'A--VENUE': ONLINE VENUE RESERVATION SYSTEM FOR RECOGNIZED STUDENTORGANIZATIONS OF ADAMSON UNIVERSITY

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Abstract

Adamson University has a diverse community where students are engaged in different activities in line with their academic field and extra--curricular activities. There are three types of student organizations in the university;; academic, socio--civic and religious. These organizations are collectively known as Recognized Student Organizations (RSOs), administered by the Office for Student Affairs (OSA). This office oversees all organized events together with Physical Facilities and General Services Office (PFGSO) for the venue reservation and approval. The aforementioned offices are currently using the traditional pen and paper method for event processing. The main goal of this research is to develop an Online Venue Reservation System that can be used to manage and process event data and help reduce problems encountered, such as data redundancy, data loss, and excessive paper use. The study used qualitative research wherein qualified respondents from OSA, PFGSO, and RSO's were chosen using purposive sampling. This developed web application allows different users to request, monitor, and approve or disapprove a venue reservation request as well as generate reports when necessary. The website was evaluated using ISO 25010 Software Quality Model by the target respondents. The survey showed that the developed system was assessed as "Good" in terms of functionality suitability, performance efficiency, compatibility, usability, reliability, security, maintainability and portability. In terms of compatibility, the website was rated "Fair". Furthermore, the respondents also evaluated the website as "Highly Feasible" in terms of technical, operational, economic and environmental considerations.

Keywords: Online Venue Reservation System, Recognized Student Organizations, Reservation, Philippines, Adamson University

1.0   INTRODUCTION

Every educational institution aims to nurture their students to attain their maximum potential during their stay inside the campus. In Adamson University, students are privileged to be able to create or join the organizations that they wish. Office for Student Affairs (OSA) is one of the many offices existing in the Adamson University community whose purposes are to conduct activities and implement policies for the university students to follow and render its services for the interest of the students. OSA is the one responsible for supervising the Recognized Student Organizations (RSO) with regards to processing organizational membership, endorsing requests of RSOs for the use of facilities inside the campus, and ensuring the quality of the activities that the RSOs would propose. Alongside with OSA who collaborates with the students to have their activities successful is the Physical Facilities and General Services Offices (PFGSO) who provides assistance by maintaining cleanliness throughout the campus, installing & repairing utilities, preparing venues for events, managing the use of university vehicles, and ensuring the safety of all people inside the campus (Adamson University, 2019).

The current system of venue reservation is costly, lengthy, and strenuous all at the same time. The OSA processes at least forty (40) inquiries and transactions per day with four (4) employees only. The PFGSO, on the other hand, processes at least ten (10) transactions per day coming from the RSOs only and PFGSO also take cares of institutional events that are considered more important. The PFGSO has ten (10) employees.

A reservation system will let the PFGSO accept or receive bookings for their services online. One of the main reasons why any kinds of services that accepts reservation should have an online reservation system is because it is convenient. An online reservation system, by the term "online", means that anywhere a person is, with access to the internet, can make reservation (Lenoir, 2019). One of the objectives of this study is also to minimize the use of paper for having an online reservation system is also eco--friendly. An article from ecology.com, written by Susan Colby (2011), states that nearly 4 billion trees are being cut down every year to make papers. It is eco--friendly in way wherein it is an online reservation system where lesser papers are being used. The consumption of paper on earth has grown of about 400 percent in the last 40 years.

Objectives of the Study
Based on the current research in the field of Information Technology, the goal of this study is to create an accurate and reliable Venue Reservation System to be used by the Recognized Student Organizations of Adamson University.

Specifically, the study sought to accomplish the following:
1. Design an Online Venue Reservation System with a centralized database for easier storing and retrieving of data while minimizing the use of papers.
2. Evaluate the developed system using ISO 25010 Quality Model in terms of its:
    a. functional suitability
    b. performance efficiency

     c. compatibility
     d. usability
     e. reliability
     f. security
     g. maintainability
     h. portability

3. Identify the respondents' degree of adopting an Online Venue Reservation System with consideration to Technology, Organization, and Environmental aspects.

System Scope and Limitation

This system is for the reservation of venue for the events made by various Recognized Student Organizations of Adamson University to be passed to and approved by the Office of Student Affairs and Physical Facilities and General Services Office. The system will be an online application available through the internet. The Office of Student Affairs can have an access for the events done for their perusal. The Physical Facilities and General Services Office can update the status of the needed equipment and/or the venues if it is available or unavailable.

The user interface will be designed as part of the system will contain the ability to reserve an event and venue, and to approve or deny requested events and venue.

The system will not include the mode of payment for specific venues and reservation of venues for institutional and outsider events.

2.0   RESEARCH METHODOLOGY

Research Design

This study entitled "A--Venue: Online Venue Reservation System for Recognized Student Organizations of Adamson University" is a descriptive research that utilizes qualitative approach to assess the problems currently encountered by offices involved in the process of reserving venue used by RSOs within Adamson University. This descriptive study was accomplished by conducting an interview on the three parties involved;; such as the RSOs, OSA, and PFGSO. All parties are staff & students of Adamson University located at 900 San Marcelino Street, Ermita, 1000 Manila, Philippines.

Letter of requests was sent to the offices for approval of conducting interviews to participating respondents. After conducting the interview, the researchers have developed an online system to address the problems encountered by the respondents and the said system was assessed using the ISO 25010 Quality Model.

Research Instruments

This study utilized the ISO 25010 Quality Model comprises eight quality characteristics which are: functional suitability, performance efficiency, compatibility, usability, reliability, security, maintainability, and portability which were measured using the Likert Scale, a 5--point scale ranging from "Very Poor" (1) to "Excellent" (5). The study also conducted a survey to assess the feasibility of the study which is also measured

using the said scale ranging from "Not at all Feasible" (1) to "Highly Feasible" (5) with four (4) considerations: technical, operational, economical, and environmental.

Table 1: Likert Scale

Scale	Range	Interpretation in Feasibility Study	Interpretation In Software Quality
5	4.51 -- 5.00	Highly Feasible	Excellent
4	3.61 -- 4.50	Feasible	Very Good
3	2.71 -- 3.60	Neutral	Good
2	1.81 -- 2.70	Not Feasible	Fair
1	1.00 -- 1.80	Not at all Feasible	Poor

3.0   FEASIBILITY OF THE STUDY

Overview of the Existing System
The existing reservation system of venue for RSOs will start from preparing letters, filling up the activity form and venue form. After accomplishing the form, the adviser is the first to approve the forms and letters. If approved, the chairperson and the dean will have to approve the request (only applicable to Academic Organizations). If the activity is categorized as an Outreach Activity, the form should be approved by the Integrated Community Extension Services (ICES) and if the activity is a Religious Activity, the form should be approved by the Campus Ministry Office (CMO). When the activity forms are already approved by the aforementioned offices, activity forms & letter should be approved by Office of the Student Affairs (OSA). After the OSA approved the forms, the Physical Facilities and General Services Offices (PFGSO) will also need to check the materials needed and approve the venue reservation form with the attached approved activity form. After PFGSO's approval, it will go back to OSA for the second approval, if the request is approved by OSA the activity and venue reservation will be done for transaction. If one of the offices (Chaiperson, Dean, CMO, ICES, OSA, and PFGSO) disapproved the activity form, the RSO needs to make a new proposal activity.

User Overview
- **USER 1:** RSO (Recognized Student of Adamson University)
  - Fills up an activity forms to be retrieved from the OSA, with signatures of their respective adviser and/or chairpersons and deans.
  - Passes the form and gets the approval to the office of OSA and PFGSO, respectively.
- **USER 2:** PFGSO (Physical Facilities and General Services)
  - Responsible for the approval of venues.
  - Checks through the activity form if the selected materials would be avaiable or not during the requested date for an event.

 o Checks the venues through the activity form if the venue requested is already reserved to another RSO or not.
- **USER 3:** OSA (Office of Student Affairs)
 o Responsible for the approval of the activity twice, before and after the PFGSO signed it.
 o Keeps papers (e.g. activity letter, forms and etc.) for archiving.
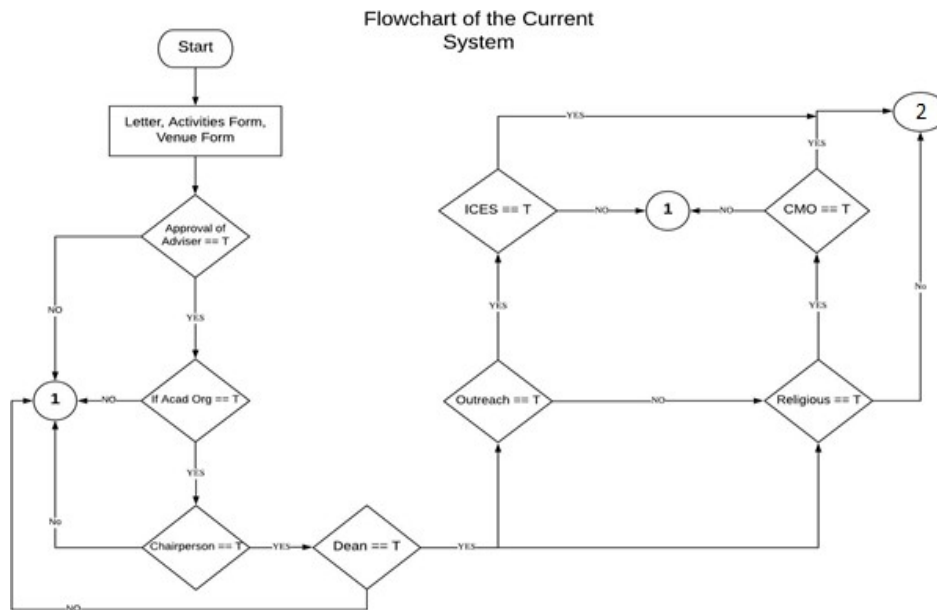
Existing System Flowchart
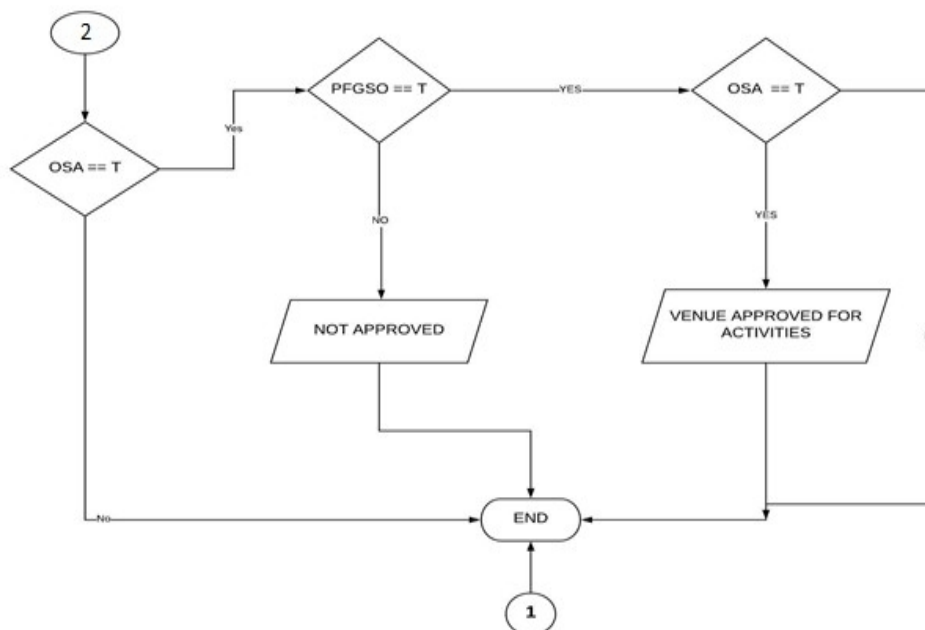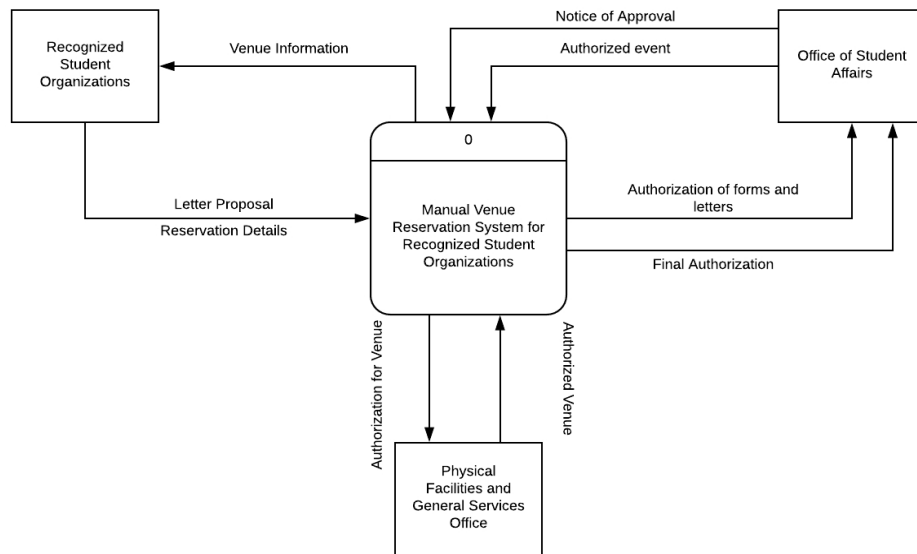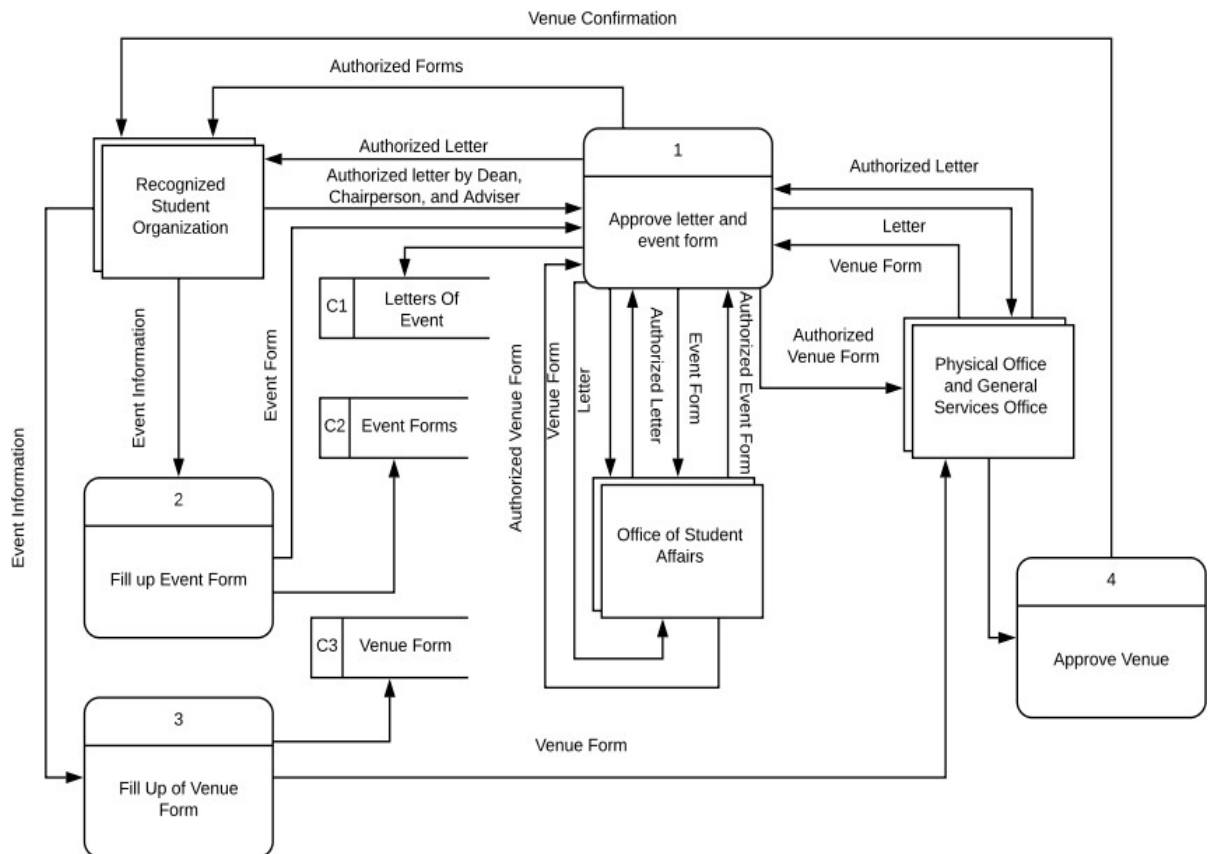

Figure 1.1: Flowchart of the Existing System

Figure 1.2: Flowchart of the Existing System (continuation)

Data Flow Diagram of the Existing System

Figure 2: Context Flow Diagram of the Current System

Figure 3: Data Flow Diagram of the Current System

Overview of the Proposed System

The proposed reservation system of venue for RSOs will start by logging--in with their respective accounts. If the entry is for RSOs they will be directed to the RSO interface which is the main, if it's the OSA or PFGSO they will be redirected to their respective interfaces.

The Administrator page has the authority to access the whole system and will be able to update all the records of the customers for reservations made through phone call or walk--in customers, change the status of the reservation of the customers, update the list of the facilities available in the resort. Also has administrative page that can view all the transaction made by the system and to who made a reservation, with the reservation and the bills (Adap et. Al, 2016).

To begin the reservation process for the activity of RSOs, they need to check for the available venues, then select for the venue, after selecting a venue, they will fill up the form for the activity. After filling up the form, the approval of adviser is needed, if approved the form will be directed to the Chairperson and Dean if the requesting party is an academic organization. If approved by the Chairperson and Dean, the requests will be redirected to certain offices;; If it is a Religious activity the activity form will be directed for the approval of Campus Ministry Office (CMO) and if it is an Outreach activity the Activity form will be directed for the approval of Integrated Community Extension Services (ICES), this also applies to non--academic organizations. If approved, the activity form will be directed to the system account of Office of the Student Affairs (OSA). If the OSA approved the activity form will be directed to the system account of Physical Facilities and General Services (PFGSO) for the final approval.

This system will allow the organizations to track the progress of their venue request and to negotiate for a new venue space if in any case there will be a rescheduling or venue replacement. The biggest strength here is the automation of communication between the parties involved in the process (Social Tables, 2011).

System Design User
Overview
- **USER 1:** RSO (Recognized Student Organizations of Adamson University)
    - They can reserve venue online
    - Minimum of One account for each RSO
    - Status of the officers for each RSO
- **USER 2:** PFGSO (Physical Facilities and General Services)
    - Has an exclusive account
    - Supply the needed materials for event
    - Approves online venue reservation form
    - Has access and privilege to change venue & material requests
- **USER 3:** OSA (Office of Student Affairs)
    - Has an exclusive account
    - Endorses RSOs for materials, facilities and venue requests for the activity
    - Approves the online activity form

- **USER 4:** RSO Advisers
  - Has an exclusive account
  - Approves the online activity form
- **USER 5:** Department Chairpersons
  - Has an exclusive account
  - Approves the online activity form
- **USER 6:** College Deans
  - Has an exclusive account
  - Approves the online activity form
- **USER 7:** Integrated Community Extension Services (ICES)
  - Has an exclusive account
  - Approves the online activity form for outreach activities
- **USER 8:** Integrated Community Extension Services (ICES)
  - Has an exclusive account
  - Approves the online activity form for religious activities
- **USER 9:** Administrator
  - Has an exclusive account
  - Has access to all data & records
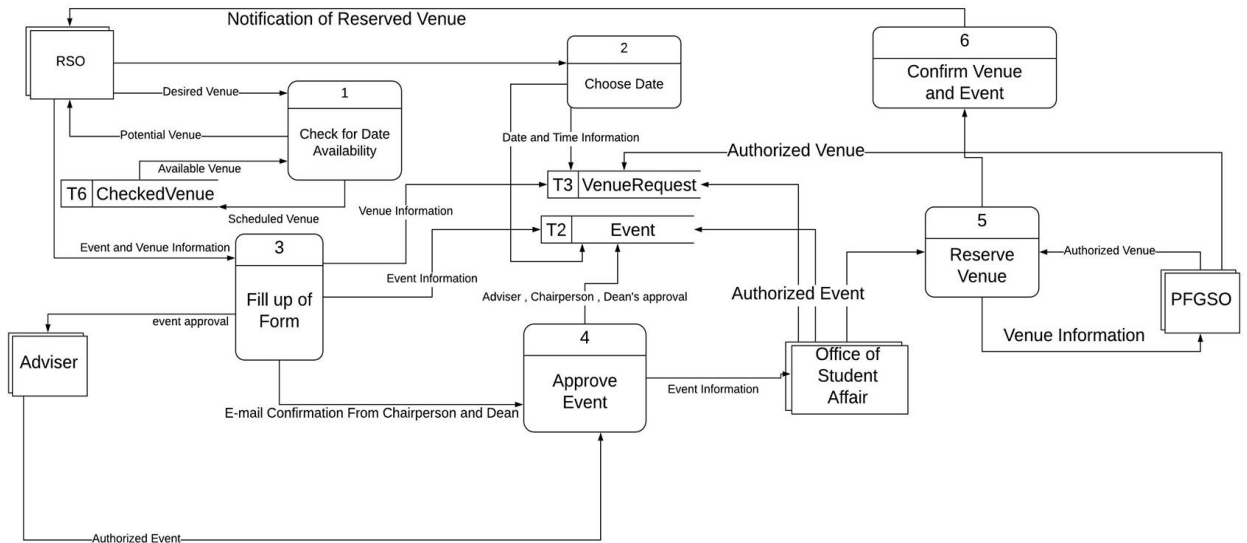 - Can change and update all records

Data Flow Diagram of the Proposed System
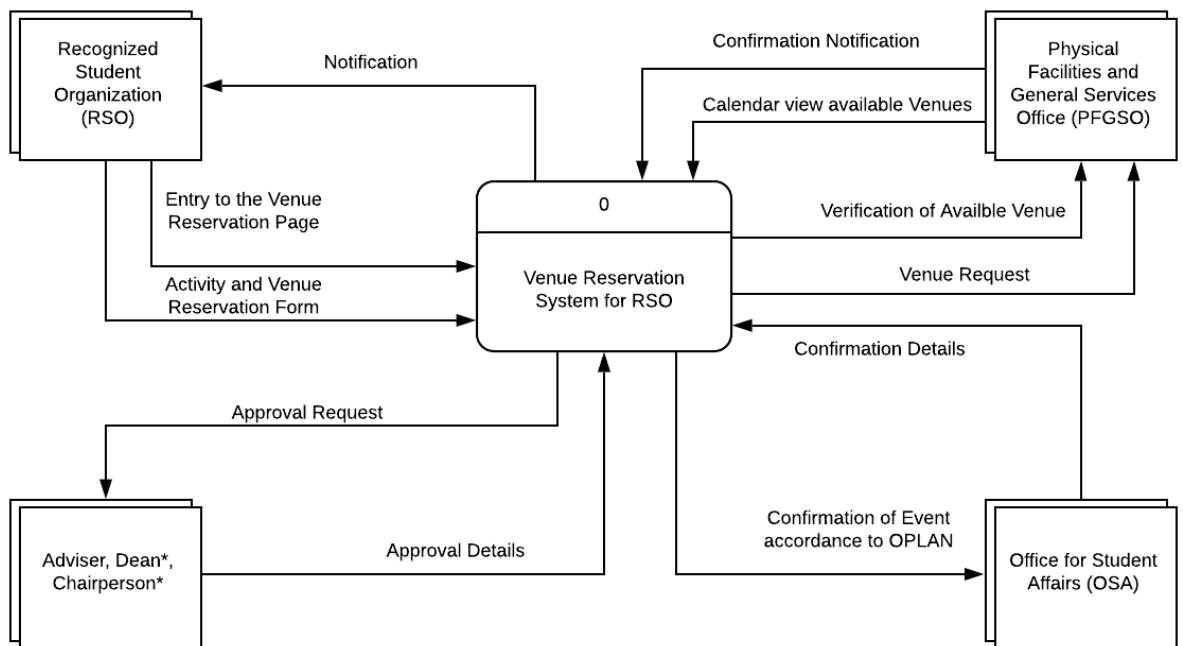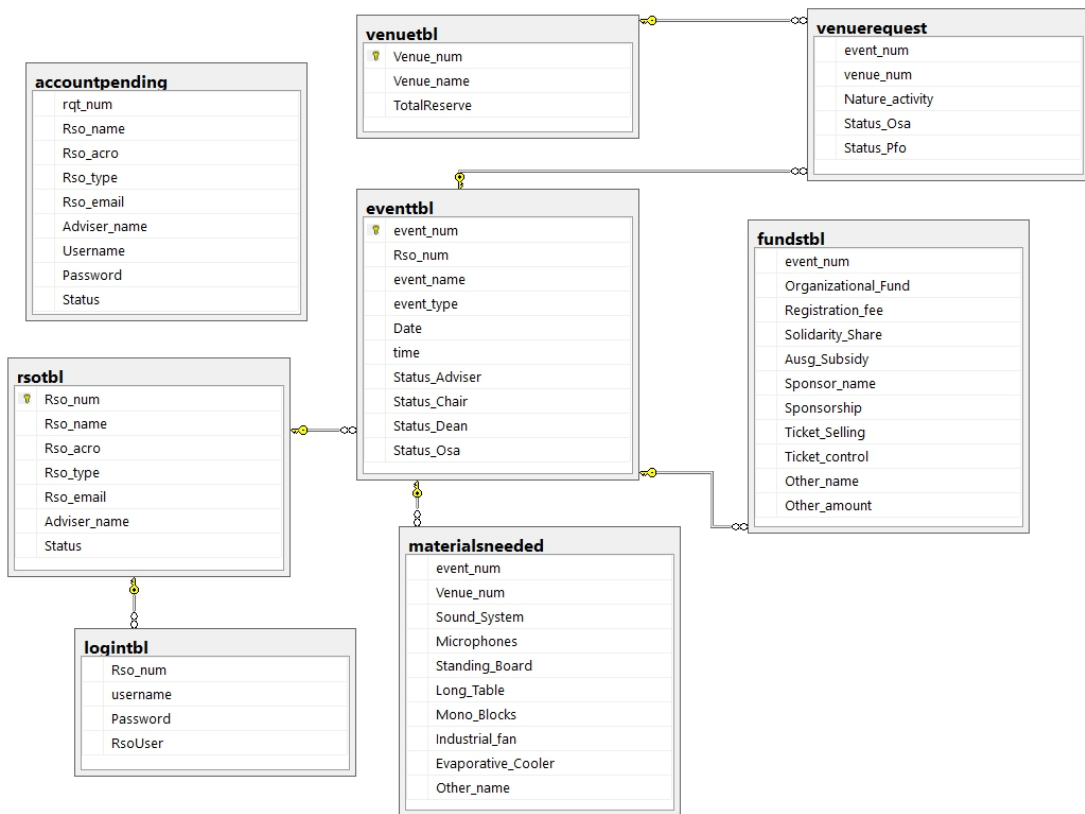

*applicable for academic organizations only

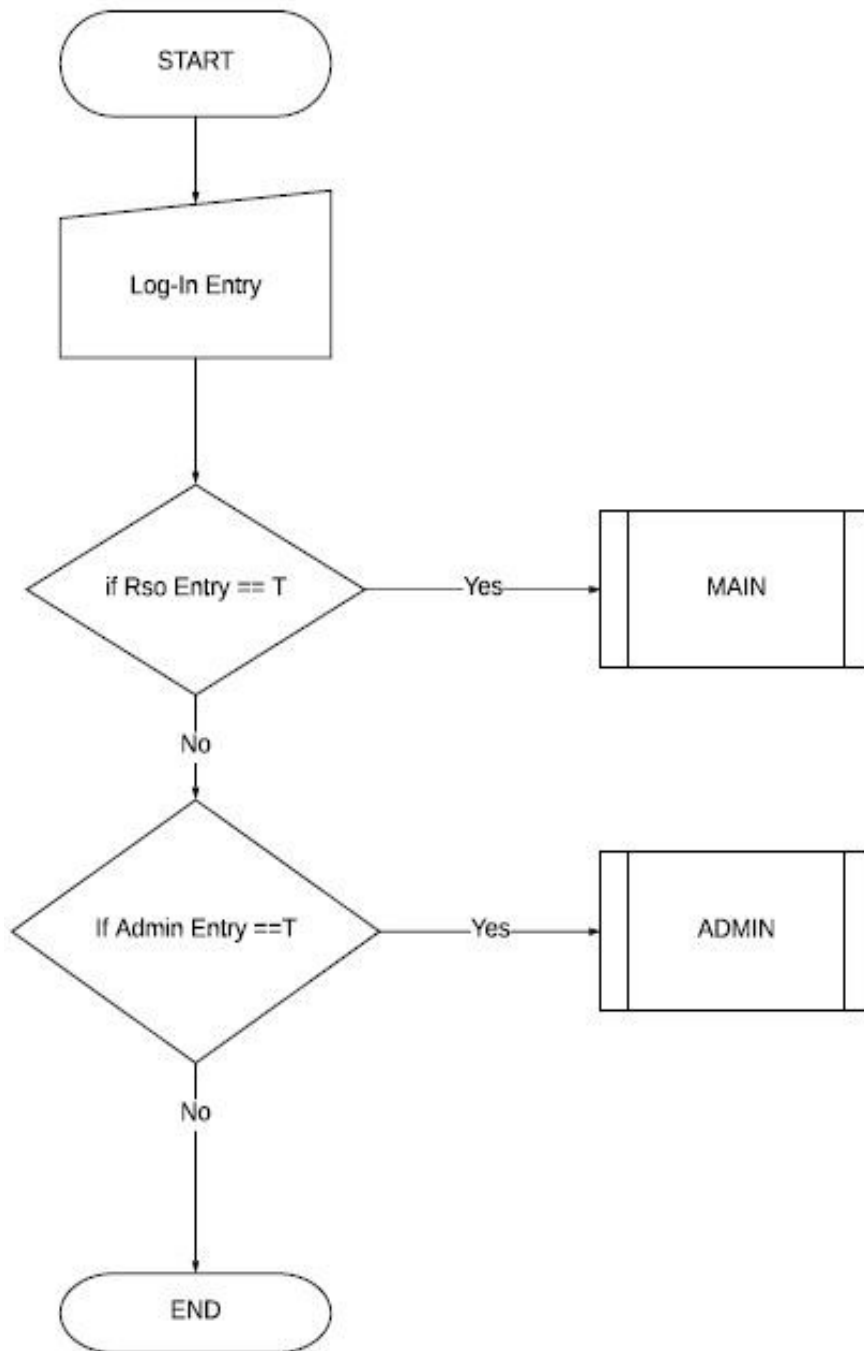**Figure 4:** Context Flow Diagram of the Proposed System

Figure 5: Data Flow Diagram of the Proposed System
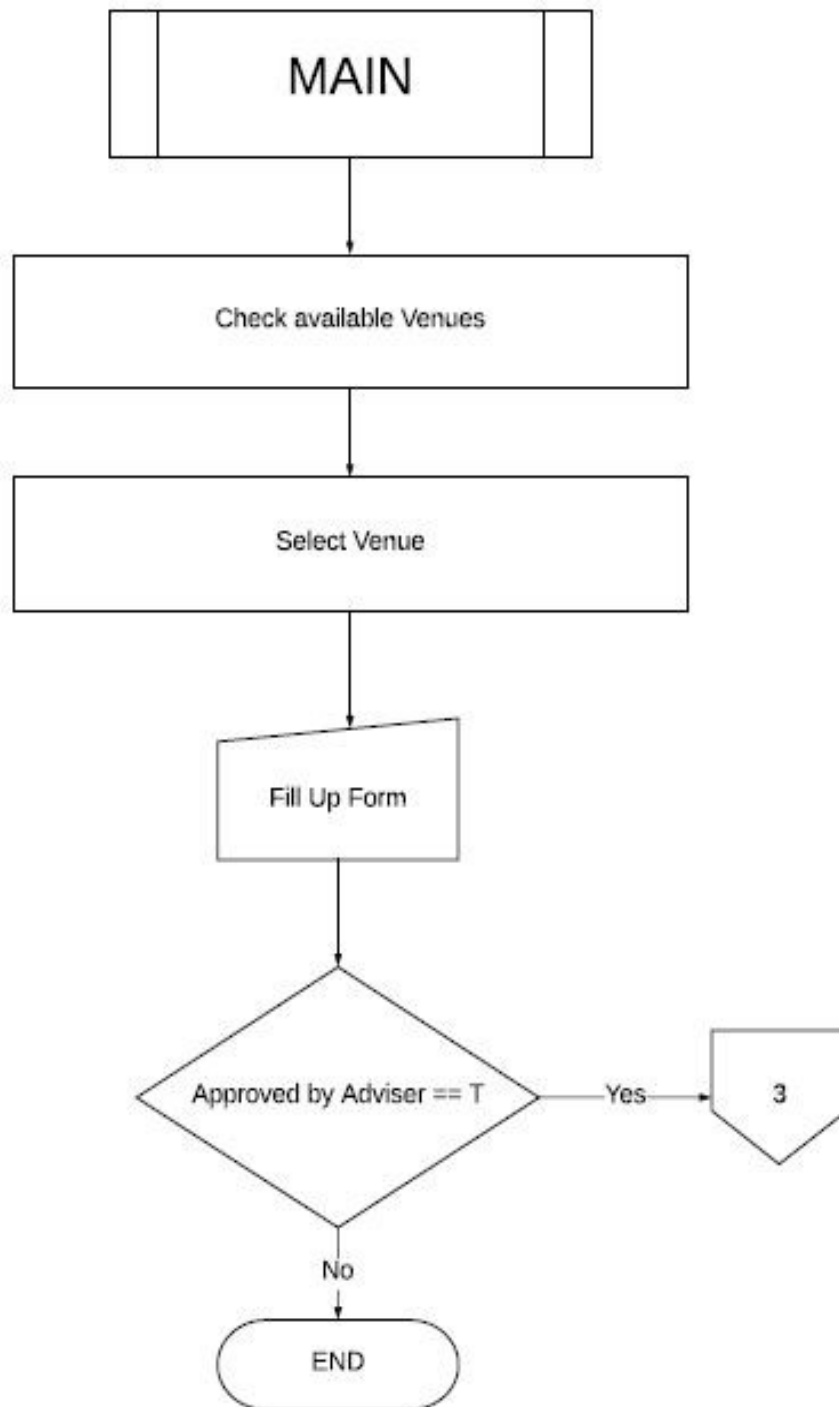
Database Design of the Proposed System
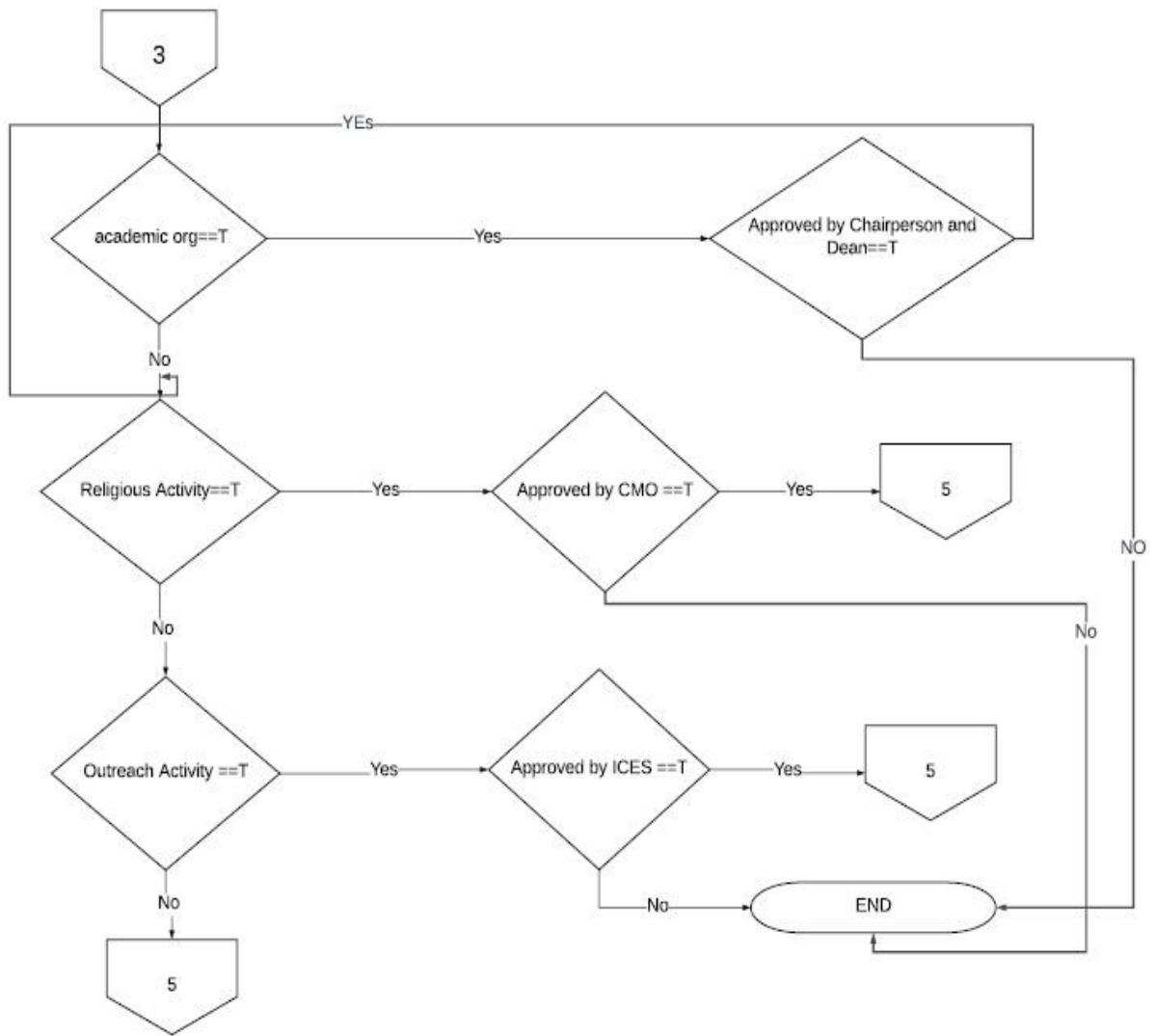

Figure 6: Database Design of the Proposed System

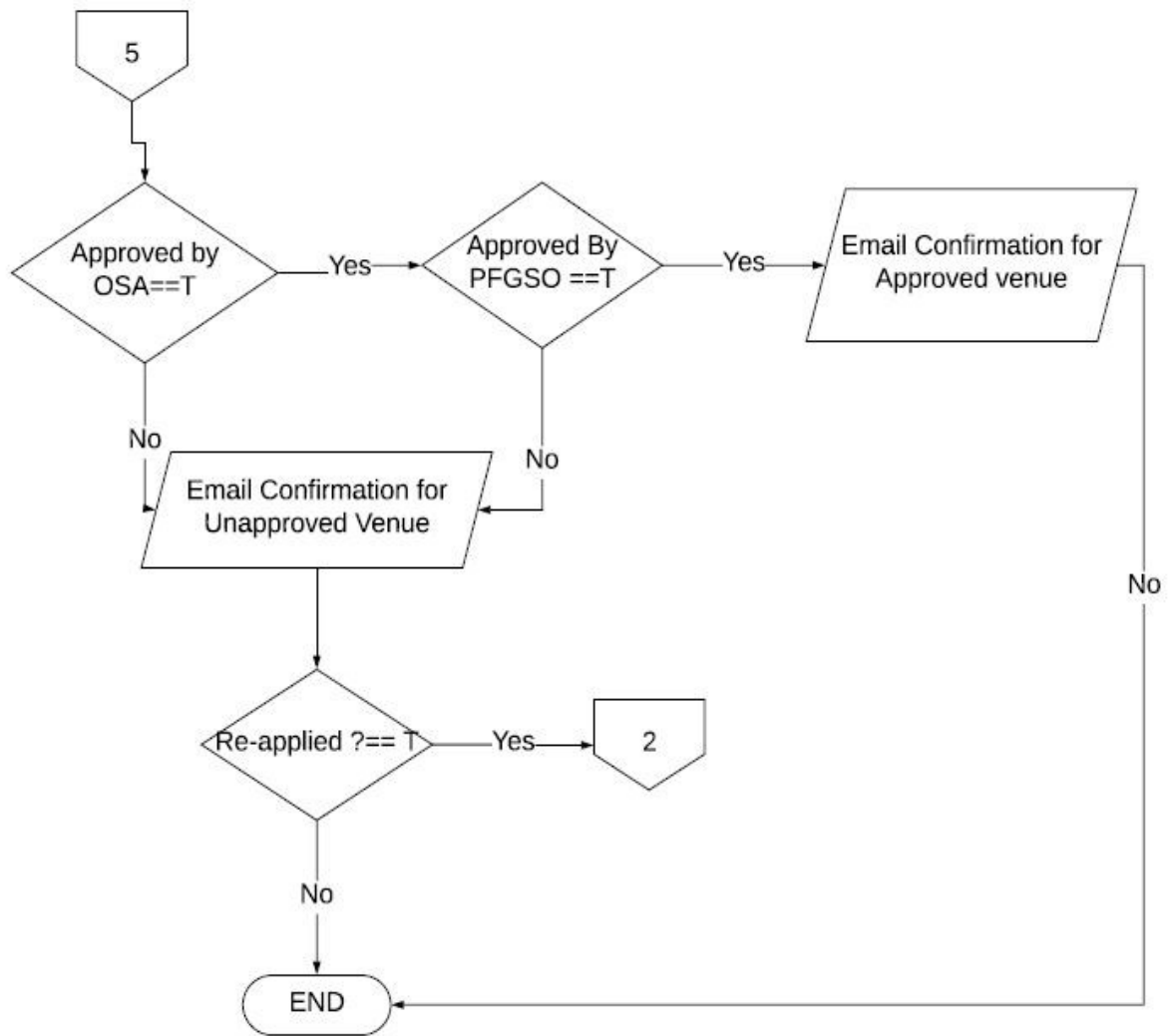**Proposed System Flowchart**

Figure 7.1: Proposed System Flowchart

Figure 7.2: Proposed System Flowchart
(continuation)

Figure 7.3: Proposed System Flowchart
(continuation)

Figure 7.4: Proposed System Flowchart
(continuation)

4.0 RESULTS AND DISCUSSION

Evaluation of the proposed system using ISO 25010 Quality Model

Table 2: Evaluation of the Online Reservation System using ISO 25010 Quality Model

Indicators	Mean	Interpretation
Functional Suitability	3.44	Good
Performance Efficiency	3.13	Good
Compatibility	2.63	Fair
Reliability	3.22	Good
Usability	3.15	Good
Security	3.24	Good
Maintainability	3.27	Good
Portability	3.40	Good
Composite Mean	3.21	Good

The proposed system got an average of 3.21 which is interpreted as "Good" based on the ISO 25010 Quality Model. These findings can be attributed to the following reasons:

(1) the proposed system provides correct results for most of the specified tasks and user objectives.

(2) the response and processing time of the system is good but can be faster with adequate internet speed and hardware specifications.

(3) the proposed system can perform its function in other medium with minimum impact on the design of the interface.

(4) the system has met the requirements for its operation and is accessible when required for use and can be improved by upgrading recovery features.

(5) the system protects users from making error by providing validation features and the aesthetics of the interface provides pleasing experience for the users and can be improved by using appropriate design and texts for its operations.

(6) the system prevents unauthorized access to the data.

(7) the system that can effectively modified without having to decrease its functionality and quality.

(8) the system can be adapted to different environments.

Evaluation of the proposed system using ISO 25010 Quality Model

Table 3: Evaluation of the Feasibility of the Online Reservation System

Considerations	Mean	Interpretation
Technical	4.78	Highly Feasible
Operational	4.54	Highly Feasible
Economic	4.62	Highly Feasible
Environmental	4.61	Highly Feasible
Composite Mean	4.64	Highly Feasible

Table 3 shows the responses of the respondents on the feasibility of the Online Venue Reservation System in terms of technical, operational, economic and environmental considerations. Overall, the respondents agree that adopting the Online Venue Reservation System if "Highly Feasible". Based on the results of the feasibility survey the respondents agree that: 1) the system can be applied to solve the problems currently encountered by the organizations. 2) the current resources are sufficient to adapt the system. 3) the organizations involved have the necessary skills to operate the system. 4) the system has adequate response time. 5) adapting the system will reduce the use of paper which will result decrease in operational costs.

5.0 CONCLUSION

Utilizing the ISO 25010 Quality Model as an assessment tool, results demonstrate that the system was "Good" in terms of functional suitability, performance efficiency, usability, reliability, security, maintainability, and portability while "Fair" in terms of compatibility. The research additionally affirmed that the respondent's level of adaption of the Online Venue Reservation System were confirmed in all terms of technical, operational, economic and environmental considerations.

In line with the results and conclusion mentioned, the following recommendations are put forward:
(1) Test the Online Venue Reservation System in a different organization or environment.
(2) Develop features that will enable the Online Venue Reservation System to be accessible in all types of devices.

6.0 REFERENCES

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