

## **Design of Web-Based Reservation of Residential House Design Application Using the Prototype Method**

**Iwan Rijayana<sup>1</sup>, Rozahi Istambul<sup>2</sup>**

<sup>1</sup>Faculty of Engineering, Widyatama University

<sup>2</sup>Faculty of Engineering, Widyatama University

<sup>1</sup> iwan.rijayana@widyatama.ac.id

**Article History:** Received: 11 January 2021; Revised: 12 February 2021; Accepted: 27 March 2021; Published online: 10 May 2021

**Abstract** – The purpose of writing this research is to find out an overview of the system that runs on Arch Studio and to create the design of the website on Arch Studio. The method used in making this research is the prototype methodology. The work project in Arch Studio has several activities including designing interior design, construction design, exterior build, and construction renovation. The results of this research are to produce a web-based marketing application that can be a tool for consumers to make transactions of reservation and is useful for consumers to obtain information easier.

**Keywords:** Application, Design, House, Prototype, Residential

### **1. Introduction**

Along with the rapid technological advances in the world of technology and information, technology is something that can help activities in human life, since the development of technology human life becomes easier, the longer the consumers' mindset changes with the changing of times. The development of information technology can improve performance and enable a variety of activities to be carried out quickly, precisely and accurately so that ultimately it will increase the productivity of companies that want to succeed in competition in the technological era like now, must have a strategy to understand consumers well. An understanding of who their customers are will lead entrepreneurs to successfully win the business market opportunities. A company that embraces the concept of marketing must be able to understand overall consumer behaviour so that the company can maintain its life cycle. Having a comfortable home is certainly a dream for everyone. Comfortable houses are proven to be healthy to live in and fulfil several requirements as ideal homes for families, to create comfortable and healthy homes must meet two categories, which are physiologically comfortable and psychologically comfortable. Then those two elements had to be fulfilled maximally. Arch Studio is a home construction website services that can meet the needs of consumers, building a house needs careful planning because it is closely related to the costs to be incurred. Careful planning can reduce the risk of waste material. Arch Studio is an application that is made to organize the concept of a house, a convenience provided by this website, where clients simply use the website to order residential homes that clients need, start from designing interior design, construction design, exterior build, renovation of construction and renovation of construction. The design of this system is expected to be able to improve company performance so that it can compete with competitors by technological developments and help obtain more effective and efficient processes.

### **2. Literature review**

#### **2.1 Development Methodology**

The method used for making this application is the Prototyping method which has several stages in its construction.

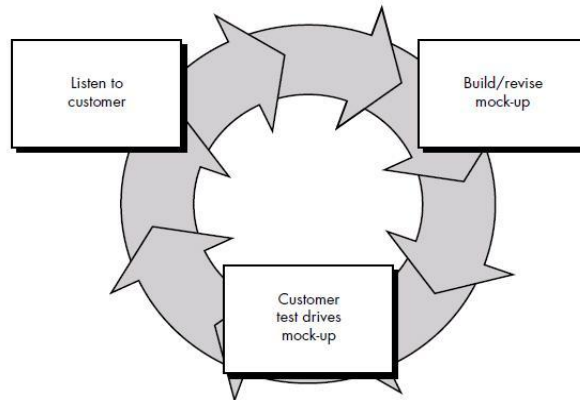


Figure 1: Prototyping Model [1]

The stages for Prototyping are:

1. Listen To Customer
2. Build / Revise Mock-Up
3. Customer Test-Drives Mock-Up

## 2.2 CodeIgniter Framework

Codeigniter is a framework for the web created in PHP format. The format created can then be used to create complex web application systems. Codeigniter can speed up the process of web development because all the required classes and modules already exist and the programmer only needs to use them again in the upcoming web application [2].

## 2.3 Website

The World Wide Web is often abbreviated as WWW or the web is like a large electronic book whose pages are stored on several servers from around the world. Web pages are assigned an online address called a Uniform Resource Locator (URL). That particular set of web pages that belong to that URL is then called a website [3].

## 2.4 MySQL

SQL is a database operation concept, especially for the selection and entry of data, which allows data operations to be done easily and automatically. As a database, MySQL supports both transactional database operations and non-transactional database operations. In non-transactional operations, MySQL is expertized in performance compared to other competing database software [4].

## 2.5 Bootstrap

Bootstrap is a framework for building responsive web design. This feature can be activated or deactivated according to users' own needs. So, users can make the web for desktop display only and when rendered by a mobile browser, the appearance of the web that we made cannot adapt to the screen. With bootstrap, users can also build dynamic or static web [4].

## 2.6 PHP

The programming language used is Hypertext Preprocessor (PHP), this programming language makes it easy to create web applications quickly, can be used to create dynamic websites, both those that require the use of a database or not [5].

## 3. Methodology

### 3.1 Listen to customer

In the first stage, listen to the customer is the stage of gathering information about the needs of the upcoming application [6].

### 3.2 Build / Revise Mock-Up

The next stage in the prototype method is the build/revise mock-up. The application is made quickly at this stage, by implementing the design results in the previous stage using the CodeIgniter framework [6].

### 3.3 Customer Test-Drives Mock-Up

At this stage, a prototype application test and evaluation are performed by users who are customers. Prototype evaluation is used to get feedback on whether the application is following the customer needs [6].

### 3.4 User Interface

The display above is the home page where users can access it without logging in. It contains previous work galleries.

The following is the display of the user login form for the reservation.

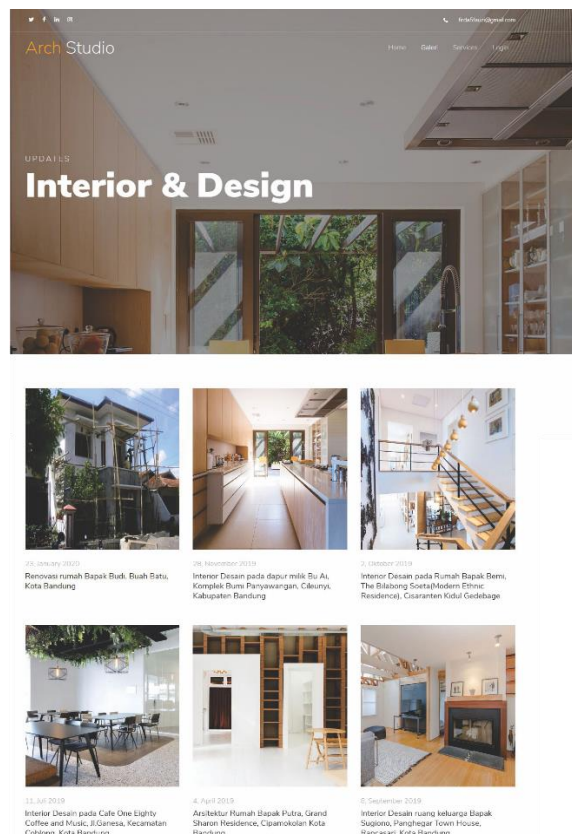


Figure 2: Gallery Page Interface

The display above contains previous work galleries.

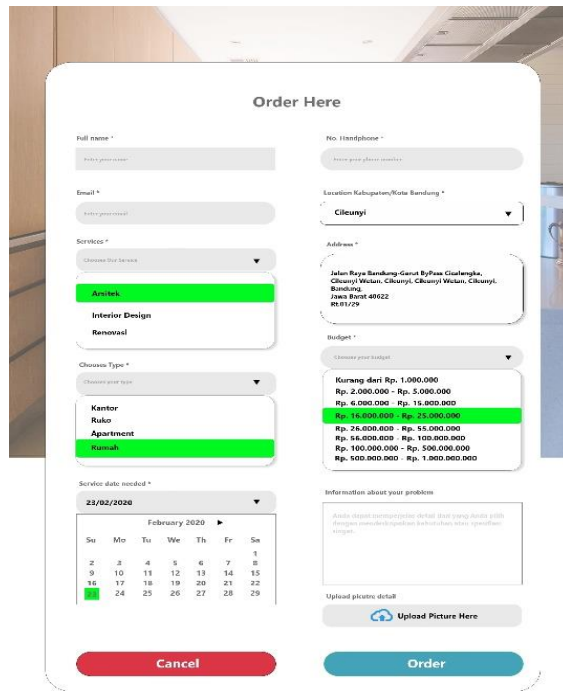


Figure 3: Order Page Interface

The above display is an order form for users who are interested in using Arch Studio services.

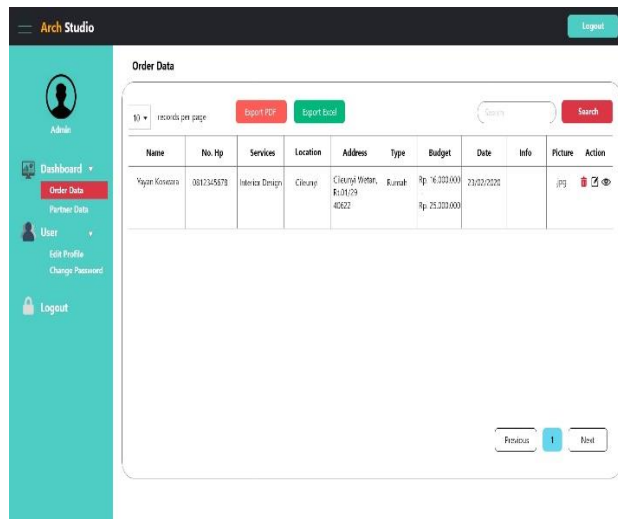


Figure 4: Admin Dashboard Page Interface

The display above is the admin dashboard for managing user data and customer transactions.

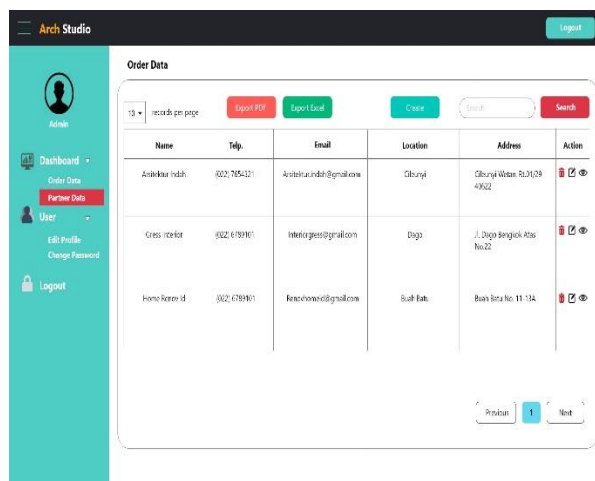


Figure 5: Partner Data Page Interface

The above display is a partner admin data that is useful for managing partner data.

#### 4. Conclusions

Based on the discussions that have been done in the previous chapters, the author found several conclusions in connection with the service information system for prospective customers who want to use the Arch Studio services:

- a. The implementation of this system can be accessed by everyone so that ordering can input data correctly.
- b. The availability of media websites will make it easier for potential customers to use Arch Studio services.
- c. The system has been computerized, so the Arch Studio service process does not need manual reporting, but all the data is stored in a database and neatly arranged for reuse.

#### References

1. Mooney, Carla., (2019). Careers in Design and Prototyping (Makerspace Careers)
2. Tralice, Vincenza., (2020). Codeigniter 4 Cookbook: Rapid Web Development with PHP 7 and Codeigniter 4.
3. Hogan, Brian P., (2020). Build Website with Hugo: Fast Web Development With Marrkdown 1<sup>st</sup> Edition.
4. Murach, Joel., (2019). Murach's MySQL
5. Krause, Jörg., (2020). Introducing Bootstrap 4: Create Powerful Web Applications Using Bootstrap 4.5.
6. Khaoula Benmoussa, Khaoula., et all, (2019). A new model for the selection of web development frameworks: application to PHP frameworks, International Journal of Electrical and Computer Engineering (IJECE), vol.9, no.1, pp. 695-703.