

SKS(Simple Kajian Scheduler) With Node.js, MongoDB, and ExpressJS

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Abstract—In Bandung there are many events, for example ‘*kajian*’ or Islamic discussion with Islamic teacher. It is quite famous in Bandung. There is a little problem in it’s scheduling, it is because there is no means to show all the events schedule at the same time. Different teachers and mosques just display their own schedule, so the user must check all the website to get the overall schedule. In this paper I’ll introduce the SKS(Simple Kajian Scheduler) that will show the system to overcome this situation. The system introduce a website that will receive schedule from the Islamic teacher and then save it to Mongo DB. After that the schedule will be shown in the main page using Node.js, Express JS, and EJS(embedded Java Script) in HTML. In this paper I have done 30% of the website, that is the model of the database, the view, and routing. There are many deficiency in the website and cannot be said the finished product.

Keywords—*Kajian, Website, Node.js, Scheduler, Express Js, Mongo DB.*

I. INTRODUCTION

“*Kajian*” have started to go famous in Bandung. There are many different teacher and discuss about many Islamic topics. There are many kinds of participant in “*kajian*”, they are old, young, woman, man, and came from different background. These people need to know about the information of *kajian* if they want to go there. They need schedule, place, topics, and speaker. In normal way they are waiting in the official account or look in the teacher or mosque website. But there are a great number of speaker and mosque, so they need to check the website one by one. This problem could make the *kajian* participant consume more time and memory to remember and check every website and official account of the speaker and mosque. So the author have an idea to make SKS(Simple Kajian Scheduler) a website that will receive all the schedule and make it people easier to get all the information.

SKS(Simple Kajian Scheduler) now offer 3 features. First, to look at *kajian* schedule. Second, Post *kajian* Schedule. Third, Authentication to post *kajian* Schedule.

In SKS everyone can see the *kajian* schedule, But to post the schedule user must be authenticated. The authentication was needed to make the right person post the right post.

SKS(Simple Kajian Scheduler) used node.js as it’s server side scripting, express.js for routing, MongoDB for database, ejs(embedded javascript) for view scripting, Mongoose for interaction with database, npm for packet manager, bootstrap 4.0 alpha 6 for CSS, and windows 10 as web OS.

In this paper author will introduce what he learnt to make the website, for example concepts, and the tools. And then the author will tell about the documentation of working and it’s method to complete the website. After that we will see the result of the paper. And the last one the author will conclude the paper and tell his future plan.

II. RELATED WORKS/LITERATURE STUDY

A. MVC(Model-View-Controller)

According to R. Margaret (2011) MVC (Model-View-Controller) is an object-oriented programming method or design pattern that mainly consist of model, view, and controller that cooperate each other to relate the user interface (view) and data models (model) to make a modular, reusable code.

In this paper, the author used MVC to make the approach become simpler.

The model in MVC represents the database or persistent data that will be saved in the website. The author used MongoDB an NOSQL database, and Mongoose to connect the web server to database.

The view in MVC represents the UI (user interface) such as GUI and Web Page. The author used HTML + CSS + JavaScript + EJS (Embedded Java Script) to code the web page.

The controller in MVC represents class that connect model and view, and also handle routing in the web. The author used Node.js and Express.js for handling the controller

B. Node.js

According to R. Margaret (2012) Node.js is a platform built on Google’s V8 Javascript virtual machine. The Javascript

virtual machine was used for client side scripting while node.js was used for server-side applications.

Node.js is an application that is event-based and run asynchronously. Because of that node.js does not block I/O, and it become one of the major advantages of node.js.

C. *Express.js*

W. Carey (2015) said Express JS is a framework for server side scripting and mobile application. It's used JavaScript, it can build single-page, multi-page web application, API, and common Back-End Functions. It also support MVC pattern and run on Node.js platform.

Express.js is really compatible with Node.js especially in MEAN because every stack technology uses JavaScript as it's language

D. *MongoDB*

R. Margaret (2014) said MongoDB is an open source database that use NoSQL concepts. It uses document-oriented data model. It doesn't use the tables and rows like relational databases, but it uses collections and documents.

MongoDB also support dynamic schema design, allowing the documents can have different structure and format.

Documents is saved in binary representation JSON format and use key-value pairs.

III. METHODS

These are the description of the methods that will be used to solve the problem :

A. *Feature*

There are 3 main feature that will be made :

- Schedule List

This feature show users all the schedule from the database. It will be sorted according to the nearest future date.

- Authentication

This feature was used as a security means to make the people who post, edit, and delete the schedule is the right one.

- Posting, Edit and Delete the schedule.

This feature used to make the *kajian* speaker or mosque post, edit, and delete the schedule entry

B. *Website Flow*

- Normal User see the Schedule

- Go to the website.
- See the schedule.

- Speaker/Mosque Post Flow

- Go to the website.

- Get into the post site using Login/Register.
- Post, edit the schedule.
- Login Flow
 - Go to website
 - Get into login page
 - Insert username and password
 - If success login have accomplished.
- Register Flow
 - Go to website
 - Get into register page
 - Insert username, password, name, contact number, and email.
 - Confirmation through email and phone number (with a phone call).
 - If success register have accomplished.

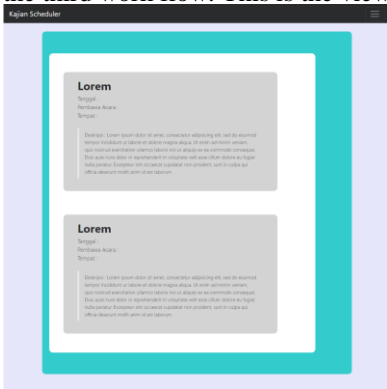
C. *Work Flow*

The plan of work to finish the website are

- Make the model schema in Node.js and then import the schema to MongoDB using Mongoose.
- Make the main pages view of the website.
- Make the main pages model.
- Make the main pages controller.
- Make the authentication (login, register) view.
- Make the authentication (login, register) model.
- Make the authentication (login, register) controller.
- Make the user activity (post, edit, *kajian* list) view.
- Make the user activity (post, edit, *kajian* list) model.
- Make the user activity (post, edit, *kajian* list) controller.
- Finishing.

IV. RESULT AND DISCUSSION

After working for at least 3 days author have done the work until the third work flow. This is the view of the main webpage



The repository can be found at <https://github.com/Azzahid/kajian-node.js>

V. CONCLUSION AND SUGGESTION

A. Conclusion

The conclusions from author research is the author need more time to finish the website, but the author have learnt many things in making the website using node.js, express.js, and MongoDB. For example

First, when using node.js and express.js it's very different than another framework like laravel and codeigniter, if the author could compare the laravel and node.js laravel is easier than working with node.js and express.js from scratch, but there is also good thing, the author could learn many new things such as working with node.js and express.js knowing the tricks and read some good way to solve things when starting building web from non-implemented MVC framework.

And the last, Author found the MongoDB amusing because it have many new concepts such as collections,

documents, etc. MongoDB also very good with big data because it's doesn't use complex join between tables.

B. Suggestion

Author suggested for making a fast and easy website to use an implemented framework such as laravel and MEAN. But if you want to have a deeper comprehension about web programming you can try this way.

In the future author hope to add some feature like role for speaker and user. The user can used some feature like sort, bookmark, save schedule, and notification.

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