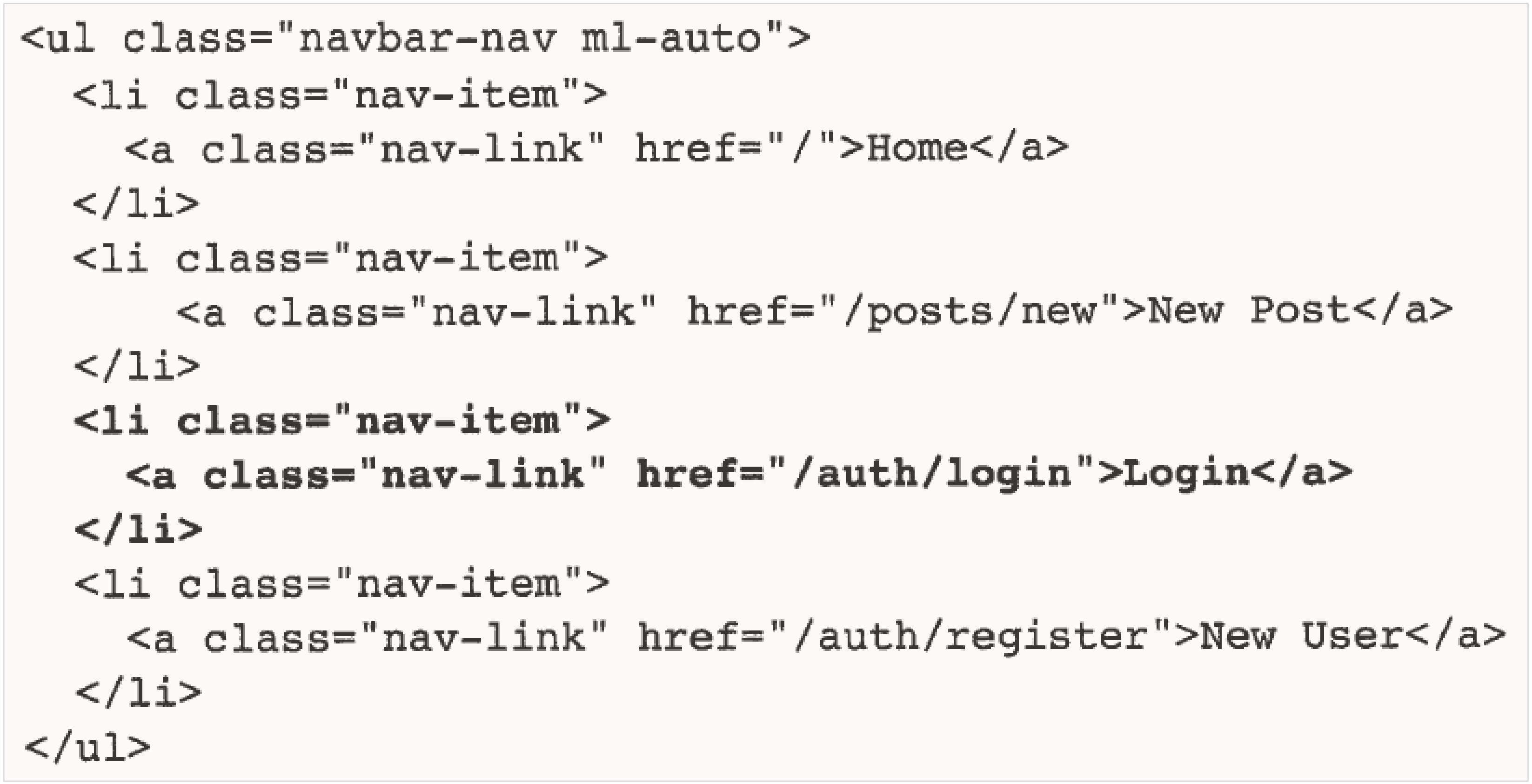


```
const loginController = require('./controllers/login')

...
```

and register the route with :

```
...
app.get('/auth/login', loginController);
...
```

- **In view/ layouts/navbar.ejs:** Add login to the navbar



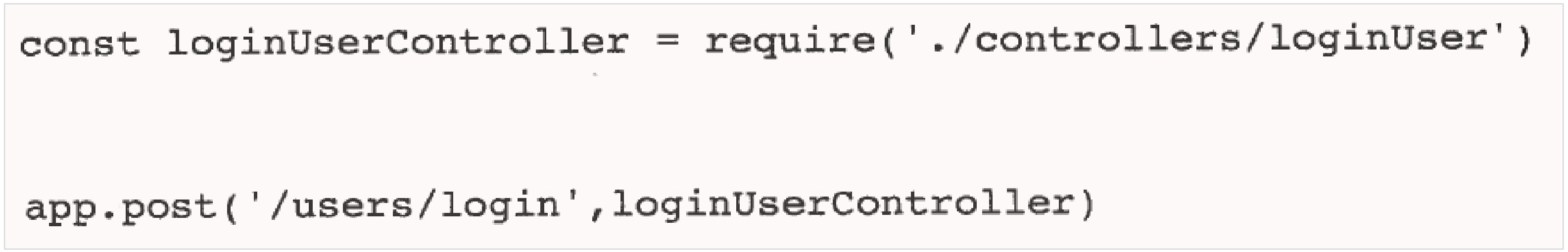
```
<ul class="navbar-nav ml-auto">
  <li class="nav-item">
    <a class="nav-link" href="/">Home</a>
  </li>
  <li class="nav-item">
      <a class="nav-link" href="/posts/new">New Post</a>
  </li>
  <li class="nav-item">
    <a class="nav-link" href="/auth/login">Login</a>
  </li>
  <li class="nav-item">
    <a class="nav-link" href="/auth/register">New User</a>
  </li>
</ul>
```

Login Process

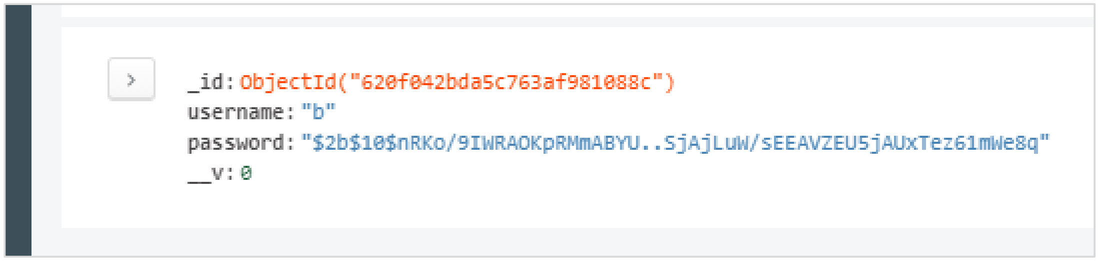
- In controllers folder, create a new file **loginUser.js**

```
const bcrypt = require('bcrypt')
const User = require('../models/User')

module.exports = (req, res) =>{
    const { username, password } = req.body;

    User.findOne({username:username}, (error,user) => {
      if (user){
        bcrypt.compare(password, user.password, (error, same) =>{
          if(same){ // if passwords match
            // store user session, will talk about it later
            res.redirect('/')
          }
          else{
            res.redirect('/auth/login')
          }
        })
      }
      else{
        res.redirect('/auth/login')
      }
    })
}
```

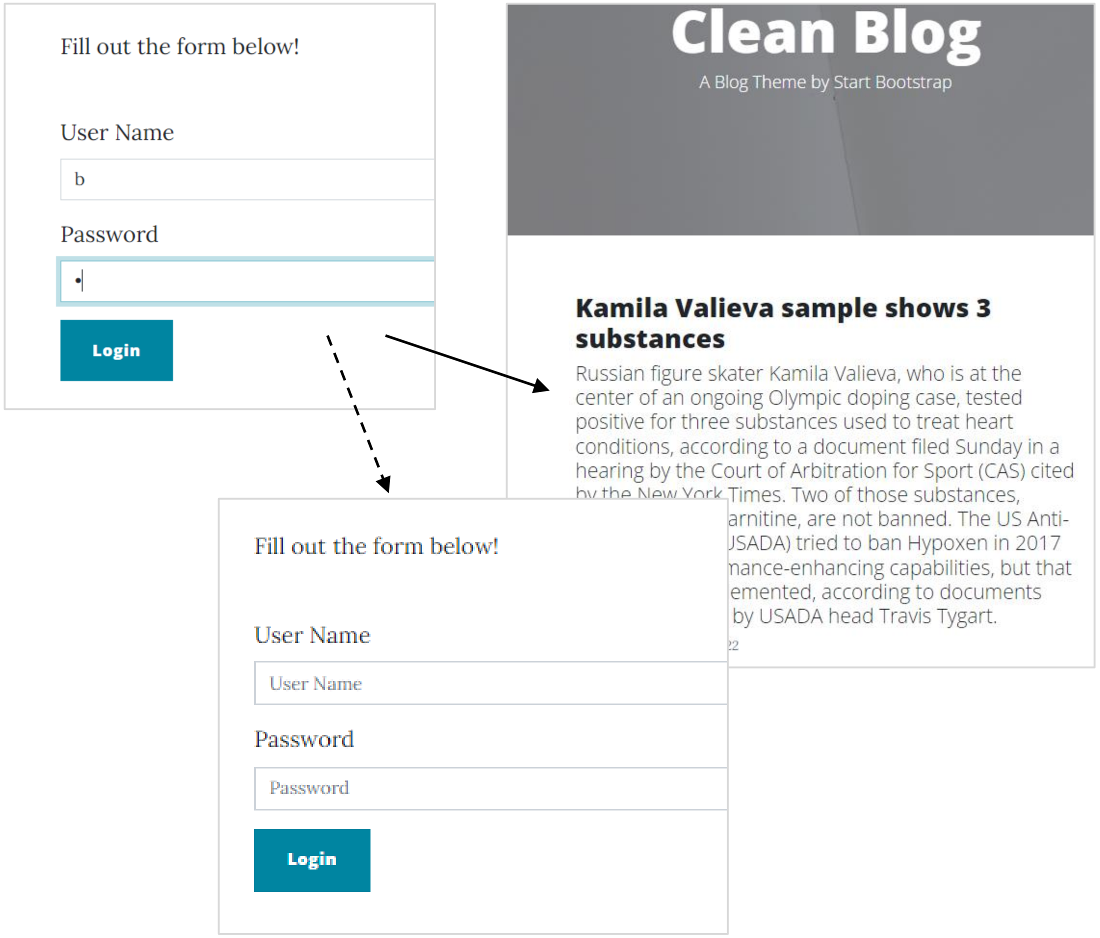
- **In index.js :** To apply the loginUserController



```
const loginUserController = require('./controllers/loginUser')


app.post('/users/login',loginUserController)
```



```
_id: ObjectId("620f042bda5c763af981088c")
username: "b"
password: "$2b$10$nRKo/9IWRAOKpRMmABYU..SjAjLuW/sEEAVZEU5jAUxTez61mWe8q"
__v: 0
```



Fill out the form below!

User Name

b

Password

•

Clean Blog

A Blog Theme by Start Bootstrap

Kamila Valieva sample shows 3 substances

Russian figure skater Kamila Valieva, who is at the center of an ongoing Olympic doping case, tested positive for three substances used to treat heart conditions, according to a document filed Sunday in a hearing by the Court of Arbitration for Sport (CAS) cited by the New York Times. Two of those substances, arnitine, are not banned. The US Anti- USADA) tried to ban Hypoxen in 2017 mance-enhancing capabilities, but that emented, according to documents by USADA head Travis Tygart.

Fill out the form below!

User Name

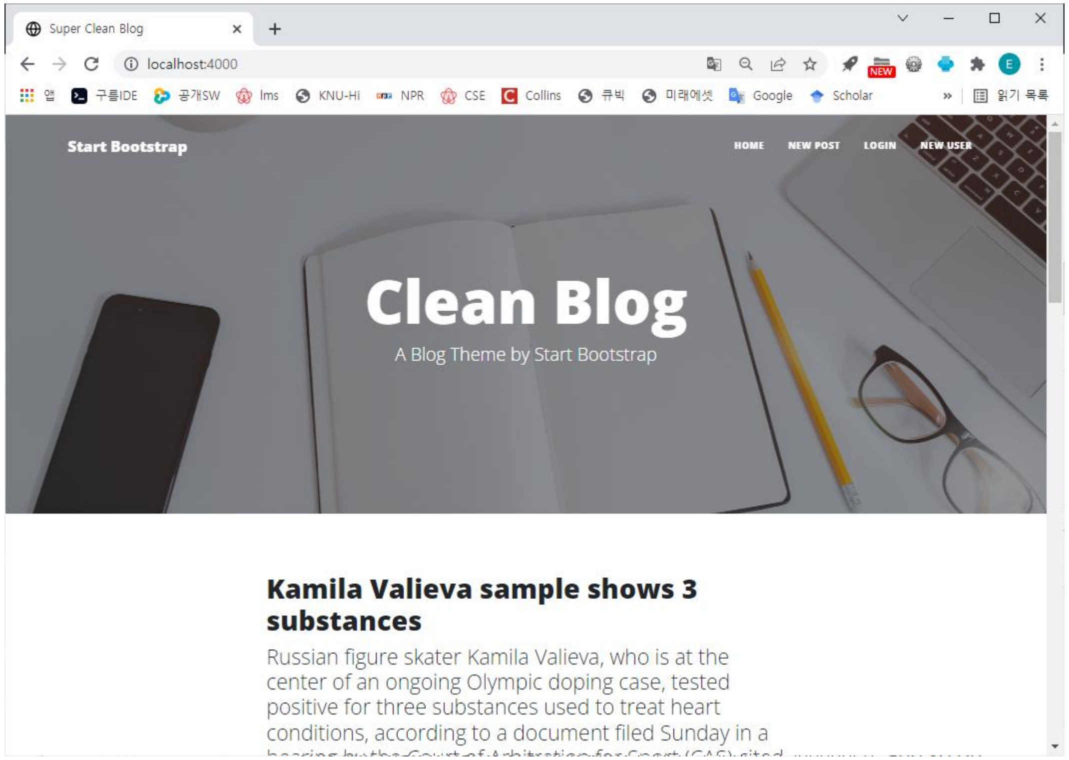
User Name

Password

Password

Summary

- APPLYING **MONGODB** TO Blog PROJECT
- **UPLOADING IMAGE** WITH EXPRESS
- INTRODUCTION TO EXPRESS **MIDDLEWARE**
- REFACTORING TO **MVC**
- **USER REGISTRATION**



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