



Institute of Technology of Cambodia

Department of Information Technology and Communication

Subject: Internet Programming TP

Lecturer: Hok Tin

Name:

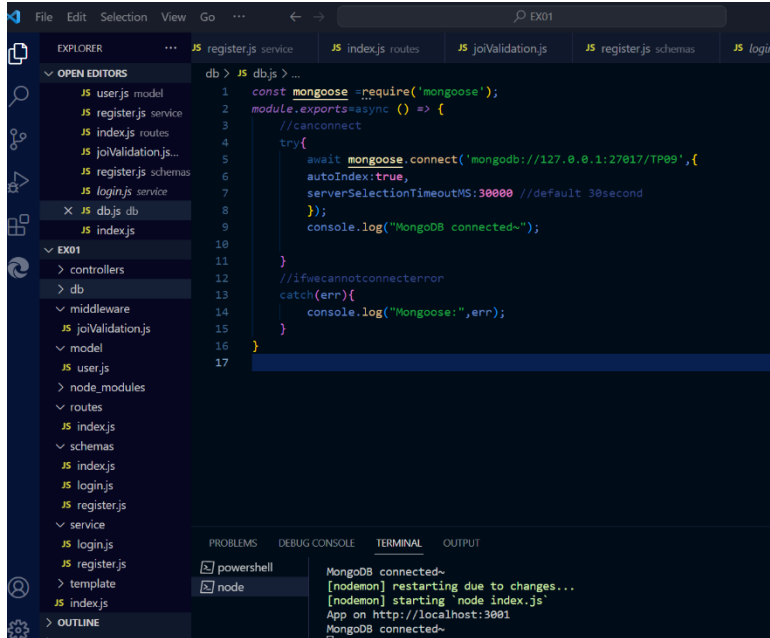
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e20190436

TP09: VueJS and NodeJS

Git Url: <https://github.com/KimLeakhena/TP09IP.git>

1: Mongoose

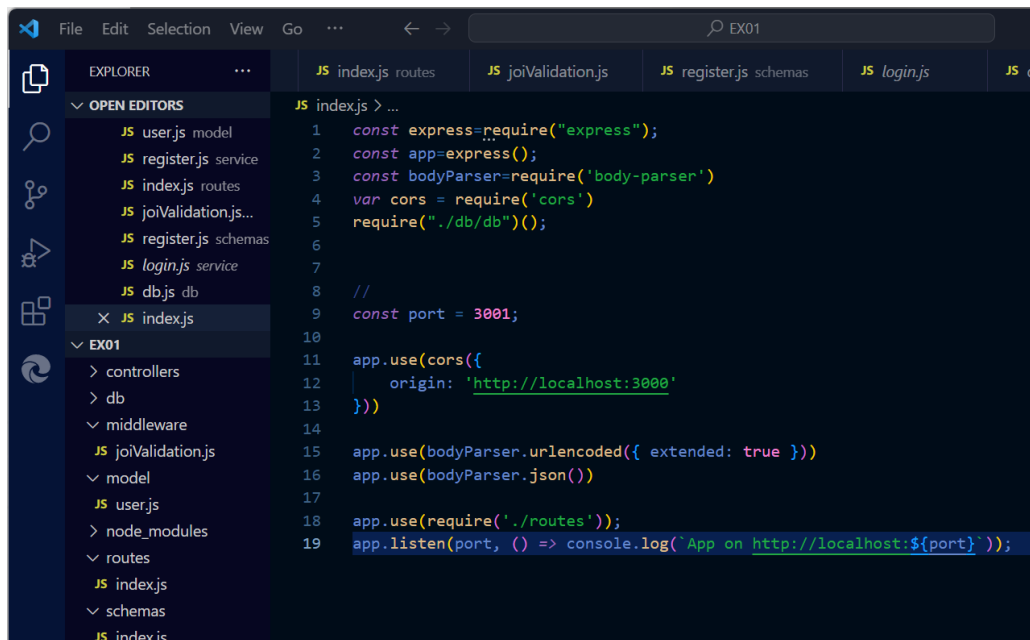


The image shows a VS Code editor with the file explorer on the left. The file explorer shows a project structure with folders like controllers, db, middleware, model, routes, schemas, and service. The file explorer is open to the db folder, showing db.js and index.js. The main editor shows the content of db.js, which contains the following code:

```
1 const mongoose = require('mongoose');
2 module.exports = async () => {
3   //can connect
4   try{
5     await mongoose.connect('mongodb://127.0.0.1:27017/TP09',{
6       autoIndex:true,
7       serverSelectionTimeoutMS:30000 //default 30second
8     });
9     console.log("MongoDB connected~");
10  }
11  }
12  //if we cannot connect error
13  catch(err){
14    console.log("Mongoose:",err);
15  }
16 }
17
```

The terminal at the bottom shows the following output:

```
MongoDB connected~
[nodemon] restarting due to changes...
[nodemon] starting 'node index.js'
App on http://localhost:3001
MongoDB connected~
```

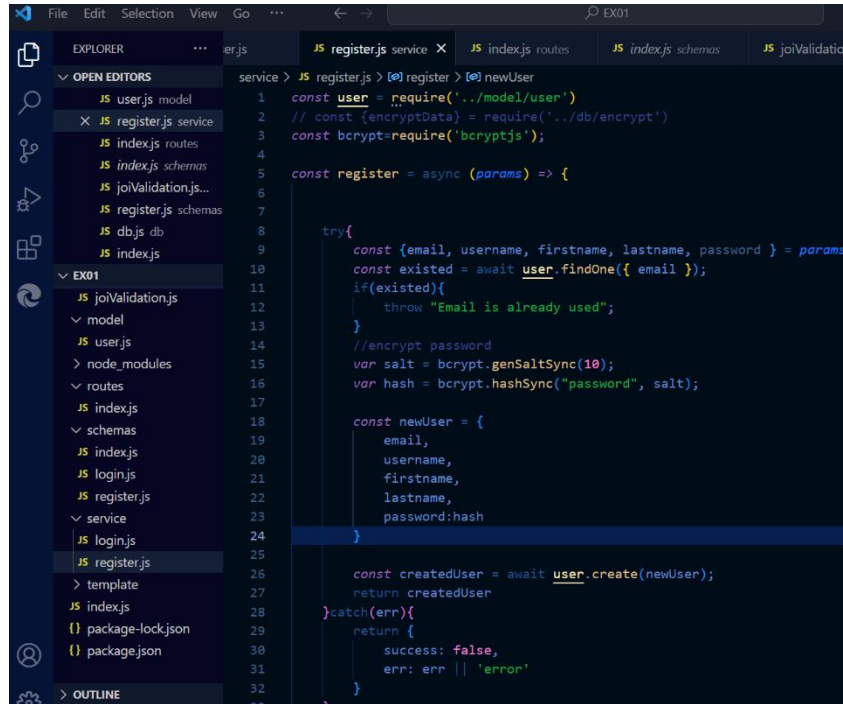


The image shows a VS Code editor with the file explorer on the left. The file explorer shows a project structure with folders like controllers, db, middleware, model, routes, schemas, and service. The file explorer is open to the routes folder, showing index.js. The main editor shows the content of index.js, which contains the following code:

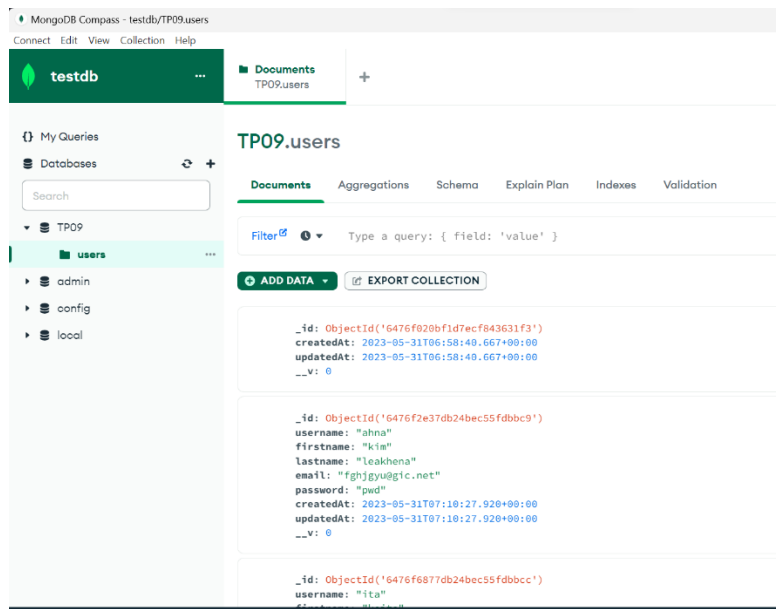
```
1 const express = require("express");
2 const app = express();
3 const bodyParser = require('body-parser')
4 var cors = require('cors')
5 require("./db/db")();
6
7
8 //
9 const port = 3001;
10
11 app.use(cors({
12   origin: 'http://localhost:3000'
13 })))
14
15 app.use(bodyParser.urlencoded({ extended: true })))
16 app.use(bodyParser.json())
17
18 app.use(require('./routes'));
19 app.listen(port, () => console.log(`App on http://localhost:${port}`));
```

The screenshot shows the Visual Studio Code interface with the Explorer sidebar on the left and the Editor window on the right. The Explorer sidebar displays the file structure of a project named 'EX01'. The Editor window shows the 'user.js' file, which contains a MongoDB schema definition for a 'user' model. The schema is defined using the 'mongoose.Schema' constructor and includes fields for 'username', 'firstname', 'lastname', 'email', and 'password'. The 'username' field is highlighted with a blue selection bar.

```
2 "use strict"
3 const mongoose=require('mongoose');
4 // const Schema=mongoose.Schema;
5 const userSchema=new mongoose.Schema({
6
7   username:{
8     type:String,
9     require:true,
10    unique:true
11  },
12
13  firstname:{
14    type:String,
15    require:true,
16    unique:true
17  },
18  lastname:{
19    type:String,
20    require:true,
21    unique:true
22  },
23  email:{
24    type:String,
25    require:true,
26    unique:true
27  },
28
29  password:{
30    type:String,
31    unique:true
32  }
33 },{
34   // options
35 }
```



```
File Edit Selection View Go ... EX01
EXPLORER
  OPEN EDITORS
    JS user.js model
    JS register.js service
    JS index.js routes
    JS index.js schemas
    JS JoiValidation.js...
    JS register.js schemas
    JS db.js db
    JS index.js
  EX01
    JS JoiValidation.js
    JS model
    JS user.js
    JS node_modules
    JS routes
    JS index.js
    JS schemas
    JS index.js
    JS login.js
    JS register.js
    JS service
    JS login.js
    JS register.js
    JS template
    JS index.js
    package-lock.json
    package.json
  OUTLINE
  JS register.js service
    1 const user = require('../model/user')
    2 // const {encryptData} = require('../db/encrypt')
    3 const bcrypt=require('bcryptjs');
    4
    5 const register = async (params) => {
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    const {email, username, firstname, lastname, password } = params;
    const existed = await user.findOne({ email });
    if(existed){
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```



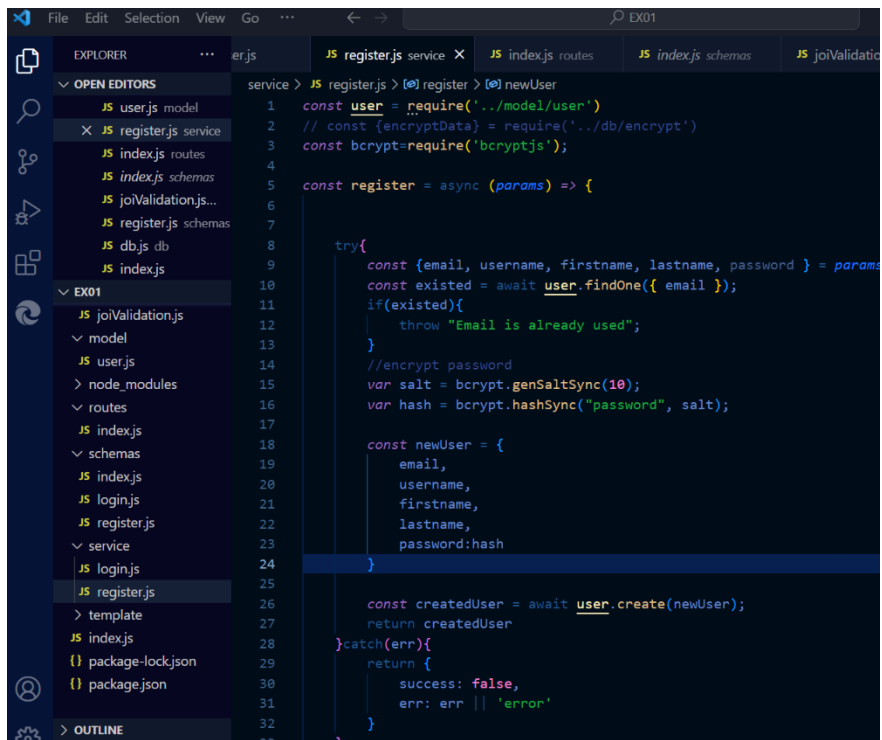
2: Authentication with database

```
File Edit Selection View Go ... EX01
EXPLORER ... JS user.js JS register.js service JS index.js routes X JS JoiValidation.js JS register.js
OPEN EDITORS
  JS user.js model
  JS register.js service
  X JS index.js routes
  JS JoiValidation.js...
  JS register.js schemas
  JS login.js service
  JS db.js db
  JS index.js
  EX01
    > controllers
    > db
    > middleware
    JS JoiValidation.js
    > model
    JS user.js
    > node_modules
    > routes
    JS index.js
    > schemas
    JS index.js
    JS login.js
    JS register.js
    > service
    JS login.js
    JS register.js
    > template
    JS index.js
    > OUTLINE
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  Windows Search File Explorer Microsoft Edge Visual Studio Code Word PowerPoint Google Chrome Node.js

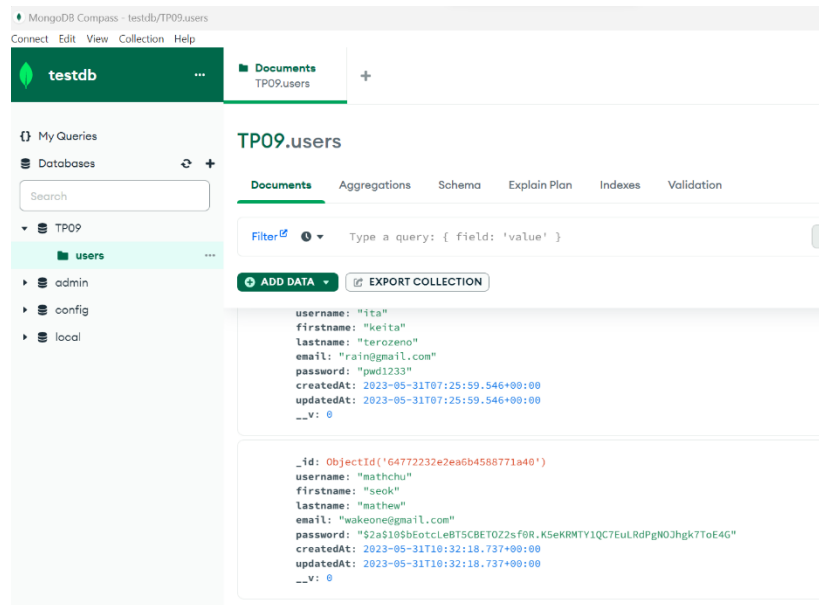
routes > JS index.js > router.get('/') callback
16 router.post('/login', async (req, res, next) => {
17   // const param = JSON.parse(req.body);
18   const {email, password} = req.body;
19   const result = await login(email, password);
20   res.json(result);
21 })
22 const JoiValidationMiddleware = async (req, res, next) => {
23
24   try {
25     await registerSchema.validateAsync(req.body);
26     next();
27   }
28   catch (err) {
29     // console.log(err);
30     res.json({
31       success: false,
32       error: err.details?.[0]?.message || "unknown error"
33     });
34   }
35 }
36
37 //register page
38 router.post('/register', JoiValidationMiddleware, async (req, res, next) => {
39   // const param = JSON.parse(req.body);
40   // try {
41   //   await registerSchema.validateAsync(req.body);
42   //   const createdUser = await register(req.body);
43   //   res.json(createdUser);
44   // }
45   // catch (err) {
46   //   console.log(err);
47   //   res.json({
48   //     success: false,
49   //     error: err.details?.[0]?.message || "unknown error"
50   //   });
51   // }
52 })
```

```
EXPLORER ... er.js JS register.js service JS index.js routes JS index.js schemas X JS JoiValidation.js
OPEN EDITORS
  JS user.js model
  JS register.js service
  JS index.js routes
  JS index.js schemas
  X JS JoiValidation.js...
  JS register.js schemas
  JS db.js db
  JS index.js
  EX01
    > controllers
    > db
    > middleware
    JS JoiValidation.js
    > model
    JS user.js
    > node_modules
    > routes
    JS index.js
    > schemas
    JS index.js
    JS login.js
    JS register.js
    > service
    JS login.js
    JS register.js
    > template
    JS index.js
    > OUTLINE
    > TIMELINE
  0 0 0
  87°
  Windows Search File Explorer Microsoft Edge Visual Studio Code Word PowerPoint Google Chrome Node.js

schemas > JS register.js > registerSchema
1 const Joi = require('joi');
2
3 const registerSchema = Joi.object({
4   username: Joi.string()
5     .alphanumeric()
6     .min(3)
7     .max(30)
8     .required(),
9
10  password: Joi.string()
11    .pattern(new RegExp('[a-zA-Z0-9]{3,30}$')),
12
13  repeat_password: Joi.ref('password'),
14
15  // access_token: [
16  //    Joi.string(),
17  //    Joi.number()
18  //  ],
19
20  // birth_year: Joi.number()
21  //   .integer()
22  //   .min(1980)
23  //   .max(2013),
24
25  email: Joi.string()
26    .email({ minDomainSegments: 2, tlds: { allow: ['com', 'net'] } }),
27    firstname: Joi.string().min(2).max(50).required(),
28    lastname: Joi.string().min(2).max(50).required(),
29  })
30
31 // .with('username', 'birth_year')
32 // .xor('password', 'access_token')
33 // .with('password', 'repeat_password');
```



```
1 const user = require('../model/user')
2 // const {encryptData} = require('../db/encrypt')
3 const bcrypt=require('bcryptjs');
4
5 const register = async (params) => {
6
7
8     try{
9         const {email, username, firstname, lastname, password} = params;
10         const existed = await user.findOne({ email });
11         if(existed){
12             throw "Email is already used";
13         }
14         //encrypt password
15         var salt = bcrypt.genSaltSync(10);
16         var hash = bcrypt.hashSync("password", salt);
17
18         const newUser = {
19             email,
20             username,
21             firstname,
22             lastname,
23             password:hash
24         }
25
26         const createdUser = await user.create(newUser);
27         return createdUser
28     }catch(err){
29         return {
30             success: false,
31             err: err || 'error'
32         }
33     }
```



Home Workspaces API Network Explore Search Postman Invite

Overview New Collection POST http://localhost:3001/ + ...

http://localhost:3001/register

POST http://localhost:3001/register

Params Authorization Headers (9) Body Pre-request Script Tests Settings

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

```
1 {
2   ...
3   "username": "rich",
4   "firstname": "ricky",
5   "lastname": "hong",
6   "email": "yeuha@gmail.com",
7   "password": "ricky123",
8   "repeat_password": "ricky123"
9 }
```

Body Cookies Headers (9) Test Results Stat

Pretty Raw Preview Visualize JSON

```
1 {
2   "username": "rich",
3   "firstname": "ricky",
4   "lastname": "hong",
5   "email": "yeuha@gmail.com",
6   "password": "$2a$10$5fiozx0hqccqF38YmR30I0ekGfPZUwPBjvjmYwz7T03zwFv8q27b6K",
7   "_id": "64773a16c22e17701ea42446",
8   "createdAt": "2023-05-31T12:14:14.936Z",
9   "updatedAt": "2023-05-31T12:14:14.936Z",
10  "_v": 0
11 }
```

Home Workspaces API Network Explore Search Postman

Overview New Collection POST http://localhost:3001/ + ...

http://localhost:3001/register

POST http://localhost:3001/register

Params Authorization Headers (9) Body Pre-request Script Tests Settings

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

```
1 {
2   ...
3   "username": "yedee",
4   "firstname": "yedad",
5   "email": "jyp@gmail.com",
6   "password": "yedee123",
7   "repeat_password": "yedee123"
8 }
```

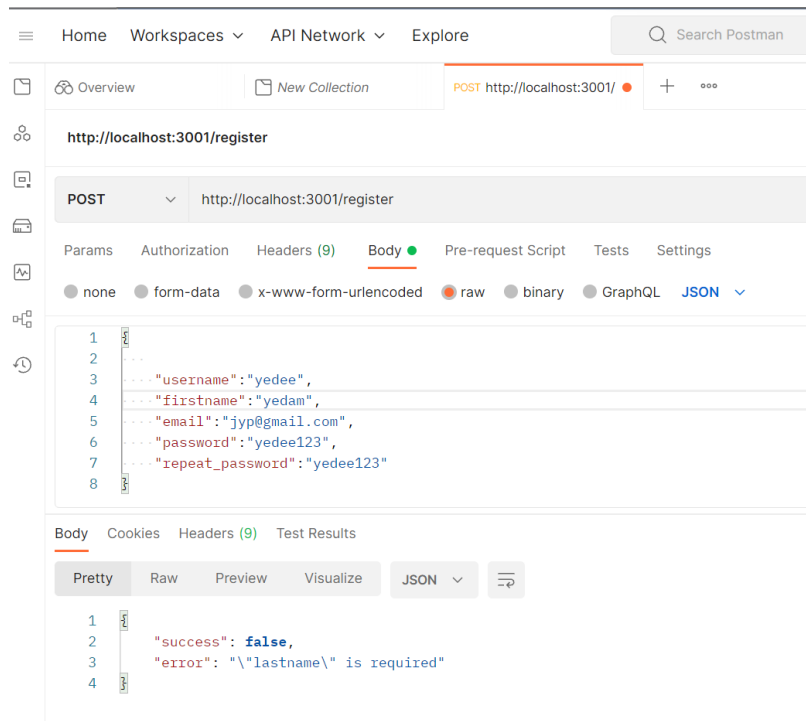
Body Cookies Headers (9) Test Results

Pretty Raw Preview Visualize JSON

```
1 {
2   "success": false,
3   "error": "\\lastname\\ is required"
4 }
```



```
1 const registerSchema=require("../schemas/register");
2 const joiValidationMiddleware =(schema) =>{
3   return async(req,res,next)=>{
4     try {
5       await schema.validateAsync(req.body);
6       next();
7     }
8     catch (err) {
9       // console.log(err);
10      res.json({
11        success:false,
12        error:err.details?.[0]?.message || "unknown error"
13      });
14    }
15  }
16 }
17 module.exports=joiValidationMiddleware;
```



Home Workspaces API Network Explore

Overview New Collection POST http://localhost:3001/ +

http://localhost:3001/register

POST http://localhost:3001/register

Params Authorization Headers (9) Body Pre-request Script Tests Se

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

```
1 {
2   ...
3   "username": "yedee",
4   "firstname": "yedad",
5   "lastname": "Bang",
6   "email": "cfdtrfjtrydtkdsde",
7   "password": "yedee123",
8   "repeat_password": "yedee123"
9 }
```

Body Cookies Headers (9) Test Results

Pretty Raw Preview Visualize JSON

```
1 {
2   "success": false,
3   "error": "\"email\" must be a valid email"
4 }
```

Home Workspaces API Network Explore Search Postman Invite

Overview New Collection POST http://localhost:3001/ + ***

http://localhost:3001/register

POST http://localhost:3001/register

Params Authorization Headers (9) Body Pre-request Script Tests Settings

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

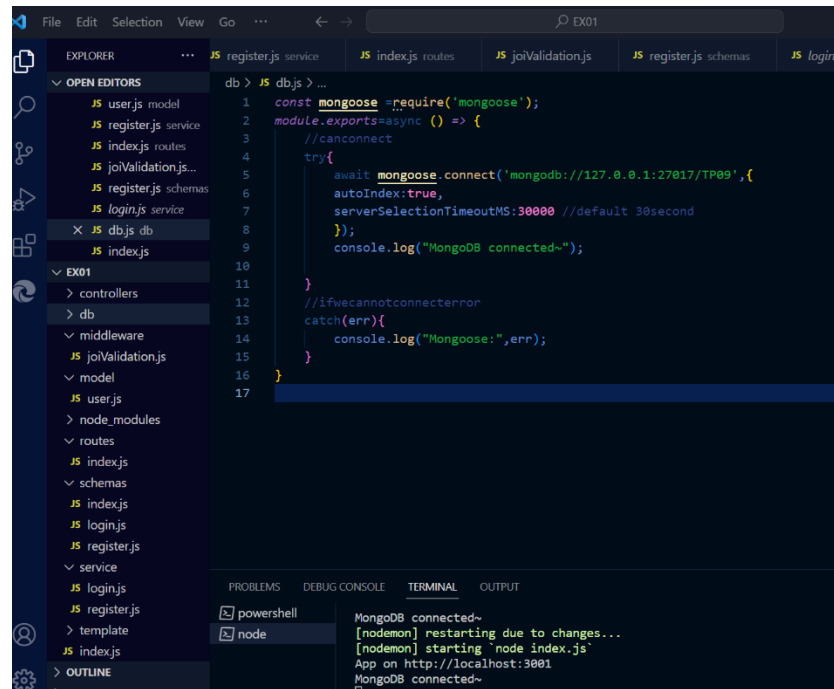
```
1 {
2   ...
3   "username": "ita",
4   "firstname": "keita",
5   "lastname": "terozeno",
6   "email": "rain@gmail.com",
7   "password": "pwd123",
8   "repeat_password": "pwd123"
9 }
```

Body Cookies Headers (9) Test Results Status

Pretty Raw Preview Visualize JSON

```
1 {
2   "success": false,
3   "err": "Email is already used"
4 }
```

3: Token, Cookie



The image shows a Visual Studio Code editor window with a project named 'EX01'. The Explorer sidebar on the left shows the file structure, including folders for 'controllers', 'db', 'middleware', 'model', 'node_modules', 'routes', 'schemas', 'service', and 'template'. The 'db' folder is expanded, showing 'db.js'. The main editor area displays the content of 'db.js', which is a JavaScript file for connecting to a MongoDB database. The code uses the 'mongoose' library and includes error handling for connection failures. The terminal at the bottom shows the output of running the application, indicating a successful connection to the MongoDB database.

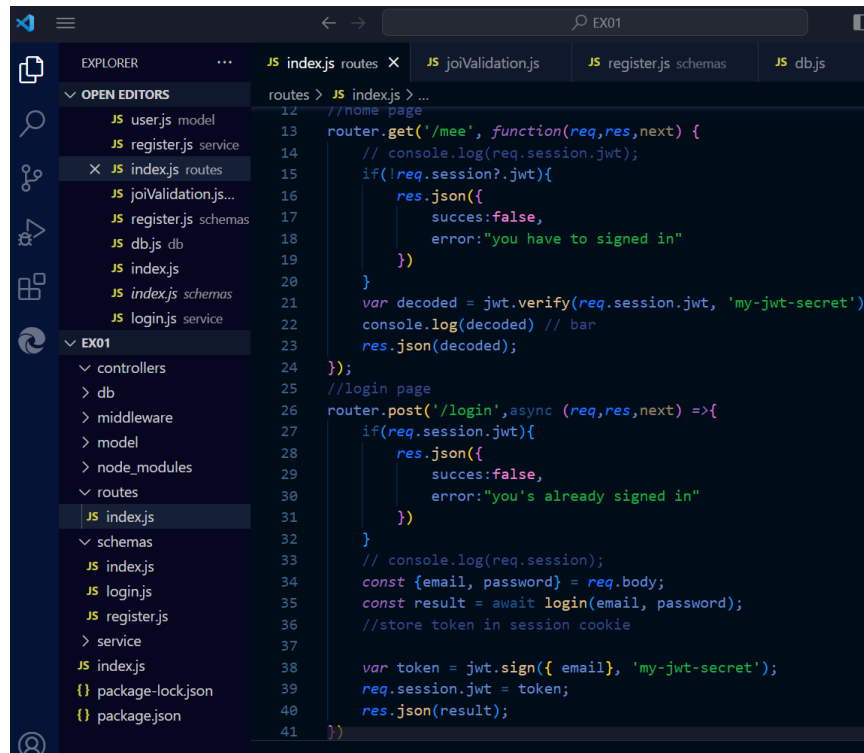
```
1 const mongoose = require('mongoose');
2 module.exports = async () => {
3   //canconnect
4   try{
5     await mongoose.connect('mongodb://127.0.0.1:27017/TP09',{
6       autoIndex:true,
7       serverSelectionTimeoutMS:30000 //default 30second
8     });
9     console.log("MongoDB connected~");
10  }
11  //ifwecannotconnecterror
12  catch(err){
13    console.log("Mongoose:",err);
14  }
15 }
16
17
```

Terminal Output:

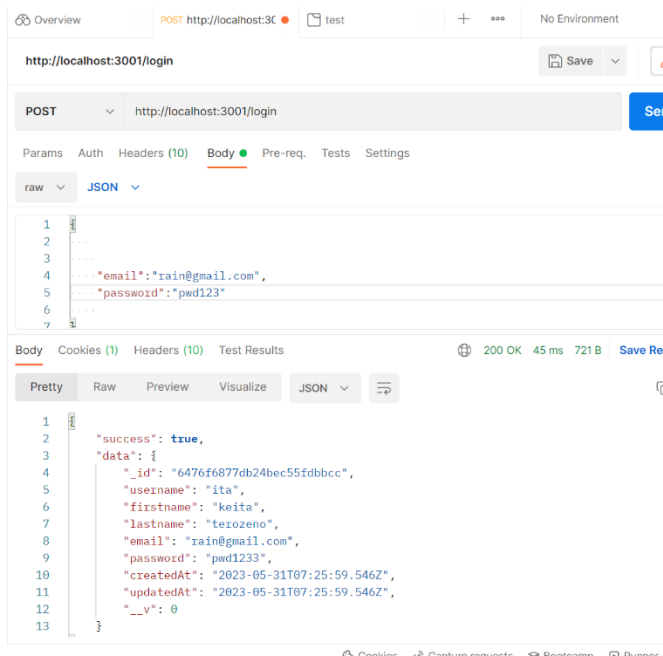
```
MongoDB connected~
[nodemon] restarting due to changes...
[nodemon] starting 'node index.js'
App on http://localhost:3001
MongoDB connected~
```

```
1 const express=require("express");
2 const app=express();
3 const bodyParser=require('body-parser')
4 var session = require('express-session')
5 var cors = require('cors')
6 require("./db/db")();
7
8
9 //
10 const port = 3001;
11
12 app.use(cors({
13   origin: 'http://localhost:3000'
14 })))
15
16 app.use(bodyParser.urlencoded({ extended: true })))
17 app.use(bodyParser.json())
18 //apply the session
19 app.set('trust proxy', 1) // trust first proxy
20 app.use(session({
21   secret: 'kmy-secret',
22   resave: false,
23   saveUninitialized: true,
24   name:'access_token',
25   cookie: {
26     maxAge:1000 * 60 * 60 * 2,
27     // sameSite:true,
28     secure:false,
29   }
30 })))
31 app.use(require('./routes'));
32 app.listen(port, () => console.log("App on http://localhost:${port}"));
```

```
1 service > JS loginjs > login
2 const Users=require("../model/user");
3 const bcrypt=require('bcryptjs');
4
5 const login = async (email, password) => {
6   try {
7
8     const user= await Users.findOne({email})
9     if(user){
10       throw 'user not found.'
11     }
12
13     if( bcrypt.compareSync(password, user?.password )){
14       throw "the user's information incorrected."
15     }
16
17     return {
18       success: true,
19       data: user
20     }
21   } catch (err) {
22     return {
23       success: false,
24       err: err || 'error'
25     }
26   }
27 }
28
29 module.exports = {
30   login
31 }
```



```
12 //home page
13 router.get('/mee', function(req,res,next) {
14   // console.log(req.session.jwt);
15   if(!req.session.jwt){
16     res.json({
17       succes:false,
18       error:"you have to signed in"
19     })
20   }
21   var decoded = jwt.verify(req.session.jwt, 'my-jwt-secret');
22   console.log(decoded) // bar
23   res.json(decoded);
24 });
25 //login page
26 router.post('/login',async (req,res,next) =>{
27   if(req.session.jwt){
28     res.json({
29       succes:false,
30       error:"you's already signed in"
31     })
32   }
33   // console.log(req.session);
34   const {email, password} = req.body;
35   const result = await login(email, password);
36   //store token in session cookie
37
38   var token = jwt.sign({ email}, 'my-jwt-secret');
39   req.session.jwt = token;
40   res.json(result);
41 })
```



Overview POST http://localhost:3001/login test + No Environment

http://localhost:3001/login Save

POST http://localhost:3001/login Send

Params Auth Headers (10) Body Pre-req. Tests Settings

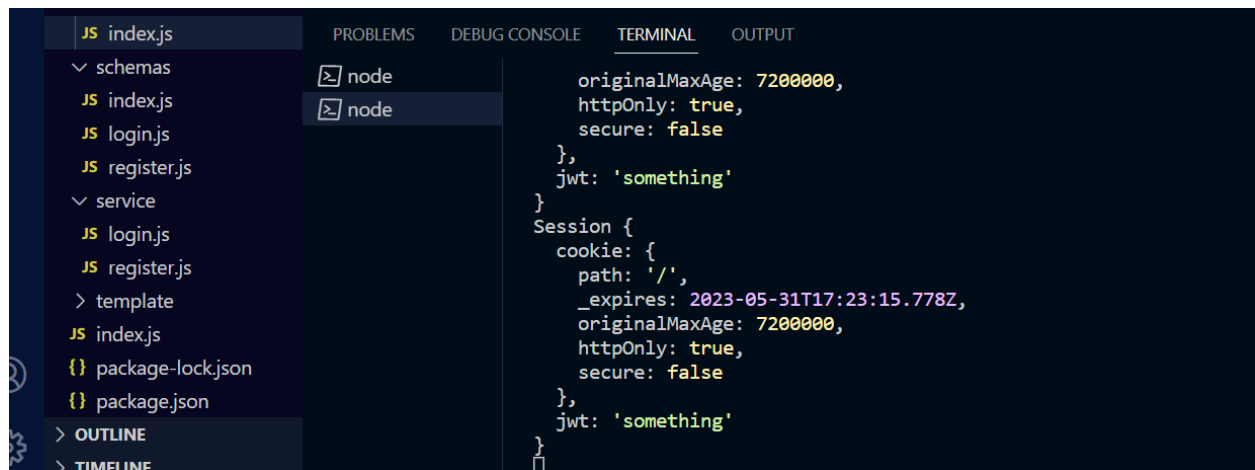
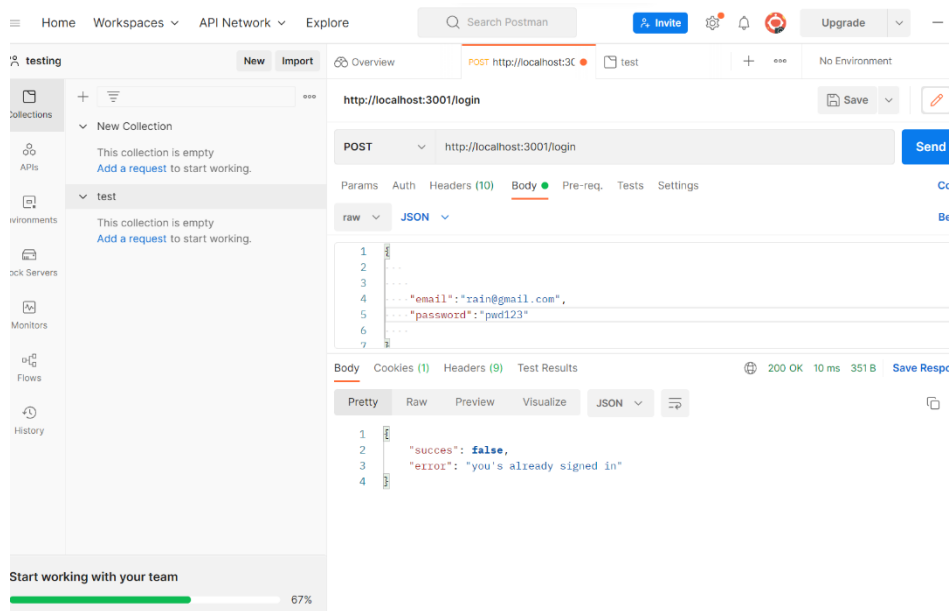
raw JSON

```
1 {
2   ...
3   ...
4   "email": "rain@gmail.com",
5   "password": "pwd123"
6 }
7
```

Body Cookies (1) Headers (10) Test Results 200 OK 45 ms 721 B Save Re

Pretty Raw Preview Visualize JSON

```
1 {
2   "success": true,
3   "data": {
4     "id": "6476f6877db24bec55fdbbcc",
5     "username": "ita",
6     "firstname": "keita",
7     "lastname": "terozeno",
8     "email": "rain@gmail.com",
9     "password": "pwd123",
10    "createdAt": "2023-05-31T07:25:59.546Z",
11    "updatedAt": "2023-05-31T07:25:59.546Z",
12    "__v": 0
13  }
14 }
```



> model

> node_modules

> routes

JS index.js

> schemas

JS index.js

JS login.js

JS register.js

> service

JS login.js

JS register.js

> template

JS index.js

{ } package-lock.json

{ } package.json

> OUTLINE

> TIMELINE

32 // next();

33

34 // }

PROBLEMS

DEBUG CONSOLE

TERMINAL

OUTPUT

node

node

```
originalMaxAge: 7200000,
httpOnly: true,
secure: false
}
}
Session {
  cookie: {
    path: '/',
    _expires: 2023-05-31T17:28:56.148Z,
    originalMaxAge: 7200000,
    httpOnly: true,
    secure: false
  },
  jwt: 'eyJhbGciOiJIUzI1NiIsInR5cCI6IkpXVCJ9.eyJlbWFPbCI6InJhaw5AZ21hawWuY29tIiwiaWF0IjoxNjg1NTQ2OTM2fQ.Z6-DR7B2BLvqCGHdIeUttfOw6KKz4KZS0bXh3H1o23YU'
}
```

Ln 24, Col 50

Spaces: 4

UTF-8

CRLF

JavaScript

Go Live

Background

Prettier

http://localhost:3001/mee

Save

GEThttp://localhost:3001/mee

ParamsAuthHeaders (8)BodyPre-req. TestsSettings

Query Params

| | KEY | VALUE | DESCRIPTION |
|--|-----|-------|-------------|
| | Key | Value | Description |

PrettyRawPreviewVisualizeJSON

```
1  {
2    "success": false,
3    "error": "you have to signed in"
4  }
```

http://localhost:3001/mee

Save

Send

GEThttp://localhost:3001/mee

Send

ParamsAuthHeaders (8)BodyPre-req. TestsSettingsCookies

Query Params

| | KEY | VALUE | DESCRIPTION | | Bulk Edit |
|--|-----|-------|-------------|--|-----------|
| | Key | Value | Description | | |

PrettyRawPreviewVisualizeJSON

```
1  {
2    "email": "rain@gmail.com",
3    "iat": 1685548091
4  }
```