
Software Requirements Specification

for

NASCON Management System

Version 1.0 approved

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<FAST: organization>

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Revision History

Name	Date	Reason For Changes	Version

1. Introduction

1.1 Purpose

This Software Requirements Specification (SRS) document outlines the requirements for developing a NaSCon Management System. The system aims to streamline the organization and management of the NaSCon event held at FAST University. It will address the challenges faced by organizers, participants, sponsors, faculty mentors, and student executives by providing a user-friendly platform for efficient communication, resource allocation, scheduling, and reporting.

1.2 Document Conventions

Standard conventions regarding terminology, formatting, and prioritization will be followed throughout this document. Requirements will be categorized based on their priority level to ensure clarity and focus during development.

1.3 Intended Audience and Reading Suggestions

This document is intended for developers, project managers, designers, testers, and any stakeholders involved in the development and deployment of the NaSCon Management System. Readers are advised to start with the overview sections to gain a comprehensive understanding of the project scope and objectives before delving into specific requirements.

1.4 Product Scope

The NaSCon Management System is designed to automate and streamline the processes involved in organizing and managing the NaSCon event at FAST University. It will facilitate effective communication between stakeholders, efficient resource allocation, scheduling conflict resolution, and comprehensive reporting. The system aims to improve the overall efficiency and effectiveness of NaSCon event management, leading to increased participant satisfaction, sponsor engagement, and successful event outcomes.

2. Overall Description

2.1 Product Perspective

The NASCON Management System is a standalone software solution designed specifically for managing the NASCON event held annually at FAST University. It is a new, self-contained product aimed at streamlining the organization and coordination of various competitions and activities within the NASCON event. This system is not a replacement for any existing systems but is intended to enhance the efficiency and effectiveness of event management processes.

The NASCON Management System interfaces with various external systems, including registration portals, event scheduling tools, and communication platforms. A simplified diagram depicting the

major components and interfaces of the overall system will be provided in the detailed design documentation.

2.2 Product Functions

- *Registration management for participants and teams*
- *Competition scheduling and allocation of venues*
- *Volunteer management and task assignment*
- *Result tracking and announcement*
- *Communication with participants and stakeholders*
- *Financial management for sponsorships and budget tracking*

2.3 User Classes and Characteristics

1. **Administrators:** *Have full access to system functionalities, responsible for overall event management.*
2. **Event Managers:** *Responsible for specific aspects of event planning and execution, such as competition scheduling or volunteer management.*
3. **Participants:** *Students and teams participating in various competitions and activities.*
4. **Student Executives:** *Individuals assisting in event organization and execution.*

2.4 Operating Environment

The NASCON Management System will operate in the following environment:

- **Hardware Platform:** *Standard server hardware with sufficient processing power and memory to handle concurrent user requests.*
- **Operating System:** *Compatible with Linux and Windows operating systems.*
- **Software Components:** *Utilizes a web-based interface accessible via modern web browsers such as Chrome, Firefox, and Safari. Relies on a relational database management system (e.g., MySQL) for data storage.*

2.5 Design and Implementation Constraints

- **Security Considerations:** *The system must adhere to stringent security standards to protect sensitive participant data and financial information.*
- **Integration with External Systems:** *The NASCON Management System must seamlessly integrate with existing registration portals, event scheduling tools, and communication platforms used by FAST University.*
- **User Interface Design:** *The user interface should be intuitive and user-friendly, catering to users with varying levels of technical expertise.*

2.6 User Documentation

The following user documentation components will be delivered along with the software:

- *User Manuals: Comprehensive guides outlining system functionalities and usage instructions.*
- *Online Help: Interactive help features integrated within the system interface.*
- *Tutorials: Step-by-step tutorials for performing common tasks within the NASCON Management System.*
- *The user documentation will adhere to industry-standard formats and delivery methods to ensure accessibility and usability.*

2.7 Assumptions and Dependencies

- *Assumptions:*
 - *The availability of reliable internet connectivity during the NASCON event.*
 - *Compliance with data protection regulations and privacy laws governing the handling of participant information.*
- *Dependencies:*
 - *Integration with third-party APIs for communication and data exchange.*
 - *Availability of necessary hardware and software resources for system deployment and operation.*

3. External Interface Requirements

3.1 User Interfaces

The NaSCon Management System will boast a user-friendly graphical user interface (GUI), accessible via web browsers, with each interface component designed to enhance user experience. General interface characteristics include sample screen images provided in the user interface specification document, adherence to GUI standards for consistency and ease of use, and standard buttons like 'Home', 'Logout', 'Help', and 'Search' available on every screen. Keyboard shortcuts may be implemented for efficiency, and error messages will adhere to a standardized format for clarity. Specialized portals tailored to different user roles—administrators, faculty mentors, student executives, sponsors, and participants—will offer relevant features and functionalities. Accessible online, the UI will be responsive to various screen sizes, ensuring ease of access from any device with internet connectivity. With intuitive design elements, clear navigation pathways, and descriptive labels, the UI will facilitate user interaction, while validation checks on forms and input fields will prevent errors.

3.2 Hardware Interfaces

The NaSCon Management System does not require any specific hardware interfaces. It will be accessible through standard computing devices such as desktop computers, laptops, tablets, and smartphones connected to the internet.

3.3 Software Interfaces

The NaSCon Management System will leverage database functionality to maintain data security and integrity, with development planned to utilize C# ASP.NET for software construction and SQL as the database solution. Integration with external software components, including reporting tools and authentication services, will be facilitated through the use of APIs or communication protocols to ensure seamless interaction and enhance system functionality.

3.4 Communications Interfaces

The NaSCon Management System will facilitate user interaction through standard web browsers utilizing HTTP/HTTPS protocols, supporting modern options like Google Chrome, Mozilla Firefox, Safari, and Microsoft Edge. To bolster security, communication will be encrypted using HTTPS to safeguard data confidentiality during transmission, complemented by robust user authentication and authorization mechanisms to control access to sensitive functionalities and information.

4. System Features

This section will list all the system features of the NASCON Management System.

4.1 Specialized Portals for each User Role

4.1.1 Description and Priority

The "Specialized Portals for each User Role" feature enables the system to dynamically adjust its interface based on the user's role. This means that a regular Participant will see something different when logged in compared to what an Administrator would see.

- Priority: High
- Benefit: 8
- Penalty: 2
- Cost: 4
- Risk: 2

This feature is crucial for providing a tailored user experience and ensuring that each user role has access to relevant functionalities and information. It enhances usability and efficiency by presenting users with only the features and options pertinent to their roles, thereby reducing clutter and potential confusion. Implementing specialized portals will

require careful design and development to ensure seamless navigation and functionality across different user roles.

4.1.2 Stimulus/Response Sequences

1. The user will launch the system.
2. The first page they see is the login page.
3. The user will enter their respective details.
4. The system will look through the database to find these details and then ascertain the role of the user.
5. The system will then display the appropriate home screen for the user regarding their role.

4.1.3 Functional Requirements

- REQ-1: The system will open the login screen within 5 milliseconds of launch.
- REQ-2: The system should give an option to sign up as a new user.
- REQ-3: The system should determine the user's role using only the details entered in the login screen.
- REQ-4: The system shall display the correct homepage regarding the user's role.
- REQ-5: The system should notify the Administrators if there are 5 invalid login attempts within the span of 1 minute.

4.2 Registration Process for Participants

4.2.1 Description and Priority

This feature is of **High** priority. It allows participants to register individually or as teams, along with optional food registration. The priority ratings for this feature components are as follows:

- Benefit: 9
- Penalty: 2
- Cost: 5
- Risk: 3

4.2.2 Stimulus/Response Sequences

1. The user will register as a Participant by:
 - a. choosing the Sign Up option, and then
 - b. choosing the "As a Participant" option.
2. The system will display the Participant registration page.
3. The User will input their respective details onto the page.
4. The User will submit these details.
5. The system will confirm the details and add the User as a Participant to the database.
6. The system will generate an online ticket with the participant's relevant information.
7. The system will display this online ticket to the participant.

4.2.3 Functional Requirements

- REQ-1: Participants shall have the option to register individually or as part of a team, providing team member details as necessary.

- REQ-2: The system shall validate registration data to ensure completeness and correctness.
- REQ-3: Upon successful registration, the system shall generate an online ticket displaying the participant information and event details.
- REQ-4: Participants shall have the option to register for food deals during the registration process.
- REQ-5: The system shall display error messages for incomplete or incorrect registration data, and will guide participants to correct the errors.

4.3 Manage Administration Accounts

4.2.1 Description and Priority

This feature is of **High** priority. It allows administrators to manage accounts for other administrators, including creating new accounts, deleting existing accounts, and modifying account details. The priority ratings for this feature components are as follows:

- Benefit: 8
- Penalty: 3
- Cost: 6
- Risk: 4

4.2.2 Stimulus/Response Sequences

1. The User will login into an Administrator account.
2. The system will display the Administrator homepage.
3. The User will select the option to Manage accounts.
4. The User will be able to input new Admin account details.
5. The system will confirm the details and add the User as an Administrator to the database.

4.2.3 Functional Requirements

- REQ-1: The system shall provide a form for administrators to input new admin account details, including username, password, and role.
- REQ-2: Upon submission, the system shall validate the input data for completeness and correctness.
- REQ-2.1: If the input data is valid, the system shall create a new Admin account and add it to the database.
- REQ-3: The system shall allow administrators to delete existing admin accounts, ensuring that associated data and references are appropriately handled to maintain data integrity.
- REQ-4: Administrators shall be able to modify account details for existing admin accounts, such as username, password, or role.
- REQ-5: The system shall display error messages for incomplete or incorrect input data during account creation or modification.

5. Other Nonfunctional Requirements

5.1 Performance Requirements

- *The system should be able to handle a high volume of concurrent users during peak registration periods without significant degradation in performance.*
- *Response times for user interactions, such as event registration and report generation, should be fast to ensure a smooth user experience.*
- *The system should be scalable to accommodate potential future growth in user base and event participation.*

5.2 Safety Requirements

- *The system should not pose any safety risks to users or stakeholders.*
- *Data entered into the system should be accurately stored and maintained to prevent errors or inaccuracies that could lead to potential safety concerns.*

5.3 Security Requirements

- *User authentication and authorization mechanisms should be in place to ensure that only authorized users can access sensitive functionalities and data.*
- *Data transmission should be encrypted using secure protocols (e.g., HTTPS) to prevent unauthorized access or interception.*
- *Measures should be implemented to protect against common security threats such as SQL injection, cross-site scripting (XSS), and session hijacking.*

5.4 Software Quality Attributes

- *Usability: The system should have an intuitive and user-friendly interface to facilitate ease of use for all stakeholders.*
- *Reliability: The system should operate consistently without unexpected downtime or data loss.*
- *Maintainability: The system should be designed with clean, modular code and well-documented components to facilitate ease of maintenance and future enhancements.*
- *Scalability: The system should be able to scale up or down to accommodate changes in user load and data volume.*
- *Availability: The system should be available and accessible to users at all times, with minimal planned downtime for maintenance activities.*

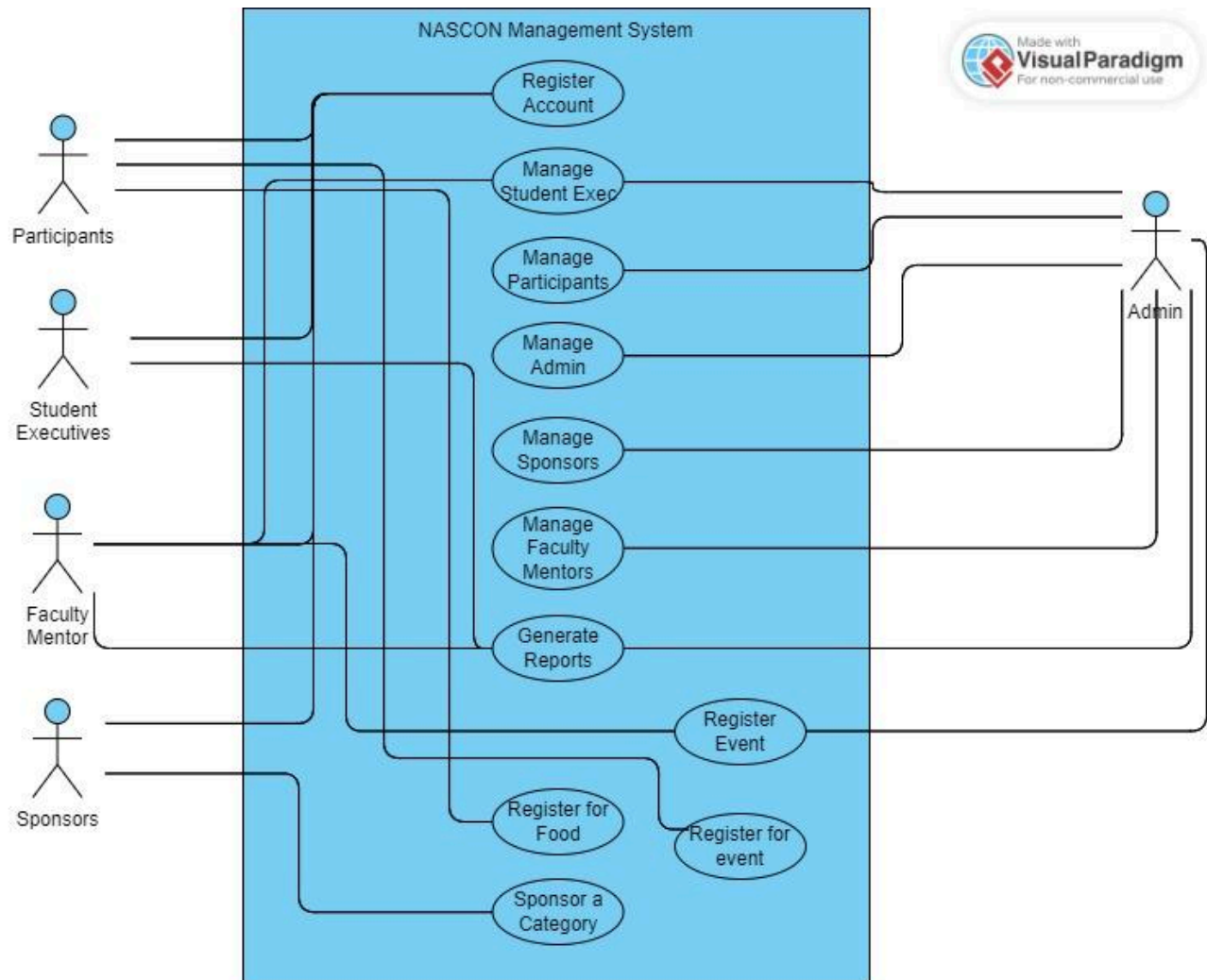
5.5 Business Rules

- *Only administrators have the authority to create, modify, or delete user accounts and system data.*
- *Faculty mentors are responsible for managing student executive accounts within their respective categories.*

- Events, sponsors, and participants must adhere to specified registration and approval processes outlined by the system.
- Payment details provided by sponsors and participants must be securely processed and stored in compliance with relevant regulations.

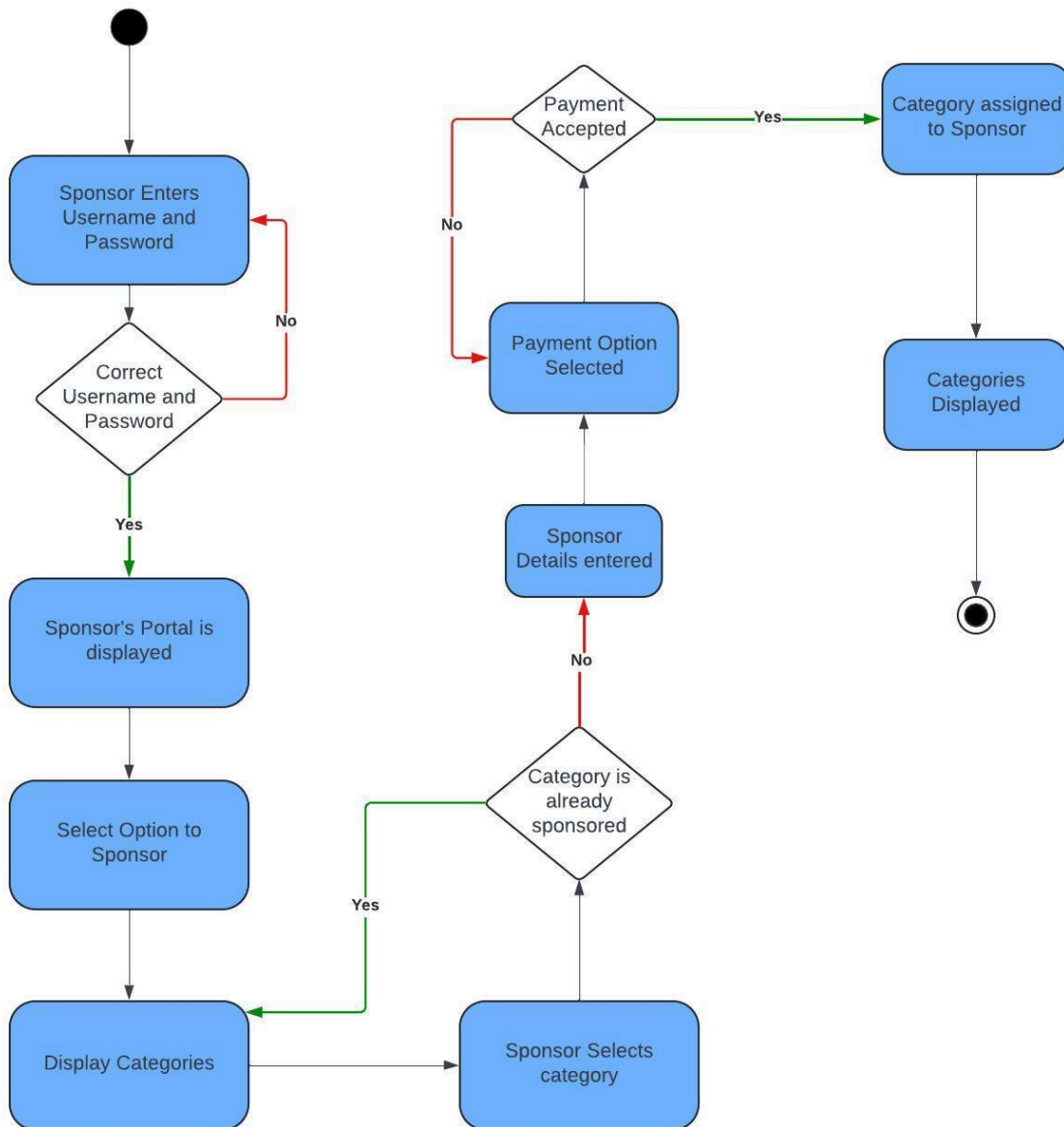
6. Diagrams

6.1 Use Case Diagram

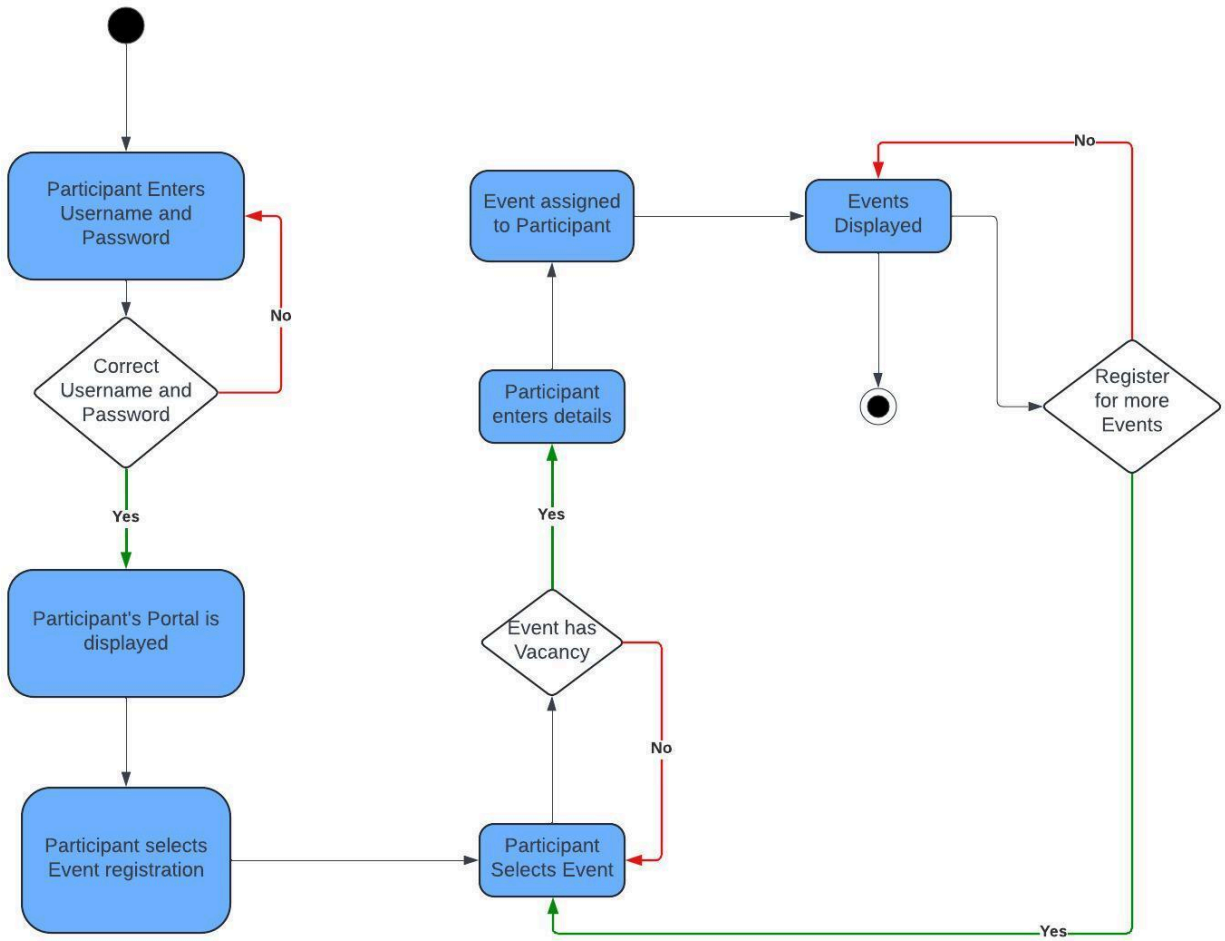


6.2 Activity Diagram

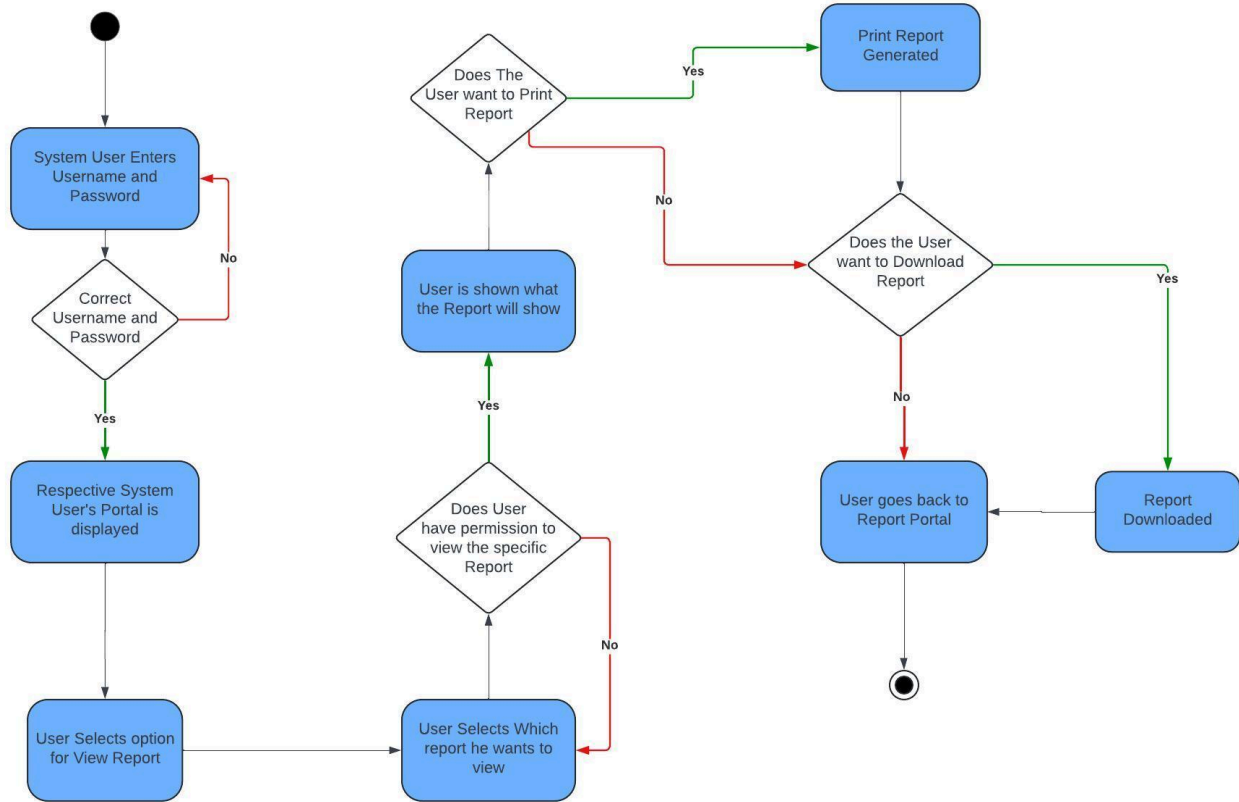
i. Sponsor a Category



ii. Register for Event

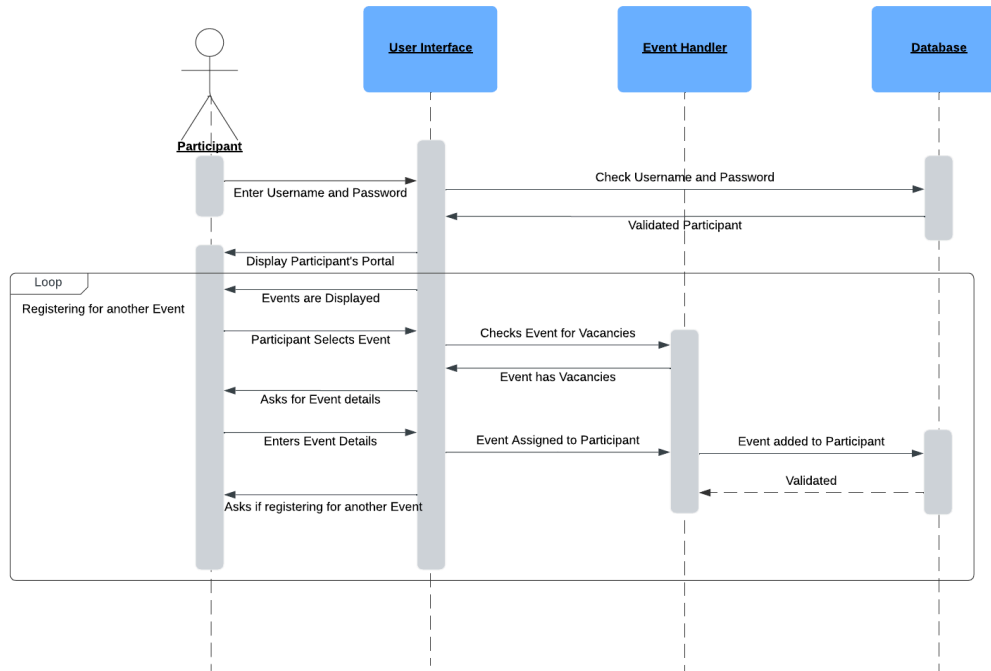


iii. Report Generation

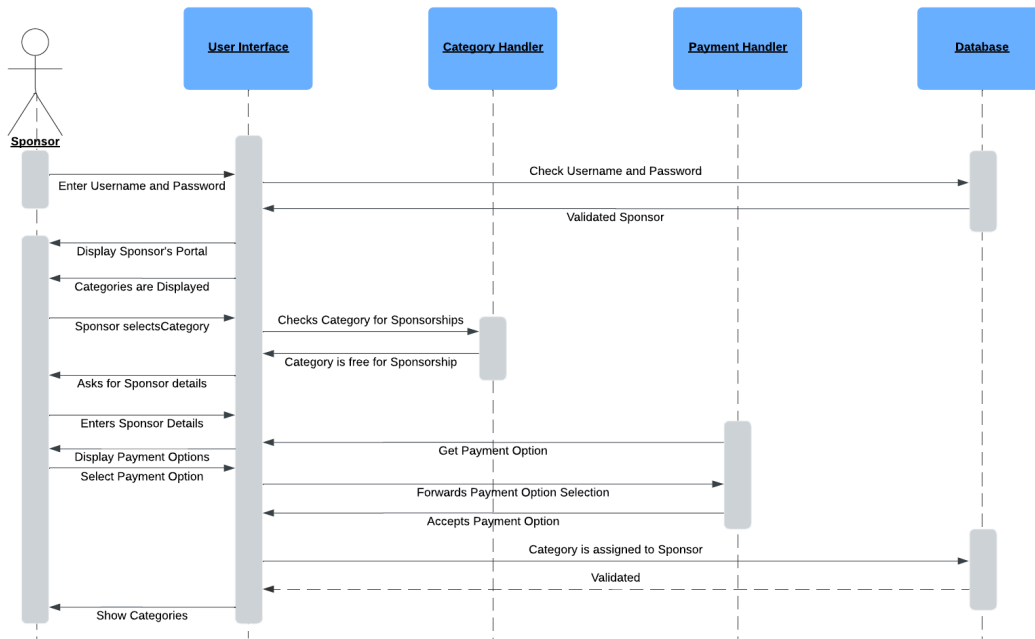


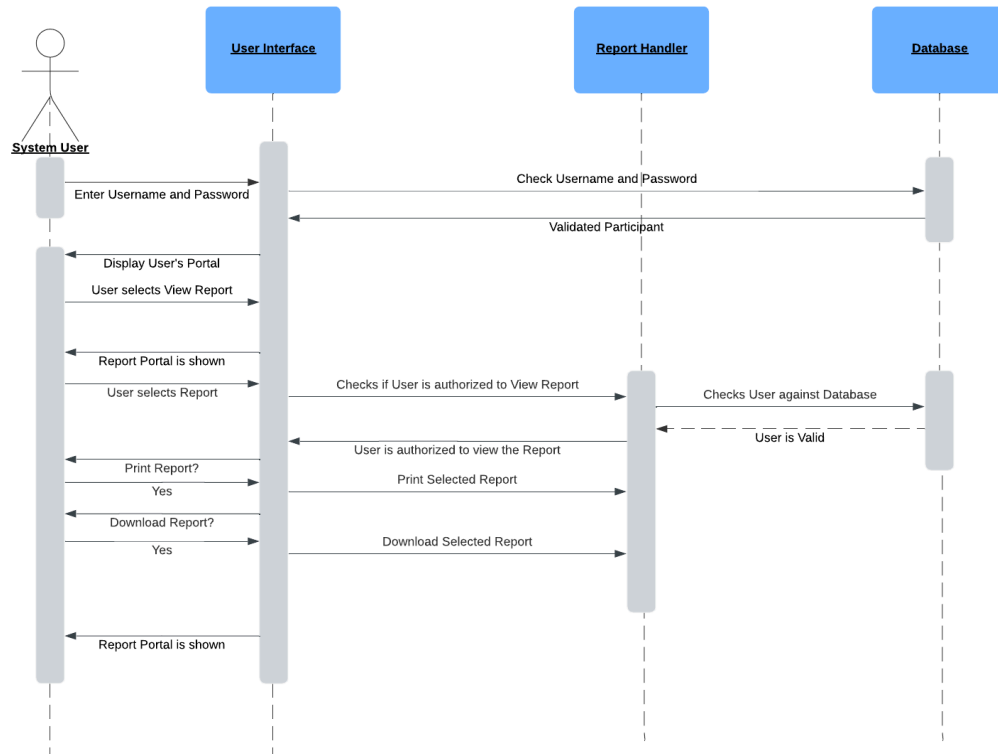
6.3 Sequence Diagram

i. Participant Registers for Event



ii. Sponsor a Category

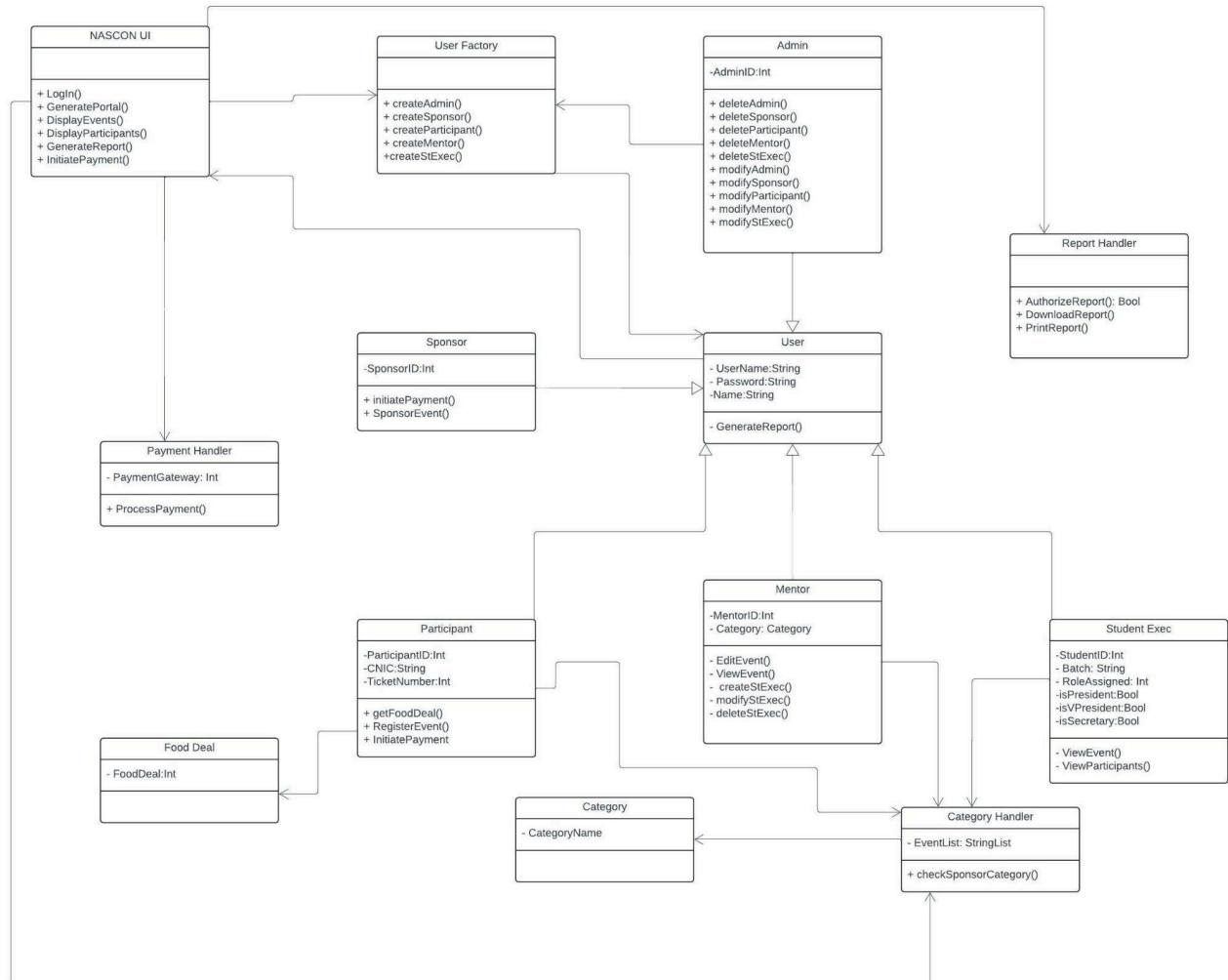


iii. Report Generation

Appendix A: Glossary

Term	Meaning
<i>Specialized Portals</i>	<i>User-specific interfaces tailored to different roles within the NaSCon Management System, providing relevant features and functionalities based on user roles such as administrators, faculty mentors, student executives, sponsors, and participants.</i>
<i>Performance Requirements</i>	<i>Criteria for system performance, including response times, scalability, and the ability to handle high volumes of concurrent users without significant degradation.</i>
<i>Software Quality Attributes</i>	<i>Characteristics of the NaSCon Management System related to usability, reliability, maintainability, scalability, and availability, ensuring a high-quality user experience and system performance.</i>
<i>Security Requirements</i>	<i>Measures to safeguard sensitive information and prevent unauthorized access or breaches within the NaSCon Management System, including user authentication, data encryption, and protection against common security threats.</i>

Appendix B: Analysis Models



Appendix C: Trello ScreenShots

