

ONLINE TIRE SALES PLAN AT CINERE RACING SHOP USING VUE.JS TECHNOLOGY

Wisnu Sukma Maulana

Computer Science, Gunadarma University, Indonesia

Article History

Received : September 2023

Revised : October 2023

Accepted : October 2023

Published : October 2023

Corresponding author*:

wisnu_maulana@staff.gunadarma.ac

DOI:

<https://doi.org/10.56127/ijml.v2i3.1090>

Abstract: The era of e-commerce or what is known as selling goods online is currently experiencing very significant development. Urban and village communities have begun to change direction in buying and selling from offline to online. One of the technologies used in e-commerce is website-based technology. Websites can be created and formulated with various features ranging from product catalogs to real-time payments very instantly. Websites have experienced a very rapid evolution from previously only being textual to now being able to make buyers feel a real experience as if they were shopping directly at the store. Website technology with the vue.js framework is a variant that is currently quite popular with programmers. Vue.js itself comes from early website technology, namely JavaScript. This has a significant impact where almost all website viewing browsers adopt JavaScript technology. One of the shops being tested using the vue.js technology design is the Cinere Racing Tire Shop. The Cinere Racing Tire Shop wants to develop the introduction of its shop services not only locally but if possible, on a national scale. By introducing the shop online, it is hoped that tire sales transactions will increase sharply. The vue.js technology design also adopts the Scrum Agile way of working according to the principles of computer science, especially the subject matter regarding the development cycle of creating a system or application.

Keywords: Vue, Online Sales, Tire Shop, Agile Scrum, Historical Simulation Model, Stock, Individual Stock, Value at Risk.

INTRODUCTION

Online shopping or E-Commerce is a way of shopping through electronic communication tools or social networks used in buying and selling transactions, where buyers don't have to bother coming to the shop to see and buy what they are looking for, they just have to look at the item they want. via the internet then order the goods of your choice and transfer the money and then the goods will be sent by the online shop to your home. E-commerce is very profitable for its users because it makes it easier for buyers who want an item without having to travel to buy it. Now more and more online shops or companies are emerging that sell various kinds of goods through E-Commerce media by simply creating a website. With the development of website-based applications, online shopping has become an alternative way of purchasing goods because the internet can certainly be classified as something new in terms of shopping format.

The Cinere Racing Tire Shop is a shop that not only focuses on selling new and second-hand car tires, but also has other products such as rims and other car accessories. Currently, the shop is only able to serve sales in the Depok area by ordering via telephone. This is what causes a big obstacle where there is dependence on operational hours and area coverage only in the city of Depok.

Based on the description of the background, the main problem in this research can be formulated as follows:

1. The need for a website to increase tire sales on a national scale.
2. Technology needs and frameworks that comply with information system development principles.

The aim of this research is to carry out analysis and design of the following:

1. Develop an e-commerce website that has features and focuses on selling tires, rims and mobile accessories for the Cinere Racing Tire Shop
2. Implementing vue.js technology as an alternative in creating an online tire shop website.

RESEARCH METHOD

The research method used in this research is SDLC (System Development Life Cycle) in the form of the Scrum Agile model, which is one of the software development models in the SDLC (System Development Life Cycle) model [9]. Agile Scrum in this design has a cycle of 2 weeks every sprint, and here are several stages in the SDLC research system as follows:

- **Sprint 1 (User Requirement)**
User Requirements are the initial stage that must be carried out in building a software. This requirements stage is a very important stage, because other software development stages will depend on this requirements stage. User Requirements is the stage of determining the client's needs for the website that will be built later. In this stage, the programmer must collaborate with the client to achieve the goals of the website.
- **Sprint 2 (UI/UX Design)**
UI/UX Design is a display designed in such a way as to be used by shop visitors to interact online with computers, tablets, smartphones or other electronic devices through displays that can be owned by shop visitors.
- **Sprint 3 (Backend API)**
The backend API is created to provide access from the database to the interface or frontend of a website. The backend API itself in API Management is an HTTP service that implements the front-end API and its operations. The backend API is created using a microservices architecture, making it possible to access data from tire shops more efficiently and effectively.
- **Sprint 4 (Frontend Website)**
A website's frontend is everything that users see or interact with when they visit a website. It is responsible for the total look and feel of the online experience. Each was created independently, with most of the technical work going into the user interface using the web language JavaScript.
- **Sprint 5 (Testing)**
In creating an application or website for use by target users, of course testing of the software is needed. This is done by Quality Assurance (QA) in order to check whether the software in the product is suitable for use or whether there are still many bugs and/or errors.
- **Sprint 6 (Live)**
At this stage, the website will be launched live. This live process can be carried out with the final goal of designing an online tire shop website. Website visitors can use all the features offered on the website itself. So that in the future, website features can be developed even more to reach a national scale.

RESULT AND DISCUSSION

Agile Scrum Sprint Cycle

The scrum agile sprint cycle designed in creating this shop website is implemented in the following picture:

Activity	Month-1				Month-2				Month-3			
	Week-1	Week-2	Week-3	Week-4	Week-5	Week-6	Week-7	Week-8	Week-9	Week-10	Week-11	Week-12
User Requirement	█	█										
UI/UX Design			█	█								
Backend API					█	█						
Frontend Website							█	█				
Testing									█	█		
Live											█	█

Figure 1. SDLC Sprint Cycle

Information:

- Activities are stages of activities that will be carried out
- Month is the sequence of months for the activities to be carried out
- Week is the week sequence of activities to be carried out

As can be seen from the figure, the development of the Cinere Racing Tire Shop website is estimated to take approximately 3 months, consisting of 12 weeks of activities with cut-offs every 2 weeks once the sprint cycle takes place.

User Requirement

The creation of user requirements in this website design is based on interview communication regarding the desires of tire shop owners and also on benchmarks of similar websites in the market that are already circulating [1]. This can be documented through a document where one of the document formats is in the form of a PRD (Product Requirement Document). The following is an example of a PRD format that can be used as a reference or template:

Requirement Brief		
Purpose		
Project Scope		
Document Convention		
Audience / Target Market		
Overall Description		
Item	Status	Notes
Product Context		Elaborate further on your product perspective and its inclusions.
Product Feature		Describe the product characteristics and attributes.
User Class and Characteristics		Discuss how your products and users interact.
Operating environment		State the integrated applications for your users.
Design and implementation		Specify the limitations to your product design.

Figure 2. Product Requirement Document Sample

UI/UX Design

Proses menterjemahkan kebutuhan user terhadap suatu rancangan yang dapat ditampilkan perlu dilakukan dengan merujuk beberapa tahapan mulai dari Wireframe, Mockup, hingga Prototype [2].

- Wireframe: sebuah sketsa kasar tampilan aplikasi atau website. Biasanya digunakan untuk menyusun tata letak awal dalam suatu desain UI. Biasanya wireframe dibuat dengan warna hitam putih yang lebih menekankan isi dari kontennya.

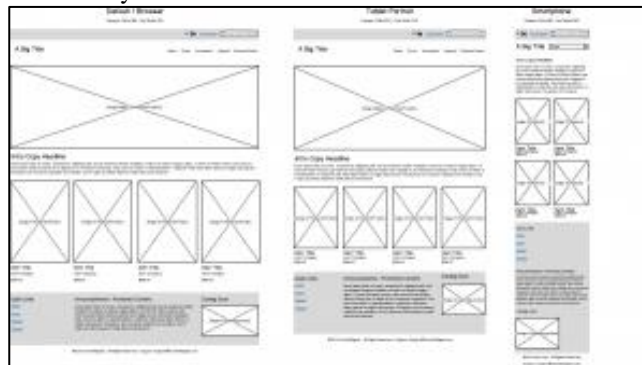


Figure 3. Wireframe Sample

- Mockup: provides a detailed overview before the product is created by conveying visual design aspects, including images, colors and typography.

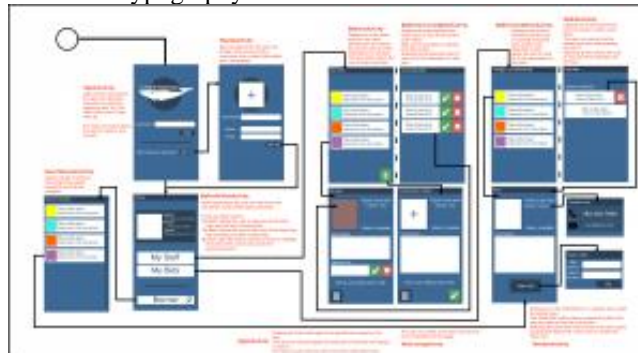


Figure 4. Mockup Sample

- Prototype: simulation of interaction between the user and the display (interface) where the user or users can see and interact with the user interface directly.

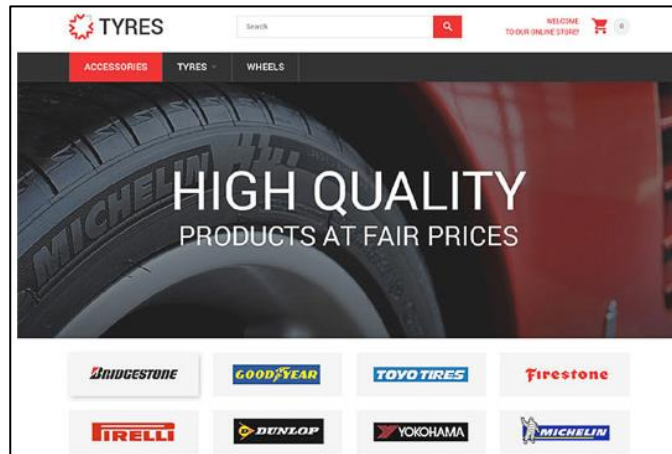


Figure 5. Prototype Sample

Backend API

The backend API creation in this website design adopts microservices technology. Microservices itself has the following architecture [3]:

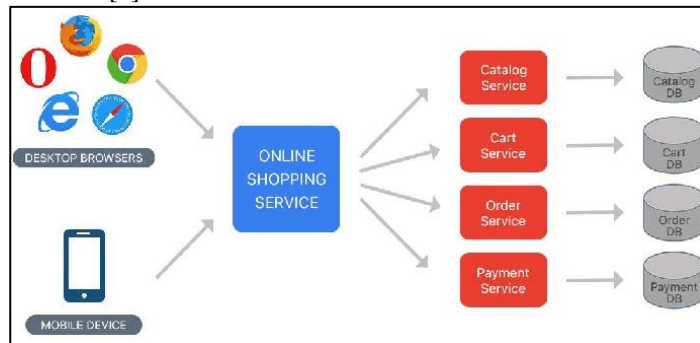


Figure 6. Online Shop Microservices Architecture

Website Frontend

In accordance with the title of this journal, one of which focuses on vue.js technology as the foundation of the frontend of the website itself. Vues.js is a JavaScript framework for building web applications or website interfaces to make them more interactive. Vues.js can be used to build user interface-based applications, such as web pages, mobile applications, and desktop applications [4].

This framework also offers various features, such as reactive data binding, component-based architecture, and tools for building scalable applications. The main features are rendering and element composition, so that if the user wants to create a more complex application they will need routing, state management, templates, build tools, and so on [8].

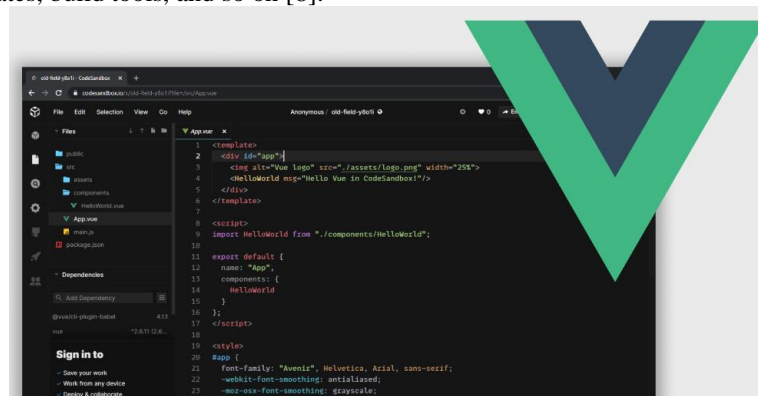


Figure 7. Vue.js Programming Sample

Testing

The testing that will be used in this design is carried out with several types which are standard standards for testing an application or system [5]. The types of testing that will be carried out are as follows:



Figure 8. Web Testing

CONCLUSION and SUGGESTION

Based on the research that has been carried out and described in this journal, several conclusions can be drawn as follows:

following:

1. Creating a website for the Cinere Racing Tire Shop focuses on developing the business of selling tires and other car accessories from the local level, namely the city to the national level with a wider coverage. This supports the success rate of the shop's profits from the future, where in the current market era more use of the online area.
2. It is felt that Vue.js technology can answer the problems that exist in designing online tire shop websites. This is because vue.js has a source of coding originating from JavaScript, which almost all browsers have this technology feature.

Despite these conclusions, this research still requires further testing. The test that needs to be carried out is the implementation of information system development based on Vue.js technology with waterfall methodology. So, later we can see which methodology is faster and more suitable for vue.js technology. The next suggestion is that this research can hopefully become a foundation for research with similar case studies so that it can enrich the analysis of the use of Vue.js technology in developing online shop websites.

REFERENCES

- [1] Sri Rahmina. 04 April 2014. Requirement System (Perancangan System Part I). <http://lea.si.fti.unand.ac.id/2014/04/requirement-system-perancangan-system-part-i/>.
- [2] Roziq Bahtiar. 01 September 2023. Tahapan Dalam Pembuatan User Interface. <https://techarea.co.id/tahapan-dalam-pembuatan-user-interface/>.
- [3] Mike Frobbins. 08 September 2023. Backend di API Management. <https://learn.microsoft.com/id-id/azure/api-management/backends?tabs=bicep>
- [4] Air Focus. Tanggal Akses 16 February. Apa itu front end (di situs web). <https://airfocus.com/glossary/what-is-a-front-end/>.
- [5] Binus. Tanggal Akses 02 Mei 2023. Jenis-Jenis Software Testing. <https://sis.binus.ac.id/2023/05/02/jenis-jenis-software-testing/>.
- [6] Biznetgio. Tanggal Akses 19 Desember 2023. Apa itu VueJS. <https://www.biznetgio.com/news/apa-itu-vuejs/>.
- [7] Rehatalanit. 2016. "Peran E-Commerce Dalam Pengembangan Bisnis". Jurnal Teknologi Industri. Volume 5. DOI: <https://doi.org/10.35968/jti.v5i0.764>. Penerbit Jurnal Universitas Suryadarma.
- [8] Natadilaga, Wijanto. 2020. "Implementasi Vue.js Pada Sistem Direktorat Kerja Sama UK Maranatha". Jurnal Strategi Teknologi Informasi. Volume 2 No.2e-ISSN: 2684-9984. Penerbit Jurnal Fakultas Teknologi Informasi Universitas Kristen Maranatha.
- [9] Dora , Sujit Kumar, and Dubey, Pushkar. 2013. "Software Development Life Cycle (Sdlc) Analytical Comparison And Survey On Traditional And Agile Methodology". National Monthly Refereed

Journal Of Research In Science & Technology. Vol No.2, Issue No.8 ISSN 2277-1174. Abhinav Journal Publisher. Odisha.

- [10] Widianarko, Cahyo Wibowo. 2018. "Studi Perbandingan Website View Framework (Vue.js) Dengan Vanila.js". Skripsi thesis, STMIK AKAKOM Yogyakarta.
- [11] Kristian, Kevin. 2018. "Evaluasi Kesuksesan Implementasi Sistem Informasi Traveloka Pada Hotel Bintang Tiga di D.I. Yogyakarta". S1 thesis, Universita AtmaJaya Yogyakarta.