**IFT 554: Middleware Programming & Database Security**

T Harish Kumar

Department of Information Technology, Arizona State University

Module 1 Assignment 1

Professor: Dinesh Sthapit

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1. **Setup:**

Basic setup of the project is done by creating new folder for the assignment and using following command in the terminal of vs code:

* npm init
* npm install express ejs
* npm install body-parser

Figure 1: Proof of Setup installation and files created from doing so.

A computer screen shot of a program

Description automatically generated

1. **.ejs Code Analysis:**

In the project there are 2 ejs files namely index.ejs and result.ejs which contains HTML code in it.

The index.ejs file has an initial page structure in it. Where it contains to input field of type number, and contains of these input field is assigned num1 and num2 variables and a button called as “Calculate” which calls the POST method in app.js file. This page loads first when the port for the project is executed using the command “node ./app.js”.

result.ejs file contains the same code as index.ejs file with dynamic HTML in the end (Figure 2). The variable names in between the dynamic syntax ‘<%= [Variable name] %>’ is replaced by the value which is sent by app.js file.

app.js file will take the variable value from the index.ejs file and do the arthemetic operation which is defined in the POST method of ‘/calculate’ and then the result is passed to result.ejs with matching variables which is defined in the result.ejs and app.js files which are ‘sum, difference, product, quotient’. Mentioned variables are then replaced in the result.ejs file in the dynamic section of the file.

Figure 2: result.ejs file.

A computer screen shot of a program

Description automatically generated

Figure 3: POST method in app.js file.

A screenshot of a computer program

Description automatically generated

1. **HTML Code Analysis:**

In the HTML code of the running port of 4000 we can observe that the values of the variable is placed correctly and displayed in the webpage.

Figure 4: HTML inspection.

A screenshot of a computer

Description automatically generated

EJS enables us to include JavaScript code in your HTML templates. This implies that dynamic content can be generated on the server before the page is rendered. One may quickly inject database query results, user-specific data, or real-time information into your HTML, as observed in the assignment. EJS templates enable you to design reusable components or partials. This is especially handy for items that appear on numerous pages, such as headers and footers. These components can be defined in distinct EJS files and then included as needed.

.ejs template can be beneficial for web development in following way:

* Code reusability: Example, if the requirement is to change the heading of the page to who logged in the page. Then we can simply write a dynamic HTML for doing so.
* Data Injection: Example, write now let say we have 5 rows of worth data and its written in static HTML and if the rows count increases to 10 then instead of changing the HTML code we can write the section of the code dynamic along with a for loop which will change the table accordingly.
* Error Handling: EJS has error-handling tools to assist you in identifying problems with your templates, such as missing or mismatched variables.

**References**