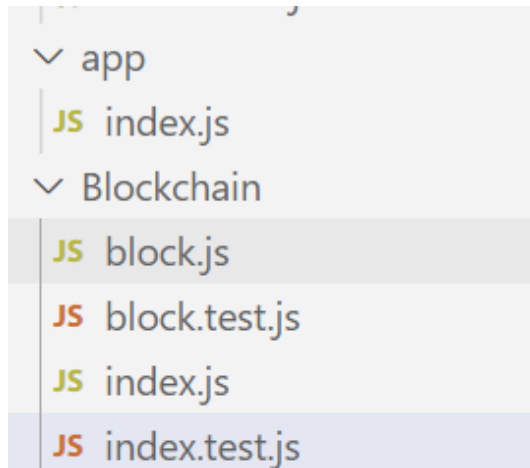


Blockchain

Develop the Blockchain Application:

Organize the Project:



```
PASS Build the Blockchain - the Chain/block.test.js
PASS Blockchain/index.test.js
  • Console

    console.log
      Replacing blockchain with the new chain.

    at Blockchain.log [as replaceChain] (Blockchain/index.test.js:14:13)

Test Suites: 5 passed, 5 total
Tests:       14 passed, 14 total
Snapshots:   0 total
Time:        1.158 s
Ran all test suites.

Watch Usage: Press w to show more.
```

Blockchain

Blockchain API - Get Blocks:

```
C:\Users\Dell\Desktop\BlockChain\Course II>npm i express --save
added 60 packages, and audited 369 packages in 2s

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

found 0 vulnerabilities
```

```
C:\Users\Dell\Desktop\BlockChain\Course II>npm run dev
> course-ii@1.0.0 dev
> nodemon ./app

[nodemon] 2.0.19
[nodemon] to restart at any time, enter `rs`
[nodemon] watching path(s): *.*
[nodemon] watching extensions: js,mjs,json
[nodemon] starting `node ./app`
Listening on port 3001
```

app > JS index.js > ...

```
1  const express = require('express');
2  const Blockchain = require('../blockchain');
3
4  const HTTP_PORT = process.env.HTTP_PORT || 3001;
5
6  const app = express();
7  const bc = new Blockchain();
8
9  app.get('/blocks', (req, res)=>{
10 |   res.json(bc.chain);
11 | });
12
13 app.listen(HTTP_PORT, ()=> console.log(`Listening on port ${HTTP_PORT}`));
14
```

BlockChain

localhost:3001/blocks

GET localhost:3001/blocks 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 34 ms 314 B Save Response

Pretty Raw Preview Visualize JSON

```
1 {
2   "timestamp": "Genesis time",
3   "lastHash": "-----",
4   "hash": "f1r57-h45h",
5   "data": []
6 }
```


Activate Windows
Go to Settings to activate Windows

Mine Blocks Post Request:

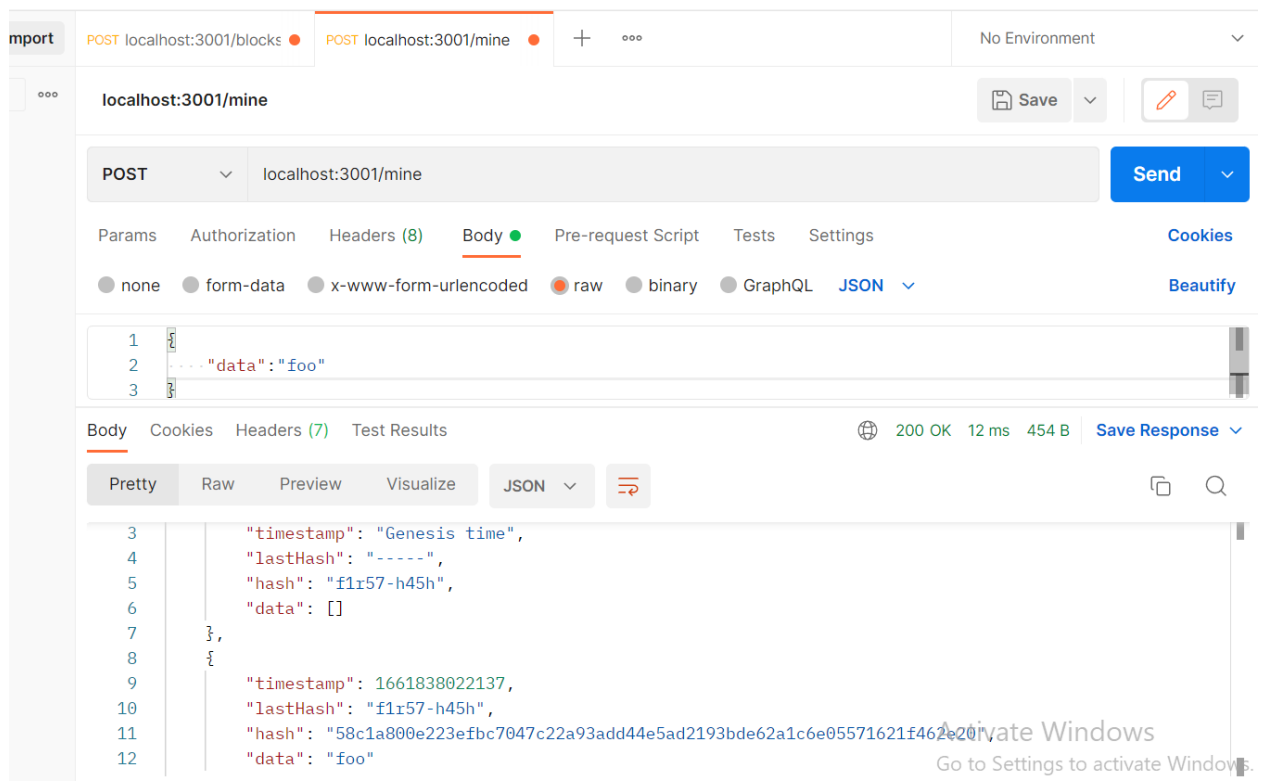
```
C:\Users\Dell\Desktop\BlockChain\Course II>npm i body-parser --save
up to date, audited 369 packages in 811ms
39 packages are looking for funding
  run `npm fund` for details
found 0 vulnerabilities
```

```
app > JS index.js > app.post('/mine') callback
1 const express = require('express');
2
3 const bodyParser = require('body-parser');
4
```

Blockchain

app > JS index.js >  app.post('/mine') callback

```
17
18 app.post('/mine', (req, res)=>{
19   const block = bc.addBlock(req.body.data);
20   console.log(`New block added : ${block.toString()}`);
21
22   res.redirect('/blocks');
23 });
24
25
26 app.listen(HTTP_PORT, ()=> console.log(`Listening on port ${HTTP_PORT}`));
27
```



The screenshot shows a web browser's developer tools interface. At the top, there's a tab for 'POST localhost:3001/mine'. Below it, the 'Body' tab is selected, showing the request body as a JSON object: `{ "data": "foo" }`. The response is also shown in the 'Body' tab, displaying a JSON object with the following properties: `{ "timestamp": "Genesis time", "lastHash": "-----", "hash": "f1r57-h45h", "data": [] }`. The status bar at the bottom indicates a 200 OK response with a 12 ms response time and 454 B of data.

Blockchain

```
C:\Users\Dell\Desktop\BlockChain\Course II>npm run dev

> course-ii@1.0.0 dev
> nodemon ./app

[nodemon] 2.0.19
[nodemon] to restart at any time, enter `rs`
[nodemon] watching path(s): *.*
[nodemon] watching extensions: js,mjs,json
[nodemon] starting `node ./app`
Listening on port 3001
New block added : Block -
    Timestamp: 1661838022137
    Last Hash: f1r57-h45h
    Hash: 58c1a800e2
    Data: foo
```

Blockchain