CHAPTER I
INTRODUCTION

1.1 Background

In today's digital era, event management within student organizations still presents several challenges, especially for large-scale activities involving many participants. At the Faculty of Engineering and Vocational Education (FTK), Universitas Pendidikan Ganesha, student organizations regularly organize seminars, workshops, competitions, and social activities. Based on interviews with key stakeholders, including the Vice Dean III for Student Affairs (WD III), FTK facilities staff, and representatives of BEM FTK, HMJ Teknik Informatika, and HMJ Teknik Industri, more than 40 events are held annually within FTK, with participant numbers ranging from dozens to hundreds for each event. In this study, WD III refers to the faculty-level official responsible for student affairs, including the review and approval of student organization activity proposals, event documentation, and accountability reports.

However, event management in FTK is still largely conducted manually. Student organization committees reported recurring problems such as delays in registration, time-consuming participant verification, and difficulties in tracking participant data. These issues become more complex in ticketed events, where organizers often struggle to record ticket sales and identify buyers due to the absence of an automated system. Event treasurers also stated that payments are still commonly handled through manual bank transfers and confirmations via messaging applications, followed by separate data recapitulation. This process increases the administrative burden on committees and creates risks such as physical ticket misuse and inaccurate transaction records.

Manual attendance recording also remains a challenge, especially in non-ticketed events. Long queues often occur at registration desks, and some participants may bypass attendance recording in crowded conditions, resulting in incomplete and unreliable attendance data. In addition, venue reservation within FTK is still inefficient because committees must contact faculty administration or facilities staff directly to record bookings. The lack of real-time room availability information can lead to scheduling conflicts and delays in event planning.

Administrative document management is another issue. Not all student organizations consistently follow the Standard Operating Procedures (SOP) for submitting proposals, documentation, and accountability reports (LPJ). In several cases, LPJs were not submitted on time, while faculty staff experienced difficulties in archiving and retrieving activity documents due to the absence of an integrated digital system. These conditions indicate that the existing manual process can no longer fully support the increasingly complex needs of event and venue management in FTK.

Based on these problems, this study proposes the development of "GANEVENT," a web-based event and venue management system that integrates digital ticketing, QR Code-based check-in, collective ticket purchasing, venue booking, payment verification, and administrative document management. The system also supports the upload of proposals, event documentation, and LPJs to improve transparency, security, efficiency, and centralized archiving in student organization activities.

Although the initial research plan considered involving student organizations from multiple faculties, the scope of this study was adjusted to focus on FTK to ensure feasibility within the available time and resources. The selected stakeholders still represent the intended system users, including faculty representatives, facilities staff, and student organization committees. To support flexibility and continuous refinement during development, this research adopts the Agile Scrum method, allowing iterative system development based on stakeholder feedback.

1.2 Problem Statement

Based on the background and preliminary study conducted within the Faculty of Engineering and Vocational Education (FTK) at Ganesha University of Education, the main problems identified in the current event and venue management process are:

a. Event registration and participant verification are still performed manually, leading to delays and data inaccuracies.
b. Difficulty in tracking ticket sales, preventing misuse of physical tickets, and handling collective purchases efficiently.

c. Attendance recording for non-ticketed events is still manual, causing incomplete and unreliable data.
d. Venue booking processes are inefficient, with no real-time availability information, often resulting in scheduling conflicts.
e. Administrative processes such as proposal submission, documentation, and accountability reports (LPJ) are not consistently followed, with no integrated archiving system.

These problems indicate the need for an integrated, web-based event management system that addresses operational inefficiencies, improves transparency, and enhances administrative compliance within FTK.

1.3 Research Question

Based on the background and problem statement described above, there are several issues that need to be addressed in this study. Therefore, the research questions in this study are as follows:

a. How is the design process of "GANEVENT" carried out using the Agile Scrum method in the student organization environment of the Faculty of Engineering and Vocational Education (FTK) at Ganesha University of Education?
b. How is the development process of "GANEVENT" implemented through sprints using the Agile Scrum method in the student organization environment of FTK?
c. What are the results of testing the "GANEVENT" system developed in this study in terms of functionality and suitability for student organization needs within FTK?
d. What is the level of user acceptance of the "GANEVENT" system developed in this study, based on feedback from end users in the student organization environment of FTK?

1.4 Research Objectives

This research was conducted to respond to the needs of student organizations in managing activities more efficiently and in a more structured way. Based on the background, problem limitations, and problem formulation described earlier, the objectives of this research are as follows:

a. To design a web-based event management system called “GANEVENT” in the student organization environment of the Faculty of Engineering and Vocational Education (FTK) at Ganesha University of Education using the Agile Scrum method
b. To develop the “GANEVENT” web-based system incrementally through sprints based on the Agile Scrum method, with continuous input from stakeholders representing the Product Owner role.
c. To determine the results of functional and usability testing of the developed “GANEVENT” system, and ensure that it meets the needs of student organizations within FTK.
d. To evaluate the level of user acceptance of the “GANEVENT” system within the student organization environment of FTK, based on feedback from system users during testing.

With the achievement of these objectives, it is expected that the developed system can serve as a digital solution to enhance efficiency in event management, simplify participant registration processes, facilitate venue rentals, and minimize the potential for administrative errors commonly encountered in student activity management within FTK.

1.5 Scope of Research

To ensure focus, feasibility, and accuracy in achieving the research objectives, this study is limited to the following scope:

a. System Scope
    - This system is specifically designed for use by student organizations within the Faculty of Engineering and Vocational Education (FTK) at Ganesha University of Education to manage event planning and campus room or venue reservations.
    - The system does not cover the management of events outside student organizations in FTK or outside the FTK environment.
b. Feature Development Focus
    - Digital Ticketing and Collective Purchase: Provides features for purchasing and recording digital tickets for each event organized by student organizations in FTK, including the ability to purchase

multiple tickets in a single transaction while recording each participant's details to maintain transparency and prevent misuse.

- Venue Booking Management: Offers real-time room availability information and venue booking features, allowing committees to request and manage bookings more efficiently.
- QR Code Check-In: Supports automatic check-in using QR Codes to improve accuracy and security during event attendance.
- Proposal and Report Uploads: Enables uploading proposals, documentation, and accountability reports (LPJ) to ensure administrative compliance.
- Independent Mobile QR Scanner App: Provides a mobile-based QR Code scanner application for event staff, with restricted access limited to ticket verification functions only, ensuring secure and efficient check-in while preventing misuse from third-party scanners.

c. Development Method

- The system is developed using the Agile Scrum method, which involves iterative development through sprints. The Scrum Master role is represented by Research Supervisor 1 (Dospem 1), while the researcher serves as the Development Team. The Product Owner role is represented by Research Supervisor 2 (Dospem 2) and a representative from Bidang 5 HMJ Teknik Informatika.
- Each sprint delivers incremental features that are continuously refined based on stakeholder feedback and needs.
- Maintenance activities are integrated into the Scrum cycle through continuous bug fixing and feature improvements in subsequent sprints, rather than as a separate post-development phase.

d. Technical Scope

- Frontend: React.js for the user interface.
- Backend: Laravel (PHP) as the backend framework to manage application logic and database connectivity.
- Database: MySQL for storing user data, events, tickets, and room rentals.

- QR Code: qrcode.js + ZXing library for QR Code generation and scanning during the check-in process.
- Payment Gateway: Integration with Midtrans to support ticket payments via QRIS and Virtual Account.
- Mobile QR Scanner App: Developed using Flutter for cross-platform compatibility, integrated with the ZXing library, and connected via secure REST API endpoints restricted to ticket verification.

e. System Limitation

- The system does not handle payments directly but only displays payment statuses that have been verified through a third-party payment gateway.
- The system does not include logistics management or event equipment features, focusing solely on digital ticketing and venue rental management.

With these boundaries, the research aims to produce a web-based solution that enhances efficiency in event management and supports student organizations in managing campus facility rentals in a more structured, responsive, and integrated manner.

1.6 Research Benefits

This study is expected to provide tangible contributions to various parties involved in managing student activities within the Faculty of Engineering and Vocational Education (FTK), including event organizers, facility managers, and faculty administrators. The following are the main benefits of this study:

a. Student Organizations

- Helps student organizations manage event planning and execution in a more structured and efficient manner through an integrated digital system.
- Reduces the risk of errors in participant registration and ticket distribution through automated digital ticketing and real-time data recording.

- Supports collective ticket purchasing, allowing multiple tickets to be bought in a single transaction while recording each participant's details, thus reducing repetitive processes and improving purchasing convenience.
- Simplifies the venue reservation process through transparent information on room availability, minimizing scheduling conflicts between activities.

b. Campus Facility Manager
   - Supports better organization and documentation of room booking schedules.
   - Minimizes scheduling conflicts by providing real-time access to room availability data.
   - Offers a system that can be accessed directly by student organizations, reducing reliance on manual administrative procedures.

c. Campus Administration (Vice Dean III for Student Affairs and Faculty Administration)
   - Accelerates the validation process for activity proposals and accountability reports (LPJ) through an efficient digital platform.
   - Provides centralized and well-structured archives of student organization activities for future reference and evaluation.
   - Enhances transparency and accountability of student organizations in each stage of event execution and reporting.

d. Author
   - Gains practical experience in developing a web-based enterprise system through the Agile Scrum method, involving real stakeholder feedback, with the Scrum Master role carried out by Research Supervisor 1 (Dospem 1).
   - Applies theoretical knowledge in software engineering, project management, and user experience (UX) design to solve real-world problems.

- Practices iterative system development through planning and executing sprint cycles based on user needs and priorities.

e. Reader

- Gains insights into the development and implementation of digital event and venue management systems in a higher education environment.
- Serves as a reference for future research on web-based information systems, particularly those applying Agile methodologies.
- Provides a case study on the use of enterprise system principles in managing structured and scalable student activities at the faculty level.