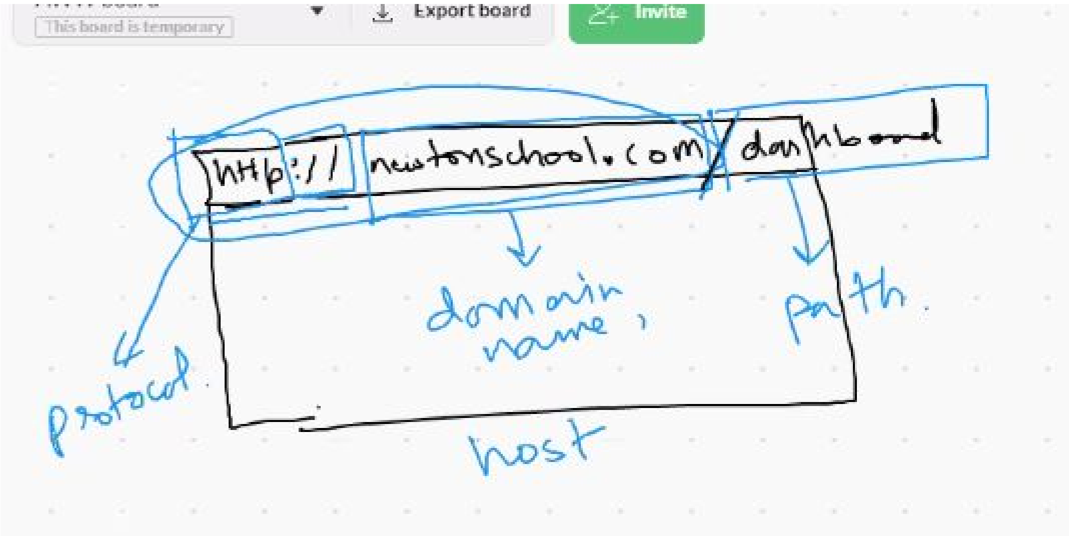
Date: 26th nov 2020

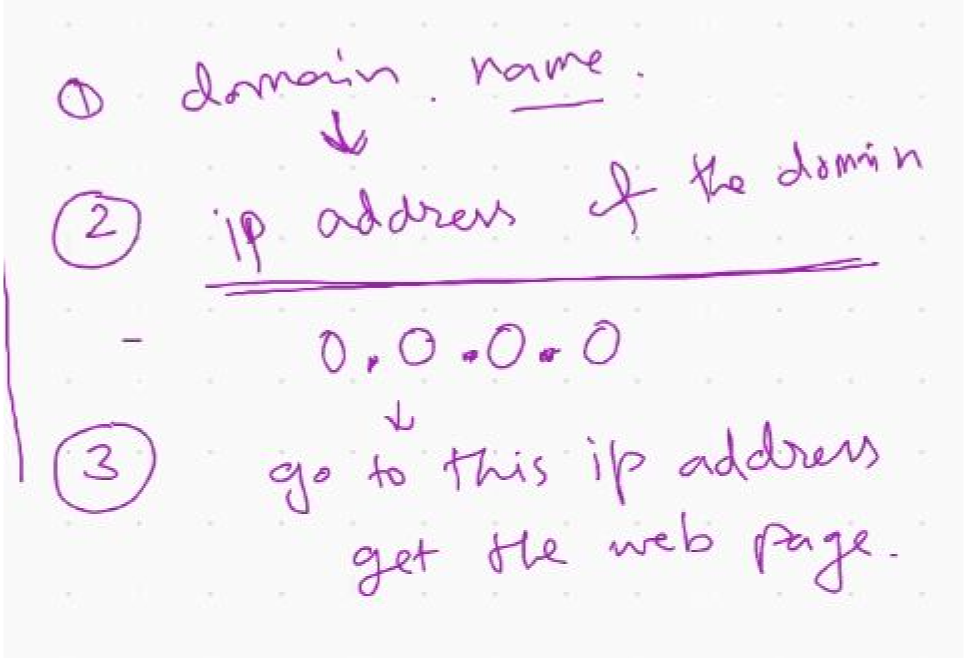
Day: 9.4

Title: **Networking - 26th November, 2020**

Topics Covered:

-





① domain name.

↓

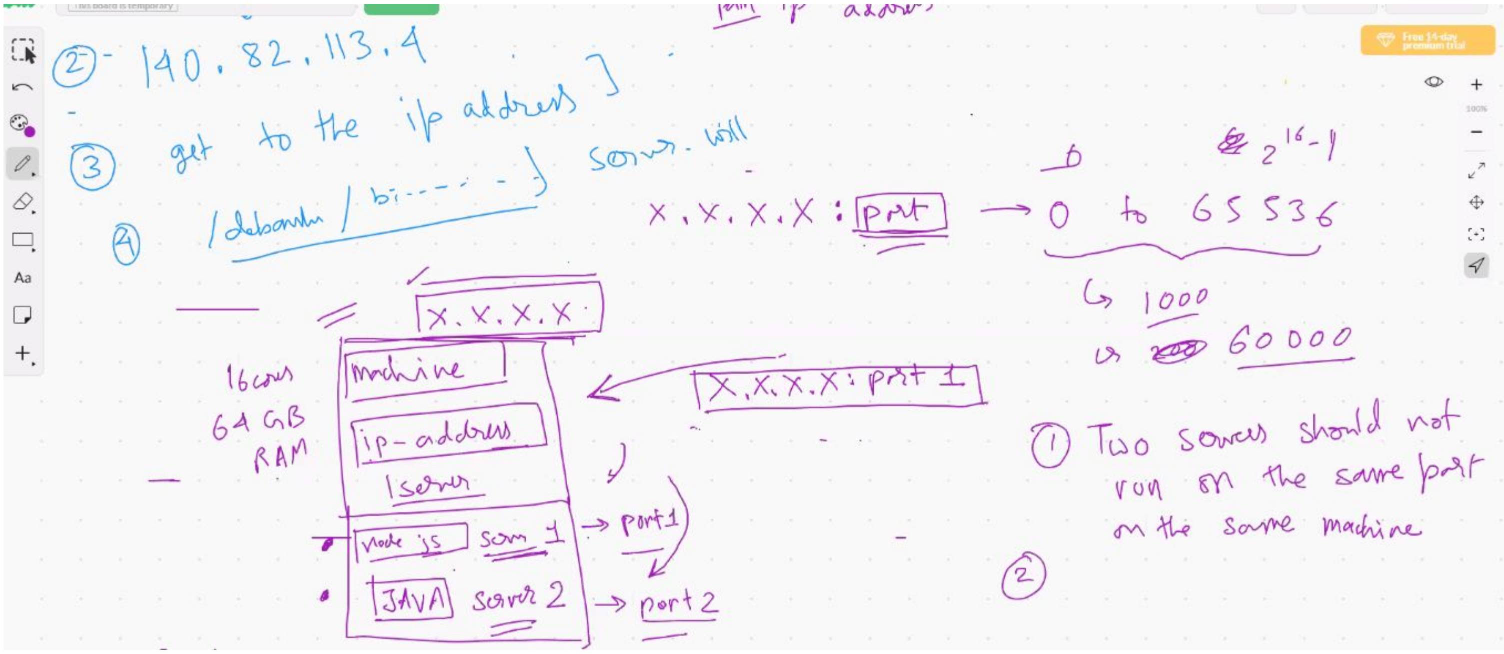
② ip address of the domain

- 0.0.0.0

↓

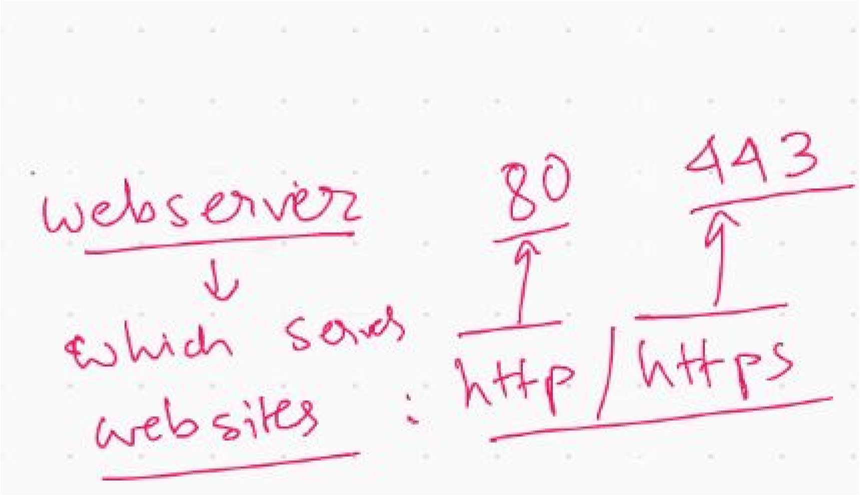
③ go to this ip address

get the web page.



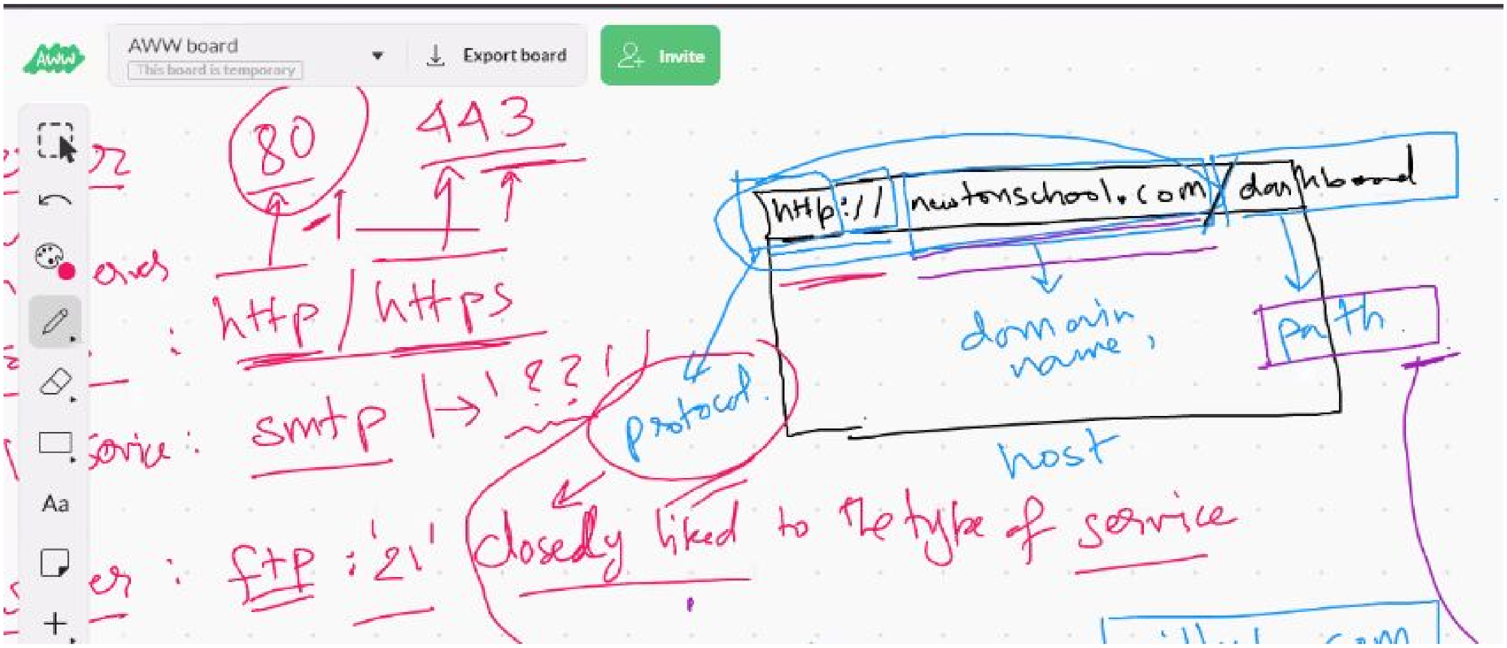
1 Two servers should not run on the same port on the same machine

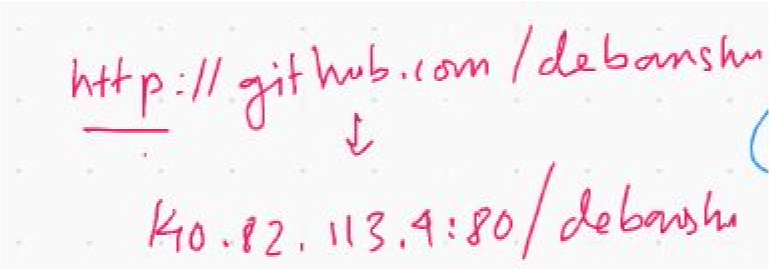
Webservice: if server provide mail service , then mail is the webservice
Protocol is is closely link to webservice



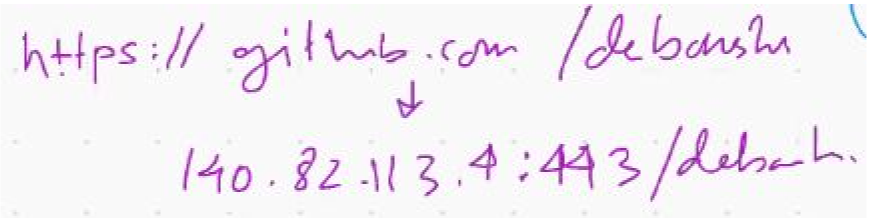
Smtp port?

By default https will hit 443 port i.e if we don’t put any port in the url



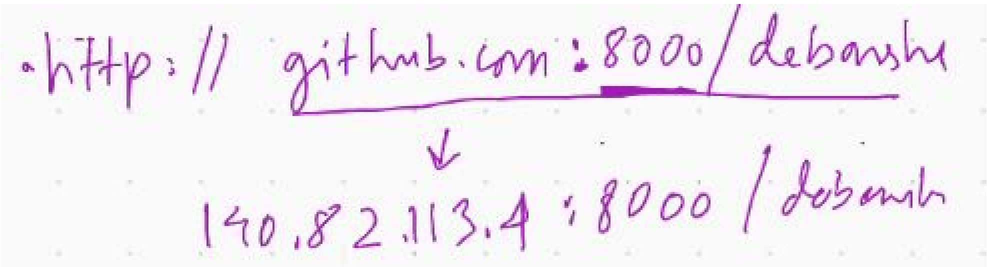


http://github.com/debansh
↓
140.82.113.4:80/debansh



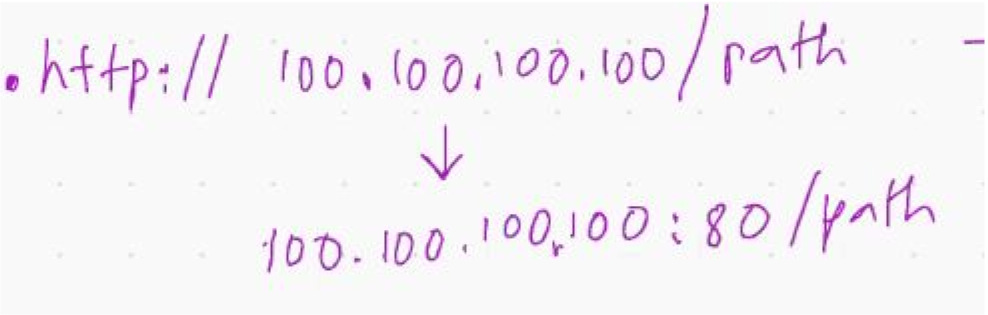
https://github.com /debansh
↓
140.82.113.4:443/debansh.

It doesn’t mean it just has to run on 443
It just a convention

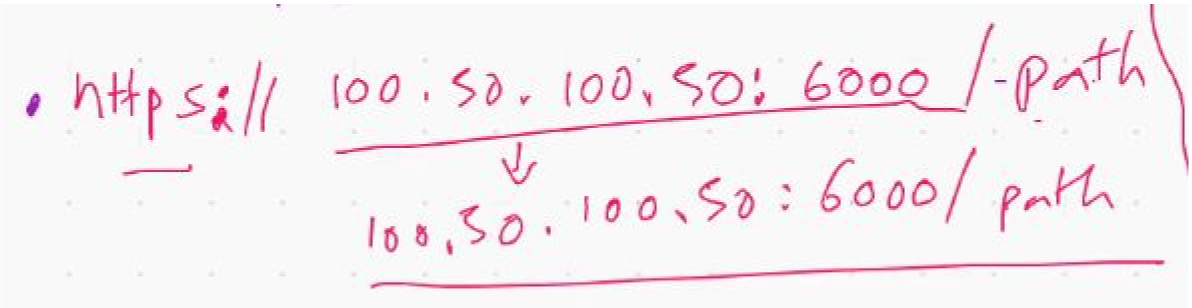


http:// github.com:8000/debansh
↓
140.82.113.4:8000/debansh

This is also possible
But it will not give any response because github is not running its server on 8000



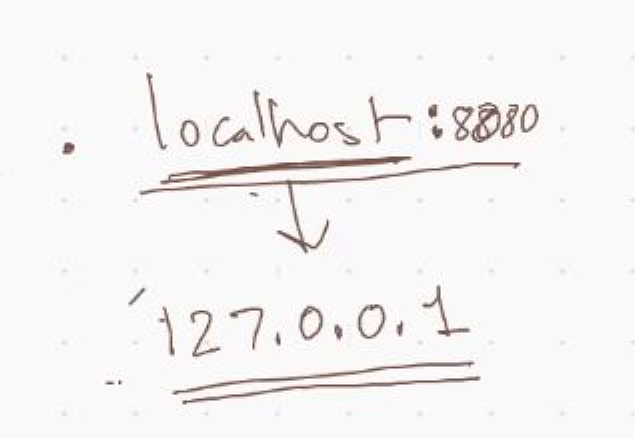
http:// 100.100.100.100/path
↓
100.100.100.100:80/path



- https:// 100.50.100.50: 6000/-path

↓

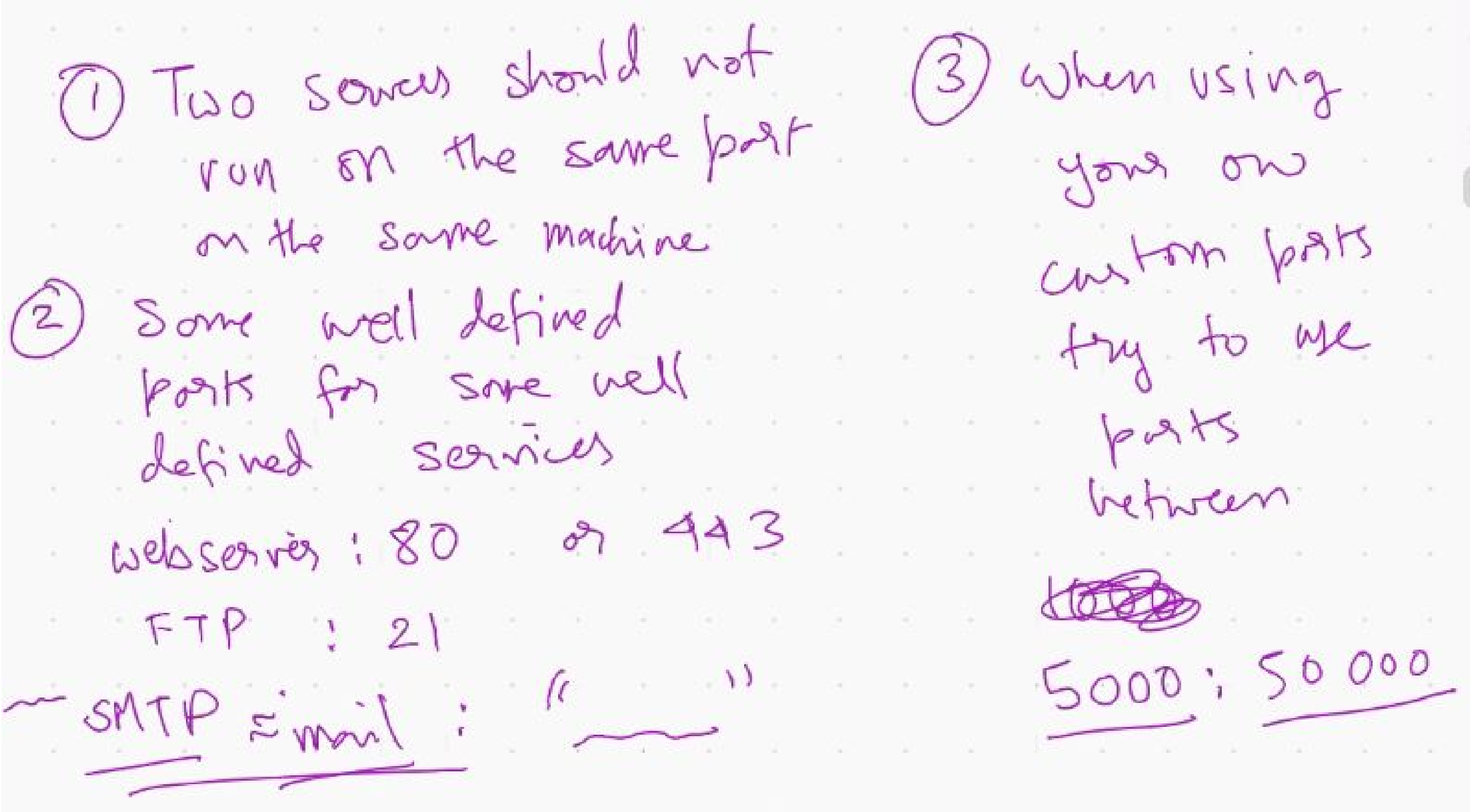
100.50.100.50:6000/ path



- localhost :8080

↓

127.0.0.1



① Two servers should not run on the same port on the same machine

② Some well defined ports for some well defined services

webservers : 80 or 443

FTP : 21

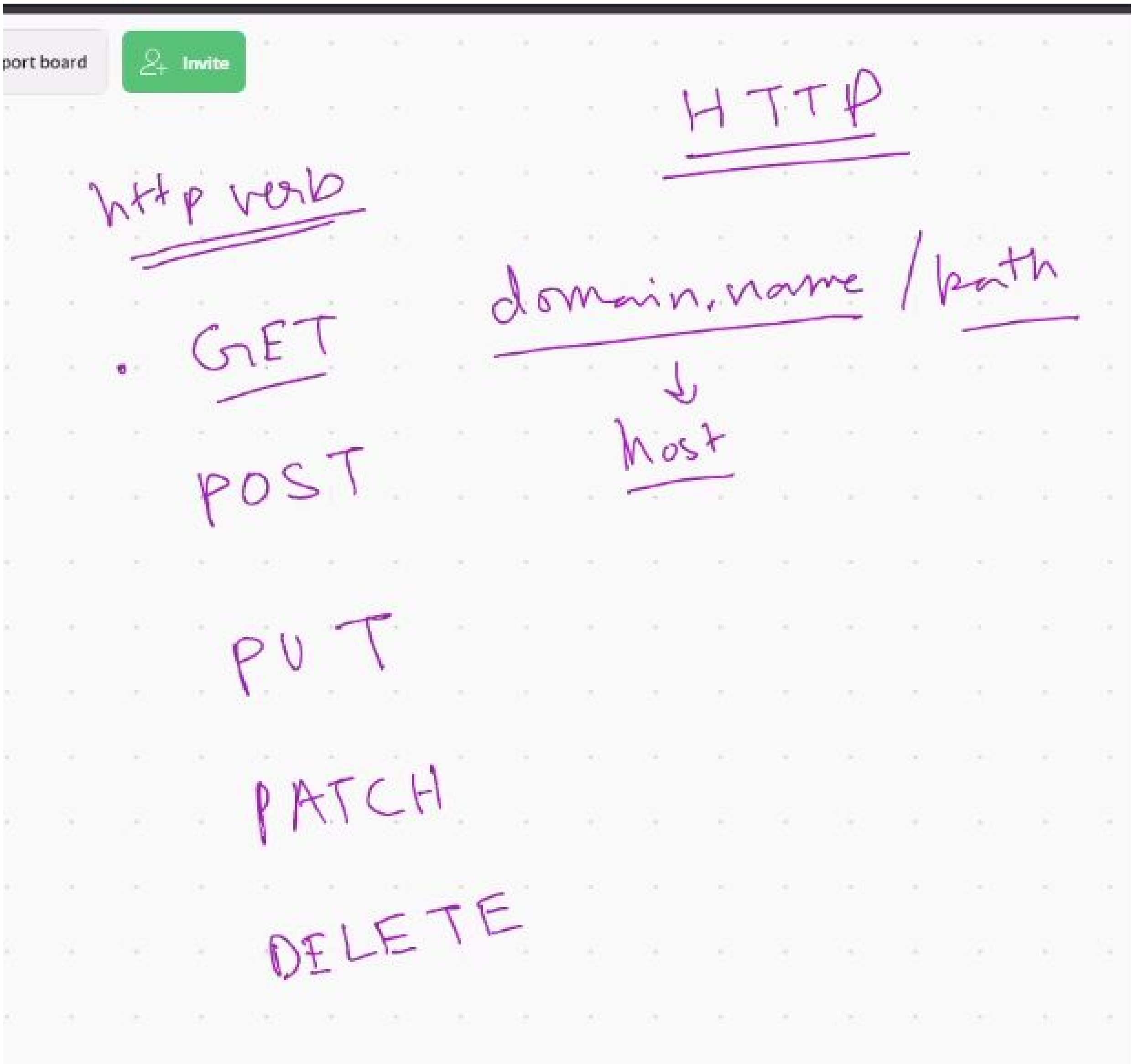
SMTP ≈ mail : "____"

③ When using your own custom ports try to use ports between

5000 ; 50 000

Try to usethe port in this range, because system may be using the port before and after that

When we go to google .com it hits 80 port then it redirects it to port 443 to https



HTTP

http verb

- GET

POST

PUT

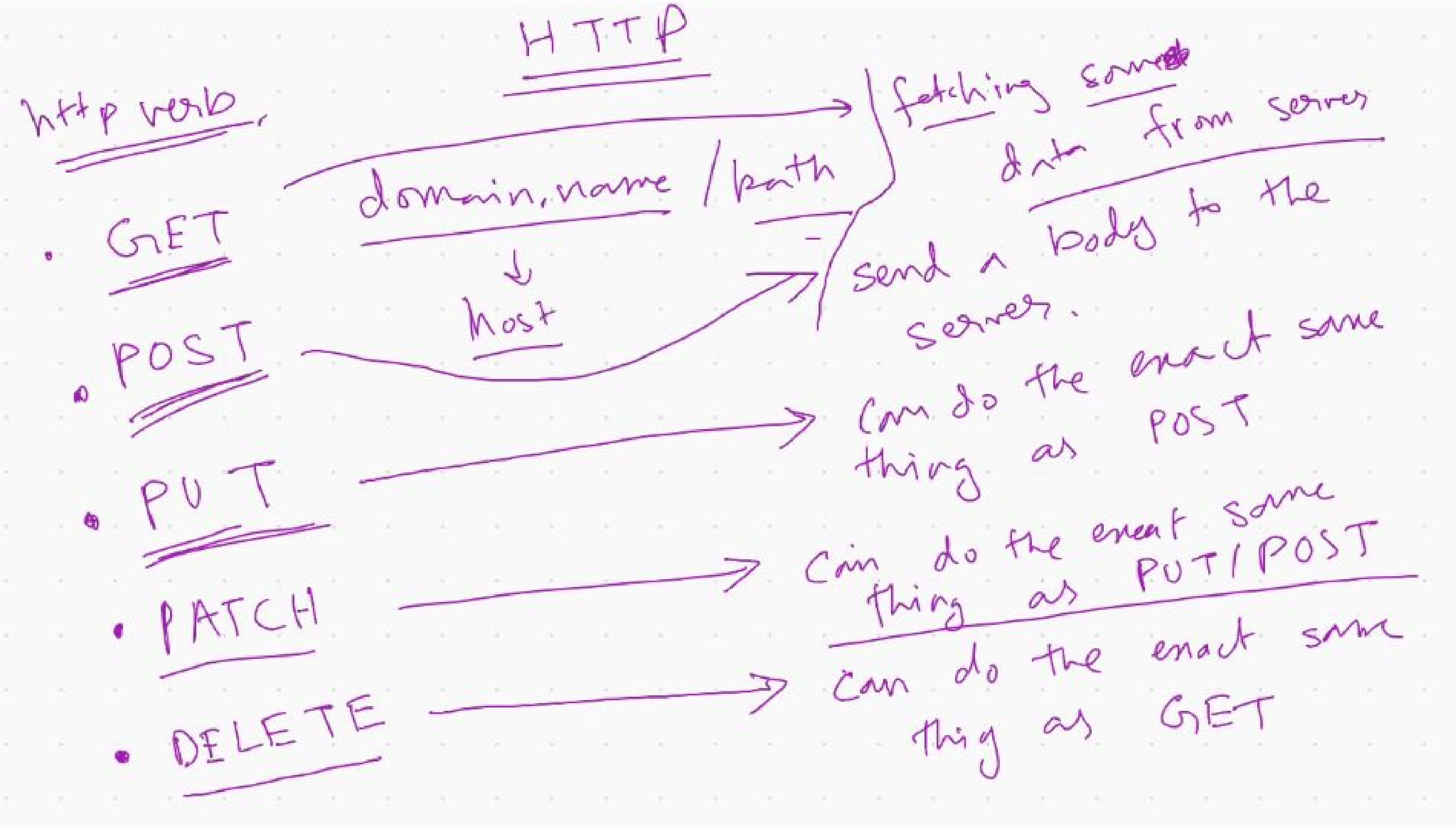
PATCH

DELETE

domain.name /path

↓

host



HTTP

http verb,

- GET
- POST
- PUT
- PATCH
- DELETE

domain.name / path

↓

host

fetching some data from server

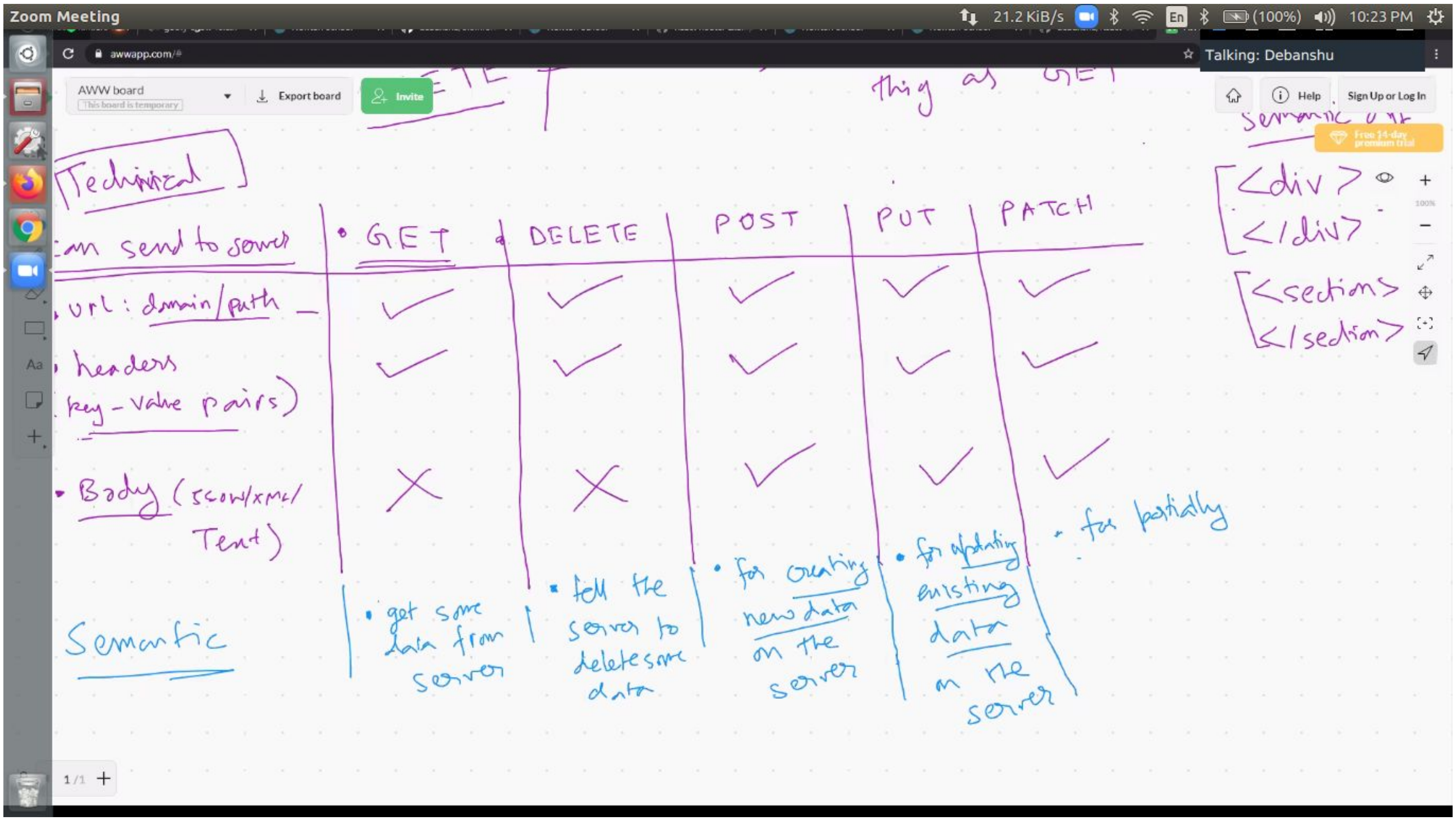
send a body to the server.

Can do the exact same thing as POST

Can do the exact same thing as PUT/POST

Can do the exact same thing as GET

With get and delete can’t send body to the server
Post put patch can send bdy to the server



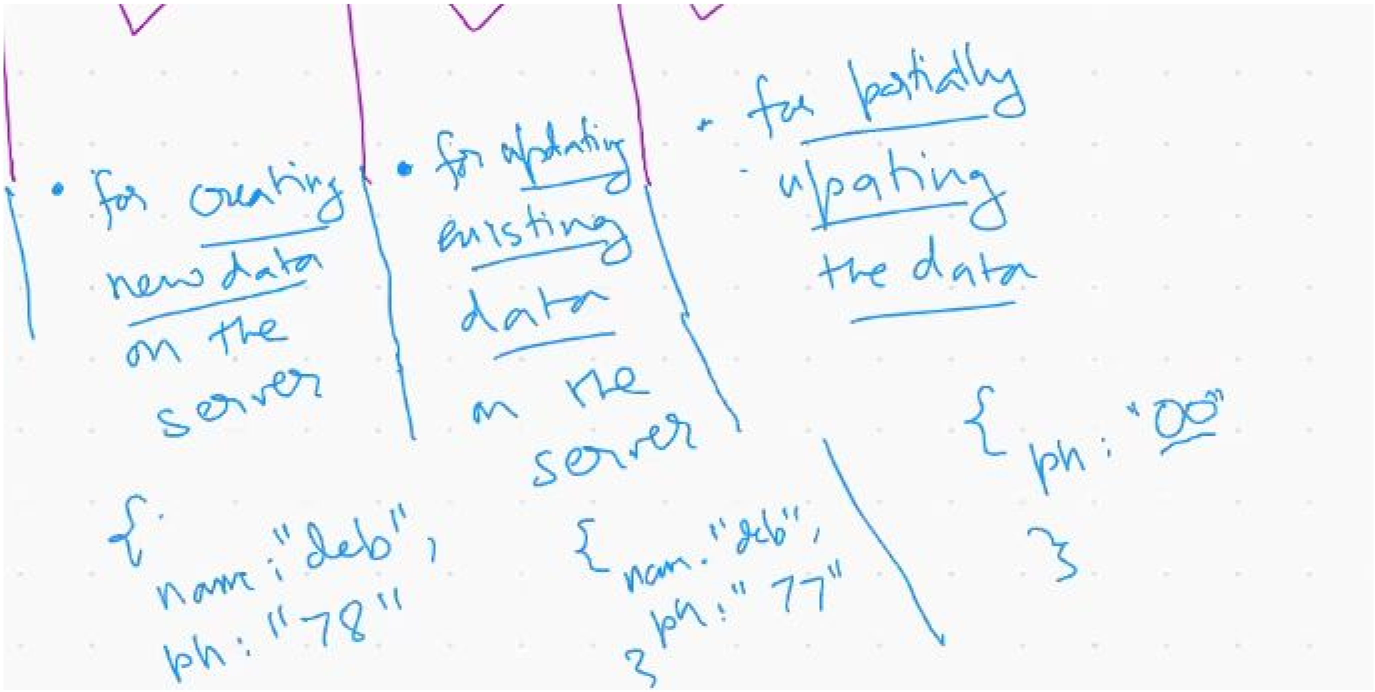
thing as GET

Semantic of

Technical	GET	DELETE	POST	PUT	PATCH
can send to server					
url : domain/path	✓	✓	✓	✓	✓
headers (key-value pairs)	✓	✓	✓	✓	✓
Body (JSON/xml/Text)	✗	✗	✓	✓	✓
Semantic	get some data from server	tell the server to delete some data	for creating new data on the server	for updating existing data on the server	for partially

<div>
</div>

<section>
</section>



- for creating new data on the server

{
name: "deb",
ph: "78"

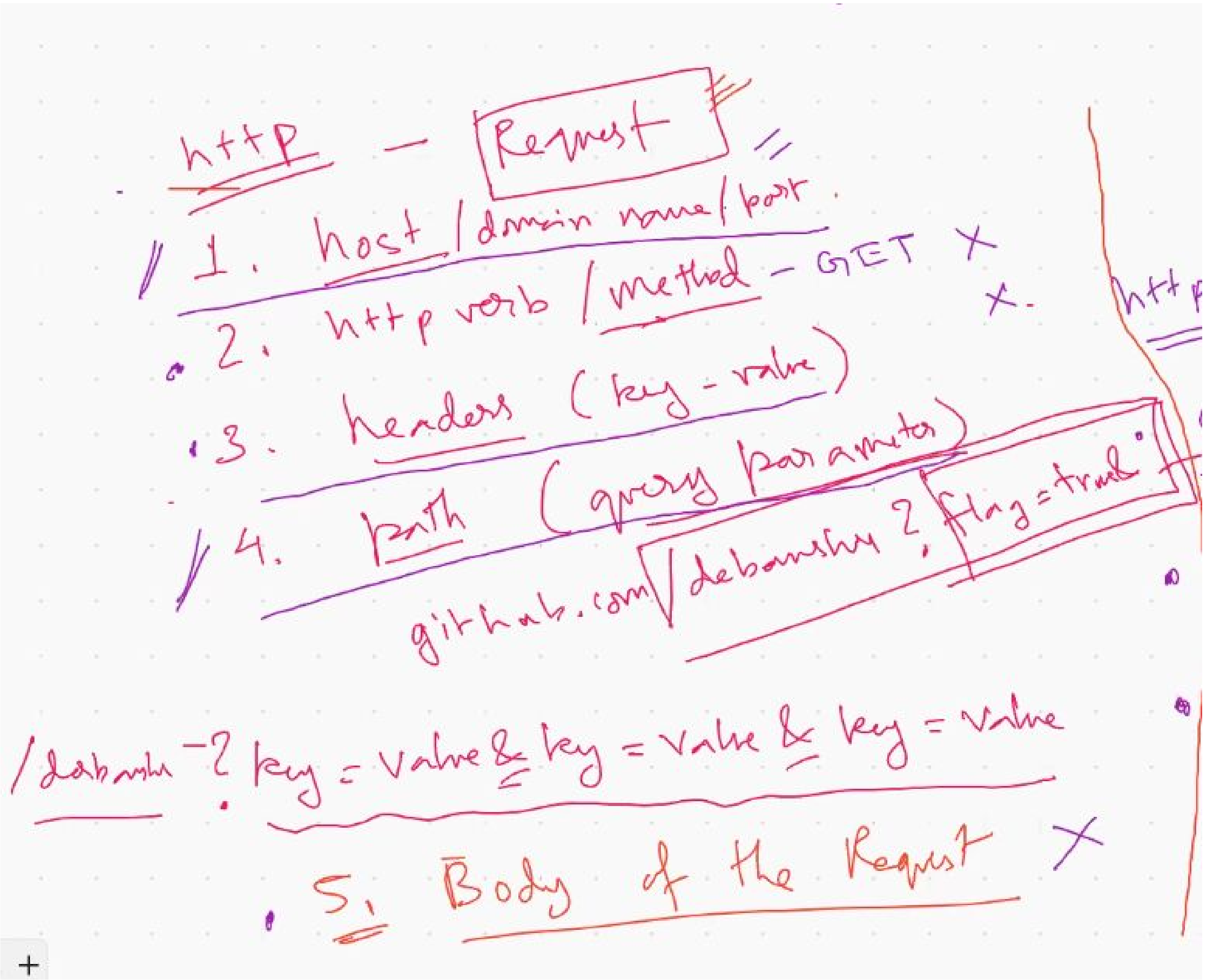
- for updating existing data on the server

{ nam: "deb",
ph: "77"
}

- for partially upating the data

{ ph: "00"
}

While using fetch function by default always use ‘GET” request method



http — Request

1. host / domain name / port.
2. http verb / method — GET
3. headers (key - value)
4. path (query parameter)

github.com/debanshu?flag=true

/debanshu — ? key = value & key = value & key = value

5. Body of the Request

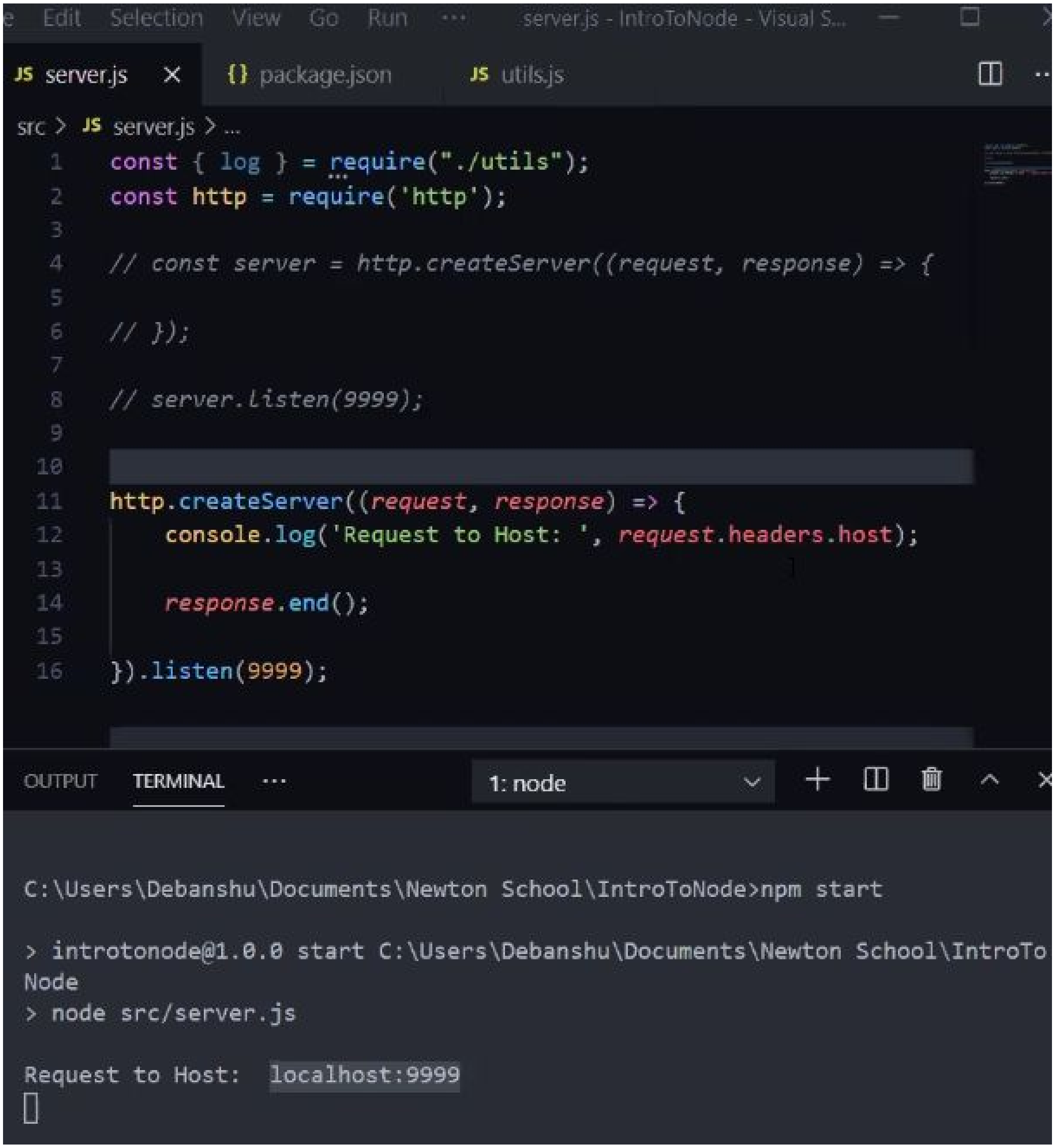
http

Anything after question mark is query parameter, which is in key value pair

Point 1 and 4 can be customized and point 2 and 3 can’t be customised and point 5 (body) can’t be customized in the browser

Request.host prints the host

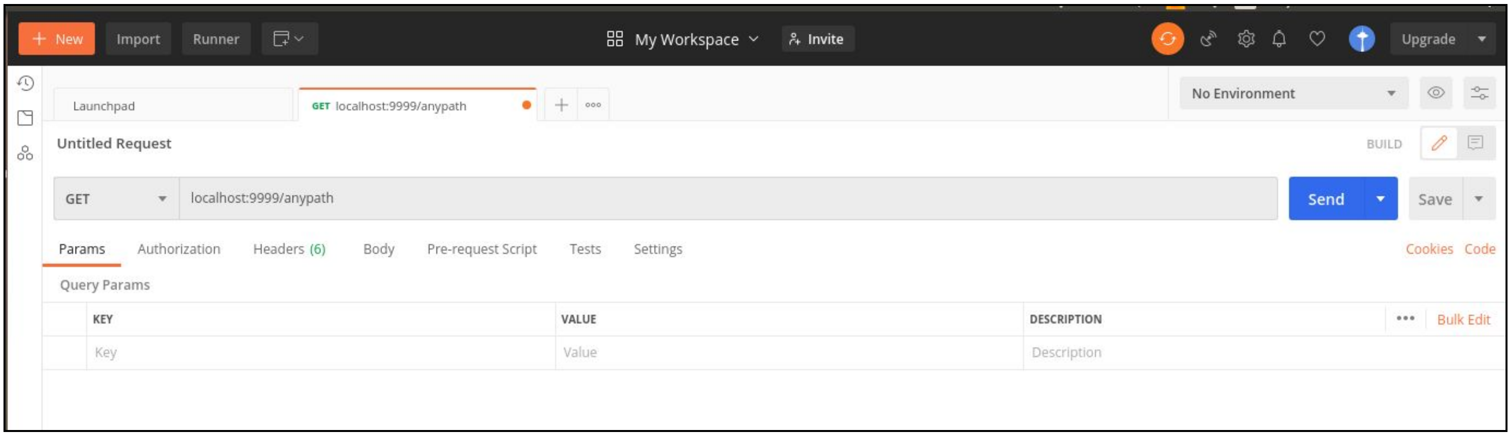
Host



```
const { log } = require("./utils");
const http = require('http');

// const server = http.createServer((request, response) => {

// });

// server.listen(9999);


http.createServer((request, response) => {
    console.log('Request to Host: ', request.headers.host);

    response.end();

}).listen(9999);
```

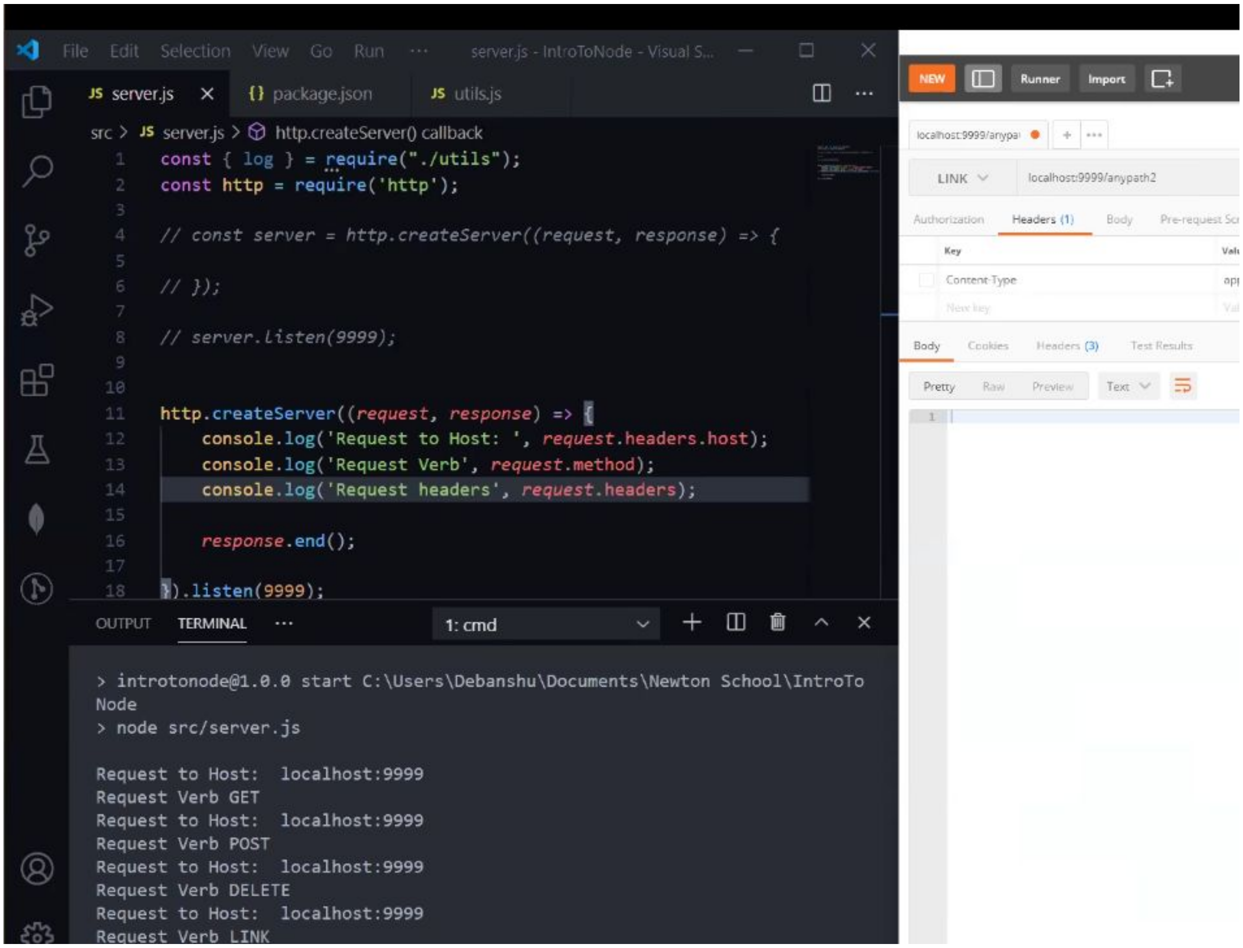
```
C:\Users\Debanshu\Documents\Newton School\IntroToNode>npm start

> introtonode@1.0.0 start C:\Users\Debanshu\Documents\Newton School\IntroTo
Node
> node src/server.js

Request to Host:  localhost:9999
```

After clicking send you received Request to Host: localhost:9999



GET localhost:9999/anypath

Headers



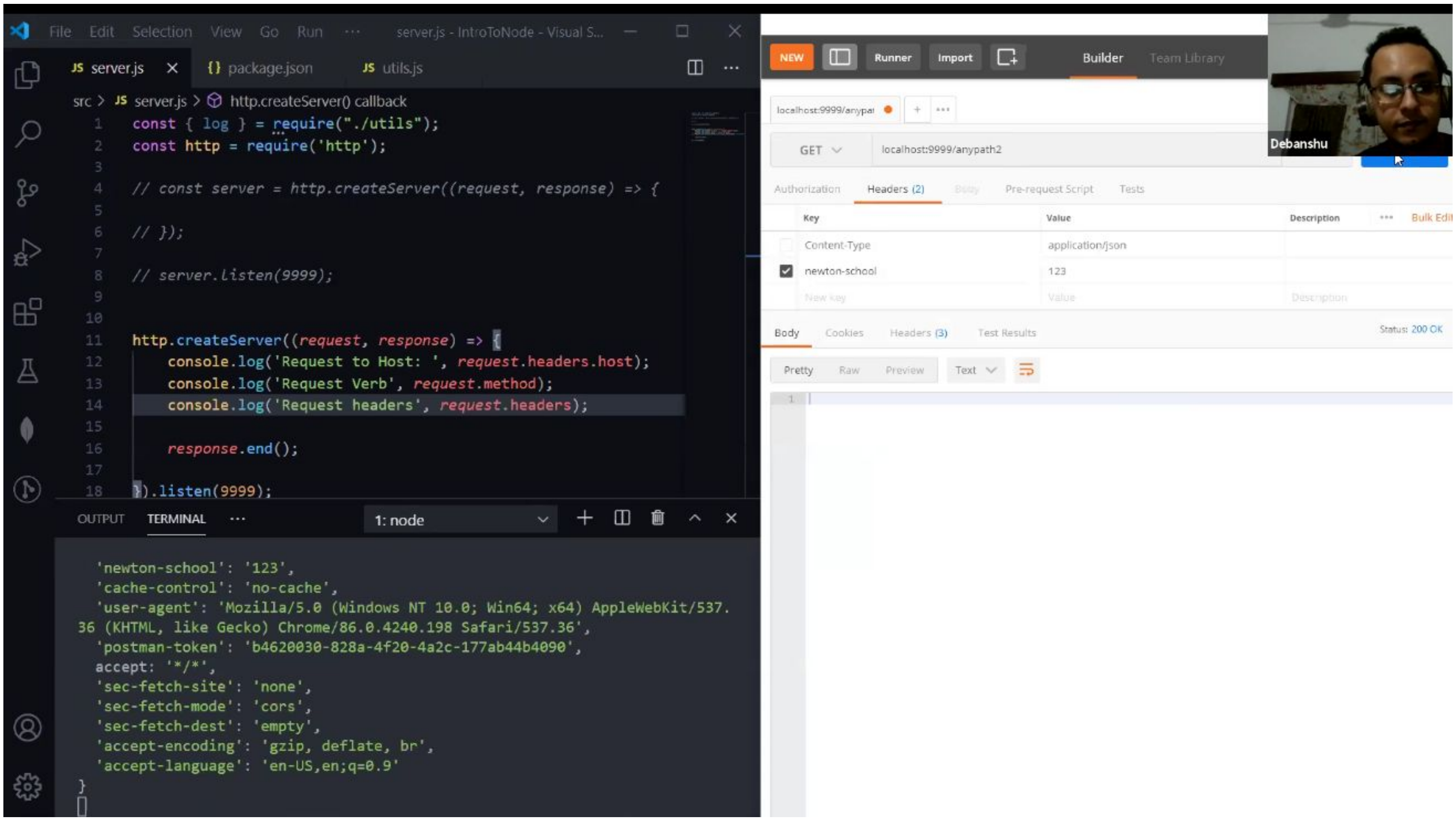
```js
const { log } = require("./utils");
const http = require('http');

// const server = http.createServer((request, response) => {

// });

// server.listen(9999);


http.createServer((request, response) => {
    console.log('Request to Host: ', request.headers.host);
    console.log('Request Verb', request.method);
    console.log('Request headers', request.headers);

    response.end();

}).listen(9999);
```

```
> introtonode@1.0.0 start C:\Users\Debanshu\Documents\Newton School\IntroTo
Node
> node src/server.js

Request to Host:  localhost:9999
Request Verb GET
Request to Host:  localhost:9999
Request Verb POST
Request to Host:  localhost:9999
Request Verb DELETE
Request to Host:  localhost:9999
Request Verb LINK
```

LINK localhost:9999/anypath2

	Key	Valu
□	Content-Type	app
	New key	Valu

Don’t put duplicate headers (key value pair),



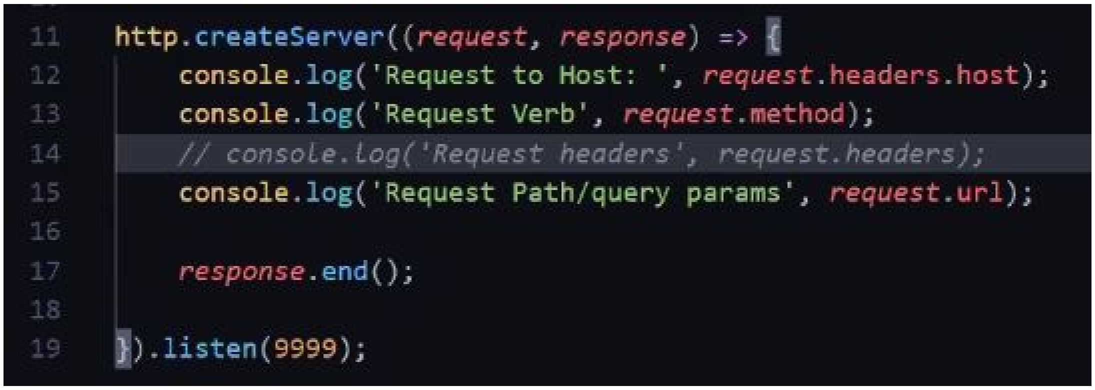
```js
const { log } = require("./utils");
const http = require('http');

// const server = http.createServer((request, response) => {

// });

// server.listen(9999);


http.createServer((request, response) => {
    console.log('Request to Host: ', request.headers.host);
    console.log('Request Verb', request.method);
    console.log('Request headers', request.headers);

    response.end();

}).listen(9999);
```

```
  'newton-school': '123',
  'cache-control': 'no-cache',
  'user-agent': 'Mozilla/5.0 (Windows NT 10.0; Win64; x64) AppleWebKit/537.
36 (KHTML, like Gecko) Chrome/86.0.4240.198 Safari/537.36',
  'postman-token': 'b4620030-828a-4f20-4a2c-177ab44b4090',
  accept: '*/*',
  'sec-fetch-site': 'none',
  'sec-fetch-mode': 'cors',
  'sec-fetch-dest': 'empty',
  'accept-encoding': 'gzip, deflate, br',
  'accept-language': 'en-US,en;q=0.9'
}
```

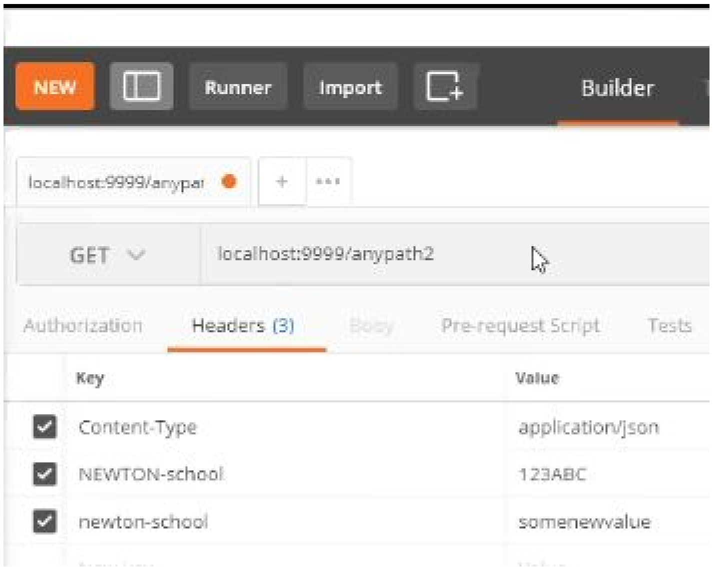
GET localhost:9999/anypath2

	Key	Value	Description
□	Content-Type	application/json	
☑	newton-school	123	
	New key	Value	Description

Path

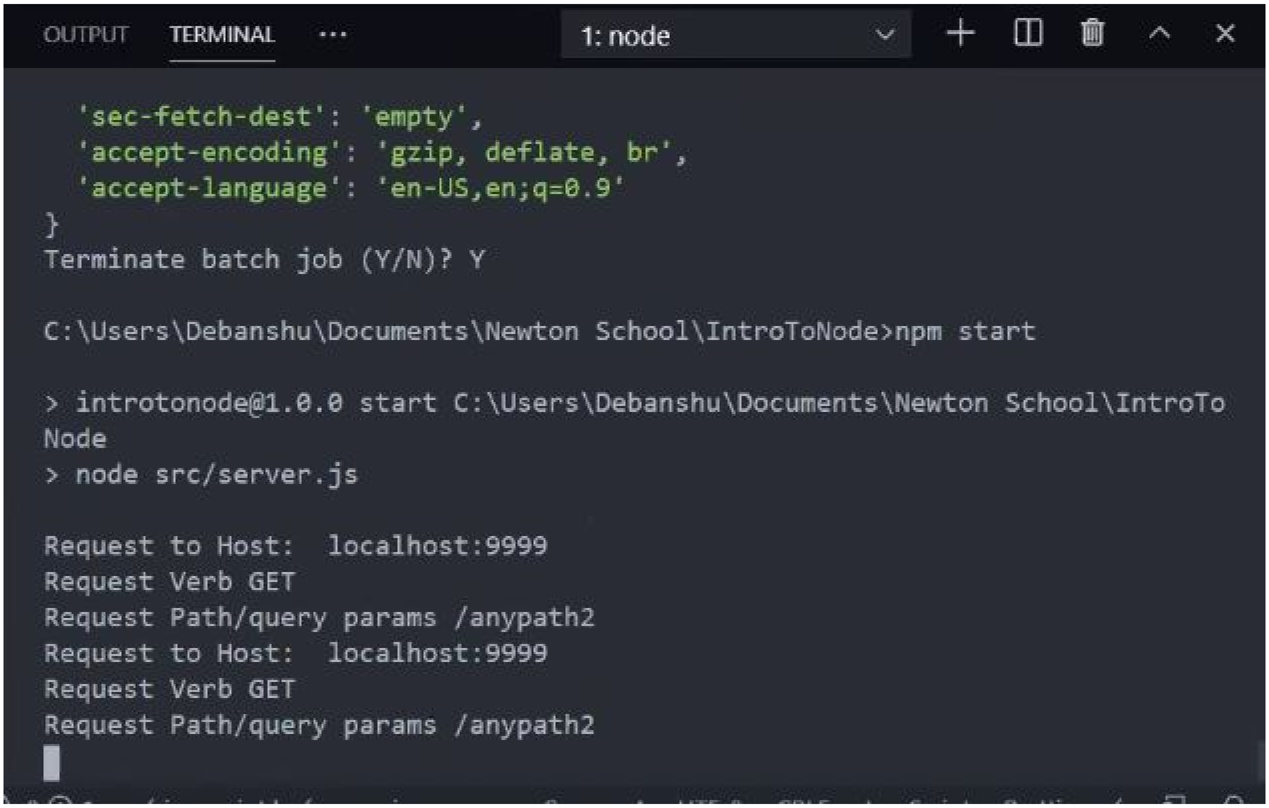


```
http.createServer((request, response) => {
    console.log('Request to Host: ', request.headers.host);
    console.log('Request Verb', request.method);
    // console.log('Request headers', request.headers);
    console.log('Request Path/query params', request.url);

    response.end();

}).listen(9999);
```



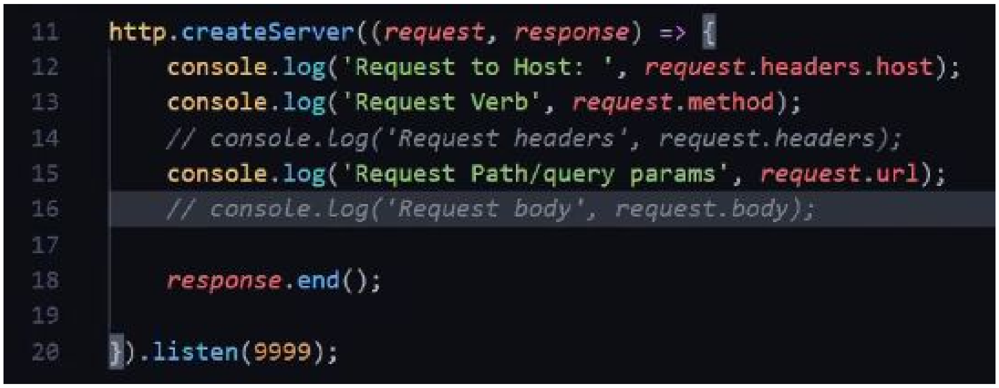
GET localhost:9999/anypath2

	Key	Value
☑	Content-Type	application/json
☑	NEWTON-school	123ABC
☑	newton-school	somenewvalue

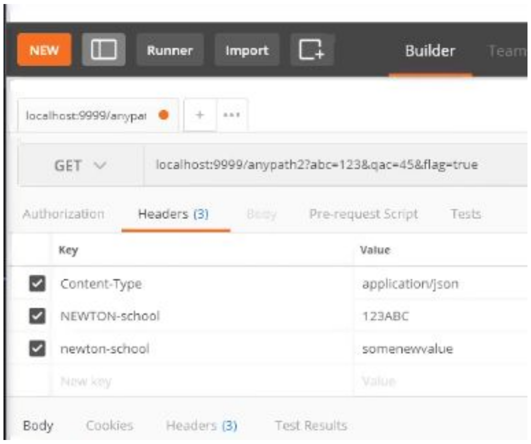


```
  'sec-fetch-dest': 'empty',
  'accept-encoding': 'gzip, deflate, br',
  'accept-language': 'en-US,en;q=0.9'
}
Terminate batch job (Y/N)? Y

C:\Users\Debanshu\Documents\Newton School\IntroToNode>npm start

> introtonode@1.0.0 start C:\Users\Debanshu\Documents\Newton School\IntroTo
Node
> node src/server.js

Request to Host:  localhost:9999
Request Verb GET
Request Path/query params /anypath2
Request to Host:  localhost:9999
Request Verb GET
Request Path/query params /anypath2
```

Query parameter

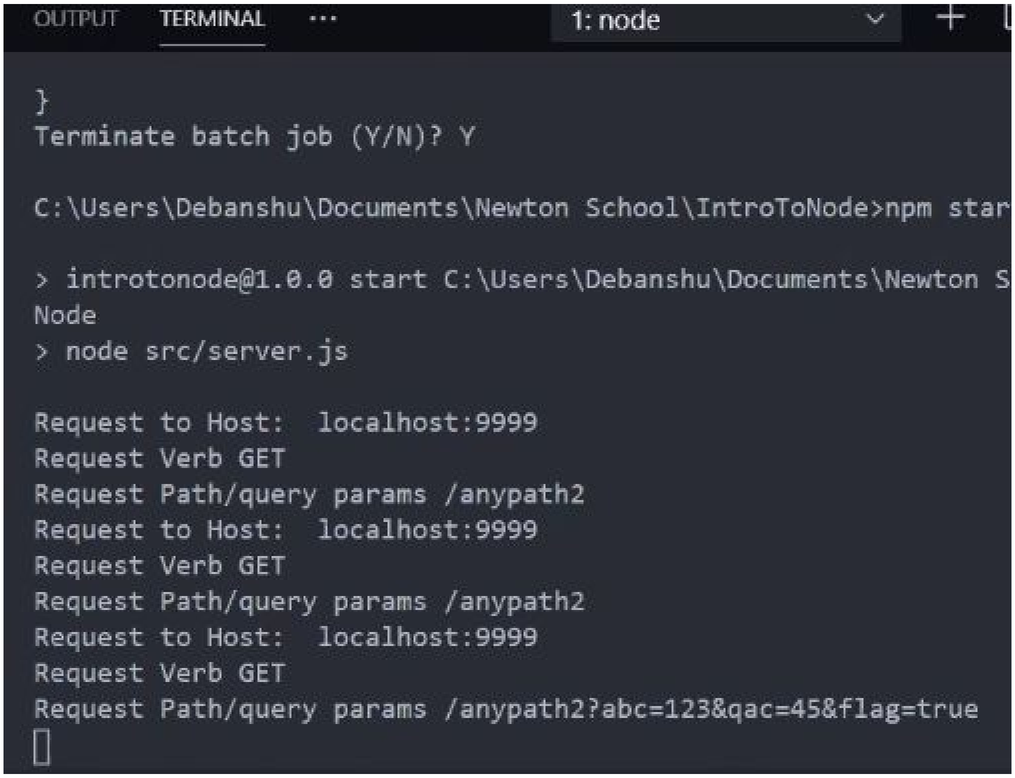


```
http.createServer((request, response) => {
    console.log('Request to Host: ', request.headers.host);
    console.log('Request Verb', request.method);
    // console.log('Request headers', request.headers);
    console.log('Request Path/query params', request.url);
    // console.log('Request body', request.body);

    response.end();

}).listen(9999);
```



GET localhost:9999/anypath2?abc=123&qac=45&flag=true

	Key	Value
☑	Content-Type	application/json
☑	NEWTON-school	123ABC
☑	newton-school	somenewvalue
	New key	Value



```
}
Terminate batch job (Y/N)? Y

C:\Users\Debanshu\Documents\Newton School\IntroToNode>npm star

> introtonode@1.0.0 start C:\Users\Debanshu\Documents\Newton S
Node
> node src/server.js

Request to Host:  localhost:9999
Request Verb GET
Request Path/query params /anypath2
Request to Host:  localhost:9999
Request Verb GET
Request Path/query params /anypath2
Request to Host:  localhost:9999
Request Verb GET
Request Path/query params /anypath2?abc=123&qac=45&flag=true
```