Back-End Development

express

Exploring

#6 Express Module

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Express

Express is a minimal and flexible Node.js web application framework that provides a robust set of features for web & mobile applications.
(See *https://expressjs.com*).

- **First, create a project directory then**

```
$ npm init
```

- **Installation**

```
$ npm install express --save
```

Response to a Create Server

satu.js

```
var express = require('express');
var app = express();

app.listen(3000);
// Listening port 3000
```

Run node satu
Open localhost:3000

Nodemon

Nodemon is a tool/utility that will monitor for any changes in your source and automatically restart your server. Just use ***nodemon*** instead of ***node*** to run your code, and now your process will automatically restart when your code changes.
See https://nodemon.io.

- **Installation**

```
$ npm install -g nodemon
```

- **Open & run source with Nodemon**

```
$ npx nodemon namaFile.js
```

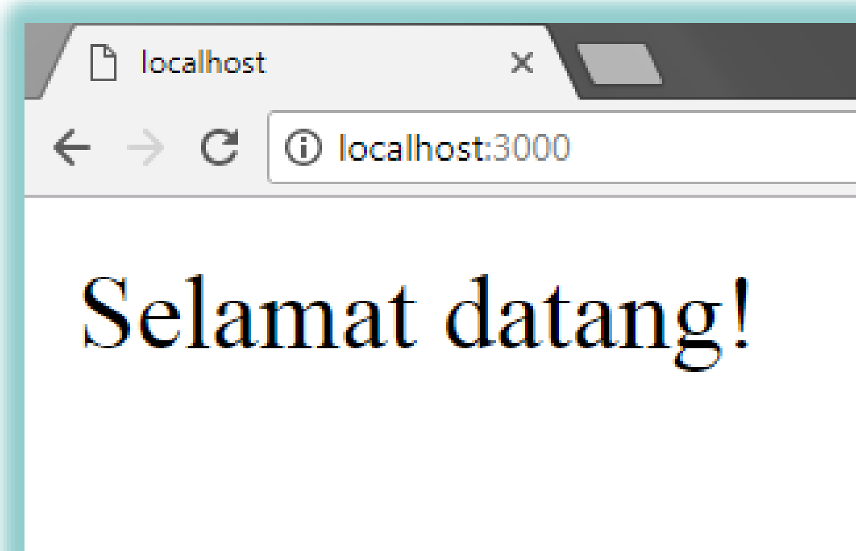
- **Restart**

```
$ rs
```

express

Response to a GET Request

```
var express = require('express');
var app = express();

app.get('/', function(req, res){
      res.send('Selamat datang!');
})
// GET request

app.listen(3000);
// Listening port 3000
```

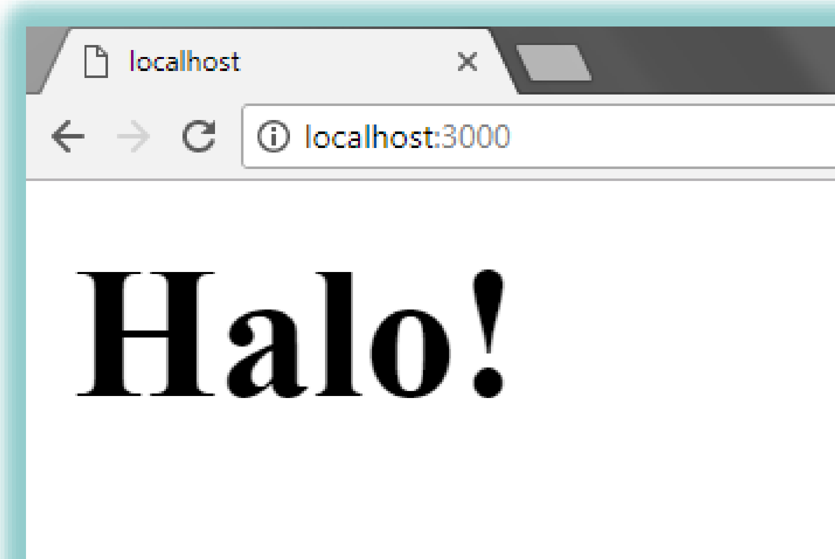


Selamat datang!

express

Serving HTML

```
var express = require('express');
var app = express();

app.get('/', function(req, res){
     res.send('<h1>Halo!</h1>');
})
// GET request

app.listen(3000);
// Listening port 3000
```

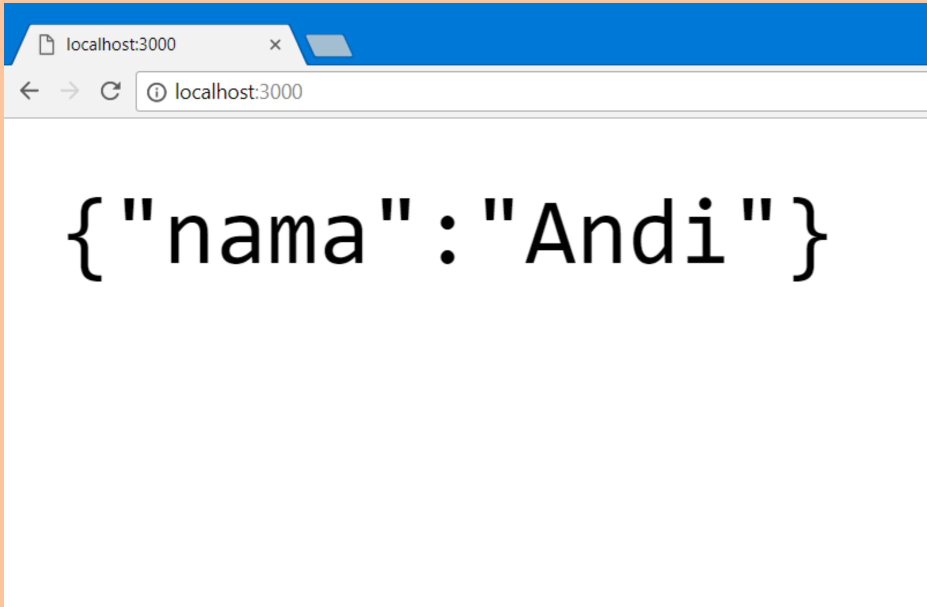


Halo!

express

Serving JSON

```
var express = require('express');
var app = express();

app.get('/', function(req, res){
     res.json({"nama":"Andi"});
})
// GET request

app.listen(3000);
// Listening port 3000
```



```
{"nama":"Andi"}
```

Routing

/beranda

/profil

/berita

/galeri

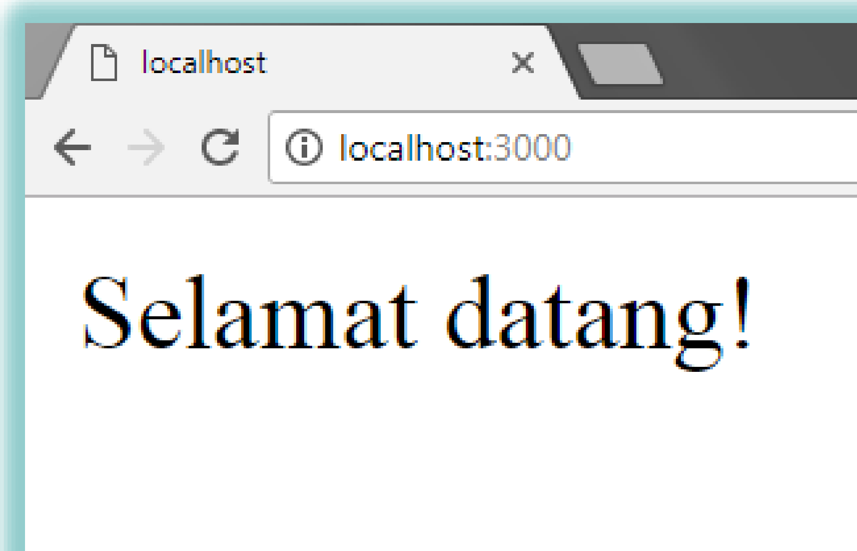
/tentang

/kontak

express

Response to a GET Request

```
var express = require('express');
var app = express();

app.get('/', function(req, res){
        res.send('Selamat datang!');
})
// GET request

app.listen(3000);
// Listening port 3000
```

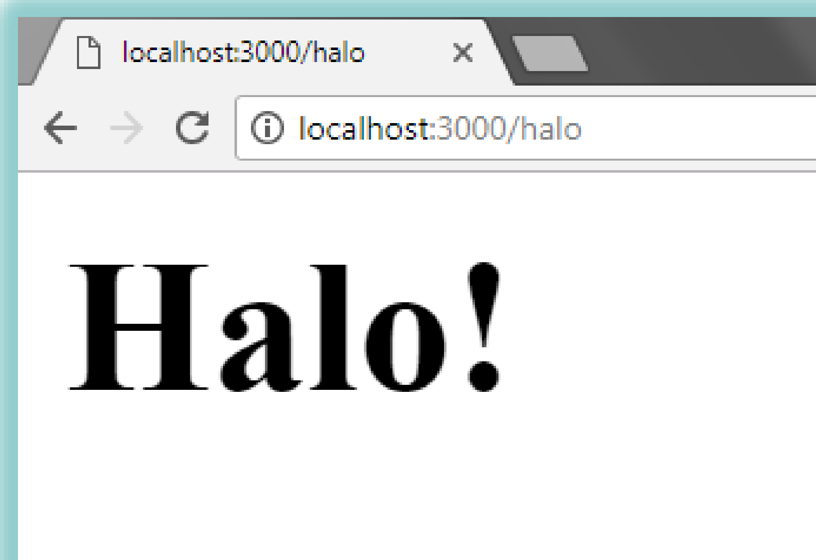


Selamat datang!

express

Response to a Static Request

```
var express = require('express');
var app = express();

app.get('/halo', function(req, res){
    res.send('<h1>Halo!</h1>');
})
// GET static request

app.listen(3000);
// Listening port 3000
```


localhost:3000/halo

localhost:3000/halo

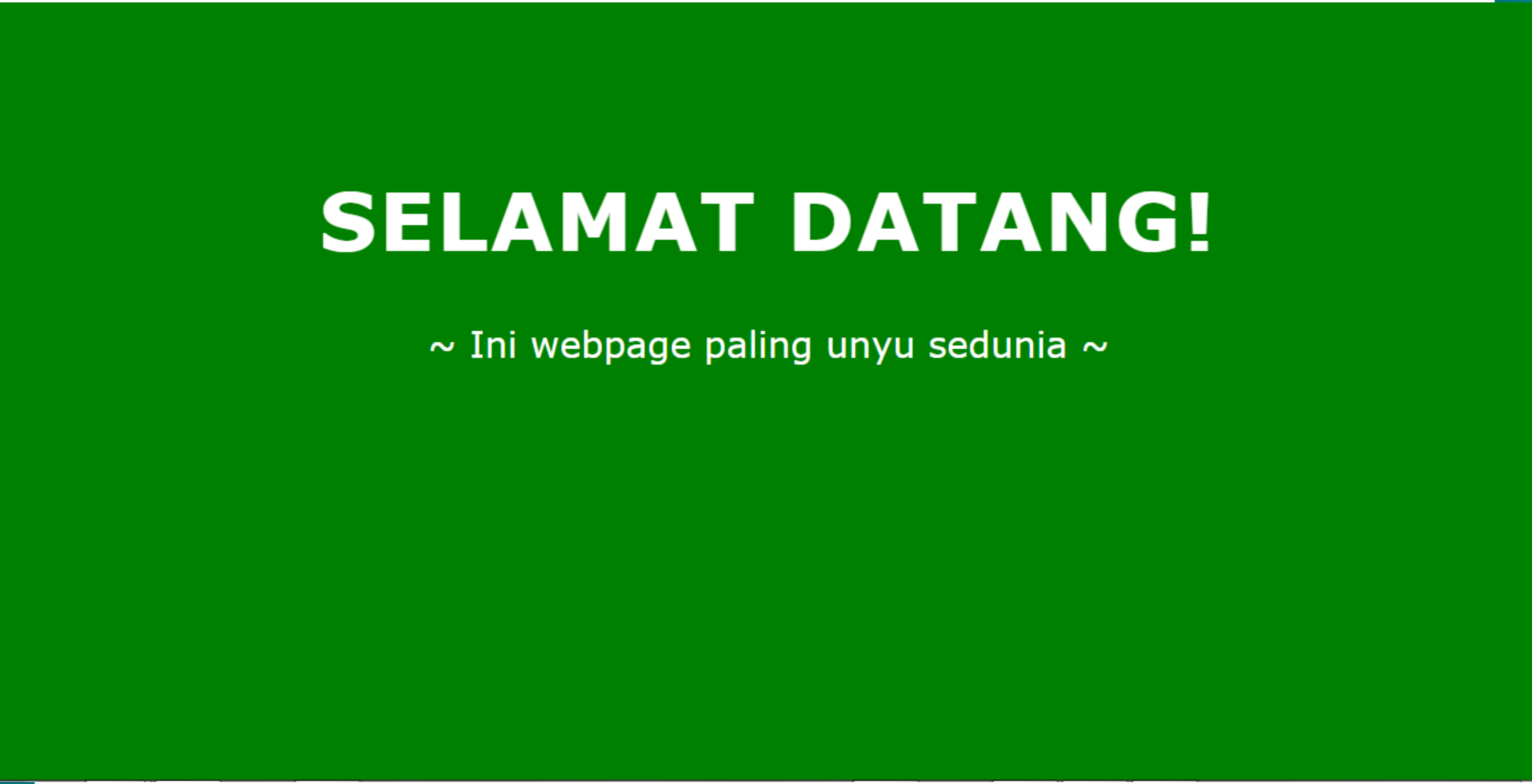
Halo!

Response to a Dynamic Request

```
var express = require('express');
var app = express();

app.get('/id/:nama', function(req, res){
    res.send('Request ID '+req.params.nama);
})
// GET dynamic request w/ parameter nama

app.listen(3000);

// coba buka:
// localhost:3000/id/Lintang
// localhost:3000/id/Andi
```

Serving HTML File
#Static Req & Res

satu.html



SELAMAT DATANG!

~ Ini webpage paling unyu sedunia ~

satu.html

```
<!DOCTYPE html>
<html>
   <head><title>Lintang</title>
      <style>
      body{background:green; font-family:verdana;
color:white; padding:150px;}
      h1{font-size:72px; text-transform:uppercase;
letter-spacing:2px; text-align:center;}
      p{font-size:32px; text-align:center;}
      </style>
   </head>
   <body>
      <h1>Selamat Datang!</h1>
      <p>~ Ini webpage paling unyu sedunia ~</p>
   </body>
</html>
```

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Serving HTML File

#Static Req & Res

satu.js

```
var express = require('express');
var app = express();

app.get('/', function(req, res){
    res.sendFile(__dirname + '/satu.html');
})

app.listen(3000);
```

** satu.html & satu.js ada dalam 1 folder!*

Embedded JavaScript

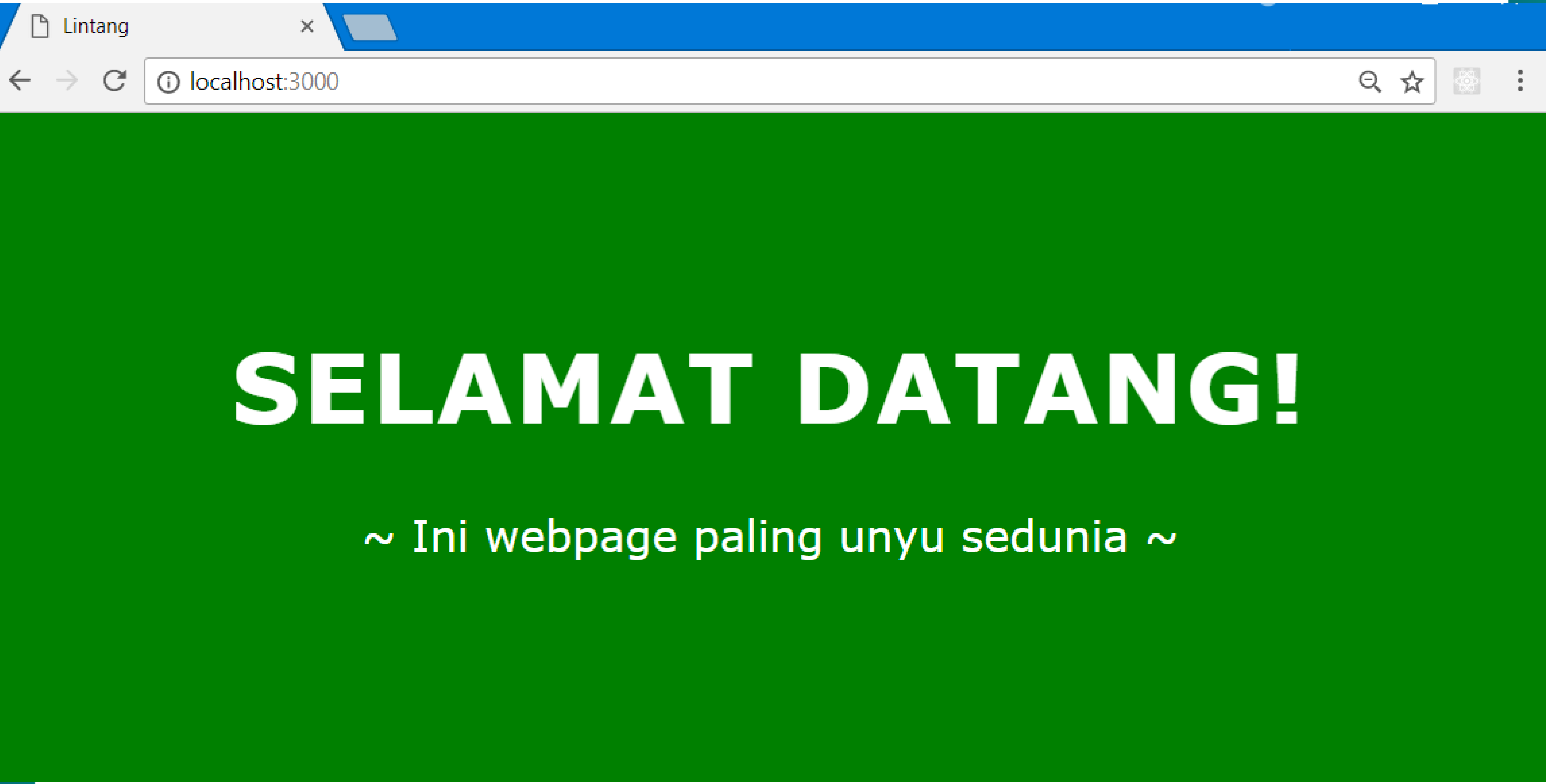
EJS is a package of client side templating language (***view engine***) that was originally part of JavaScriptMVC, which has now been replaced by DoneJS. EJS combines data & a template to produce HTML. JavaScript between **<% %>** will be executed. JavaScript between **<%= %>** adds HTML to the result (see embeddedjs.com).

- **Installation**

  ```
  npm install ejs --save
  ```

Serving EJS File
#Static Req & Res

localhost:3000/



Lintang

localhost:3000

SELAMAT DATANG!

~ Ini webpage paling unyu sedunia ~

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// Buat ‘satu.ejs’ dalam folder ‘views’

Serving EJS File

#Static Req & Res

satu.ejs

```
<!DOCTYPE html>
<html>
   <head><title>Lintang</title>
      <style>
      body{background:green; font-family:verdana;
     color:white; padding:150px;}
      h1{font-size:72px; text-transform:uppercase;
letter-spacing:2px; text-align:center;}
      p{font-size:32px; text-align:center;}
      </style>
   </head>
   <body>
<h1>Selamat Datang!</h1>
<p>~ Ini website paling unyu sedunia! ~</p>
   </body>
</html>
```

Serving EJS File

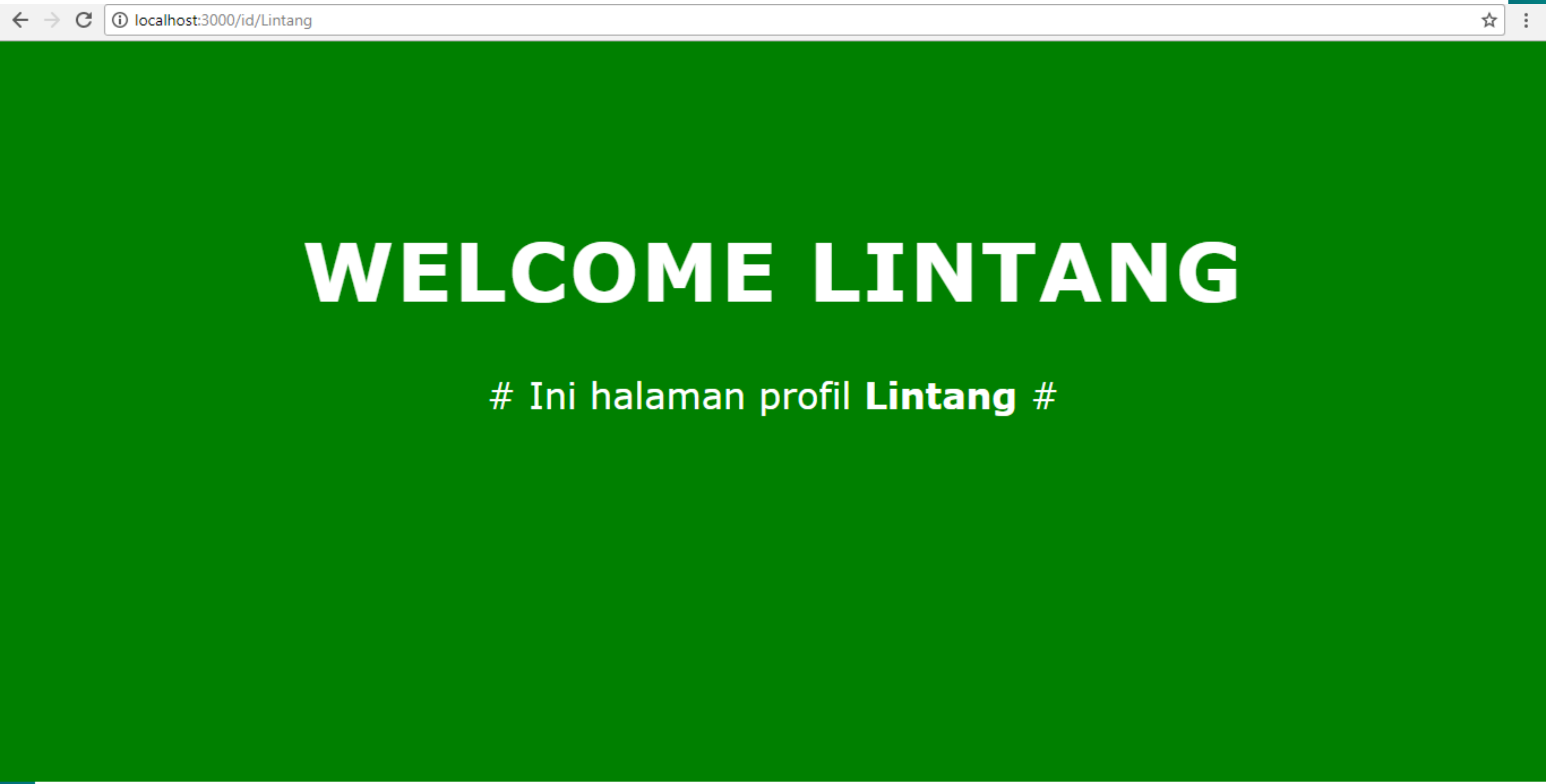
#Static Req & Res

satu.js

```
var express = require('express');
var app = express();

app.set('view engine' , 'ejs');
// buat folder ‘views’!

app.get('/', function(req, res){
    res.render('satu');
})
// merujuk ke file ‘satu’ dalam views.

app.listen(3000);
```

Serving HTML File
#Dynamic Req & Res

localhost:3000/id/Lintang



localhost:3000/id/Lintang

WELCOME LINTANG

Ini halaman profil **Lintang**

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Serving HTML File

#Dynamic Req & Res

// Buat ‘satu.ejs’ dalam folder ‘views’

satu.ejs

```
<!DOCTYPE html>
<html>
   <head><title>Lintang</title>
      <style>
      body{background:green; font-family:verdana;
     color:white; padding:150px;}
      h1{font-size:72px; text-transform:uppercase;
letter-spacing:2px; text-align:center;}
      p{font-size:32px; text-align:center;}
      </style>
   </head>
   <body>
<h1>Welcome <%= orang %></h1>
<p># Ini halaman profil <b><%= orang %></b> #</p>
   </body>
</html>
```

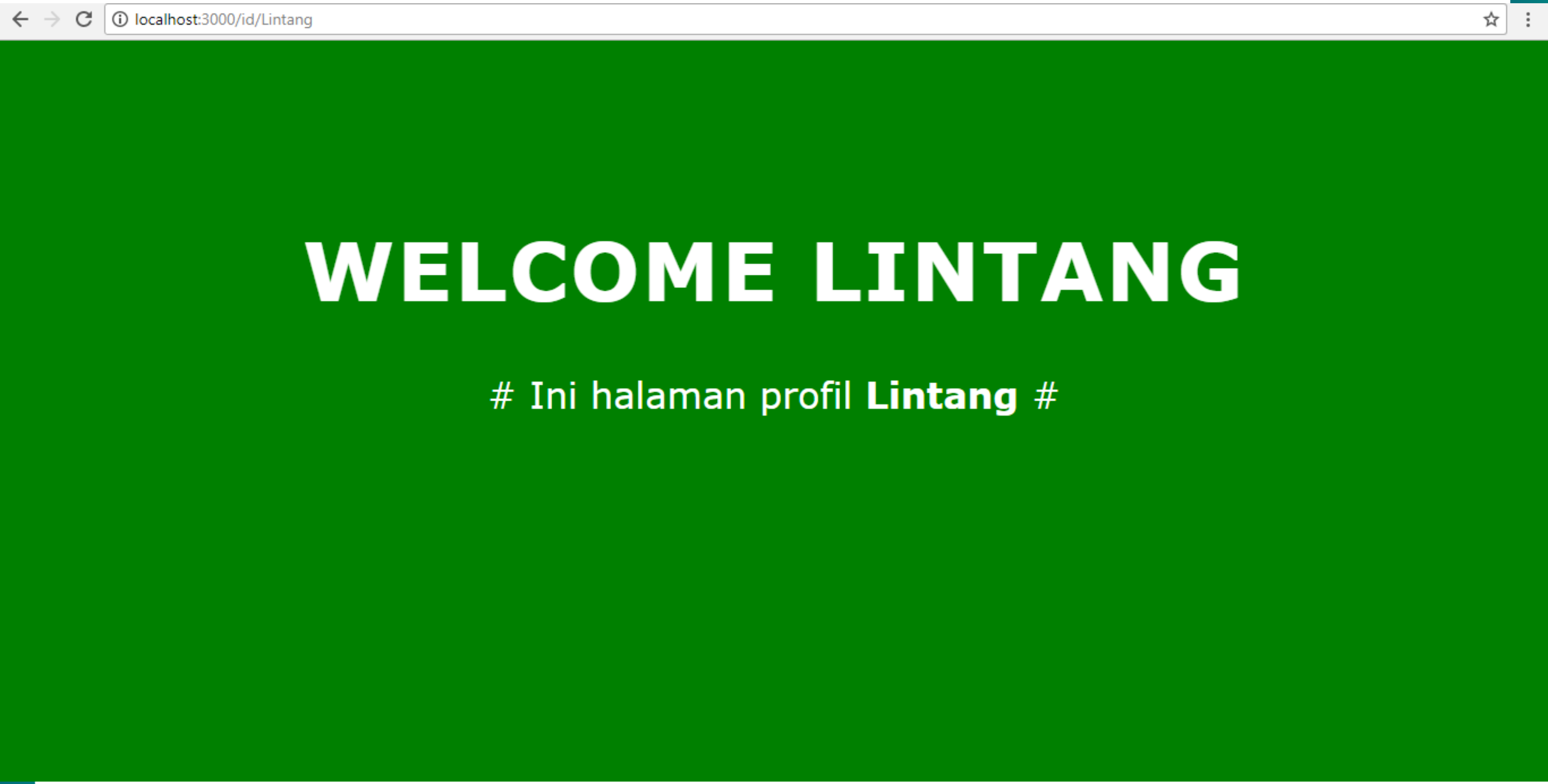
Serving HTML File
#Dynamic Req & Res

satu.js

```
var express = require('express');
var app = express();

app.set('view engine' , 'ejs');
// buat folder ‘views’!

app.get('/id/:nama', function(req, res){
     res.render('satu', {orang:req.params.nama});
})
// merujuk ke file ‘satu’ dalam views.

app.listen(3000);
```

Serving HTML File
#Dynamic Req & Res

localhost:3000/id/Lintang



WELCOME LINTANG

Ini halaman profil **Lintang**

EJS
<% Embedded JavaScript %>

Inject an Object

satu.js

```
var express = require('express');
var app = express();

app.set('view engine' , 'ejs');

app.get('/', function(req, res){
     var orangjs = {nama:'Andi', usia:24};
     res.render('satu', {orangejs: orangjs});
})

app.listen(3000);
```

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Inject an Object

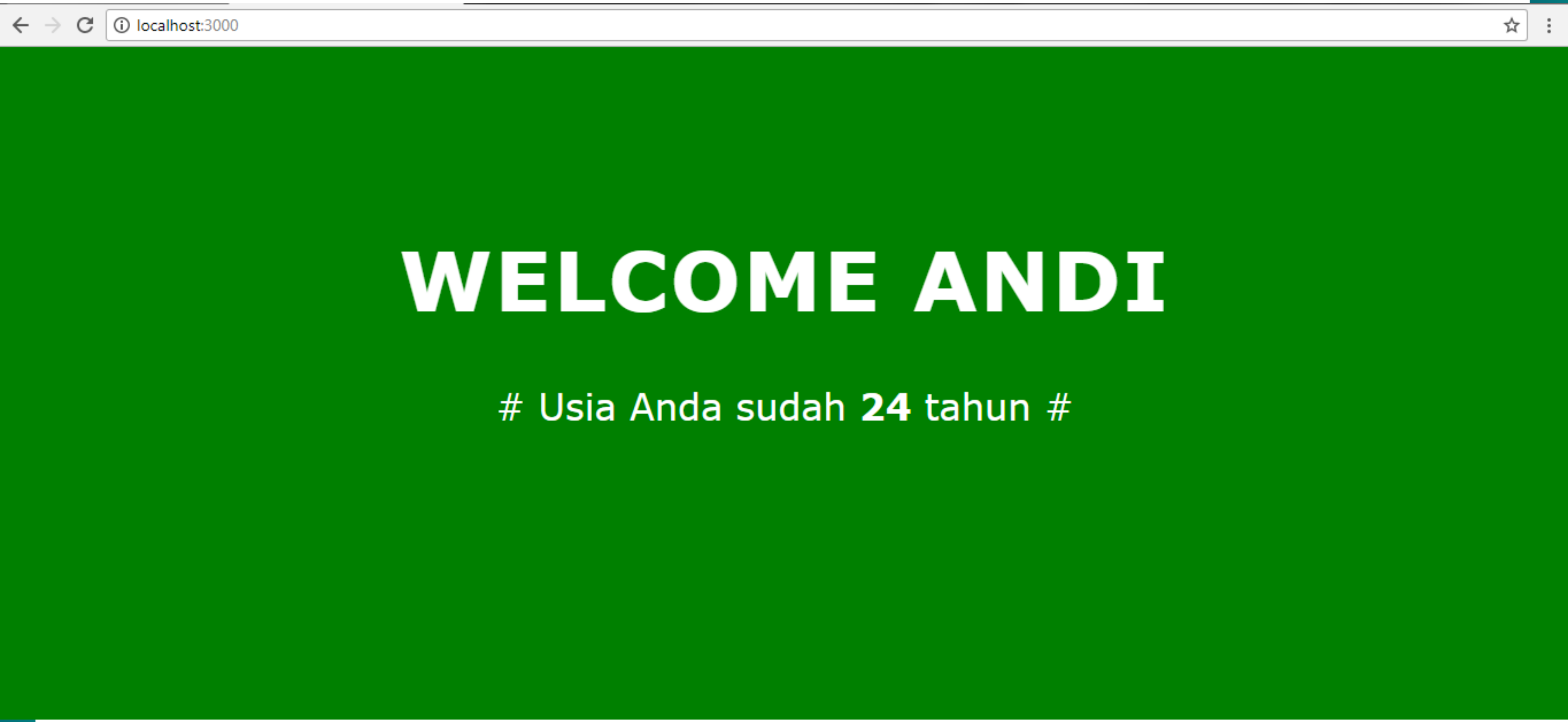
satu.ejs

```
<body>
    <h1>Welcome
    <%= orangejs.nama %></h1>

    <p># Usia Anda <b>
    <%= orangejs.usia %>
    </b> th #</p>
</body>
```

Inject an Object

localhost:3000



WELCOME ANDI

Usia Anda sudah **24** tahun

EJS
<% Embedded JavaScript %>

Inject JS code

satu.js

```
var express = require('express');
var app = express();

app.set('view engine' , 'ejs');

app.get('/', function(req, res){
     var orangjs = ['Adi', 'Budi', 'Caca'];
     res.render('satu', {orang: orangjs});
})

app.listen(3000);
```

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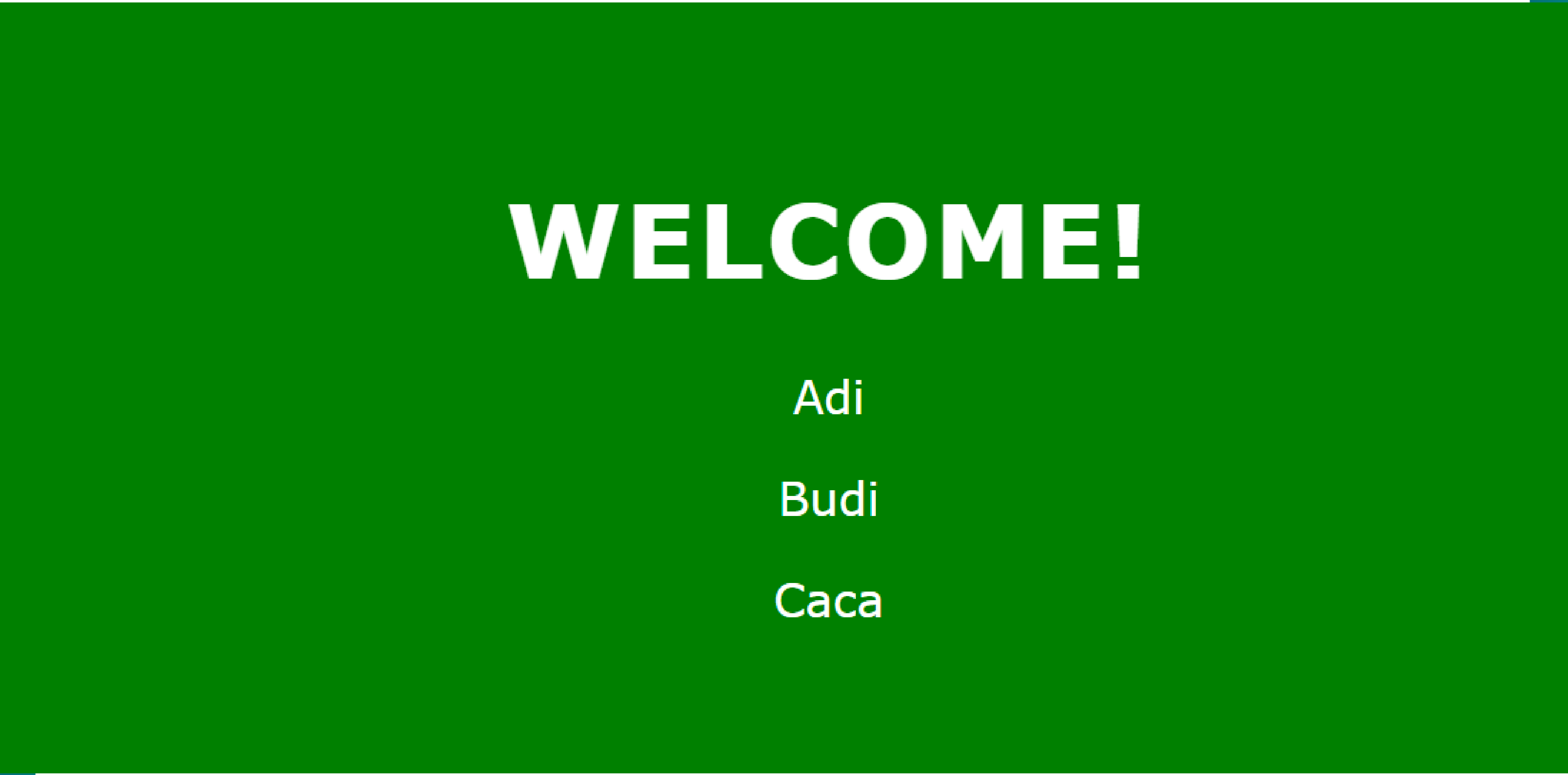
Inject JS code

satu.ejs

```
<body>
  <h1>Welcome!</h1>
  <% for(i=0;i<3;i++){ %>
  <p> <%= orang[i]; %> </p>
  <% } %>
 </body>
```

Inject JS code

localhost:3000



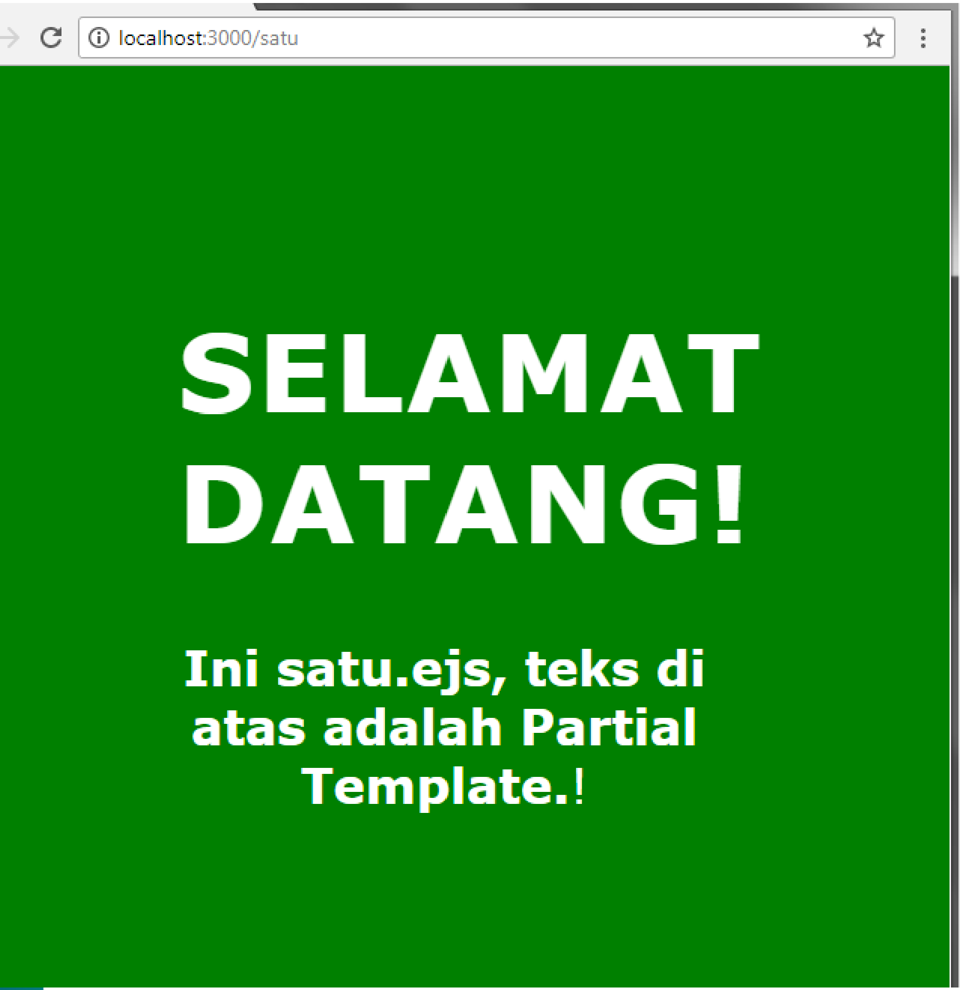
WELCOME!

Adi

Budi

Caca

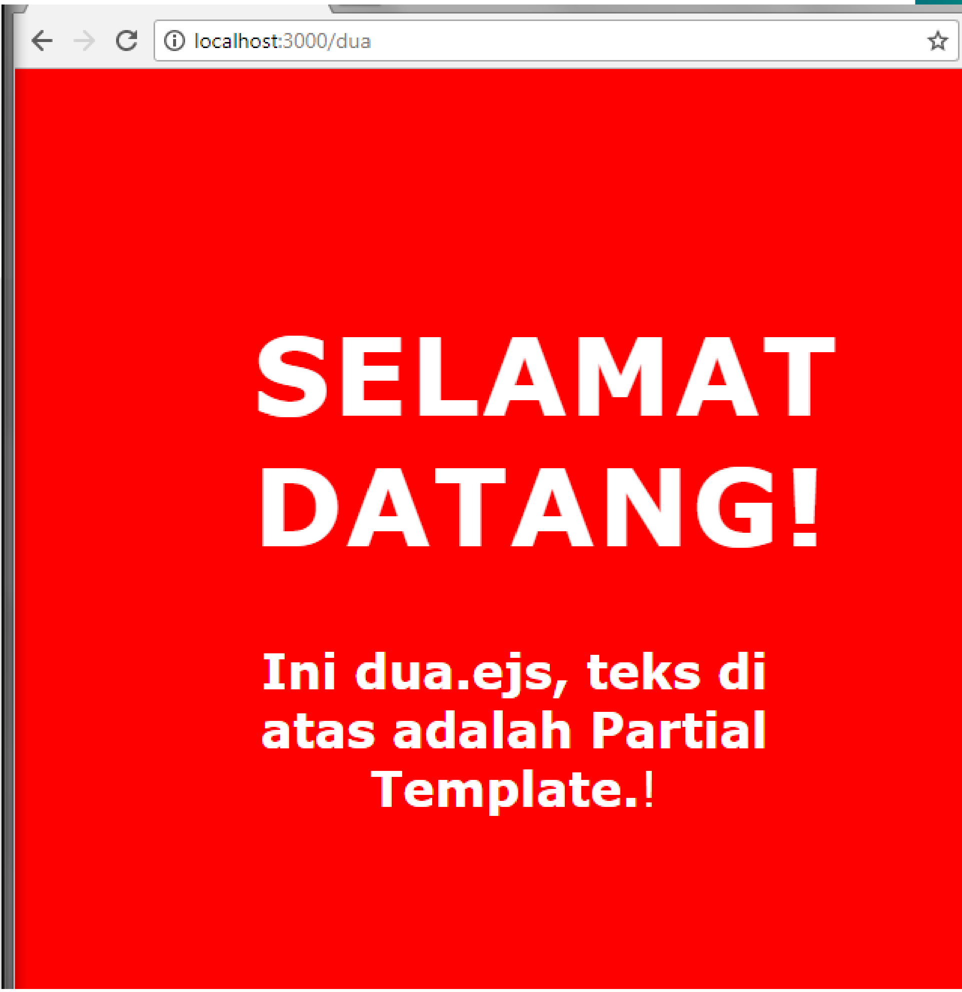
localhost:3000/satu & localhost:3000/dua



localhost:3000/satu

SELAMAT DATANG!

Ini satu.ejs, teks di atas adalah Partial Template.!



localhost:3000/dua

SELAMAT DATANG!

Ini dua.ejs, teks di atas adalah Partial Template.!

Partial Template

Partial Template

judul.ejs

```
<h1>Selamat Datang!</h1>
```

// create **judul.ejs** on dir **views/parsial**

Partial Template

satu.ejs

```
<body>

<%- include(parsial/judul) %>

<b><p>Ini satu.ejs, teks di atas
adalah Partial Template</b>!

</body>
```

Partial Template

dua.ejs

```
<body>

<%- include(parsial/judul) %>

<b><p>Ini dua.ejs, teks di atas
adalah Partial Template</b>!

</body>
```

Partial Template

satu.js

```
var express = require('express');
var app = express();
app.set('view engine', 'ejs');

app.get('/satu', function(req, res){
     res.render('satu');
})

app.get('/dua', function(req, res){
     res.render('dua');
})

app.listen(3000);
```

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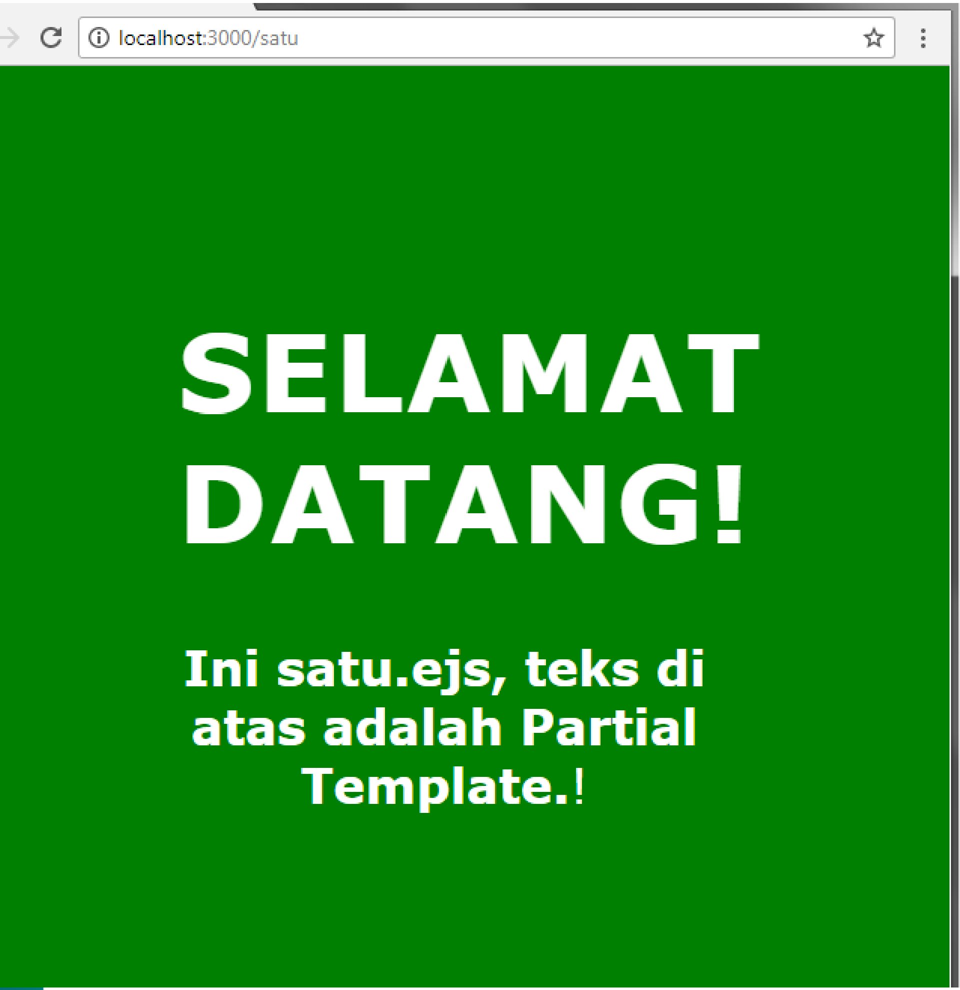
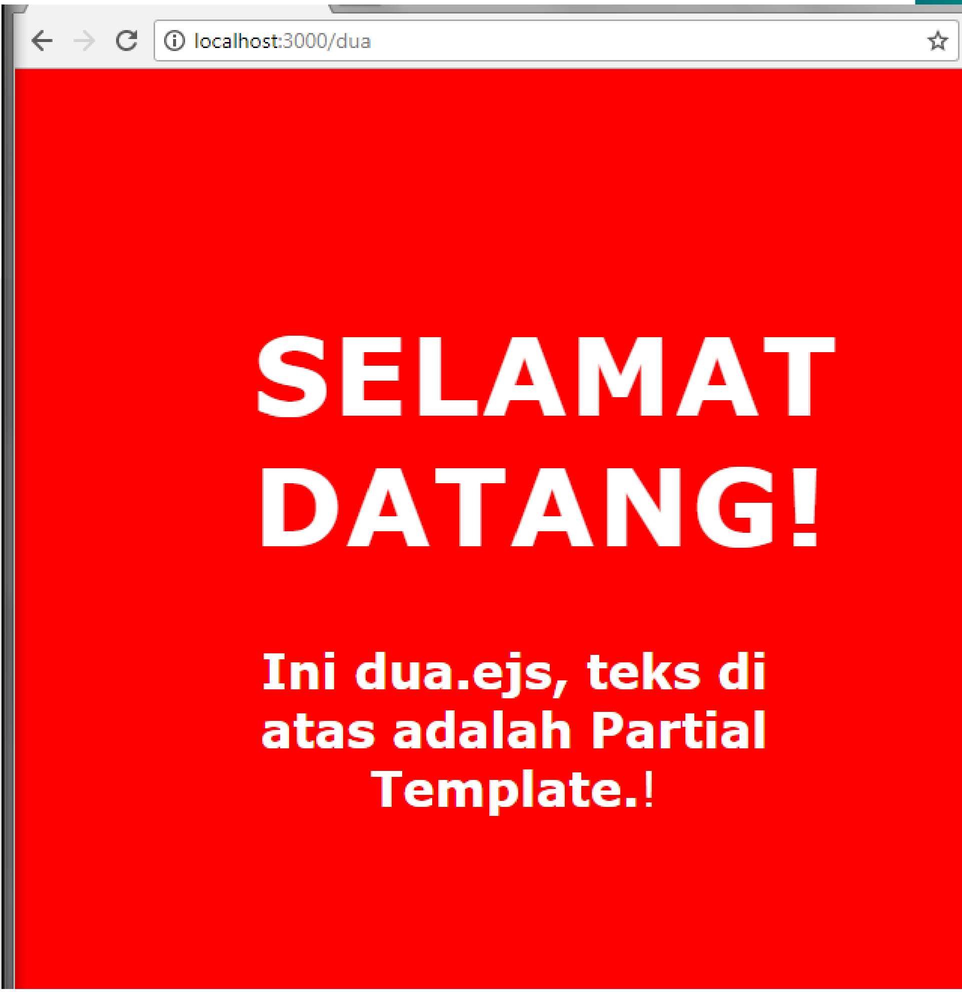
localhost:3000/satu & localhost:3000/dua



SELAMAT DATANG!

Ini satu.ejs, teks di atas adalah Partial Template.!



SELAMAT DATANG!

Ini dua.ejs, teks di atas adalah Partial Template.!

Partial Template

Query String

Query string is the part of a uniform resource locator (URL) containing data that does not fit conveniently into a hierarchical path structure.

- http://123.com/news?page=2
- http://xyz.com/a?x=1234&y=5678

Query to Server

satu.js

```
var express = require('express');
var app = express();

app.set('view engine', 'ejs');

app.get('/', function(req, res){
    console.log(req.query)
    res.render('satu');
})

app.listen(3000);
```

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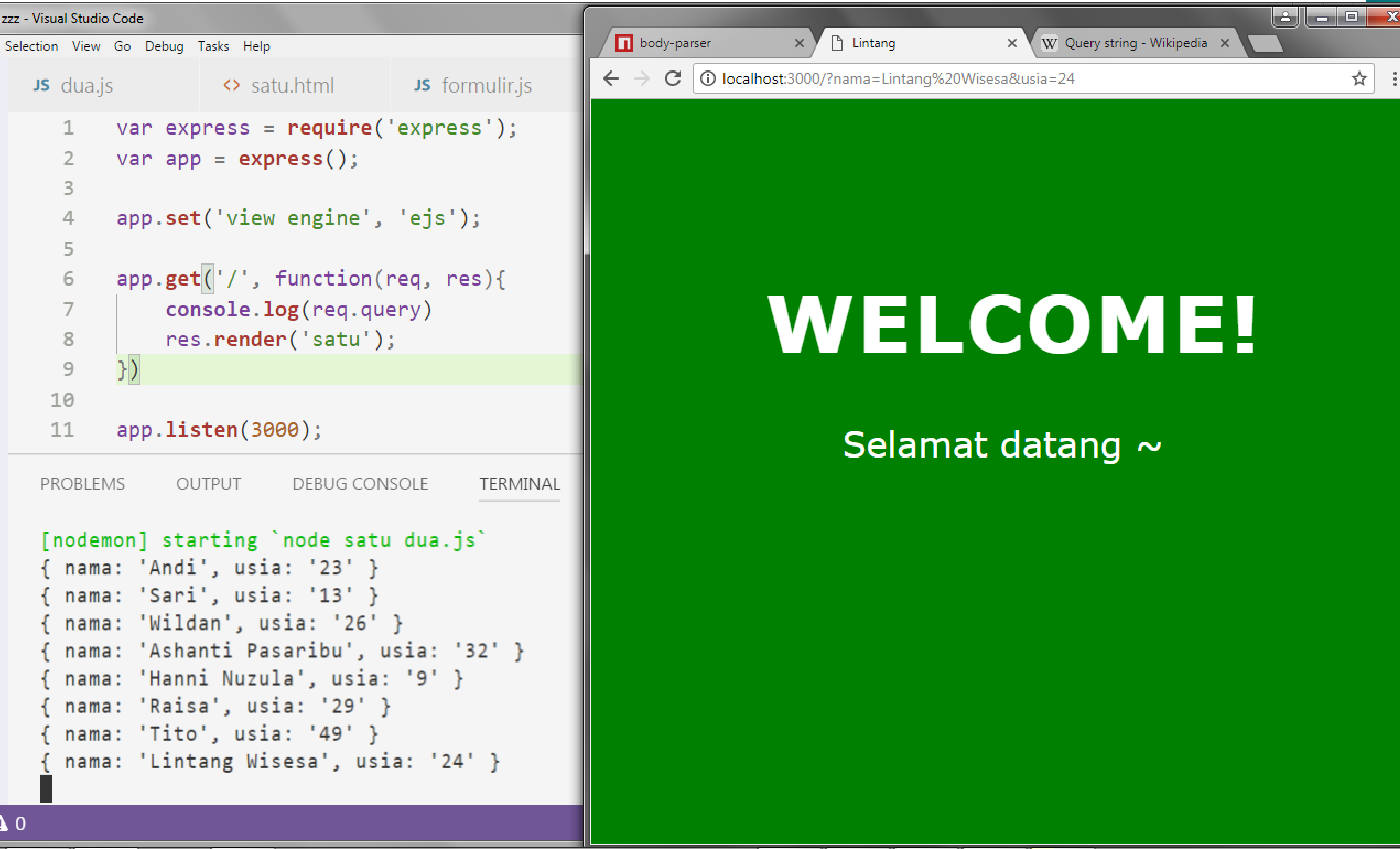
Query to Server

satu.ejs

```
<body>
    <h1>Welcome!</h1>
    <p>Selamat datang ~</p>
</body>
```

localhost:3000/?nama=Iwa%20K&usia=52



```
var express = require('express');
var app = express();

app.set('view engine', 'ejs');

app.get('/', function(req, res){
    console.log(req.query)
    res.render('satu');
})

app.listen(3000);
```

```
[nodemon] starting `node satu dua.js`
{ nama: 'Andi', usia: '23' }
{ nama: 'Sari', usia: '13' }
{ nama: 'Wildan', usia: '26' }
{ nama: 'Ashanti Pasaribu', usia: '32' }
{ nama: 'Hanni Nuzula', usia: '9' }
{ nama: 'Raisa', usia: '29' }
{ nama: 'Tito', usia: '49' }
{ nama: 'Lintang Wisesa', usia: '24' }
```

localhost:3000/?nama=Lintang%20Wisesa&usia=24

WELCOME!

Selamat datang ~

Query to Server & Res HTML page

satu.js

```
var express = require('express');
var app = express();

app.set('view engine', 'ejs');

app.get('/', function(req, res){
     console.log(req.query)
     res.render('satu', {qs: req.query});
})

app.listen(3000);
```

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Query to Server & Res HTML page

satu.ejs

```
<body>

<h1>Welcome!</h1>

<p>Hai kak <b><%= qs.nama %></b>!

<p>Usiamu <b><%= qs.usia %></b> th!

</body>
```

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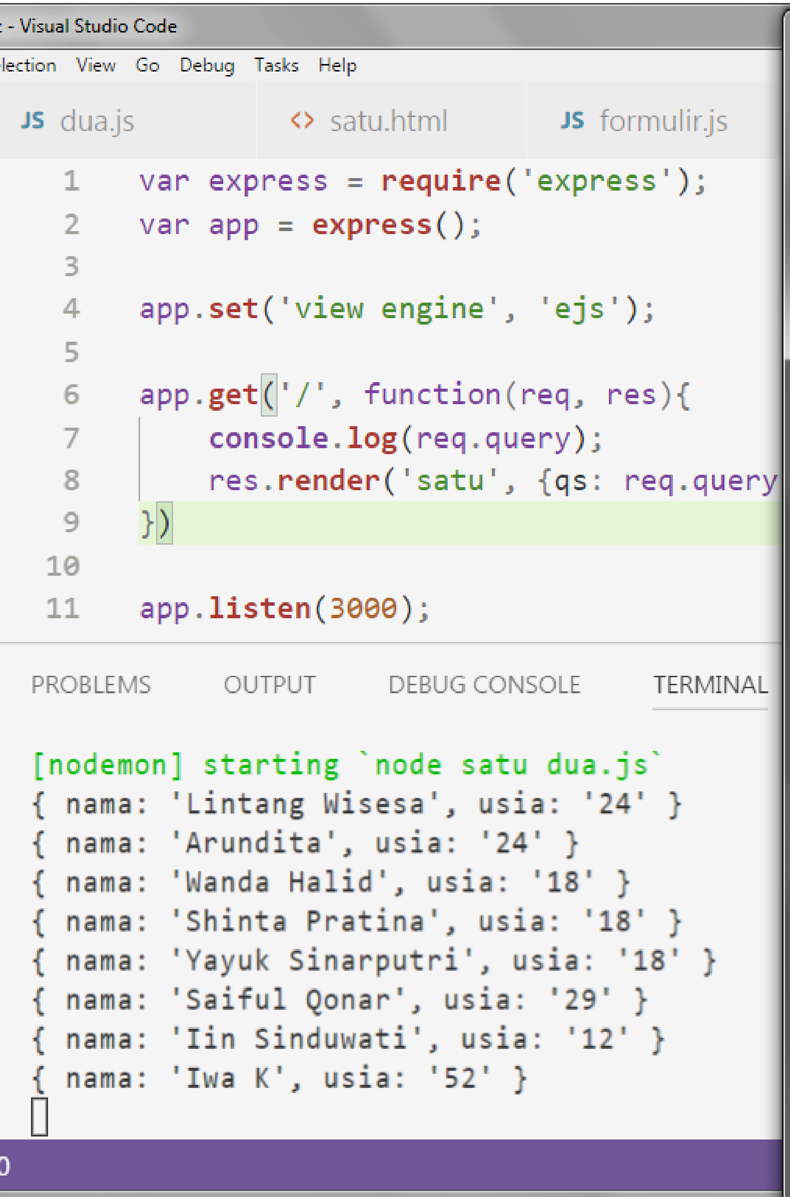
localhost:3000/?nama=Iwa%20K&usia=52



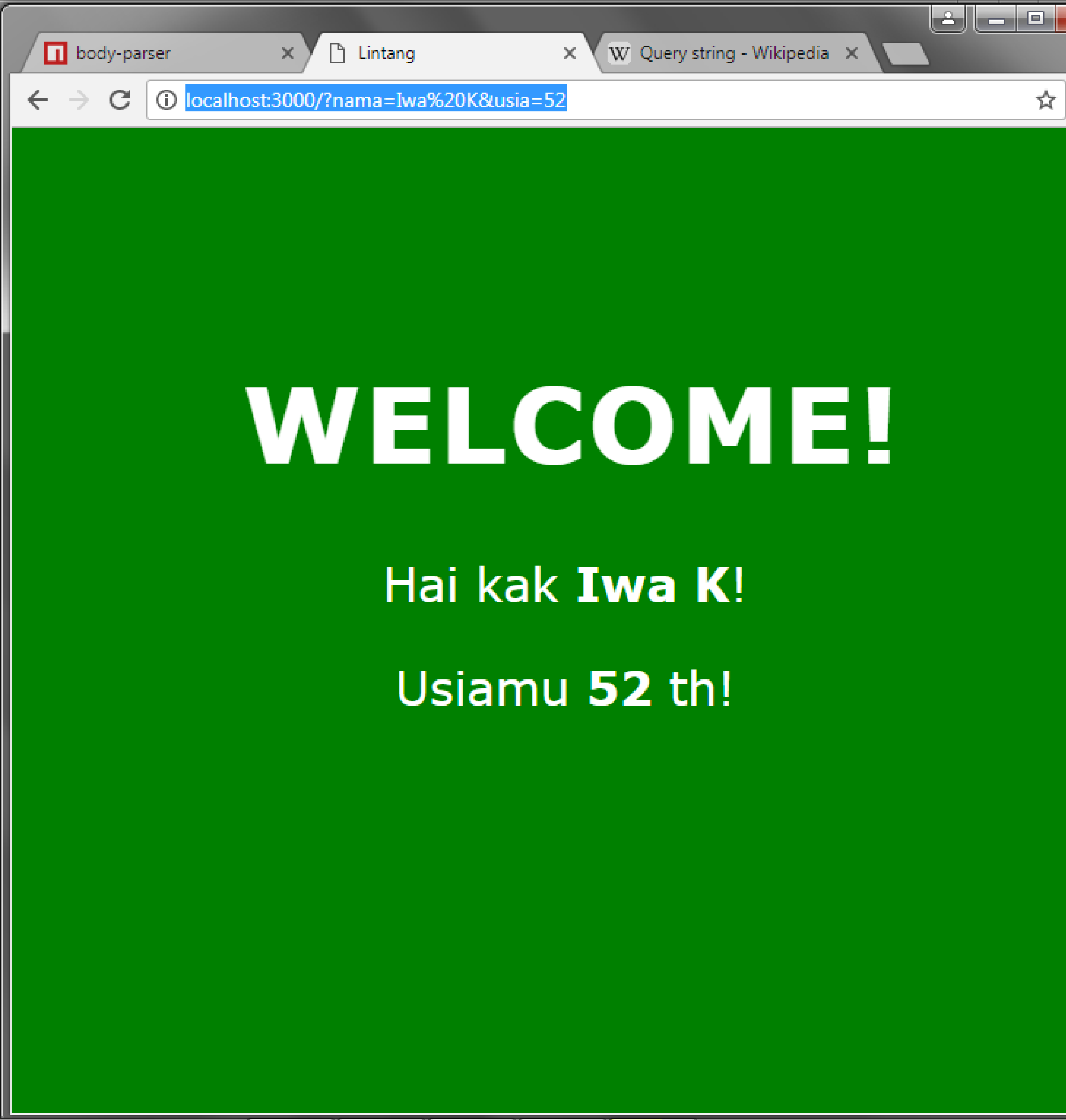
```
var express = require('express');
var app = express();

app.set('view engine', 'ejs');

app.get('/', function(req, res){
    console.log(req.query);
    res.render('satu', {qs: req.query
})

app.listen(3000);
```

```
[nodemon] starting `node satu dua.js`
{ nama: 'Lintang Wisesa', usia: '24' }
{ nama: 'Arundita', usia: '24' }
{ nama: 'Wanda Halid', usia: '18' }
{ nama: 'Shinta Pratina', usia: '18' }
{ nama: 'Yayuk Sinarputri', usia: '18' }
{ nama: 'Saiful Qonar', usia: '29' }
{ nama: 'Iin Sinduwati', usia: '12' }
{ nama: 'Iwa K', usia: '52' }
```



localhost:3000/?nama=Iwa%20K&usia=52

WELCOME!

Hai kak **Iwa K**!

Usiamu **52** th!

Back-End Development

express

Exploring

#6 Express Module

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