# Implementation Of MVC Model In Web-Based Online Ticket Ordering For Magic Art 3d Museum

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| ARTICLE INFORMATION | ABSTRACT (10pt, Times New Roman) |
|---|---|
| | *The 3D Magic Art Museum is located in the old town. This museum is currently the best museum destination in the old city. This museum displays many interesting paintings and three-dimensional works of art and provides new experiences for visitors. Because previously ticket reservations were made conventionally so tourists had to come directly to the location or use the telephone, so agents were overwhelmed in processing ticket orders. Most visitors who want to pay for tickets still use cash and do not use mobile banking services, which often results in quite long and very inefficient queues, as well as the large number of visitors to the 3D Magic Art Museum, allegedly due to a mismatch between ticket orders and the number of guests in the group. . This research aims to help tourists book tickets more easily and efficiently. At the application design stage, the Model-View-Controller (MVC) method was used. Meanwhile, the programming technology uses the CodeIgniter framework. Therefore, this system can provide a website for museums so that it can be used as a means of ordering and paying online (Payment Gateway), as well as increasing visitor satisfaction through the functionality of this website.* |

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## INTRODUCTION

Public interest in visiting this museum is steadily increasing. Usually, visitors to the Magic Art 3D Museum are not only individuals but also groups of families, kindergarten (TK) groups, high school or vocational school (SMA/SMK) groups, university students, and even government agencies such as the Department of Tourism and Creative Economy (DISPAREKRAF) have visited the museum(Saepudin et al., 2022).

Booking is a reservation that can be defined as the process of an agreement to reserve a product, good, or service, but has not yet been finalized by a purchase (Putra, 2021). Previously, ticket reservations were made conventionally, meaning that tourists had to come directly to the location or use the telephone, which caused agents to be overwhelmed in handling ticket bookings(Kurniawan et al., 2020). Most visitors who wish to pay for tickets still use cash and do not use mobile banking services, often resulting in rather long queues and being highly inefficient, as well as many museum visitors experiencing delays, suspected to be due to discrepancies between ticket reservations and the number of guests in a group(Batubara et al., 2022). Therefore, various breakthroughs are necessary as technology is developing so rapidly, such as those that museums will implement in the future.

In order to save time and assist visitors so they don't have to wait in line and can quickly purchase tickets, an online ticket booking website is needed as a means to make it easier for visitors to order tickets and to minimize

the queues that often occur (Artio et al., 2023). In this digital era, many entrepreneurs sell tickets through various platforms, one of which is xendit(Normah et al., 2022). To enhance business competitiveness, companies are required to be able to provide more complete and accurate information for both internal and external purposes(Yulianti, 2020). With the current surge of information flow, this has become one of the factors needed to stay competitive(Utama et al., 2023).

**RESEARCH METHOD**
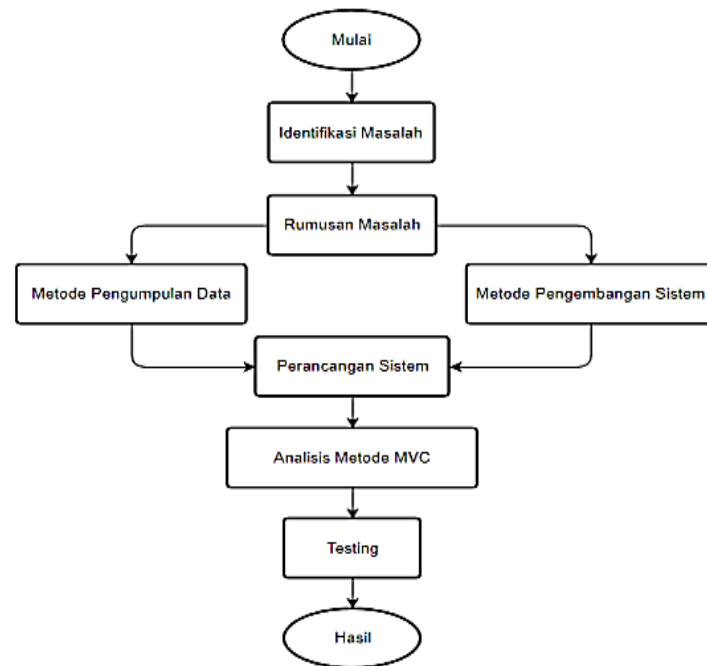The research stages used are:



Figure 1. Research Stages

The background for the identified problem is that the ticket booking system is still very basic. When there are many visitors who want to visit, they must patiently queue, and many still pay for their tickets in cash or manually, rather than using M-Banking. This is highly ineffective and inefficient(Nugroho & Fachrie, 2024). After identifying the problem, the writer formulated the main research question: "How can the frequent queues of visitors at the museum be minimized?" The data collection methods used by the writer started with direct observation and interviews at the Magic Art 3D Museum in West Jakarta(Martadinata & Zaliman, 2021). In the system development stage, the writer chose to use the MVC (Model-View-Controller) development method because it saves time in the development process and makes the system easier to adapt to user needs(Anwar & Kurniawan, 2019). In the system design stage, the writer created system designs that serve to illustrate the intended system (Wijaya & Christian, 2019). During the MVC method analysis stage, the writer performed analysis using the MVC (Model View Controller) method, focusing on online ticket booking transaction data at the Magic Art 3D Museum in West Jakarta. In the testing phase, the writer conducted trials on the previously created application to identify issues described in the problem identification (Adi et al., 2020). The final stage is the system design outcome, which can be accessed directly by visitors for online ticket booking(Febriyanti et al., n.d.).

**RESULTS AND DISCUSSION**
The author obtained the results of website creation, using the waterfall method design and program testing with black box testing, in addition the author used UML tools in designing the system and also data models in designing the database.

1.   **Problem Analysis**
Analysis of the problems faced by the author in obtaining a complete description of the process of creating an information system programThese include ticket orders having to be made on-site due to the lack of an online ticket booking system. Furthermore, ticket purchase summaries are still processed manually, which can result in discrepancies between ticket purchase data.

## 2. *Data Model*

Data model is  conceptual presentation of the data structures used in an information system. data model describes how data is stored, linked, and manipulated. Below is an image of the data model of the online ticket ordering system.
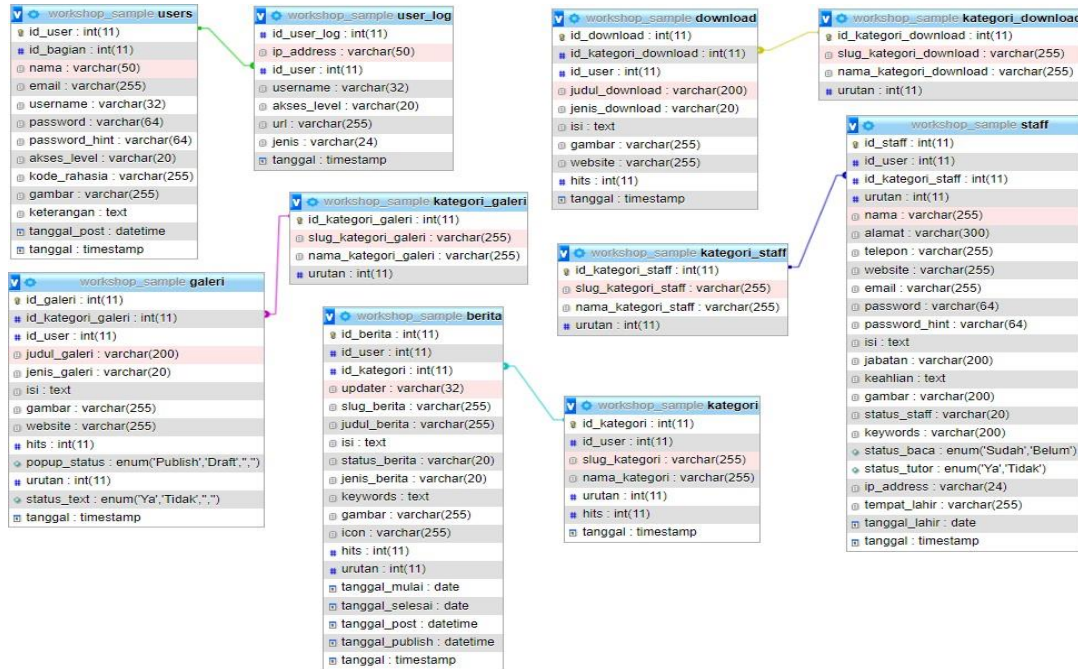


Figure 2. Data Model

## 3. *Software Architecture*

Dalam rancangan pembuatan sistem pemesanan tiket online, penulis menggunakan UML sebagai alat merancang sistem, adapun diagram UML yang digunakan antara lain usecase diagram, activity diagram dan sequence diagram.

### 3.1 Use case Diagram

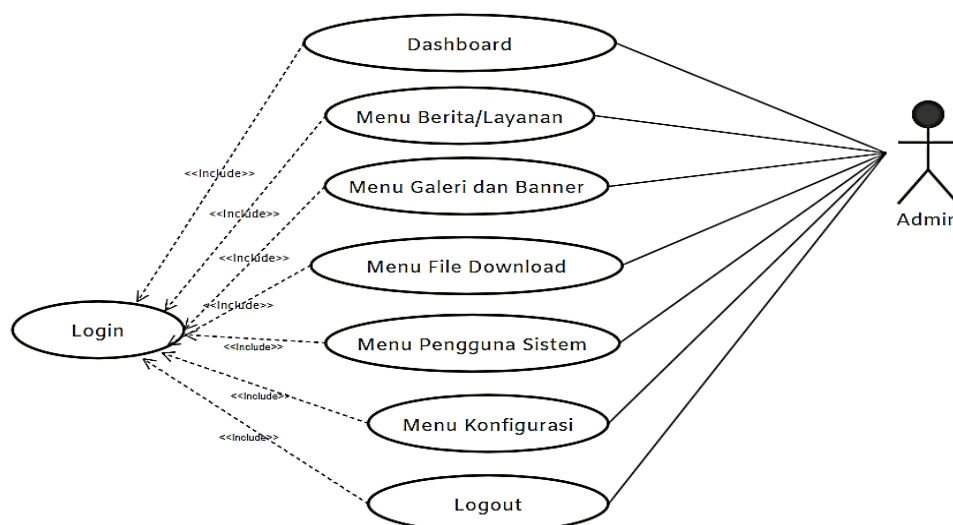The use case diagram has two users, namely visitors and admins:



Figure 3. Usecase Diagram Admin user

This diagram illustrates a system that requires a login process to access menus such as the Dashboard, Menu Berita/Layanan, , Menu Galeri, System Users Menu, and others. Each of these menus may be interconnected and require continuous access after login, and the Admin has full control over the system settings through these menus.
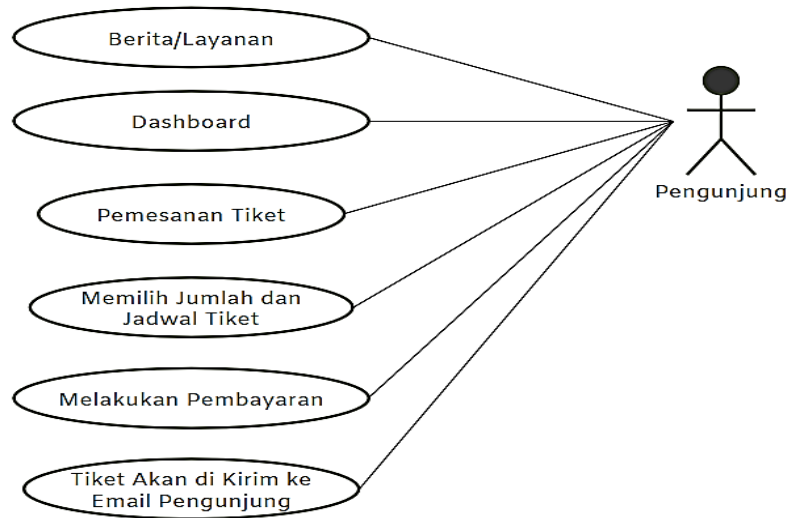


Figure 4. Usecase Diagram Customer user

This diagram represents a ticket purchasing system where a visitor interacts with the system by: viewing news or services, ordering tickets, selecting the number of tickets and schedule, making a payment, receiving the purchased tickets in their email.

**3.2 Activity Diagram**
Activity diagrams depict the sequence of activities or steps in a process, including decision-making conditions, parallelism, and transitions between activities.
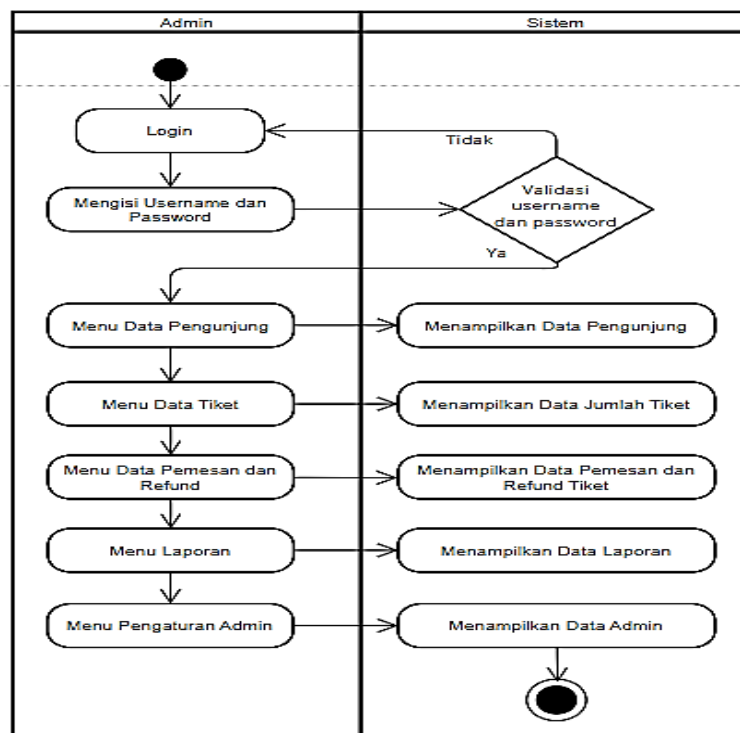


Figure 5. Activity Diagram

This diagram illustrates the process flow for an admin, starting with logging in with a username and password. The system then validates the input. If valid, the admin can access various menus within the system, such as those for viewing visitor data, ticket data, bookings and refunds, reports, and admin settings.

### 3.3 Sequence Diagram

A sequence diagram is a type of diagram used to model interactions between objects in a system based on time sequence. The following is a sequence diagram for the admin actor.
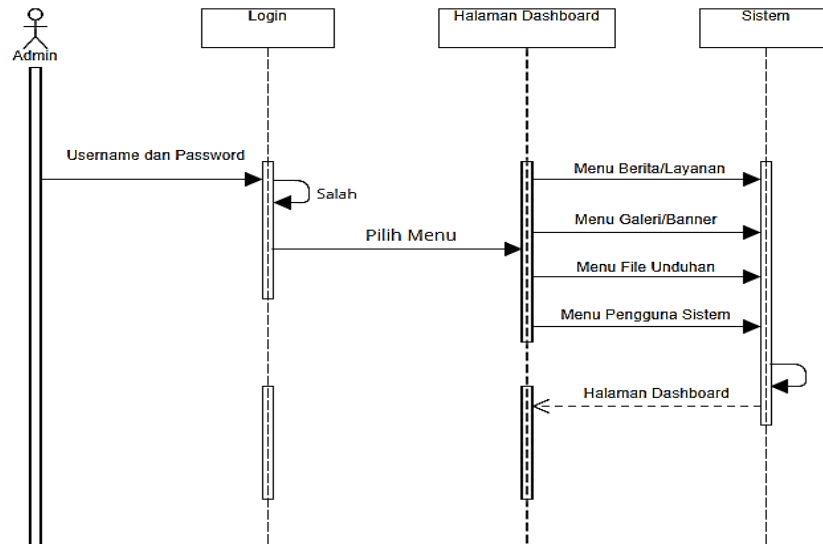


Figure 6. Sequence Diagram

This diagram illustrates the login flow and menu navigation by the admin in the system. If the login is successful, the admin can select various menus from the dashboard: the news menu, the gallery menu, the download menu, and the user menu. Each menu will send a request to the system to obtain the appropriate data or page.

### 4. User Interface
### 4.1 Login Page

Design the login page display, fill in the username and password correctly, then the system will verify and display the main page, as follows:



Figure 7. Interface Login

### 4.2 Dashboard

The main page design is a page that has modifications to the website page itself, such as the news/service page, download file page, gallery page and banner, as follows:
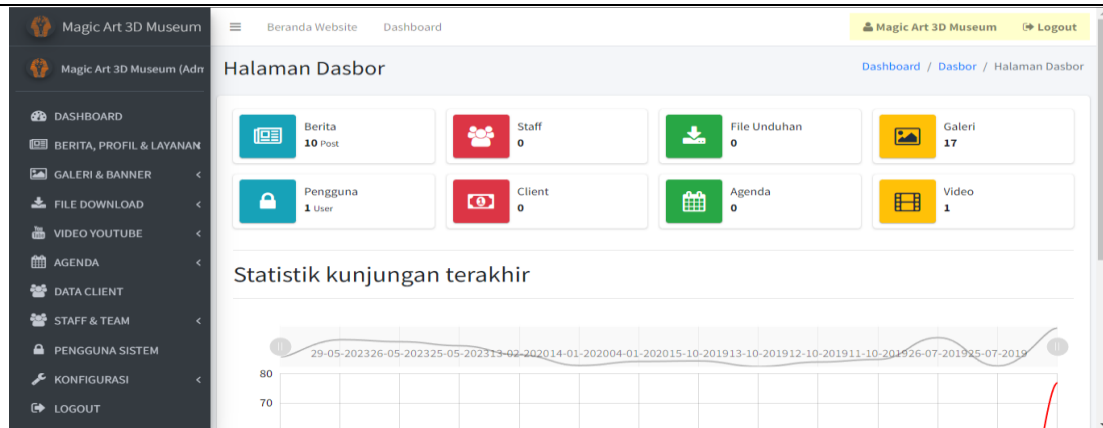
Figure 8. Interface Login

## 4.3 Ticket Order Page

The design of the ticket ordering page display, on this page visitors can see the cost of the ticket that must be purchased, operating hours and checkout before entering the museum, as follows:



Figure 9. Interface ticket order page

## 4.4 Ticket Payment Page

The design of the ticket payment page display, on this page visitors can make reservations and pay for tickets online on the museum website page with a payment gateway provided by the museum using a third party, namely Xendit, as follows:



Figure 10. Interface Ticket Payment Page

## 4.5  Order Report Page

The design of this page display can report online ticket booking and payment, as follows:
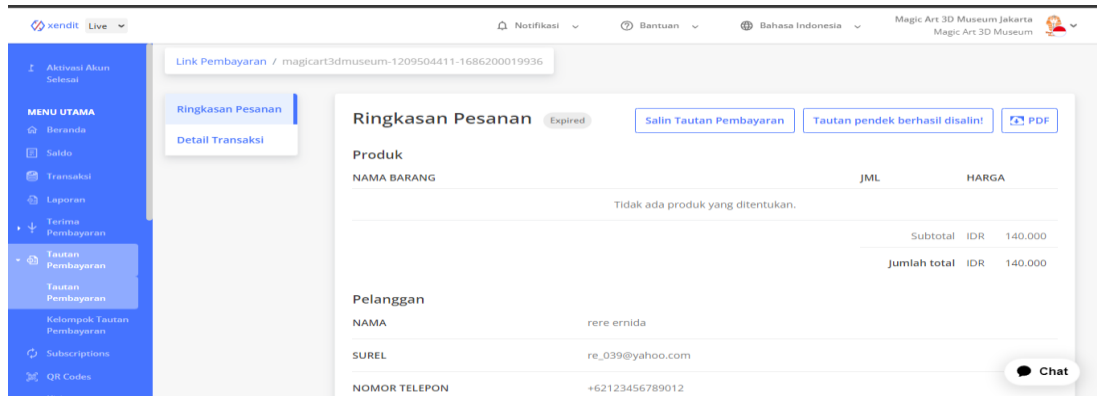


Figure 11. Interface Order Report page

## 5    Testing

In the testing phase, the author will conduct tests using the black box testing method. Black box testing allows for testing by identifying the input and output. The following are the test results for the sentiment orientation system developed.

Table 1
Black Box Testing

| No | Testing Description | Testing Scenario | Expected Results | Test Results |
|---|---|---|---|---|
| 1 | Admin login successful | Enter your username and password, then click login | Go to the dashboard page | Success |
| 2 | Logout admin | Click on the user photo in the top right corner, then click logout | Back to the login page | Success |
| 3 | News and Services Menu | Select the news and services menu | Go to the news and services data page | Success |
| 4 | Gallery and Banner Menu | Select the photo and video data menu | Go to the gallery and banner data page | Success |
| 5 | Menu File Download | Select the data file download menu | Go to the file download data page | Success |
| 6 | Menu Staff | Select the museum staff data menu | Go to the museum staff data page | Success |
| 7 | System User Menu | Select the system user menu | Enter the system user data page | Success |
| 8 | Configuration Menu | Select the configuration menu | Go to the system user data page | Success |
| 9 | Ticket Menu | Select the ticket menu | Go to the ticket data page | Success |
| 10 | Ticket Booking and Payment Page | Select the ticket booking page | Go to the ticket booking and payment page | Success |

**CONCLUSION**

With the Online Ticket Booking System application, visitors can book tickets more efficiently and discrepancies between the number of tickets and the number of visitor groups when booking museum tickets can be minimized. Therefore, this system can reduce issues that have occurred at the museum during ticket booking in the past. It makes it easier for visitors to book and pay for tickets, and increases visitor satisfaction thanks to the features available on this website application. After the application was implemented at the museum, the results showed that booking and payment for entrance tickets became more efficient, visitors no longer needed to wait in line to purchase tickets, and ticket booking data was better managed to minimize discrepancies in the number of visitors when purchasing tickets for the museum management.

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