

LAPORAN PRAKTIKUM
PEMROGRAMAN BERORIENTASI OBJEK



RIYADI TRI WALUYA BUDI

2308065

SIK A3

I.PENDAHULUAN

Saya akan membuat aplikasi web yang memungkinkan calon mahasiswa mendaftar di kampus.

Formulir pendaftaran ini akan menanyakan informasi seperti NIK, nama, jenis kelamin yang diinginkan, tanggal lahir, nomor telepon, email, alamat, informasi (mengapa Anda ingin belajar di sini).

Data yang dimasukkan akan disimpan selama sesi berlangsung, sehingga memudahkan pengguna untuk melanjutkan proses pendaftaran tanpa kehilangan informasi apapun.

Langkah:

- Siapkan lingkungan: Instal kerangka kerja Node.js dan Express.
- Buat Server: Buat server dasar menggunakan Express.
- Konfigurasi session: Gunakan middleware seperti sesi Ekspres untuk mengelola session.
- Desain formulir pendaftaran: Membuat antarmuka formulir menggunakan HTML dan CSS.
- Penanganan Data: Menangani pengiriman data formulir dan menyimpannya dalam sesi.
- Validasi Input: Memberikan umpan balik kepada pengguna mengenai validasi data yang dimasukkan.
- Buka halaman berikutnya: Arahkan pengguna ke halaman konfirmasi setelah registrasi berhasil.

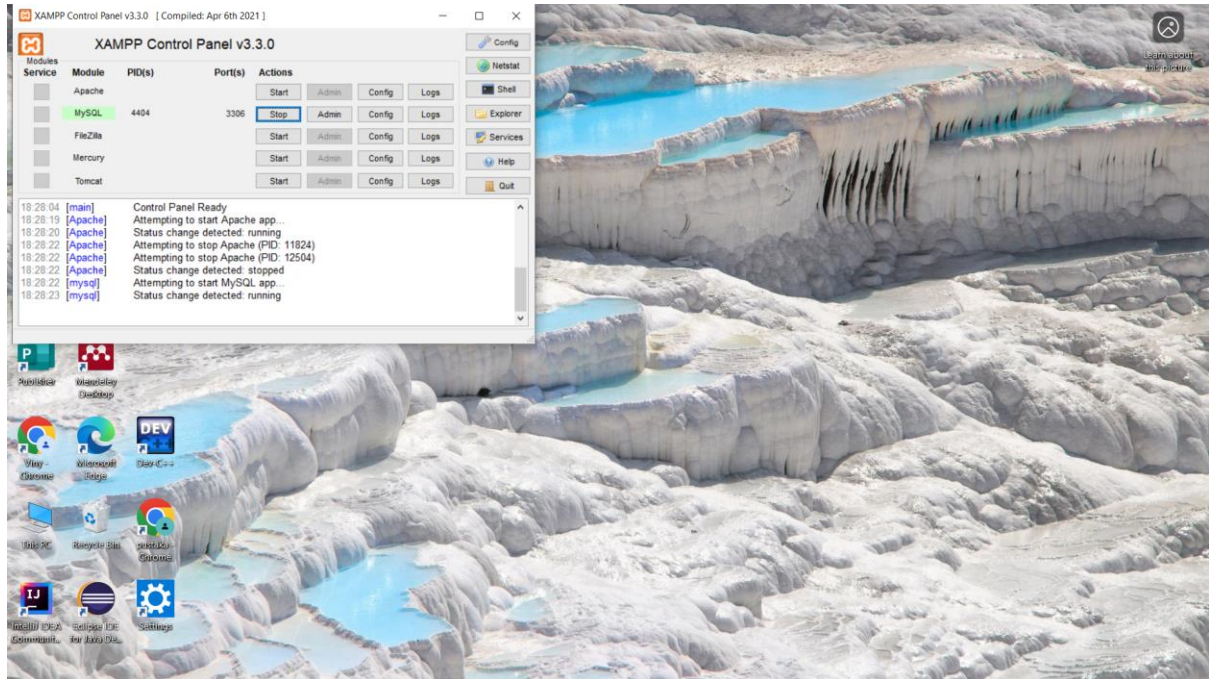
Harapan Setelah menyelesaikan praktik ini, peserta akan dapat memahami cara kerja sesi di Node.js dan dapat mengimplementasikan fungsi tersebut pada aplikasi web, khususnya untuk sistem registrasi yang lebih terstruktur dan kompleks.

II.ALAT DAN BAHAN

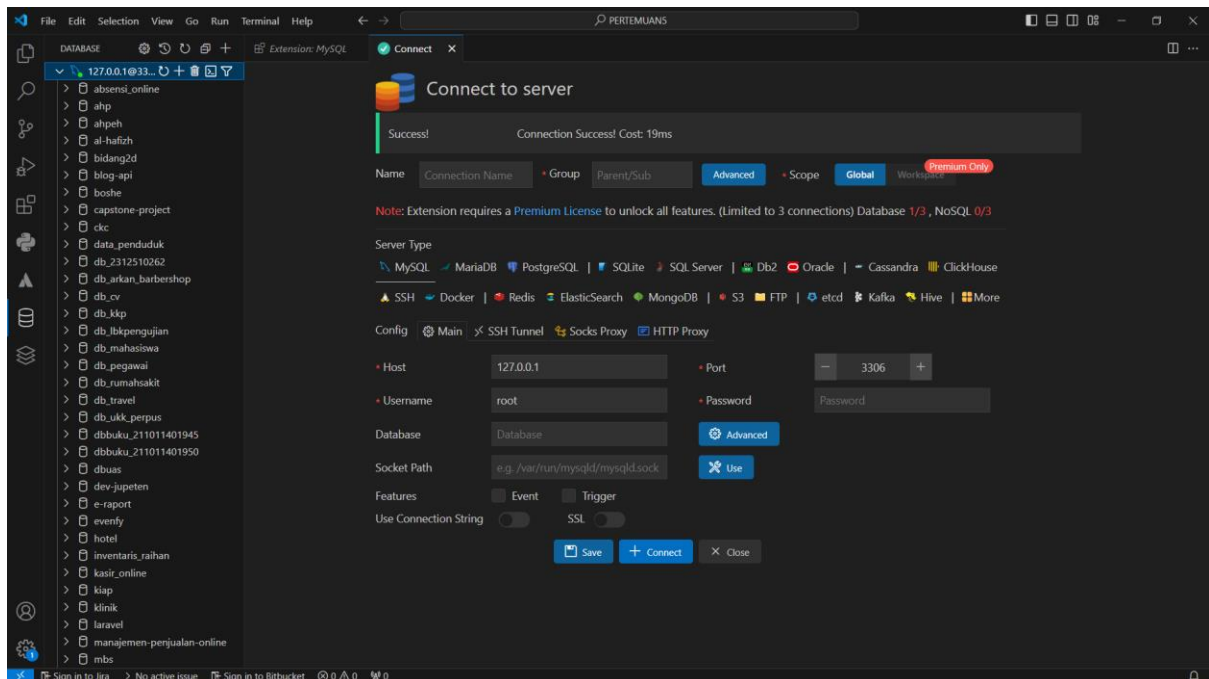
- VScode
- Node.js
- MySQL

III.LANGKAH – LANGKAH

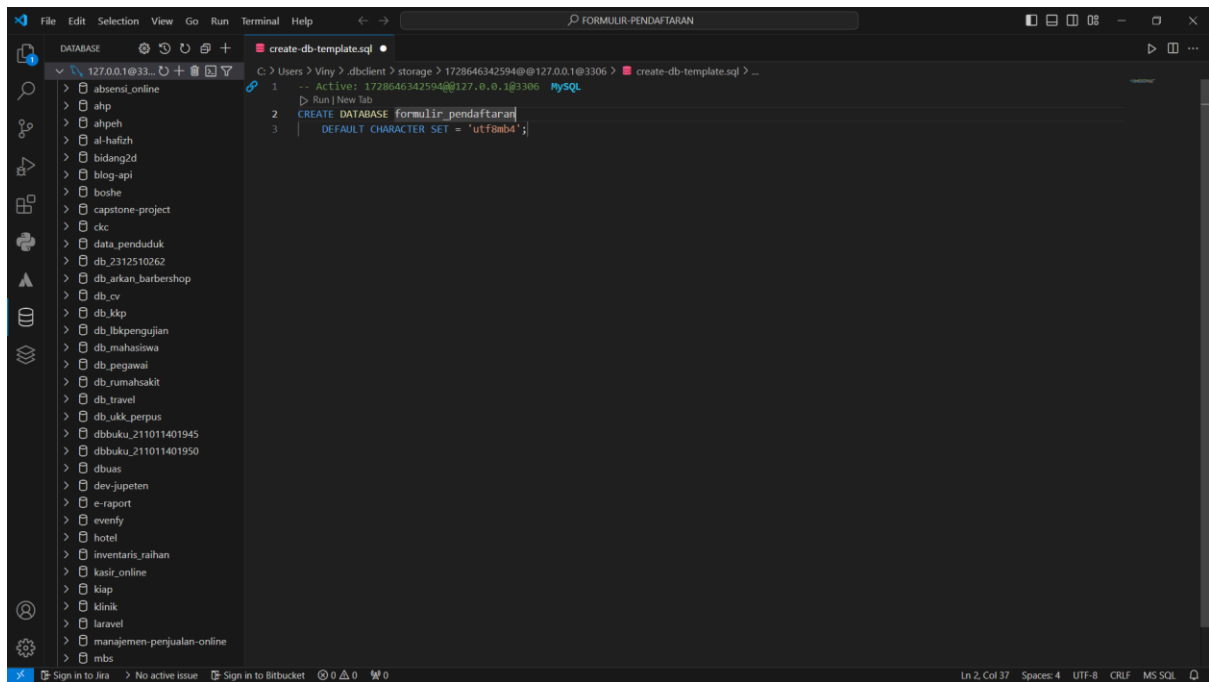
1.Pertama, Buka Aplikasi XAMPP Kemudian Aktifkan MySQL nya



2. Kemudia buka ekstensi MySQL pada VSCode, kemudian connect pada database.



3. Kemudian tambahkan database dengan nama formulir pendaftaran

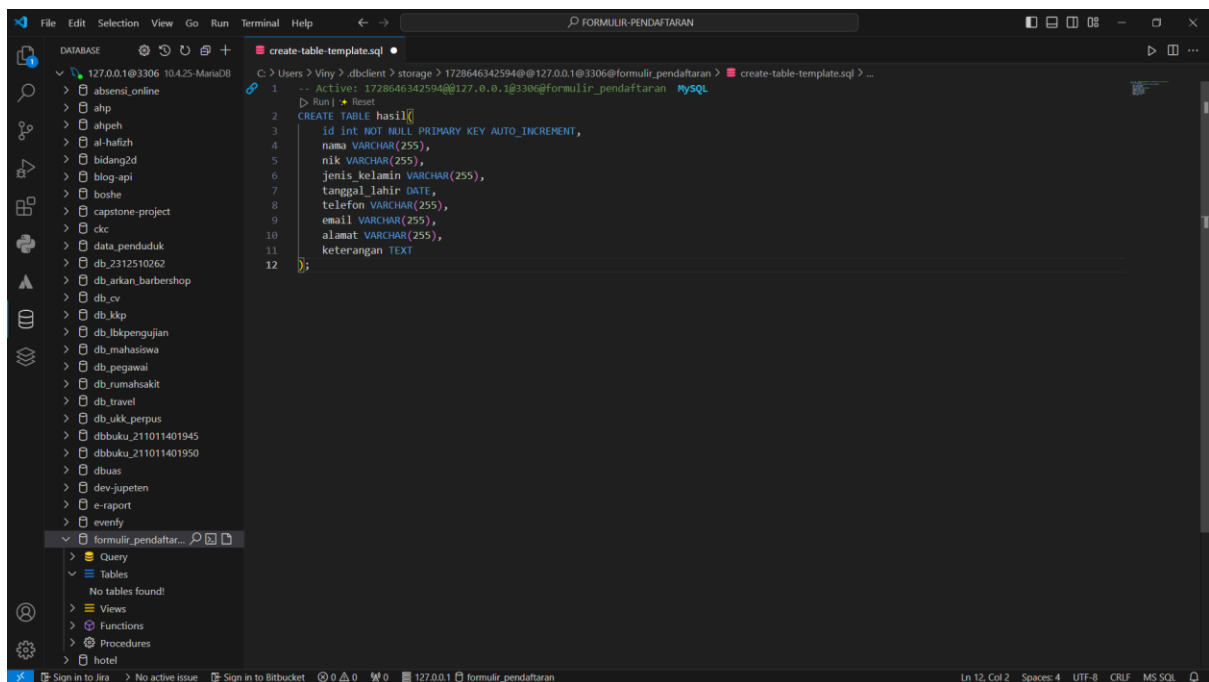


The screenshot shows the MySQL Workbench interface. On the left, the 'DATABASES' pane lists various databases. The main editor window is titled 'create-db-template.sql' and contains the following SQL code:

```
1 -- Active: 1728646342594@127.0.0.1@3306 MySQL
2 CREATE DATABASE formulir_pendaftaran;
3 | DEFAULT CHARACTER SET = 'utf8mb4';
```

The status bar at the bottom indicates 'Ln 2, Col 37 Spaces: 4 UTF-8 CRLF MS SQL'.

4. Tambahkan tabel hasil untuk menyimpan datanya

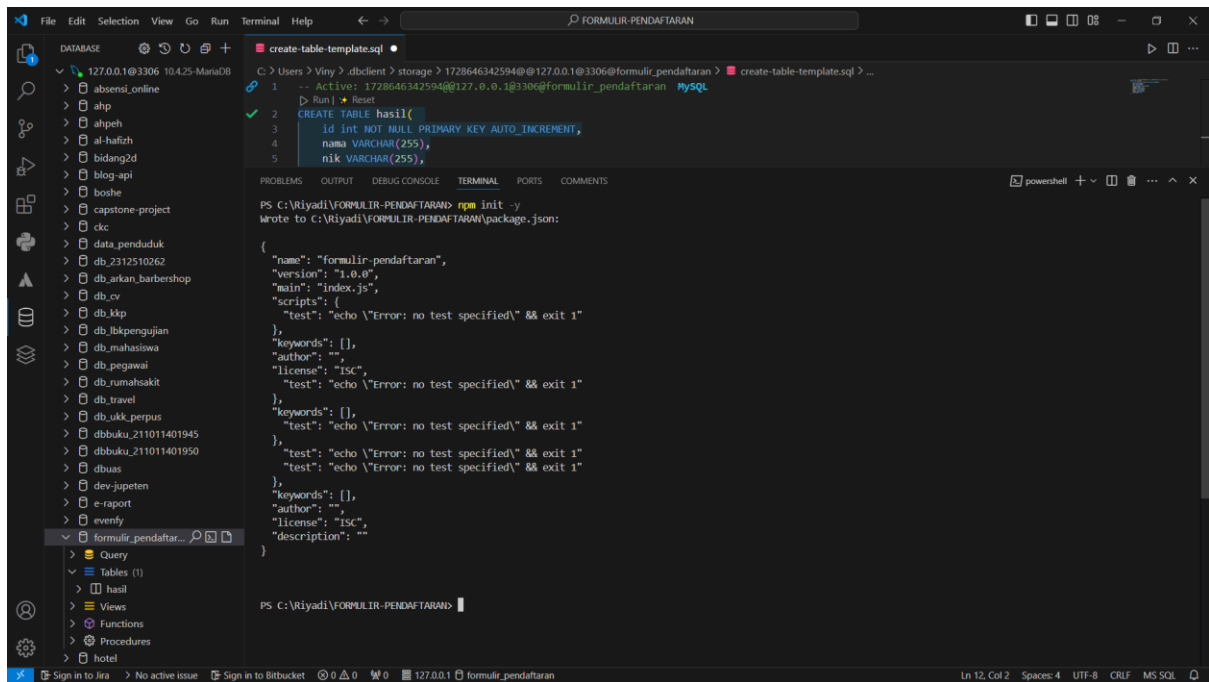


The screenshot shows the MySQL Workbench interface. The 'DATABASES' pane on the left now includes 'formulir_pendaftaran'. The main editor window is titled 'create-table-template.sql' and contains the following SQL code:

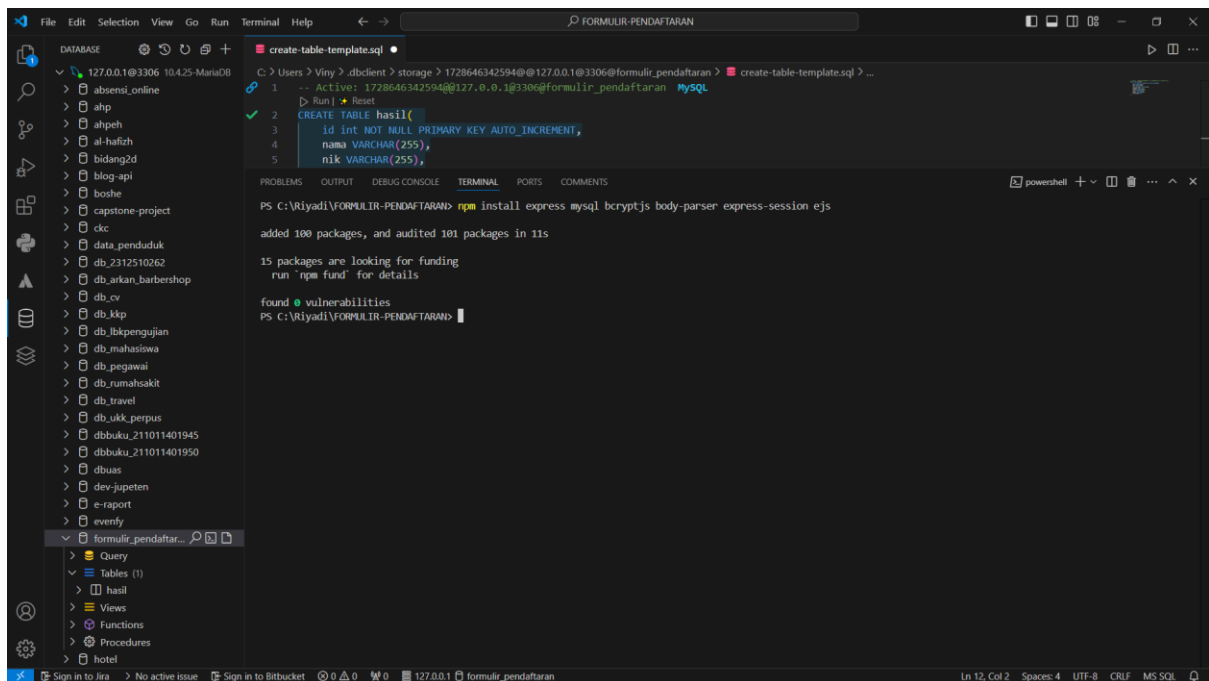
```
1 -- Active: 1728646342594@127.0.0.1@3306@formulir_pendaftaran MySQL
2 CREATE TABLE hasil(
3     id int NOT NULL PRIMARY KEY AUTO_INCREMENT,
4     nama VARCHAR(255),
5     nik VARCHAR(255),
6     jenis_kelamin VARCHAR(255),
7     tanggal_lahir DATE,
8     telepon VARCHAR(255),
9     email VARCHAR(255),
10    alamat VARCHAR(255),
11    keterangan TEXT
12 );
```

The status bar at the bottom indicates 'Ln 12, Col 2 Spaces: 4 UTF-8 CRLF MS SQL'.

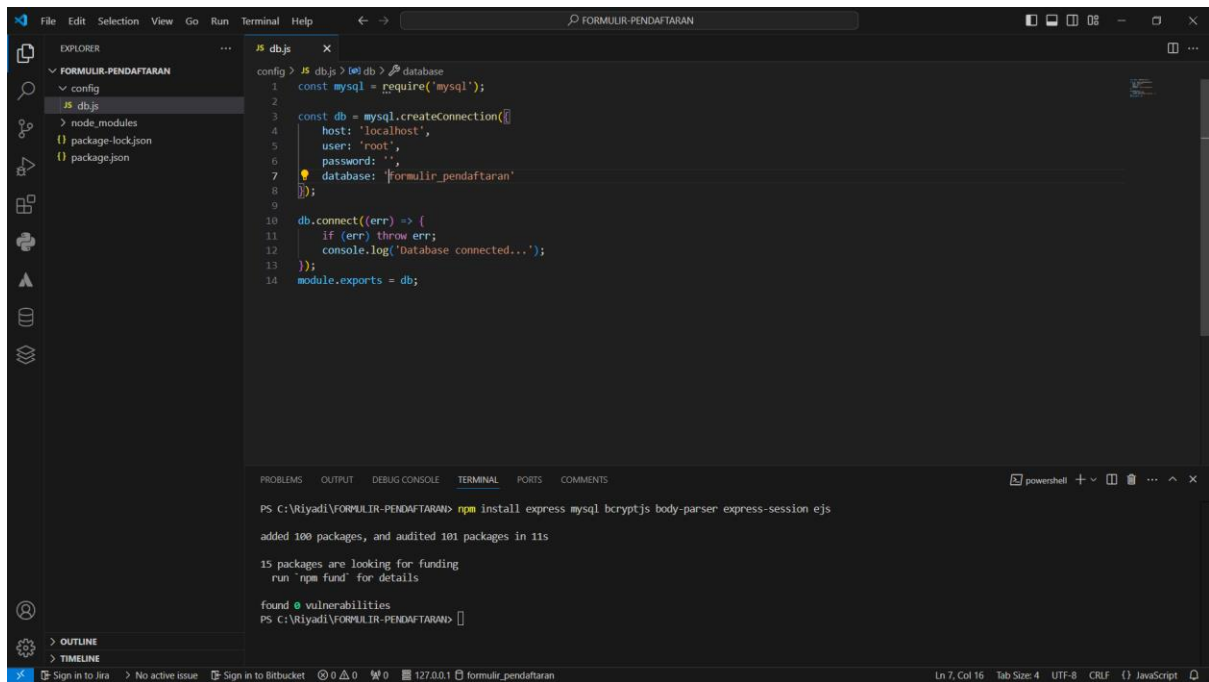
5. Buka terminal, dan inisiasi npm untuk node.js



6. Install express.js, mysql, body-parser, express-session, dan ejs



7. Konfigurasi koneksi database



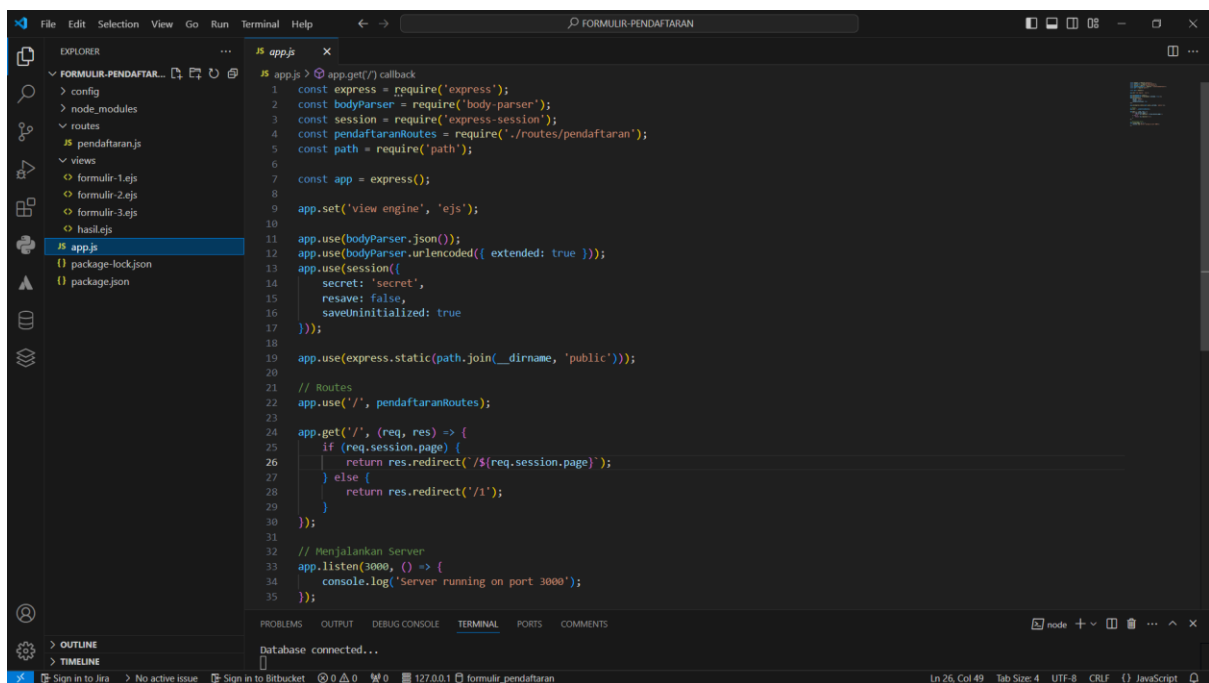
The screenshot shows the Visual Studio Code interface with a project named 'FORMULIR-PENDAFARAN'. The Explorer sidebar on the left shows the file structure: 'config' (selected), 'node_modules', 'package-lock.json', and 'package.json'. The main editor displays the file 'db.js' with the following JavaScript code:

```
1 const mysql = require('mysql');
2
3 const db = mysql.createConnection({
4   host: 'localhost',
5   user: 'root',
6   password: '',
7   database: 'formulir_pendaftaran'
8 });
9
10 db.connect((err) => {
11   if (err) throw err;
12   console.log('Database connected...');
13 });
14 module.exports = db;
```

The bottom panel shows the 'TERMINAL' tab with the following output:

```
PS C:\Vriyadi\FORMULIR-PENDAFARAN> npm install express mysql bcryptjs body-parser express-session ejs
added 100 packages, and audited 101 packages in 11s
15 packages are looking for funding
  run 'npm fund' for details
found 0 vulnerabilities
PS C:\Vriyadi\FORMULIR-PENDAFARAN>
```

8. Server setup pada app.js



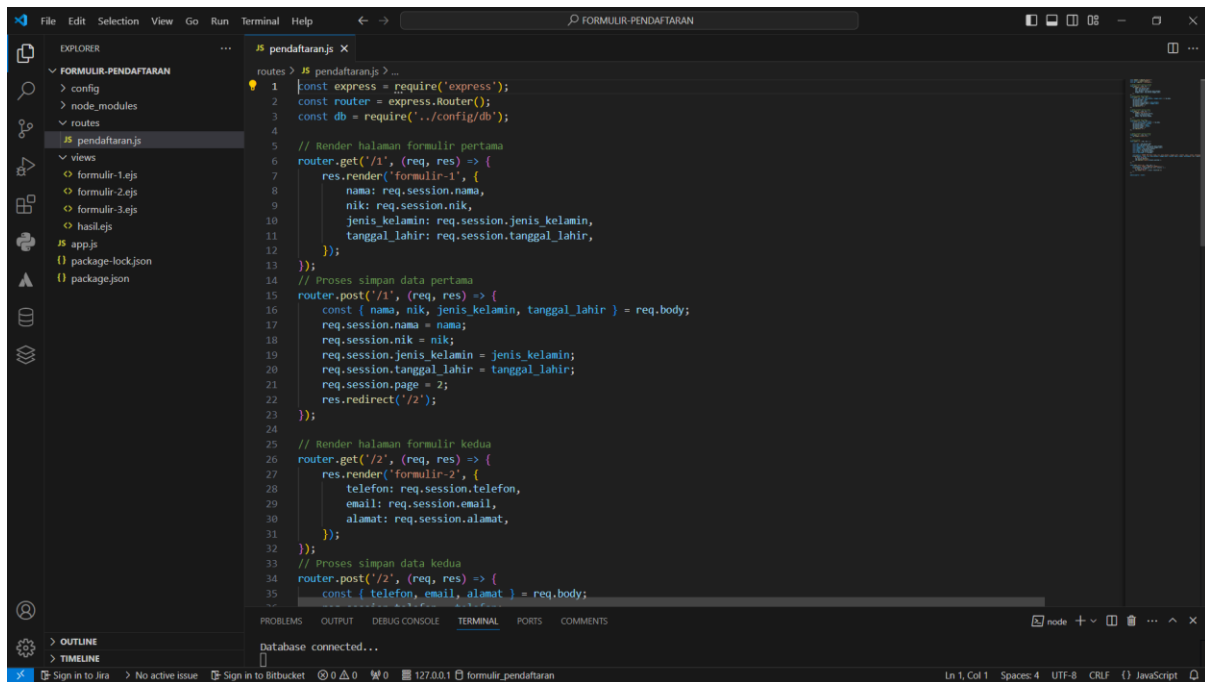
The screenshot shows the Visual Studio Code interface with the same project. The Explorer sidebar shows the file structure: 'config', 'node_modules', 'routes', 'pendaftaran.js', 'views', 'formulir-1.ejs', 'formulir-2.ejs', 'formulir-3.ejs', 'hasil.ejs', 'app.js' (selected), 'package-lock.json', and 'package.json'. The main editor displays the file 'app.js' with the following JavaScript code:

```
1 // app.get('/') callback
2 const express = require('express');
3 const bodyParser = require('body-parser');
4 const session = require('express-session');
5 const pendaftaranRoutes = require('./routes/pendaftaran');
6 const path = require('path');
7
8 const app = express();
9
10 app.set('view engine', 'ejs');
11
12 app.use(bodyParser.json());
13 app.use(bodyParser.urlencoded({ extended: true }));
14 app.use(session({
15   secret: 'secret',
16   resave: false,
17   saveUninitialized: true
18 }));
19 app.use(express.static(path.join(__dirname, 'public')));
20
21 // Routes
22 app.use('/', pendaftaranRoutes);
23
24 app.get('/', (req, res) => {
25   if (req.session.page) {
26     return res.redirect(`/5${req.session.page}`);
27   } else {
28     return res.redirect('/1');
29   }
30 });
31
32 // Menjalankan Server
33 app.listen(3000, () => {
34   console.log('Server running on port 3000');
35 });
```

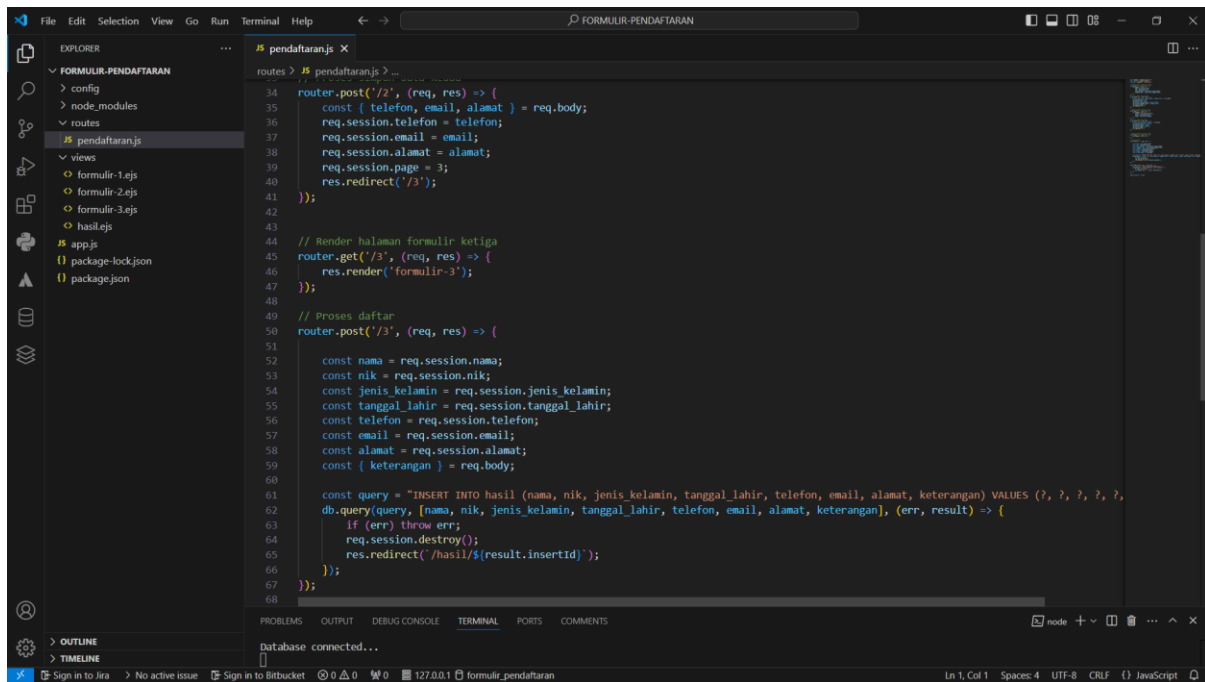
The bottom panel shows the 'TERMINAL' tab with the following output:

```
Database connected...
[]
```

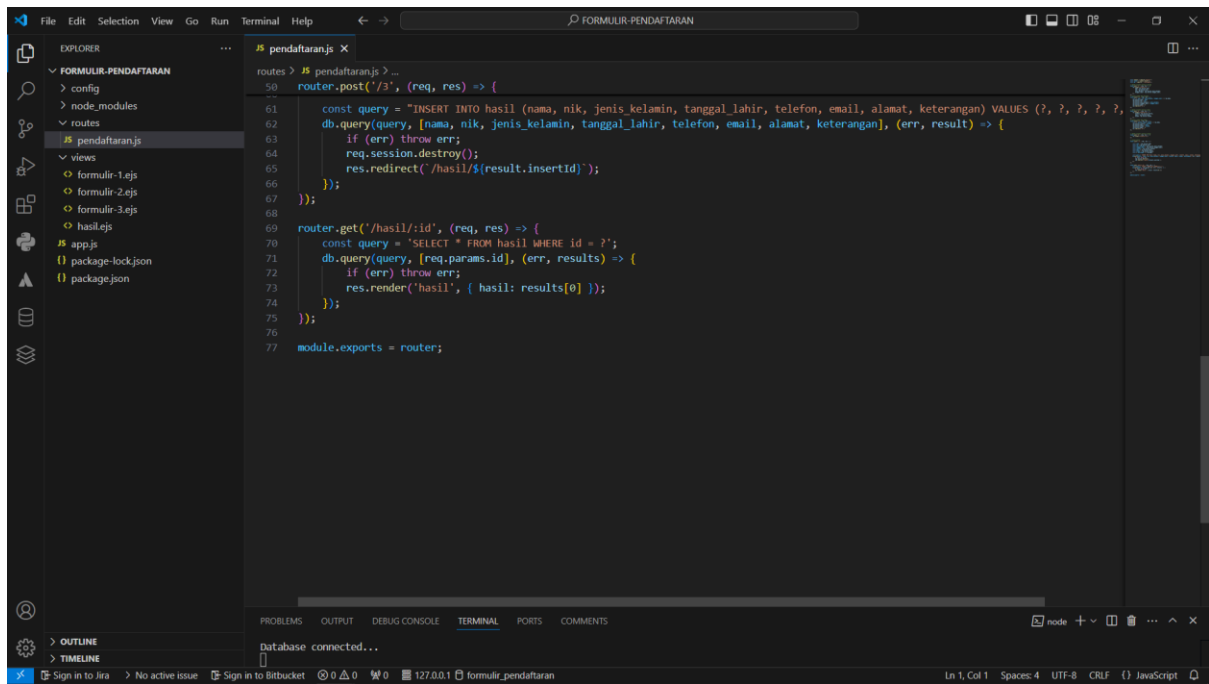
9. Buat routesnya untuk mendaftar dan melihat



```
1 const express = require('express');
2 const router = express.Router();
3 const db = require('../config/db');
4
5 // Render halaman formulir pertama
6 router.get('/1', (req, res) => {
7   res.render('formulir-1', {
8     nama: req.session.nama,
9     nik: req.session.nik,
10    jenis_kelamin: req.session.jenis_kelamin,
11    tanggal_lahir: req.session.tanggal_lahir,
12  });
13 });
14
15 // Proses simpan data pertama
16 router.post('/1', (req, res) => {
17   const { nama, nik, jenis_kelamin, tanggal_lahir } = req.body;
18   req.session.nama = nama;
19   req.session.nik = nik;
20   req.session.jenis_kelamin = jenis_kelamin;
21   req.session.tanggal_lahir = tanggal_lahir;
22   req.session.page = 2;
23   res.redirect('/2');
24 });
25
26 // Render halaman formulir kedua
27 router.get('/2', (req, res) => {
28   res.render('formulir-2', {
29     telepon: req.session.telepon,
30     email: req.session.email,
31     alamat: req.session.alamat,
32   });
33 });
34
35 // Proses simpan data kedua
36 router.post('/2', (req, res) => {
37   const { telepon, email, alamat } = req.body;
```



```
34 router.post('/2', (req, res) => {
35   const { telepon, email, alamat } = req.body;
36   req.session.telepon = telepon;
37   req.session.email = email;
38   req.session.alamat = alamat;
39   req.session.page = 3;
40   res.redirect('/3');
41 });
42
43 // Render halaman formulir ketiga
44 router.get('/3', (req, res) => {
45   res.render('formulir-3');
46 });
47
48 // Proses daftar
49 router.post('/3', (req, res) => {
50
51   const nama = req.session.nama;
52   const nik = req.session.nik;
53   const jenis_kelamin = req.session.jenis_kelamin;
54   const tanggal_lahir = req.session.tanggal_lahir;
55   const telepon = req.session.telepon;
56   const email = req.session.email;
57   const alamat = req.session.alamat;
58   const { keterangan } = req.body;
59
60   const query = "INSERT INTO hasil (nama, nik, jenis_kelamin, tanggal_lahir, telepon, email, alamat, keterangan) VALUES (?, ?, ?, ?, ?, ?, ?, ?)";
61   db.query(query, [nama, nik, jenis_kelamin, tanggal_lahir, telepon, email, alamat, keterangan], (err, result) => {
62     if (err) throw err;
63     req.session.destroy();
64     res.redirect('/hasil/${result.insertid}');
65   });
66 });
67
68
```



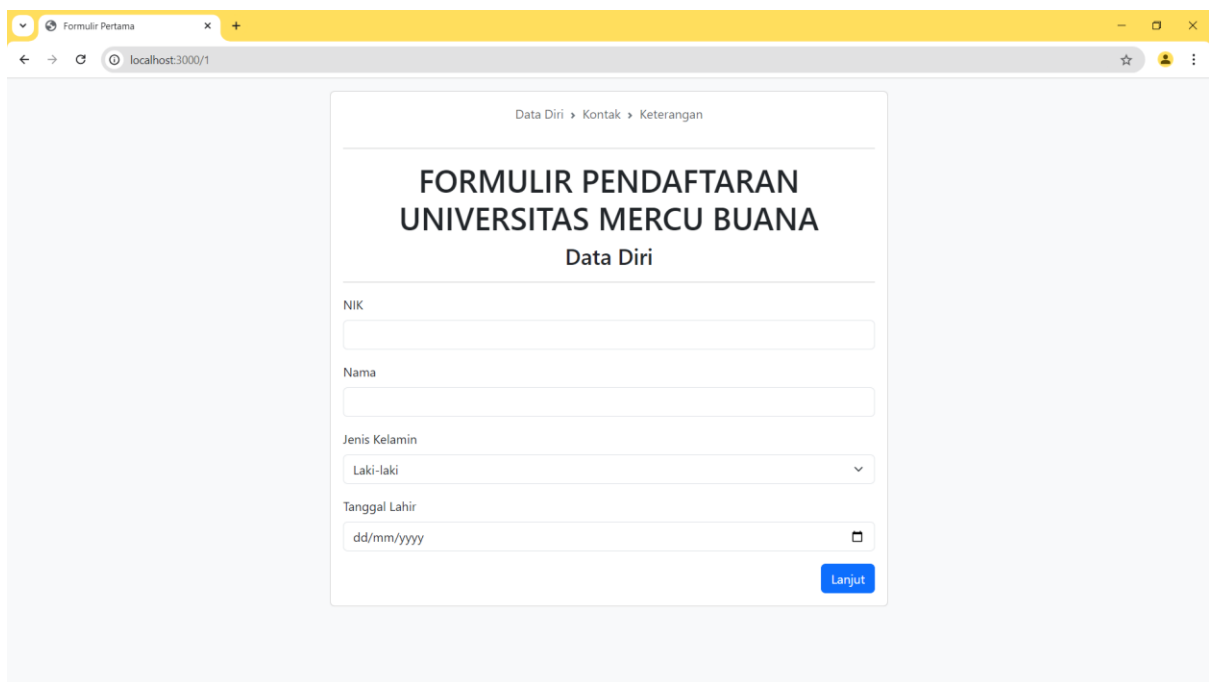
11. Membuat tampilan untuk formulir pertama

The image shows a Visual Studio Code editor window with the following components:

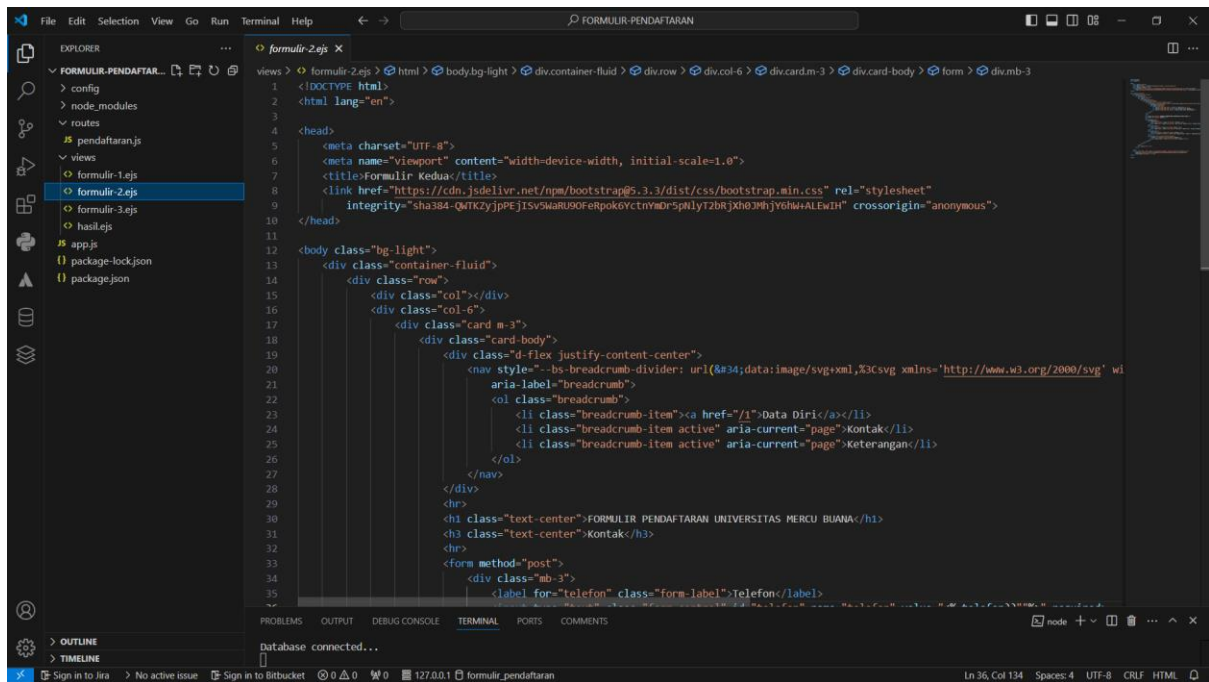
- Explorer (Left):** Displays the project structure. The file `formulir-1.ejs` is selected under the `views` directory.
- Main Editor:** Shows the HTML code for `formulir-1.ejs`. The code includes:
 - Meta tags for charset (UTF-8) and viewport (width=device-width, initial-scale=1.0).
 - Title: `<title>Formulir Portamata</title>`
 - Bootstrap CSS and JS links with integrity and crossorigin attributes.
 - Body structure with a `bg-light` class, containing a `container-fluid` and a `row` of columns.
 - First column: Contains a breadcrumb with links for "Data Diri", "Kontak", and "Keterangan".
 - Second column: Contains a form with a text-center heading `<h3 class='text-center'>FORMULIR PENDAFTARAN UNIVERSITAS MERCU BUANA</h3>`, a form method="post", and a label for "NIK" with class "form-label".
- Terminal (Bottom):** Shows the message "Database connected..."
- Status Bar (Bottom):** Displays the current file as `formulir-pendaftaran` and the language as `HTML`.

```
views > formulir-1.ejs > html > body.bg-light > div.container-fluid > div.row > div.col-6 > div.card-m-3 > div.card-body > form > div.mb-3 > input#tanggal_lahir.form-control
2 <html lang="en">
12 <body class="bg-light">
13 <div class="container-fluid">
14 <div class="row">
16 <div class="col-6">
24 <input type="date" class="form-control" id="tanggal_lahir" name="tanggal_lahir" value="">
52 </div>
53 <div class="d-flex justify-content-end">
54 <button type="submit" class="btn btn-primary">Lanjut</button>
55 </div>
56 </div>
57 </div>
58 </div>
59 <div class="col"></div>
60 </div>
61 </div>
62 </div>
63 <div>
64 <script src="https://cdn.jsdelivr.net/npm/bootstrap@5.3.3/dist/js/bootstrap.bundle.min.js"
65 integrity="sha384-YpccrVf0tY3lHB60NkMx3s9FODVZLE5aAA55NDz0xhy9GkC1dS1K1eH7N6J1eH2"
66 crossorigin="anonymous"></script>
67 </body>
68 </html>
```

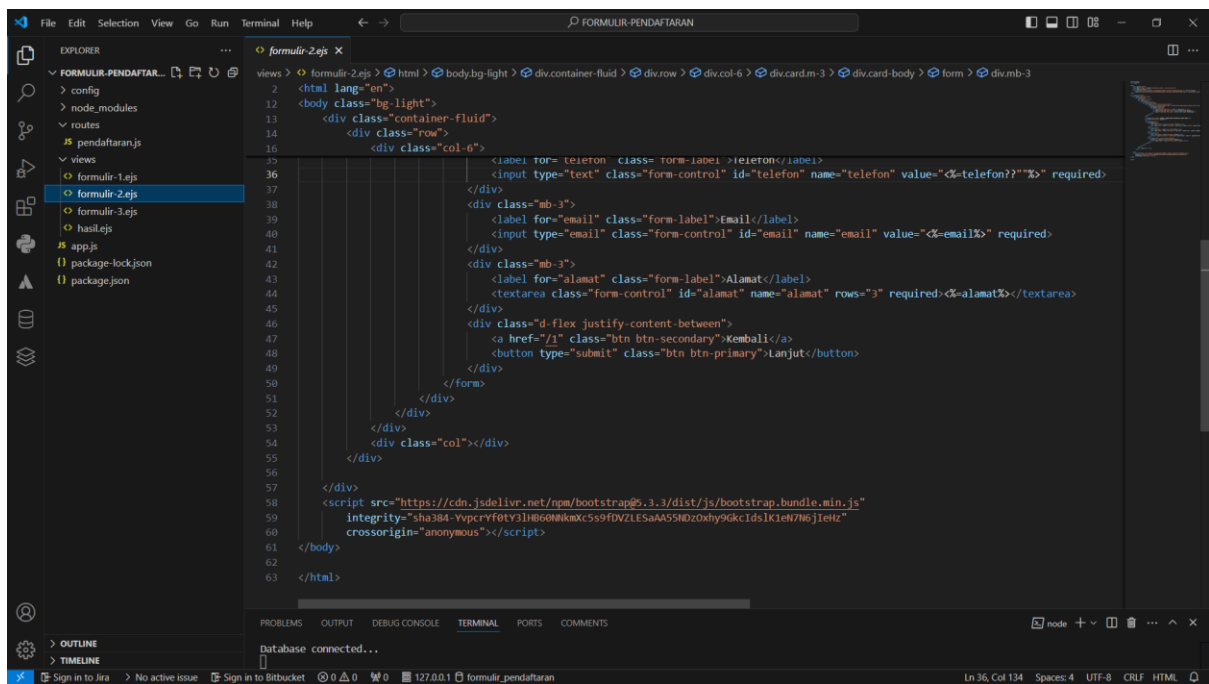
12. Tampilan akan seperti berikut



13. Membuat tampilan untuk formulir kedua




```
1 <!DOCTYPE html>
2 <html lang="en">
3
4 <head>
5   <meta charset="UTF-8">
6   <meta name="viewport" content="width=device-width, initial-scale=1.0">
7   <title>Formulir Kedua</title>
8   <link href="https://cdn.jsdelivr.net/npm/bootstrap@5.3.3/dist/css/bootstrap.min.css" rel="stylesheet"
9     integrity="sha384-QmTKyryjPEj1Sv5MaRU90FerpokvctnYADRSpklyT2BRjXh03PHjY6H4ALEWtH" crossorigin="anonymous">
10 </head>
11
12 <body class="bg-light">
13   <div class="container-fluid">
14     <div class="row">
15       <div class="col"></div>
16       <div class="col-6">
17         <div class="card m-3">
18           <div class="card-body">
19             <div class="d-flex justify-content-center">
20               <nav style="--bs-breadcrumb-divider: url(&#34;data:image/svg+xml,&#34;url('http://www.w3.org/2000/svg' wi
21                 aria-label="breadcrumb">
22                 <ol class="breadcrumb">
23                   <li class="breadcrumb-item"><a href="/1">Data Diri</a></li>
24                   <li class="breadcrumb-item active" aria-current="page">Kontak</li>
25                   <li class="breadcrumb-item active" aria-current="page">Keterangan</li>
26                 </ol>
27               </nav>
28             </div>
29             <hr>
30             <h1 class="text-center">FORMULIR PENDAFTARAN UNIVERSITAS MERCU BUANA</h1>
31             <h3 class="text-center">Kontak</h3>
32             <hr>
33             <form method="post">
34               <div class="mb-3">
35                 <label for="telepon" class="form-label">Telepon</label>
```



```
36                 <input type="text" class="form-control" id="telepon" name="telepon" value="<%=telepon?%">" required>
37               </div>
38               <div class="mb-3">
39                 <label for="email" class="form-label">Email</label>
40                 <input type="email" class="form-control" id="email" name="email" value="<%=email%">" required>
41               </div>
42               <div class="mb-3">
43                 <label for="alamat" class="form-label">Alamat</label>
44                 <textarea class="form-control" id="alamat" name="alamat" rows="3" required><%=alamat%"></textarea>
45               </div>
46               <div class="d-flex justify-content-between">
47                 <a href="/1" class="btn btn-secondary">Kembali</a>
48                 <button type="submit" class="btn btn-primary">Lanjut</button>
49               </div>
50             </form>
51           </div>
52         </div>
53       </div>
54     </div>
55   </div>
56
57 </div>
58 <script src="https://cdn.jsdelivr.net/npm/bootstrap@5.3.3/dist/js/bootstrap.bundle.min.js"
59   integrity="sha384-YpccrVfoty3Hb60NikmKc599F0VZLESA455MDz0xhy9GkcIDsIK1eH7N6J1eH2"
60   crossorigin="anonymous"></script>
61
62 </body>
63 </html>
```

13. Tampilan akan seperti berikut



The screenshot displays a web browser window with a yellow header bar. The address bar shows 'localhost:3000/2'. The page content is centered and features a registration form for Universitas Mercu Buana. The form has a title 'FORMULIR PENDAFTARAN UNIVERSITAS MERCU BUANA' and a subtitle 'Kontak'. It includes three input fields: 'Telefon', 'Email', and 'Alamat'. At the bottom of the form, there are two buttons: 'Kembali' (Back) and 'Lanjut' (Next). The browser's tab is labeled 'Formulir Kedua'.

[Data Diri](#) > [Kontak](#) > [Keterangan](#)

FORMULIR PENDAFTARAN UNIVERSITAS MERCU BUANA

Kontak

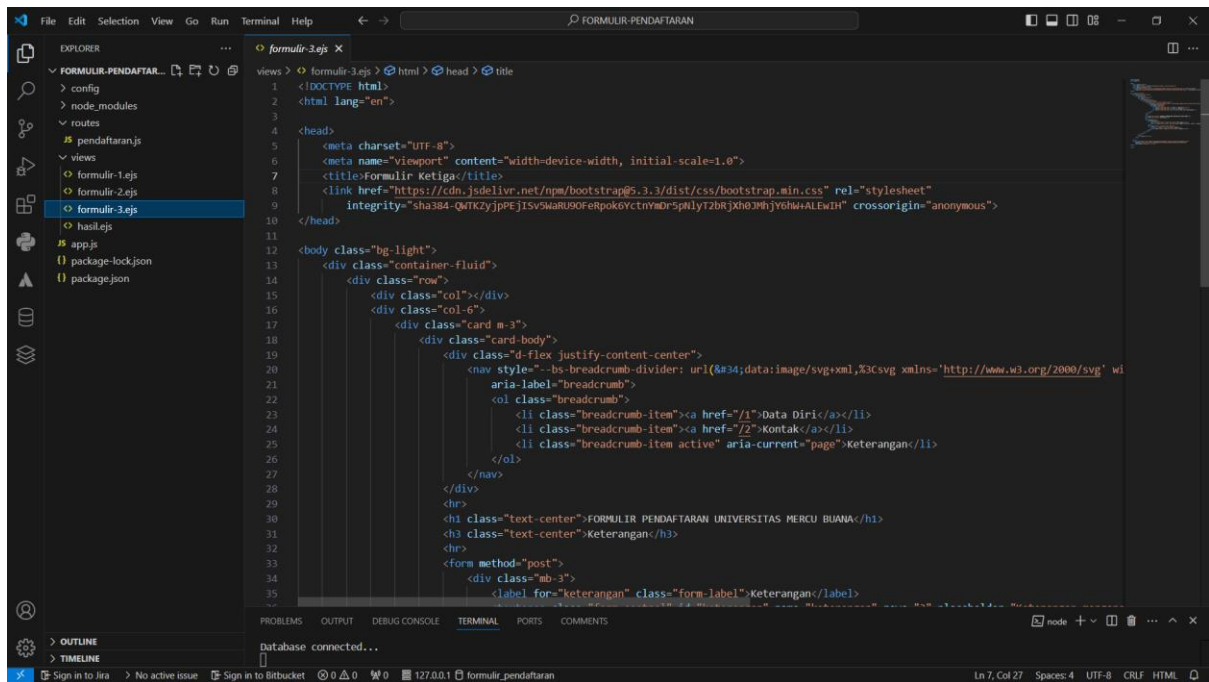
Telefon

Email

Alamat

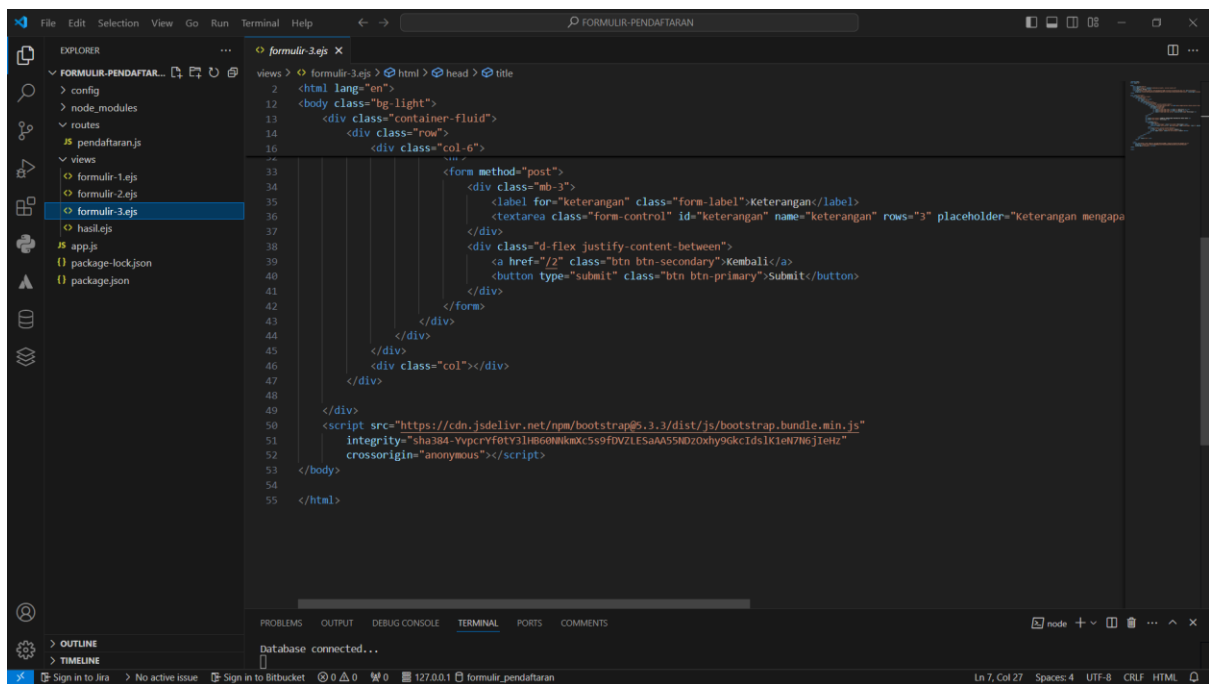
[Kembali](#) [Lanjut](#)

14. Membuat tampilan untuk formulir ketiga



The screenshot shows the VS Code editor with the file 'formulir-3.ejs' open. The code is an HTML template for a registration form. It includes a DOCTYPE declaration, a meta charset of 'UTF-8', and a viewport meta tag. The title is 'Formulir Ketiga'. It uses Bootstrap 5.3.3 via a CDN link. The body has a light blue background and a container-fluid. Inside, there's a row with a col-6 containing a card-body. The card-body has a d-flex justify-content-center with a nav style=-bs-breadcrumb-divider. The nav contains three breadcrumb items: 'Data Diri', 'Kontak', and 'Keterangan' (which is active). Below the breadcrumbs are centered headings for 'FORMULIR PENDAFTARAN UNIVERSITAS MERCU BUANA' and 'Keterangan'. A form with method='post' and class='mb-3' contains a label 'Keterangan' and a text area.

```
1 <!DOCTYPE html>
2 <html lang="en">
3
4 <head>
5   <meta charset="UTF-8">
6   <meta name="viewport" content="width=device-width, initial-scale=1.0">
7   <title>Formulir Ketiga</title>
8   <link href="https://cdn.jsdelivr.net/npm/bootstrap@5.3.3/dist/css/bootstrap.min.css" rel="stylesheet"
9     integrity="sha384-QktzjyPpEjISv9MAR90FerpokvctnYADRSpklyT2BRjXh03PHjY6H4ALEWtH" crossorigin="anonymous">
10 </head>
11
12 <body class="bg-light">
13   <div class="container-fluid">
14     <div class="row">
15       <div class="col-6">
16         <div class="card-body">
17           <div class="d-flex justify-content-center">
18             <nav style="-bs-breadcrumb-divider: url(&#34;data:image/svg+xml,&#34;url('http://www.w3.org/2000/svg') wi
19               aria-label="breadcrumb">
20               <ol class="breadcrumb">
21                 <li class="breadcrumb-item"><a href="/1">Data Diri</a></li>
22                 <li class="breadcrumb-item"><a href="/2">Kontak</a></li>
23                 <li class="breadcrumb-item active" aria-current="page">Keterangan</li>
24               </ol>
25             </nav>
26           </div>
27           <hr>
28           <h1 class="text-center">FORMULIR PENDAFTARAN UNIVERSITAS MERCU BUANA</h1>
29           <h3 class="text-center">Keterangan</h3>
30           <hr>
31           <form method="post">
32             <div class="mb-3">
33               <label for="keterangan" class="form-label">Keterangan</label>
34               <div class="form-control" id="keterangan" name="keterangan" rows="3" placeholder="Keterangan mengapa
35             </div>
36           </form>
37         </div>
38       </div>
39     </div>
40   </div>
41 </body>
42 </html>
```



The screenshot shows the VS Code editor with the file 'formulir-2.ejs' open. The code is an HTML template for a registration form. It includes a DOCTYPE declaration, a meta charset of 'UTF-8', and a viewport meta tag. The title is 'Formulir Kedua'. It uses Bootstrap 5.3.3 via a CDN link. The body has a light blue background and a container-fluid. Inside, there's a row with a col-6 containing a card-body. The card-body has a d-flex justify-content-center with a nav style=-bs-breadcrumb-divider. The nav contains three breadcrumb items: 'Data Diri', 'Kontak', and 'Keterangan' (which is active). Below the breadcrumbs are centered headings for 'FORMULIR PENDAFTARAN UNIVERSITAS MERCU BUANA' and 'Keterangan'. A form with method='post' and class='mb-3' contains a label 'Keterangan' and a text area.

```
1 <!DOCTYPE html>
2 <html lang="en">
3
4 <head>
5   <meta charset="UTF-8">
6   <meta name="viewport" content="width=device-width, initial-scale=1.0">
7   <title>Formulir Kedua</title>
8   <link href="https://cdn.jsdelivr.net/npm/bootstrap@5.3.3/dist/css/bootstrap.min.css" rel="stylesheet"
9     integrity="sha384-QktzjyPpEjISv9MAR90FerpokvctnYADRSpklyT2BRjXh03PHjY6H4ALEWtH" crossorigin="anonymous">
10 </head>
11
12 <body class="bg-light">
13   <div class="container-fluid">
14     <div class="row">
15       <div class="col-6">
16         <div class="card-body">
17           <div class="d-flex justify-content-center">
18             <nav style="-bs-breadcrumb-divider: url(&#34;data:image/svg+xml,&#34;url('http://www.w3.org/2000/svg') wi
19               aria-label="breadcrumb">
20               <ol class="breadcrumb">
21                 <li class="breadcrumb-item"><a href="/1">Data Diri</a></li>
22                 <li class="breadcrumb-item"><a href="/2">Kontak</a></li>
23                 <li class="breadcrumb-item active" aria-current="page">Keterangan</li>
24               </ol>
25             </nav>
26           </div>
27           <hr>
28           <h1 class="text-center">FORMULIR PENDAFTARAN UNIVERSITAS MERCU BUANA</h1>
29           <h3 class="text-center">Keterangan</h3>
30           <hr>
31           <form method="post">
32             <div class="mb-3">
33               <label for="keterangan" class="form-label">Keterangan</label>
34               <div class="form-control" id="keterangan" name="keterangan" rows="3" placeholder="Keterangan mengapa
35             </div>
36           </form>
37         </div>
38       </div>
39     </div>
40   </div>
41 </body>
42 </html>
```

15. Tampilan akan seperti berikut

Formulir Ketiga

localhost:3000/3

[Data Diri](#) > [Kontak](#) > Keterangan

FORMULIR PENDAFTARAN UNIVERSITAS MERCU BUANA

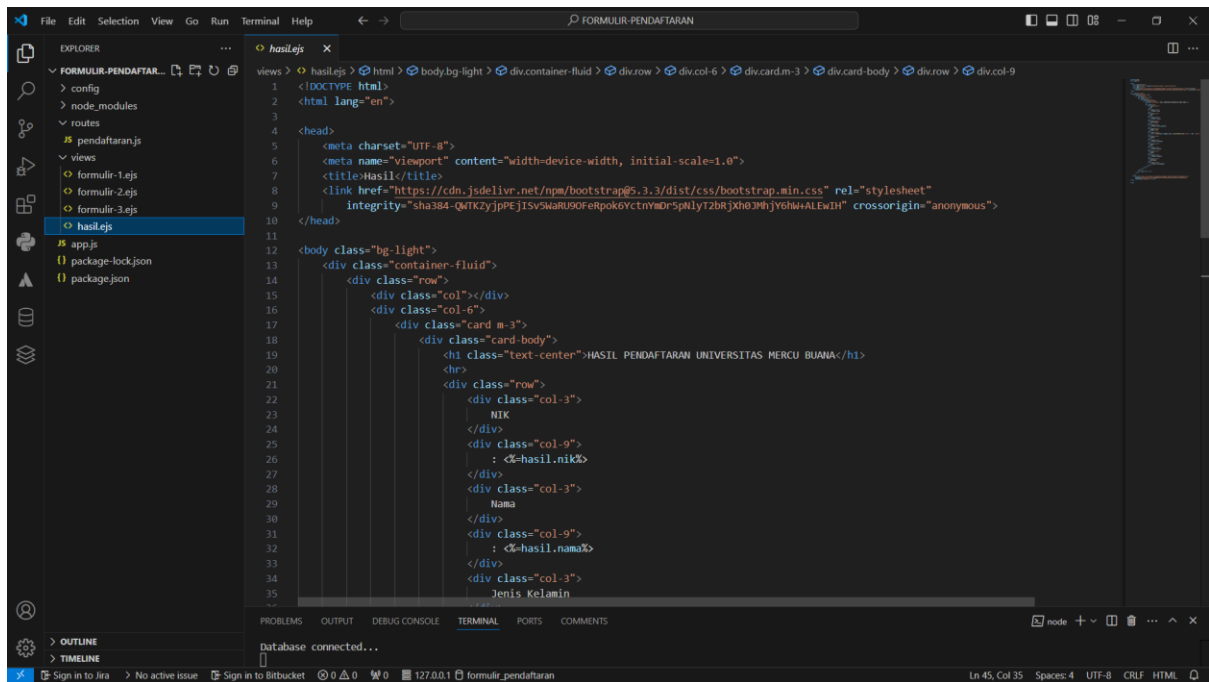
Keterangan

Keterangan

Keterangan mengapa anda ingin berkuliah disini

Kembali Submit

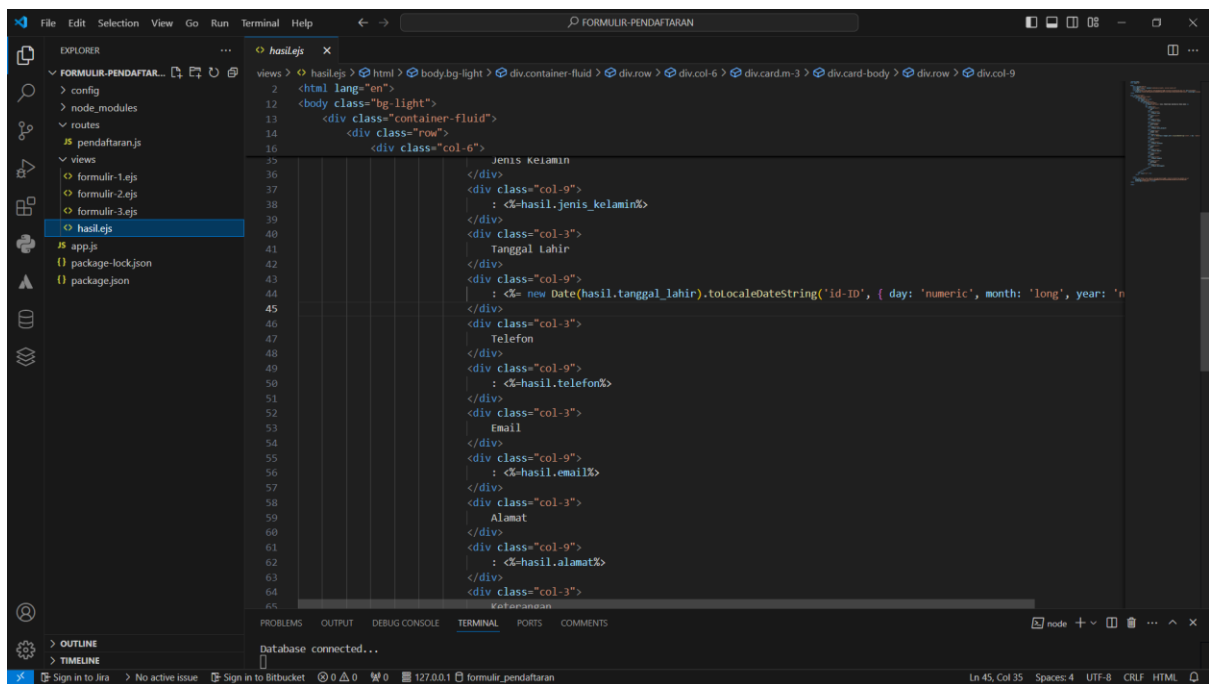
16. Buat tampilan untuk menampilkan hasilnya



The screenshot shows the VS Code editor with the file explorer on the left displaying the project structure. The main editor area shows the `hasil.ejs` file with the following HTML code:

```
1 <!DOCTYPE html>
2 <html lang="en">
3
4 <head>
5   <meta charset="UTF-8">
6   <meta name="viewport" content="width=device-width, initial-scale=1.0">
7   <title>Hasil</title>
8   <link href="https://cdn.jsdelivr.net/npm/bootstrap@5.3.3/dist/css/bootstrap.min.css" rel="stylesheet"
9     integrity="sha384-QmTKZyypPEjIvSmaR90FerpokvYcgspIlyT2BxRjXhD99jyYhW4ALEWH" crossorigin="anonymous">
10 </head>
11
12 <body class="bg-light">
13   <div class="container-fluid">
14     <div class="row">
15       <div class="col"></div>
16       <div class="col-6">
17         <div class="card m-3">
18           <div class="card-body">
19             <h1 class="text-center">HASIL PENDAFTARAN UNIVERSITAS MERCU BUANA</h1>
20             <hr>
21             <div class="row">
22               <div class="col-3">
23                 NIK
24               </div>
25               <div class="col-9">
26                 : <%=hasil.nik%>
27               </div>
28               <div class="col-3">
29                 Nama
30               </div>
31               <div class="col-9">
32                 : <%=hasil.nama%>
33               </div>
34               <div class="col-3">
35                 Jenis Kelamin
```

The status bar at the bottom indicates the file is at line 45, column 35, in UTF-8 encoding with CRLF line endings.



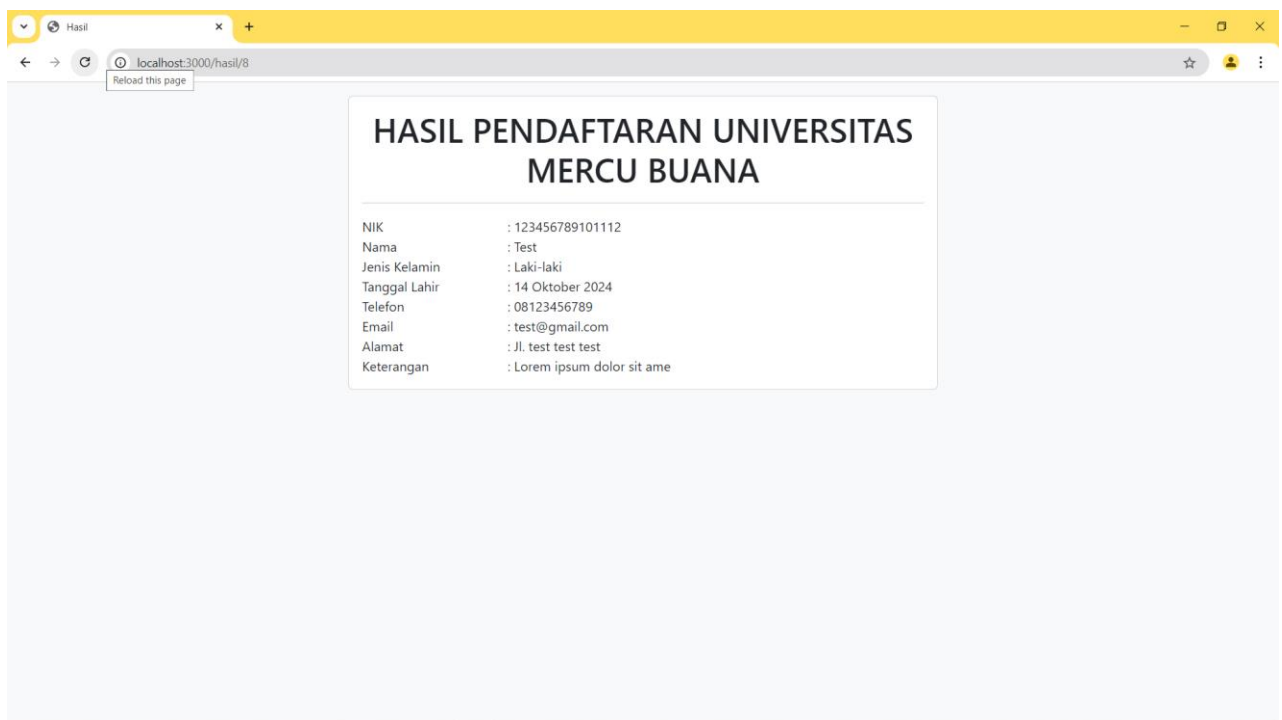
The screenshot shows the VS Code editor with the file explorer on the left displaying the project structure. The main editor area shows the `hasil.ejs` file with the following HTML code:

```
2 <html lang="en">
12 <body class="bg-light">
13   <div class="container-fluid">
14     <div class="row">
15       <div class="col-6">
16         <div class="card m-3">
17           <div class="card-body">
18             <h1 class="text-center">HASIL PENDAFTARAN UNIVERSITAS MERCU BUANA</h1>
19             <hr>
20             <div class="row">
21               <div class="col-3">
22                 NIK
23               </div>
24               <div class="col-9">
25                 : <%=hasil.nik%>
26               </div>
27               <div class="col-3">
28                 Nama
29               </div>
30               <div class="col-9">
31                 : <%=hasil.nama%>
32               </div>
33               <div class="col-3">
34                 Jenis Kelamin
35               </div>
36               <div class="col-9">
37                 : <%=hasil.jenis_kelamin%>
38               </div>
39               <div class="col-3">
40                 Tanggal Lahir
41               </div>
42               <div class="col-9">
43                 : <%= new Date(hasil.tanggal_lahir).toLocaleDateString('id-ID', { day: 'numeric', month: 'long', year: 'n
44               </div>
45               <div class="col-3">
46                 Telefon
47               </div>
48               <div class="col-9">
49                 : <%=hasil.telefon%>
50               </div>
51               <div class="col-3">
52                 Email
53               </div>
54               <div class="col-9">
55                 : <%=hasil.email%>
56               </div>
57               <div class="col-3">
58                 Alamat
59               </div>
60               <div class="col-9">
61                 : <%=hasil.alamat%>
62               </div>
63               <div class="col-3">
64                 Kota/Kabupaten
65               </div>
66               <div class="col-9">
67                 : <%=hasil.kota_kabupaten%>
68               </div>
69               <div class="col-3">
70                 No. Pendaftaran
71               </div>
72               <div class="col-9">
73                 : <%=hasil.no_pendaftaran%>
74               </div>
75             </div>
76           </div>
77         </div>
78       </div>
79     </div>
80   </div>
81 </body>
82 </html>
```

The status bar at the bottom indicates the file is at line 45, column 35, in UTF-8 encoding with CRLF line endings.

```
2 <html lang="en">
12 <body class="bg-light">
13   <div class="container-fluid">
14     <div class="row">
15       <div class="col-6">
60       </div>
61       <div class="col-9">
62         : <%=hasil.alamat%>
63       </div>
64       <div class="col-3">
65         Keterangan
66       </div>
67       <div class="col-9">
68         : <%=hasil.keterangan%>
69       </div>
70     </div>
71   </div>
72 </div>
73 </div>
74 <div class="col"></div>
75 </div>
76
77 </div>
78 <script src="https://cdn.jsdelivr.net/npm/bootstrap@5.3.3/dist/js/bootstrap.bundle.min.js"
79   integrity="sha384-YpccrV0pbyzOnRHp060M147F0114969GKDI6UJ96D062F6114e4Q6jB436J5eHz"
80   crossorigin="anonymous"></script>
81 </body>
82
83 </html>
```

17. Tampilan akan seperti berikut



PENJELASAN :

Sesssion dapat menyimpan data yang diperlukan dan akan disimpan di server untuk jangka waktu tertentu, sehingga informasi yang dibutuhkan tetap dapat diakses selama periode tersebut. Ini sangat berguna untuk formulir pendaftaran bertahap agar pengguna tidak perlu mengisi ulang formulir sebelumnya, terutama saat ingin melakukan refresh atau kembali ke tahap sebelumnya. Data akan tetap tersimpan selama formulir belum disubmit dalam waktu yang ditentukan.