Design and Implementation of the SALUTS System to Support of Improvement of Tourism Transactions and Promotion

Juniardi Akhir Putra\(^1\), Halid Nuryadi\(^2\), Yuliadi\(^3\), Erwin Mardinata\(^4\), Chairul Hudaya\(^5\), Shinta Esabella\(^6\), Ardiansyah Putra\(^7\), Ahmad Juliansyah\(^8\)

\(^{1,3,6,7,8}\) Study Program of Informatics, Sumbawa University of Technology, Sumbawa, Indonesia
\(^2\) Study Program of Energy System Engineering, Sumbawa University of Technology, Sumbawa, Indonesia
\(^3\) Study Program of Digital Business, Sumbawa University of Technology, Sumbawa, Indonesia
\(^4\) Department of Electrical Engineering, Indonesia University, Jakarta, Indonesia
\(^5\) jeniardi.akhir.putra@uts.ac.id, \(^6\) halid.nuryadi@uts.ac.id, \(^7\) erwin.mardinata@uts.ac.id, \(^8\) c.hudaya@eng.ui.ac.id, Shinta.esabella@uts.ac.id, \(^9\) ardiansyah.putra@uts.ac.id, Ahmad.juliansyah@uts.ac.id, \(^8\) yuliadi@uts.ac.id

ABSTRACT
This research aims to design and build a tourism system in Sumbawa Regency. In this research is using a qualitative approach that used model of rapid application development (RAD) for system development life cycle (SDLC) method. Overall the first stage is system planning, next stage is analyzing tourism data and information that would be presented on web and android technology based. In addition, for users interface display is the attractive database design. The final stage is coding the system and produce a prototype for the implementation which is presenting on the web pages and google play store for android smartphones. Moreover for further research is to develop SALUTS system into iPhone operating system (iOS) based, so it could be launched multi-platform, widely used by: local, regional, national and international tourism. Just like the android operating system, iOS has also various advantages. From harmonious integration to high data security, iOS meets user expectations by providing an experience that is not only efficient, but also reliable. It is no wonder that iOS has many fans from various circles. The system presented could be used for evaluation, monitoring and facilitating of tourism transaction and promotion processes in Sumbawa Regency, overall it could be useful for tourism improvement in West Nusa Tenggara Province.

INTRODUCTION
Tourism is a sector that has a strategic role in the economy of a region, both in terms of income and infrastructure development. Indonesia, as an archipelagic country with abundant natural and cultural riches, offers great potential in the tourism industry. To maintain and increase the attractiveness of tourist destinations (Wiyanto, Fadhilah, & Siswandi, 2022) (Pendit, 2012) (Arliyana & Maulidina, 2019).

Sumbawa Island as one of the tourism destinations in Indonesia, has extraordinary natural and cultural riches. It has beautiful beaches, majestic mountains and cultural heritage. Moreover It has great potential to become a leading tourism destination. Even though it has great potential, the development of the tourism sector in Sumbawa island still faces several obstacles. Some of them include infrastructure that is not optimal yet, lack of effective promotion, lack of involvement of local communities and lack of integration in destination management. In this digital era, the role of technology is very important in improving the tourism sector. Web and android systems based could be an effective solution to overcome several challenges in developing the tourism sector (Annisa, Matondang & Afrizal, 2022) (Soekadjo, 2012) (Anshary ddk, 2021).

LITERATURE REVIEW
The SALUTS system is a based on web and mobile (android) system, created to make it easier for tourists to find tourism place and also tourism guides. The system workflow that will be developed by researchers focuses on the use of the system by users, where users in the system are divided into several user divisions, namely Tourism, PEMDA (Regional Government), Associations, Travel Agents and Fintech Banks. Meanwhile, for admin management, Sumbawa University of Technology is the management party. The details of tour and guide rates are adjusted by the Regional Government and local tourism managers. Some of the available features in the system being developed are Manage Agent Data, Manage Transactions, Manage Tours, Reports, Tour Search, Destination Orders, Destination History and Transaction History.
Hopefully this platform, could be improved tourism sector and make tourist are easy to access tourism information in Sumbawa island. The system aims to develop a tourism platform for Regional Governments that is transparent, accountable and helps tourists to get information and services safely and easily. In designing a web and Android system based, it is related to previous research, this previous research could be a reference for literature studies to strengthen the research that has been carried out.

In previous research with the title "E-Tourism as a Tourism Information Media by Website-Based for Bekasi Regency" compiled by Wijayanto, the research produced an e-tourism system as a website-based tourism information media that makes it easier for tourists to find out about tourist attractions in the Bekasi Regency area. consists of Login-Logout features, managing tour packages, managing tourist attractions, managing hotel data, managing restaurant data, managing culture, managing transactions Wijanto, Fadhilah & Siswandi, 2022). The second research is entitled "Tourism Information System by Web-Based in Nunukan Regency" which was prepared by Annisa, this research produces a tourism information system by website-based which is expected this system could be made easy for the public to obtain tourism information in Nunukan Regency. On this application which consist of information features such as hotels, restaurants, culture, tourist attraction and report features (Annisa, Matondang, & Afrizal, 2022). The third research is entitled "Tourism Guide Information Center in Central Kalimantan Using the Rapid Application Development (RAD) Method" by Arliyana, in this research produced a tourism guide information center application in Central Kalimantan which consists of information features such as tourist information, traditional ceremonies, culture, culinary delights, souvenirs, and features about the application, tourist attraction details and destination map information (Arliyana & Maulidina, 2019).

The difference with related research that has been carried out is that in previous research it only focused on web-based systems, whereas in this research the researcher designed and implemented based on web and mobile (android) information system (Firly, 2018) (Hamsun, 2018).

METHOD

The research used a descriptive qualitative approach (Anggito & Setiawan, 2018) (Setyadi, & Perbawa, 2022) (Jogiyanto, 2015). Where the system development life cycle (SDLC) method was using the RAD (rapid application development) model (Budi, Siswa, & Abijono, 2017) (Jogiyanto, 2017). In this research using the following RAD model, the scheme as following below:

In the SDLC Method with RAD Model image above, the research implementation process has been carried out as following below:

**Planning**

At this stage, the research begins with system planning, which is the stage where a team of system analysts and users analyze the system required by the user. This includes analyzing user goals and software limitations. The steps used in collecting data and information were carried out by means of observation, focus group discussion (FGD), documentation and literature study. The data and information obtained will be analyzed, then identify developments and carry out concept planning for the system to be built.
Analysis
This stage analyzes the tourism data and information that will be presented using web and Android technology based. The system design process consists of two stages, namely design and development. At this stage the user will see and provide input on the prototype, which has been designed. The systems analysis team adjusts the modules based on feedback. Sequence diagrams, class diagrams, use case diagrams, and activity diagrams are all components of system modeling. ERD, table specifications, and relationships between tables are components of database design.

Design
For this third stage, system design was carried out, where this stage uses object-oriented design. At this research stage, the system is built by applying the results of the user analysis stage into the programming language used. Information about the actors, objects, and classes involved in the system is entered into this stage.

Prototype
This stage is to code the system and produce a prototype that is used for the system testing stage. If the system could be accepted as running well then it goes to the implementation stage. If it does not working properly or accepted, then the coding stage is carried out again.

Implementation
The final stage is implementation, namely the stage of presenting the system on a web page and presenting it on the google play store. At this stage, the system that has been completed, including the main menu, data management, transactions and report generation, undergoes black box testing before connecting to the server. After ensuring that the system is functioning correctly, the system is moved to the server for configuration and a training process is provided to the user to help find and correct system errors or deficiencies.

RESULT
In the SALUTS system implementation process, that used the RAD model stages are following stages below:

Planning
An observation process has been carried out, where the process of implementing tourism activities in Sumbawa Regency has been reviewed, where promotion is still manual and the transaction process has not used digitalization. Meanwhile, from the results of the Focus Group Discussion (FGD), tourism actors hope that there will be a platform for digital promotions and payments so that they could increase the number of tourists visiting both local, national and international. Whereas on the Regional Government side there is a desire for a process that is transparent and easy to evaluate from the tourism sector in Sumbawa Regency, which has been set at the Whale Shark Tourism FGD in Saleh Bay, Sumbawa Regency.

Analysis
An analysis process has been carried out on technology, data and information requisite. The results of the analysis process that has been carried out as following below:

1. Technology requisite analysis
In the results of the technology requisite analysis, XAMPP software, sublime text, and required data storage such as: MySQL, as well as several programming scripts such as: PHP and java script and utilized Flutter as a framework. Meanwhile, android technology was built using android studio and presented on the google play store.

2. Data and information requisite analysis

The results of data and information requisite analysis is data preparation for the features that will be designed, namely manage agent data, manage transactions, manage tours, reports, tour destination search orders, destination history and transaction history.

Design

In the design process is using object-oriented design. Besides that, the database design and appearance has been carried out that are attractive to users. In object-oriented design using UML, namely the use case diagram:

In the use case of SALUTS system, super admin management is the one who could manage all available features and could add agent accounts that could enter the system and manage reports. Meanwhile, agents could manage the tours offered and manage transactions. The Regional Government (PEMDA) has the authorization to monitor and evaluate tourism activities. Fintech (banking parties) has the authorization to monitoring financial transactions in the system. For tourism have the right to search for tours, tourist attraction orders, view destination and transaction history.

In object-oriented design, class diagrams are used to provide information about the system being built by showing classes and their relationships. The Class Diagram in the SALUTS System as following below:
Prototype

This stage has been carried out of system coding, this process produces a prototype that is used for the system testing stage. The system coding stage for back end web based and front end android based as following below:

![Fig. 4 Class Diagram of SALUTS System](image)

![Fig. 5 The Coding Process of SALUTS System](image)

From the coding process has been carried out, a SALUTS system was produced which runs on a web pages and Android smartphones.
Implementation

In this final stage, implementation has been carried out, namely the stage of presenting the system on web pages and android smartphones. The system presented could be used to evaluate and monitoring tourism conditions in Sumbawa Regency. The display of the home page of the web-based system running on the https://SALUTS.id/ page as following below:

![Fig. 6 Homepage of SALUTS System on Web](image)

The main page presents tourist photo information, search for tourist locations based on the categories desired by tourism. Apart from the promotional features offered by tourism agents, there is a login menu for SALUTS System users to manage tourism transactions as well as monitoring and evaluating activities in the system. The appearance of the super admin (Sumbawa University of Technology) who could be manage data report on tourism activities and transactions in the SALUTS system as following below:

![Fig. 7 Report Managing Page in SALUTS System on Web](image)

Managing reports in the system, data and information on the number of agents active in tourism activity transactions could be presented and the Government side could be easily monitored and evaluated.

DISCUSSION

Meanwhile, for the tourism side, apart from being able to access the system via the web, you can also access it via an Android smartphone. On the web page, tourism could be carried out of transactions and could be seen in the transaction history as follows:
In the image of the tourist location search page and transaction process of Android based, the trip name, status, and location as well as the price and time of the tourist activity are presented in detail. With this system, tourism actors could be easily accessed for tourist information and transactions become effective and efficient on Sumbawa Island.

**CONCLUSION**

The research has been carried out completely in the working stages, from the planning, analysis, design, prototype, and implementation stages which have been presented on the http://saluts.id page for web-based systems and has been presented on the Google Play Store for Android-based. With the SALUTS system, tourism actors and visitors could be easily accessed tourism information on the island of Sumbawa and the Regional Government could be easily accessed for monitoring and evaluating that is transparent and accountable in tourism activities. The suggestion for further research is to develop an IoS (multi-platform) based system so that it could be widely used by local, regional, national, and international tourism.
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