

**TRƯỜNG ĐẠI HỌC CẦN THƠ**  
**TRƯỜNG CÔNG NGHỆ THÔNG TIN & TRUYỀN THÔNG**



**BÁO CÁO THỰC HÀNH MÔN**  
**PHÁT TRIỂN ỨNG DỤNG WEB (CT449 NHÓM 07)**

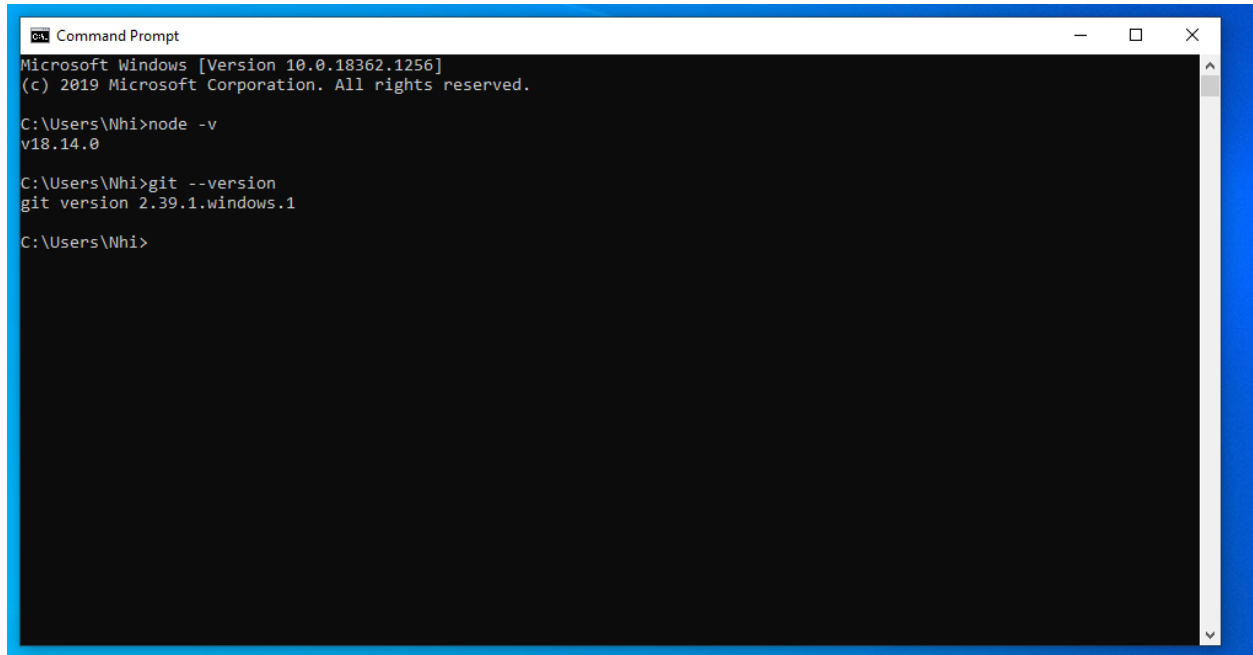
**Sinh viên thực hiện**  
**Lê Thị Chúc Nhi B1910271**

**Giảng viên hướng dẫn**  
**ThS Nguyễn Minh Trung**

# BÀI THỰC HÀNH 1

## Ứng dụng Contactbook – Backend

### Bước 0




```
Command Prompt
Microsoft Windows [Version 10.0.18362.1256]
(c) 2019 Microsoft Corporation. All rights reserved.

C:\Users\Nhi>node -v
v18.14.0

C:\Users\Nhi>git --version
git version 2.39.1.windows.1

C:\Users\Nhi>
```

# Bước 1

 Windows PowerShell

```
PS D:\PTUD_WEB\TH> npm init
This utility will walk you through creating a package.json file.
It only covers the most common items, and tries to guess sensible defaults.

See `npm help init` for definitive documentation on these fields
and exactly what they do.

Use `npm install <pkg>` afterwards to install a package and
save it as a dependency in the package.json file.

Press ^C at any time to quit.
package name: (th)
version: (1.0.0)
description:
entry point: (index.js) server.js
test command:
git repository:
keywords:
author: Nhib1910271
license: (ISC)
About to write to D:\PTUD_WEB\TH\package.json:

{
  "name": "th",
  "version": "1.0.0",
  "description": "",
  "main": "server.js",
  "scripts": {
    "test": "echo \"Error: no test specified\" && exit 1"
  },
  "author": "Nhib1910271",
  "license": "ISC"
}

Is this OK? (yes)
PS D:\PTUD_WEB\TH>
```

```
PS D:\PTUD_WEB\TH> npm install express cors
added 59 packages, and audited 60 packages in 7s

7 packages are looking for funding
  run `npm fund` for details

found 0 vulnerabilities
PS D:\PTUD_WEB\TH>
```

## Bước 2


 master ▾


 1 branch

 0 tags

Go to file

Add file ▾

 Code ▾

 nhib1910271 Cai dat du an 3526a2d 2 minutes ago 1 commit

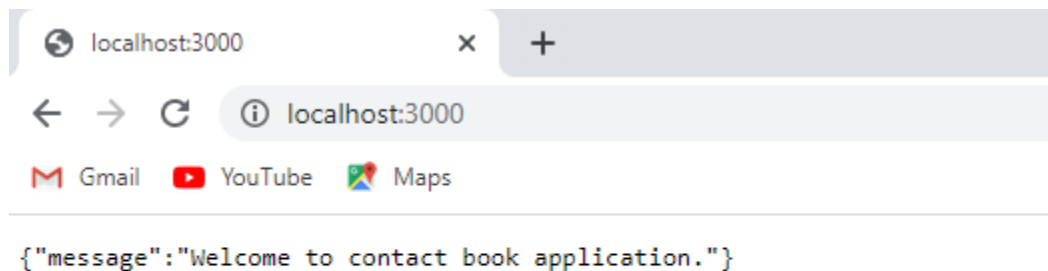
 .gitignore	Cai dat du an	2 minutes ago
 package-lock.json	Cai dat du an	2 minutes ago
 package.json	Cai dat du an	2 minutes ago

Bước 3:

```
JS app.js > ...
1  const express = require("express");
2  const cors = require("cors");
3
4  const app = express();
5
6  app.use(cors());
7  app.use(express.json());
8
9  app.get("/", (req, res) => {
10 |     res.json({ message: "Welcome to contact book application."});
11 | });
12
13 module.exports = app;
```

```
JS server.js > ...
1  const app = require("./app");
2  const config = require("./app/config")
3
4  const PORT = config.app.port;
5  app.listen(PORT, () => {
6 |     console.log('Server is running on port ${PORT}.');
7 | });
```

```
app > config > JS index.js > ...
1  const config = {
2    app: {
3      port: process.env.PORT || 3000,
4    }
5  };
6  module.exports = config;
```



```
C:\Windows\system32\cmd.exe
PS D:\PTUD_WEB\TH> npm install nodemon --save-dev
added 32 packages, and audited 92 packages in 7s
10 packages are looking for funding
  run `npm fund` for details
found 0 vulnerabilities
PS D:\PTUD_WEB\TH> npm start
> th@1.0.0 start
> nodemon server.js

[nodemon] 2.0.20
[nodemon] to restart at any time, enter `rs`
[nodemon] watching path(s): *.*
[nodemon] watching extensions: js,mjs,json
[nodemon] starting `node server.js`
Server is running on port ${PORT}.
```

master

1 branch

0 tags

Go to file

Add file

<> Code

nhib1910271 Cai dat express chay thong bao xin chao			7a281db now	🕒 2 commits
📁	app/config	Cai dat express chay thong bao xin chao	now	
📄	.gitignore	Cai dat du an	19 minutes ago	
📄	app.js	Cai dat express chay thong bao xin chao	now	
📄	package-lock.json	Cai dat express chay thong bao xin chao	now	
📄	package.json	Cai dat express chay thong bao xin chao	now	
📄	server.js	Cai dat express chay thong bao xin chao	now	

Help people interested in this repository understand your project by adding a README.

Add a README

## Bước 4

```
app > controllers > JS contact.controller.js > ...
1  const req = require("express/lib/request");
2
3  exports.create = (req, res) => {
4    res.send({ message: "create handler" });
5  };
6
7  exports.findAll = (req, res) => {
8    res.send({ message: "findAll handler" });
9  };
10
11 exports.findOne = (req, res) => {
12   res.send({ message: "findOne handler" });
13 };
14
15 exports.update = (req, res) => {
16   res.send({ message: "update handler" });
17 };
18
19 exports.delete = (req, res) => {
20   res.send({ message: "delete handler" });
21 };
22
23 exports.deleteAll = (req, res) => {
24   res.send({ message: "deleteAll handler" });
25 };
26
27 exports.findAllFavorite = (req, res) => {
28   res.send({ message: "findAllFavorite handler" });
29 };
```

app > routes > JS contact.route.js > ...

```
1  const express = require("express");
2  const contacts = require("../controllers/contact.controller");
3
4  const router = express.Router();
5
6  router.route("/")
7    .get(contacts.findAll)
8    .post(contacts.create)
9    .delete(contacts.deleteAll);
10
11 router.route("/favorite")
12   .get(contacts.findAllFavorite);
13
14 router.route("/:id")
15   .get(contacts.findOne)
16   .put(contacts.update)
17   .delete(contacts.delete);
18
19 module.exports = router;
```

JS app.js > ...

```
1  const express = require("express");
2  const cors = require("cors");
3
4  const contactsRouter = require("../app/routes/contact.route");
5
6  const app = express();
7
8  app.use(cors());
9  app.use(express.json());
10
11 app.use("/api/contacts", contactsRouter);
12
13 app.get("/", (req, res) => {
14   res.json({ message: "Welcome to contact book application." });
15 });
16
17 module.exports = app;
```



http://localhost:3000/api/contacts/favorite

GET http://localhost:3000/api/contacts/favorite Send

Params Authorization Headers (6) Body Pre-request Script Tests Settings Cookies

Query Params

KEY	VALUE	DESCRIPTION	...	Bulk Edit
Key	Value	Description		

Body Cookies Headers (8) Test Results


Status: 200 OK Time: 37 ms Size: 304 B Save Response

Pretty Raw Preview Visualize JSON

```
1  {
2    "message": "findAllFavorite handler"
3  }
```

## Bước 5

```
app > JS api-error.js > ...
1  class ApiError extends Error {
2    constructor(statusCode, message) {
3      super();
4      this.statusCode = statusCode;
5      this.message = message;
6    }
7  }
8
9  module.exports = ApiError;
10
```

JS app.js >  app.get("/") callback

```
1  const express = require("express");
2  const cors = require("cors");
3
4  const contactsRouter = require("../app/routes/contact.route");
5
6  const ApiError = require("../app/api-error");
7
8  const app = express();
9
10 app.use(cors());
11 app.use(express.json());
12
13 app.use("/api/contacts", contactsRouter);
14
15 app.use((req, res, next) => {
16   return next(new ApiError(404, "Resource not found"));
17 });
18
19 app.use((err, req, res, next) => {
20   return res.status(err.statusCode || 500).json({
21     message: err.message || "Internal Server Error"
22   });
23 });
24
25 app.get("/", (req, res) => {
26   res.json({ message: "Welcome to contact book application."});
27 });
28
29 module.exports = app;
30
```

GET http://localhost:3000

No Environment

http://localhost:3000

Save

Send

ParamsAuthorizationHeaders (6)BodyPre-request ScriptTestsSettings

Params

KEY	VALUE	DESCRIPTION		Bulk Edit
Key	Value	Description		

BodyCookiesHeaders (8)Test Results

Raw

123

"message": "Resource not found"

master1 branch0 tags

Go to fileAdd fileCode

nhib1910271Dinh nghia cac route cho tai nguyen Contact75090271 minute ago3 commits

app	Dinh nghia cac route cho tai nguyen Contact	1 minute ago
.gitignore	Cai dat du an	46 minutes ago
app.js	Dinh nghia cac route cho tai nguyen Contact	1 minute ago
package-lock.json	Cai dat express chay thong bao xin chao	27 minutes ago
package.json	Cai dat express chay thong bao xin chao	27 minutes ago
server.js	Cai dat express chay thong bao xin chao	27 minutes ago

Help people interested in this repository understand your project by adding a README.

Add a README

masterCT449\_web / app /

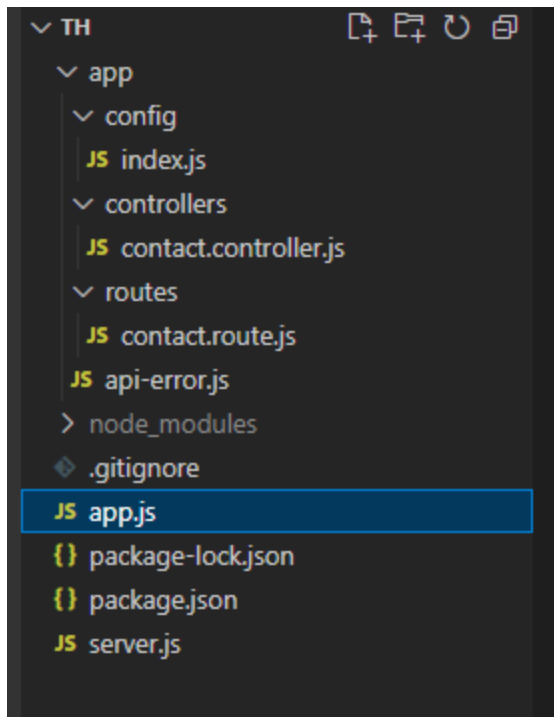
Go to fileAdd file

nhib1910271Cai dat xu ly loi

f3a1143nowHistory

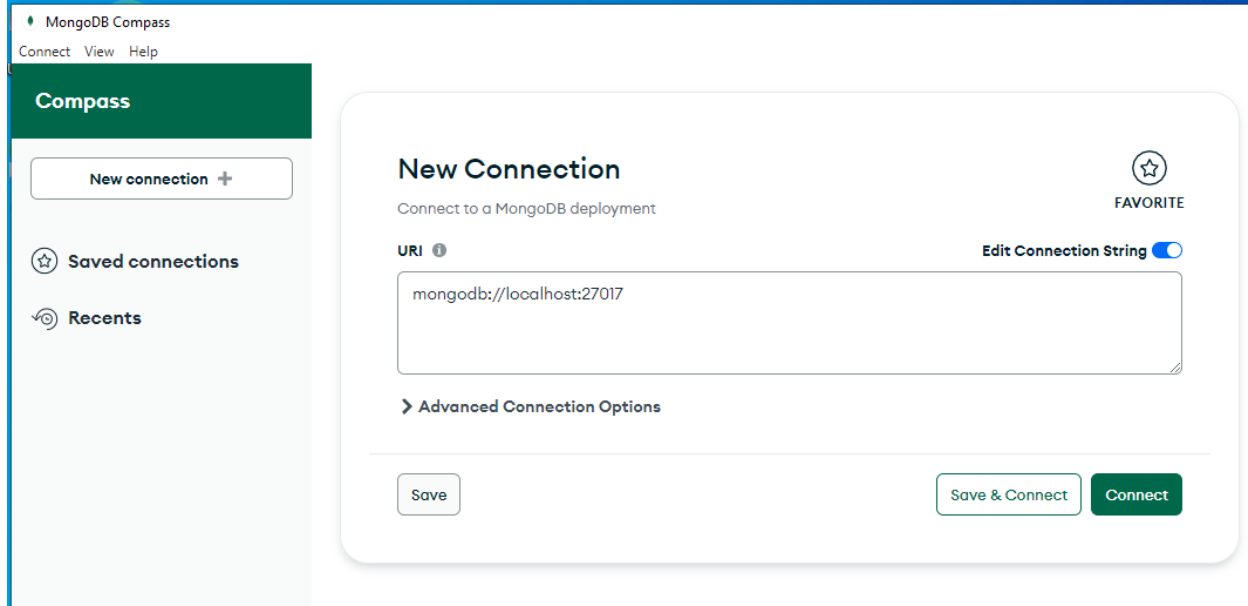
..		
config	Cai dat express chay thong bao xin chao	28 minutes ago
controllers	Dinh nghia cac route cho tai nguyen Contact	2 minutes ago
routes	Dinh nghia cac route cho tai nguyen Contact	2 minutes ago
api-error.js	Cai dat xu ly loi	now

Give feedback



## BUỔI 2

### Bước 0:



## Bước 1

```
app > config > JS index.js > ...
1  const config = {
2    app: {
3      port: process.env.PORT || 3000,
4    },
5
6    db: {
7      uri: process.env.MONGODB_URI || "mongodb://127.0.0.1:27017/contactbook"
8    }
9  };
10
11  module.exports = config;
```

```
app > utils > JS mongodb.util.js > MongoDB > connect
1  const { MongoClient } = require("mongodb");
2
3  class MongoDB {
4    static connect = async (uri) => {
5      if (this.client) return this.client;
6      this.client = await MongoClient.connect(uri);
7      return this.client;
8    };
9  }
10
11  module.exports = MongoDB;
```

JS server.js > startServer

```
1  const app = require("./app");
2  const config = require("./app/config");
3  const MongoDB = require("./app/utils/mongodb.util");
4
5  async function startServer() {
6    try {
7      await MongoDB.connect(config.db.uri);
8      console.log("Connected to the database!");
9
10     const PORT = config.app.port;
11     app.listen(PORT, () => {
12       console.log(`Server is running on port ${PORT}`);
13     });
14   } catch (error) {
15     console.log("Cannot connect to the database!", error);
16     process.exit();
17   }
18 }
19
20 startServer();
```

app > services > JS contact.service.js > ...

```
1  const { ObjectId } = require("mongodb");
2  class ContactService {
3    constructor(client) {
4      this.Contact = client.db().collection("contacts");
5    }
6
7  }
8  module.exports = ContactService;
```

POST http://localhost:3000/

No Environment

http://localhost:3000/api/contacts

Save

POST

http://localhost:3000/api/contacts

Send

Params

Authorization

Headers (9)

Body

Pre-request Script

Tests

Settings

Cookies

none

form-data

x-www-form-urlencoded

raw

binary

GraphQL

JSON

Beautify

```
1 {
2   "name": "Nhi",
3   "email": "nhi123@gmail.com",
4   "address": "Vinh Long",
5   "favorite": true,
6   "phone": "0774836320"
7 }
8
```

Body

Cookies

Headers (8)

Test Results

200 OK

319 ms

401 B

Save Response

Pretty

Raw

Preview

Visualize

JSON

```
1 {
2   "_id": "63f4a33becd8723015d6e05a",
3   "address": "Vinh Long",
4   "email": "nhi123@gmail.com",
5   "favorite": true,
6   "name": "Nhi",
7   "phone": "0774836320"
8 }
```

Documents

contactbook.con...

contactbook.contacts

1 DOCUMENTS1 INDEXES

Documents

Aggregations

Schema

Explain Plan

Indexes

Validation

Filter

Type a query: { field: 'value' }

Reset

Find

More Options

ADD DATA

EXPORT COLLECTION

1 - 1 of 1

```
_id: ObjectId('63f4a33becd8723015d6e05a')
address: "Vinh Long"
email: "nhi123@gmail.com"
favorite: true
name: "Nhi"
phone: "0774836320"
```

Link github: [https://github.com/nhib1910271/CT449\\_web.git](https://github.com/nhib1910271/CT449_web.git)