**Proposed system: Online Event Management System**

Submitted to

Instructor Name

Course Name:

Fundamental Software Engineer COM – 560 – MCSO1

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**PART 1: Project Vision & Scope**

**1. Business requirements for developing application OEMS**

**1.1 Background**

Online Event Management System is a system that would provide a comprehensive platform where events can be organized and managed efficiently. It is a web based system application that will admit event organizers to manage tasks such as ticketing, planning for an event, and management of attendees and analysis of post event. By imposing this latest technology, the system will streamline event operations, enhance user experience, and ensure successful event outcomes. This system is set to revolutionize the way events are coordinated and executed, catering to a wide range of clients and event types.

**1.2 Business Opportunity**

The implementation of OEMS introduces a lucrative business opportunity in the industry of event management. This system will deal with the skyrocketing demand of the event organizations. By providing an user-friendly, affordable and scalable solution; the system aims to attract a wide range of event organizers and businesses seeking efficient event management tools. Due to its convenient, OEMS is assured to make of the most on the needs of the market for innovative technology-driven solutions thus, ensuring high customer satisfaction and a market position that is competitive.

**1.3 Business Objectives and Success Criteria**

**BO-1: the OEMS will provide a comprehensive event security by developing secure registration and measures of access control, ensuring only authorized attendees can participate in events.**

**BO-2: the OEMS will provide convenient tools of managing audio, including integrated speakers, functionalities of recording and microphones, to ease smooth event communication and enhance the engagement of attendee.**

**SC-1: the system's sensors and communication features will enable seamless remote interaction between event organizers and attendees, ensuring efficient temperature adjustments and timely notifications regarding event updates.**

**SC-3: the system will enable event organizers to receive timely alerts through text messages or emails, providing valuable insights into event proceedings, attendee behavior, and potential issues such as crowd management or unauthorized access.**

**1.4 Customer or Market Need**

The OEMS system addresses customer need in the market of event management. In the current world, event organizers face challenges in organizing well the whole process of event planning, attendee engagement and analysis of the post event. Traditional methods lack efficient communication. Besides, they cannot track the attendee, and perform real-time insights. The market demands a comprehensive solution that deals with this issues for a smooth event organization and execution. OEMS will meet this customer need by providing a user-friendly platform that permits organizers to deal with the logistics of events, the process of registration, ticketing, and attendee communication. By offering notifications of events on real-time basis, secure access control, the system will empower event organizers to optimize event experiences and drive higher attendee satisfaction.

**1.5 Business Risks**

**BR-1: the development of OEMS may face constraints of resources, this may lead to delays or cost overruns.**

**BR-2: user acceptance could be a challenge, particularly if the system's interface is complex or requires technical expertise to navigate.**

**BR-3: the development of the system may be time-consuming resulting in customer dissatisfaction with delayed implementation and hindered event planning.**

**2. Vision Statement for home EMC**

The vision for OEMS is to transform the process of planning for an event and how it is executed for organizers worldwide. While focusing on the system efficiency and simplicity, OEMS will entitle event organizers to consistently manage every aspect of their events. OEMS will provide the registration of an event, the process of ticketing, the engagement of the attendee and the analysis of post-event. This will assure an aggregate experience of event for both attendees and organizers. OEMS vision is to become an all-round solution in the industry of managing events. By putting into taking into account the cutting edge technologies, OEMS system will offer real-time communication between attendee and organizers of the events, a secure access control to deny the unauthenticated users from accessing the secure system and comprehensive data insights which will permit event organizers to make informed decisions, enhance attendee satisfaction and drive successful event outcomes.

**3. Scope and Limitations for home EMC**

**3.1 Scope of Initial Release**

The initial release of the OEMS will focus on delivering a user-friendly platform for event organizers to manage event registrations, the whole process of ticketing and basic attendee engagement. It will support the mode of operating online and the main capabilities of monitoring event, serving to a single class of users i.e., event organizers.

**3.2 Scope of Subsequent Releases**

The subsequent releases of the OEMS will focus on boosting user experience with faster and simplified event management features, including one-click controls. The OEMS system will be expanded to accommodate all user classes, including Guests, Minors and Systems Technicians. This will ensure inclusivity and scalability for diverse events.

**3.3 Limitations and Exclusions**

**3.3.1 Limitations**

- The OEMS system will not offer control for all aspects of event at a central point.

- The OEMS system will not provide full automation for every task related to the event but instead it will focus on specific features like; ticketing and registration.

- The OEMS system may be more suitable for smaller to medium-sized events rather than large-scale conventions or festivals.

**3.3.2 Exclusions**

- The OEMS system will exclusively focus on software-based controllers in its development excluding hardware-based controllers.

**PART 2**

**4. Online Event Management System**

**4.1 Potential user features**

**F1:** Users might create an account and register with the OEMS platform to access event management functionalities.

**F2:** Users might create new events by providing event details, such as event name, date, time, location, and description.

**F3:** Users might have access to a personalized dashboard that displays all their created and attended events.

**F4:** Users might manage event tickets, including creating different ticket types and setting ticket prices.

**F5:** Users might view and manage the list of attendees for their events, send event invitations, and track RSVPs.

**F6:** OEMS might integrate with a secure payment gateway, allowing users to sell tickets and collect payments online.

**F7:** Users might promote their events through social media sharing options and email invitations.

**F8:** Users might access real-time analytics and insights on event registrations, ticket sales, and attendee demographics.

**F9:** OEMS might provide communication tools like event notifications, updates, and reminders to attendees.

**F10:** Users might invite co-organizers and team members to collaborate on event planning and management.

**F11:** Users might manage event venues, including booking, availability, and seating arrangements.

**F12:** OEMS might offer customization options for event pages, allowing users to brand their events with logos and banners.

**F13:** Users might manage event resources like catering, equipment, and materials needed for each event.

**F14:** Users might create and display event schedules and agendas for attendees to view.

**F15:** OEMS might have a check-in feature to track attendance and validate tickets at the event venue.

**F16:** Users might cancel or reschedule events and notify attendees about changes.

**F17:** OEMS might offer customer support and a help center for users to seek assistance and resolve issues.

**4.2 Prioritized user features for Online Event Management System**

**4.2.1 Essential User Features\***

EF1: OEMS *shall provide a user registration and login functionality to allow users to create accounts and access the system.*

User Classes: Event organizers, attendees, and administrators.

EF2: OEMS *shall allow users to create and manage events by providing event details, such as event name, date, time, location, and description.*

User Classes: Event organizers and administrators.

EF3: OEMS *shall offer ticket management capabilities, including creating ticket types, setting prices, and facilitating online ticket sales.*

User Classes: Event organizers and administrators.

EF4: OEMS *shall allow users to manage event attendees and send event invitations.*

User Classes: Event organizers and administrators.

EF5: OEMS *shall offer communication tools, such as event notifications and reminders, to keep attendees informed.*

User Classes: Event organizers and administrators.

EF6: OEMS *shall have a check-in feature to validate event attendees and track attendance.*

User Classes: Event organizers and administrators.

EF7: OEMS *shall provide customer support and a help center to assist users with any issues or questions.*

User Classes: All users (event organizers, attendees, and administrators) who may require assistance or support.

EF8: OEMS *shall implement robust security measures to protect user data and ensure privacy.*

User Classes: All users (event organizers, attendees, and administrators) whose data and privacy are protected by the system.

**4.2.2 Desirable User Features\***

DF1: *OEMS should allow event organizers to choose and customize event themes and templates to give their events a unique look and feel.*

User classes that would use this feature: Event organizers.

DF2: OEMS *should integrate with popular social media platforms to enable event organizers to promote events and facilitate social sharing.*

User classes that would use this feature: Event organizers.

DF3: OEMS *should provide tools for event organizers to create and manage email marketing campaigns to reach out to potential attendees.*

User classes that would use this feature: Event organizers.

DF4: OEMS *should offer features to manage event sponsorships, including sponsor registration, tracking benefits, and sponsor recognition.*

User classes that would use this feature: Event organizers.

DF5: OEMS *should allow event organizers to create and conduct surveys and polls to gather feedback and preferences from attendees.*

User classes that would use this feature: Event organizers.

DF6: OEMS *should support QR code-based check-in for faster and more efficient attendee validation at events.*

User classes that would use this feature: Event organizers, attendees, and administrators.

**4.2.3 Optional User Features\***

OF1: OEMS *could offer virtual reality experiences for selected events, providing attendees with immersive and interactive event participation.*

User classes that would use this feature: Attendees.

OF2: OEMS *could provide live streaming and video recording options for events, allowing virtual attendees to access event content on-demand.*

User classes that would use this feature: Event organizers and attendees.

OF3: OEMS *could offer VIP access and premium ticket options with exclusive perks and benefits for high-value attendees.*

User classes that would use this feature: Attendees.

OF4: OEMS *could support on-site event check-in kiosks for a smoother and faster attendee registration process.*

User classes that would use this feature: Event organizers and attendees.

OF5: OEMS *could implement smart badges with Near Field Communication (NFC) technology for easy attendee identification and interaction.*

User classes that would use this feature: Attendees.

OF6: OEMS *could provide virtual event swag bags with digital goodies and offers from sponsors and exhibitors.*

User classes that would use this feature: Attendees.

**4.3 Prioritization of Desirable Features**

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**4.4 Traceability of User Features to User Classes**

|  |  |  |  |
| --- | --- | --- | --- |
|  | **UsrCl-Events** | **UsrCl-2 system technicians** | **UsrCl-3 Guests** |
| **EF-1** | **X** |  |  |
| **EF-2** | **X** |  |  |
| **EF-3** |  |  |  |
| **EF-4** | **X** | **X** | **X** |
| **EF-5** | **X** |  |  |
| **EF-6** | **X** | **X** | **X** |
|  |  |  |  |
| **DF-1** | **X** |  |  |
| **DF-2** | **X** |  |  |
| **DF-3** |  | **X** |  |
| **DF-4** |  |  | **X** |
| **DF-5** | **X** | **X** | **X** |
| **DF-6** |  |  |  |
|  |  |  |  |
| **OF-1** | **X** |  |  |
| **OF-2** | **X** |  |  |
| **OF-3** |  |  | **X** |
| **OF-4** |  | **X** |  |
| **OF-5** | **X** | **X** | **X** |
| **OF-6** | **X** |  |  |

**4.5 Quality Attributes for OEMS**

|  |  |
| --- | --- |
| **Quality Attribute** | **Brief Description** |
| **RE-1** | The OEMS shall provide timely response services within a reasonable time frame to support users in managing events efficiently. |
| **SA-1** | The OEMS shall implement security measures, such as data encryption and access controls, to ensure the safety and privacy of user data and event information. |
| **SE-1** | The OEMS shall incorporate features like user authentication and authorization to prevent unauthorized access and protect sensitive event data. |
| **AV-1** | The OEMS shall strive to maintain high availability, with minimal downtime during regular operations, ensuring users can access and use the platform reliably. |
| **AC-1** | The OEMS shall be accessible from various devices, including mobile phones, tablets, and laptops, to allow users to manage events conveniently from anywhere. |

**RE: response time**

**SA: system safety**

**SE: system security**

**AV: system availability**

**AC: system accessibility**

**PART 3: Business Rules and Use Cases**

**Use case diagram**



**5.0 Features included in the Online Event Management System**

**EF-1:** *The OEMS system shall allow users to create and manage events, enabling them to schedule and organize various occasions such as parties, gatherings, and celebrations.*

**EF-2:** *The OEMS system shall provide customizable invitations and RSVP management, enabling users to design and send event invitations to their contacts and track the responses efficiently.*

**EF-3:** *The OEMS system shall include a guest list feature, allowing users to manage and update the list of attendees for their events, ensuring seamless check-in and coordination on the day of the event.*

**EF-4:** *The OEMS system shall integrate a calendar function, enabling users to view their event schedule at a glance and avoid scheduling conflicts with other commitments.*

**EF-5:** *The OEMS system shall offer a payment and ticketing module, allowing event organizers to set up ticket sales for paid events, track sales, and provide attendees with digital or printable tickets.*

**EF-6:** *The OEMS system shall include a communication platform, enabling event organizers to send updates, announcements, and important information to attendees before, during, and after the event.*

**DF-1:** *The OEMS system should provide integration with popular social media platforms, allowing users to share event details, photos, and updates seamlessly with their social network.*

**DF-2:** *The OEMS system should offer analytics and reporting features, providing event organizers with insights into attendee engagement, ticket sales, and other relevant metrics to improve future event planning.*

**5.1 Business rules included in the Online Event Management System**

|  |  |  |  |
| --- | --- | --- | --- |
| **Business**  **Rules** | **Definition** | **Type of Rule** | **Source** |
| **BR-1** | Each event must have a unique identifier | Fact | Vision statement |
| **BR-2** | Attendees cannot purchase tickets after the event has started. | Constraint | SRS |
| **BR-3** | The OEMS system will calculate the total ticket sales revenue for each event. | computation | SRS |
| **BR-4** | Error code 102 indicates an issue with payment processing | Inference | SRS |
| **BR-5** | The system will generate a confirmation email for each attendee after successful registration. | Action enabler | Vision statement |
| **BR-6** | Event organizers must be able to edit event details until one week before the event date. | Inference | SRS |
| **BR-7** | The system should provide a refund to attendees if an event is canceled by the organizer. | Fact | System technicians |
| **BR-8** | Attendees must agree to the terms and conditions before completing the registration. | Action enabler | System sponsor |
| **BR-9** | Each event listing should display the remaining number of available tickets. |  |  |
| **BR-10** | The system should validate attendee email addresses to ensure they are in a proper format. |  |  |

**5.2 Traceability of business rules to Online Event Management System**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Use case  Feature | **UC-1:**  Create  Event | **UC-2:**  Manage  Event | **UC-3:**  Send Invitations | **UC-4:**  Accept/Reject  Invitation | **UC-5:**  Update  Event Schedule |
| **BR-1** | X | X | X | X | X |
| **BR-2** |  | X |  |  | X |
| **BR-3** |  |  |  |  |  |
| **BR-4** |  | X |  |  | X |
| **BR-5** |  |  | X |  |  |
| **BR-6** |  |  |  |  | X |
| **BR-7** |  | X | X | X | X |
| **BR-8** |  | X |  |  | X |
| **BR-9** |  |  |  |  | X |
| **BR-10** |  |  |  |  |  |

**5.3 Use cases for Online Event Management System**

5.3.1 Use case #1 for OEMS system

*Use case ID: UC-1*

*Use case name: Create and Manage Event*

*Primary actor that initiates the use case: Event Organizer*

*Secondary actors, if any: Attendees, System Administrator*

*Statement of purpose:* This use case describes the scenario where an event organizer creates and manages an event through the OEMS system. The organizer can input event details, set up ticketing, invite attendees, and manage event-related information.

*Preconditions that must be true before this use case can be executed:*

1. The event organizer must have a registered account on the OEMS system.

2. The event organizer must be logged in.

*Primary scenario that describes the normal course of this use case:*

1. The event organizer logs into the OEMS system.

2. The organizer selects the "Create Event" option from the dashboard.

3. The system presents a form for the organizer to input event details, including event name, date, time, location, and description.

4. The organizer sets up ticketing options, including ticket types, prices, and availability.

5. The organizer can choose to send event invitations through the system, which sends out email notifications to potential attendees.

6. Attendees can register for the event through the provided link in the invitation.

7. The system allows the organizer to track ticket sales, attendee RSVPs, and other event-related metrics.

8. The organizer can make updates to event details if needed, such as changing the date or description.

*Alternative cases for exception handling:*

1. The system experiences technical issues and cannot create the event.

2. The organizer forgets to set ticket prices, making registration impossible.

3. Attendees encounter difficulties during registration due to system errors.

*Features incorporated in this business case:*

**EF-1:** *The OEMS system shall allow users to create and manage events.*

**EF-2:** *The OEMS system shall provide customizable invitations and RSVP management.*

**EF-5:** *The OEMS system shall offer a payment and ticketing module.*

*Business rules for this use case:*

**BR5:** The system should validate event details and ensure the event date is in the future.

**BR12:** Attendees must provide valid information during registration.

*Post conditions that must be true after this use case is executed:*

1. The event is successfully created and added to the system's database.

2. Attendees can register for the event using the provided registration link.

3. The event organizer can monitor ticket sales, RSVPs, and other event-related data.

**5.4.2 Use case #2 for OEMS system**

*Use case ID: UC-2*

*Use case name: Register for Event*

*Primary actor that initiates the use case: Attendee*

*Statement of purpose:* This use case outlines the process in which an attendee registers for an event using the OEMS system. Attendees can provide their information, select ticket options, and complete the registration process.

*Preconditions that must be true before this use case can be executed:*

1. The attendee must have access to the OEMS system through a web browser or mobile app.

2. The event for which the attendee wants to register must be available and accepting registrations.

*Primary scenario that describes the normal course of this use case:*

1. The attendee accesses the OEMS system and navigates to the list of available events.

2. The system displays event listings with details such as event name, date, location, and ticket options.

3. The attendee selects the desired event to register for.

4. The system prompts the attendee to provide registration details, including name, email, and any additional information required by the organizer.

5. The attendee chooses the preferred ticket type and quantity.

6. The system calculates the total cost and presents the attendee with payment options.

7. The attendee selects a payment method (credit card, PayPal, etc.) and enters the necessary payment information.

8. The system processes the payment and confirms the successful registration.

9. The attendee receives a confirmation email with event details and a unique registration ID.

*Alternative cases for exception handling:*

1. The attendee encounters technical issues during the registration process.

2. The attendee provides invalid payment information, leading to a failed payment.

3. The event reaches its maximum attendee capacity while the attendee is in the registration process.

*Features incorporated in this business case:*

**EF-2:** *The OEMS system shall provide customizable invitations and RSVP management.*

**EF-5:** *The OEMS system shall offer a payment and ticketing module.*

*Business rules for this use case:*

**BR12:** *Attendees must provide valid information during registration.*

**BR15:** *The system should validate payment information before processing the payment.*

*Post conditions that must be true after this use case is executed:*

1. The attendee's registration information is stored in the system's database.

2. The attendee's payment is successfully processed and recorded.

3. The attendee receives a confirmation email with event details.

**5.4.3 Use case #3 for OEMS system**

*Use case ID: UC-3*

*Use case name: Manage Attendee List*

*Primary actor that initiates the use case: Event Organizer*

*Statement of purpose:* This use case describes how an event organizer manages the attendee list for their event using the OEMS system. The organizer can view, edit, and communicate with attendees to ensure a successful event.

*Preconditions that must be true before this use case can be executed:*

1. The event organizer must have a registered account on the OEMS system.

2. The event for which the attendee list needs to be managed must exist.

*Primary scenario that describes the normal course of this use case:*

1. The event organizer logs into the OEMS system.

2. The organizer navigates to the event management dashboard.

3. The system displays a list of attendees registered for the selected event, including their names, contact information, and registration status.

4. The organizer can view individual attendee details and access their registration information.

5. The organizer has the option to mark attendees as "checked in" when they arrive at the event venue.

6. The organizer can send announcements or updates to all registered attendees through the system's communication feature.

7. If needed, the organizer can modify attendee information or cancel individual registrations.

*Alternative cases for exception handling:*

1. The system experiences technical issues, making it difficult for the organizer to access or manage the attendee list.

2. The organizer accidentally makes changes to attendee information without proper authorization.

3. Attendees complain about not receiving event-related announcements due to communication issues.

*Features incorporated in this business case:*

**EF-3:** *The OEMS system shall include a communication platform.*

*Business rules for this use case:*

**BR12:** *Attendees must provide valid information during registration.*

**BR17:** *The system should have appropriate security measures to prevent unauthorized access to attendee data.*

*Post conditions that must be true after this use case is executed:*

1. The attendee list and their registration status are updated according to the organizer's actions.

2. Attendees who have checked in are marked as such in the system.

3. Attendees receive event-related announcements if sent by the organizer.

**5.4.4 Use case #4 for OEMS system**

*Use case ID: UC-4*

*Use case name: Generate Event Reports*

*Primary actor that initiates the use case: System Administrator*

*Statement of purpose:* This use case outlines the process in which a system administrator generates event reports using the OEMS system. Reports can include attendee statistics, ticket sales data, and other event-related metrics.

*Preconditions that must be true before this use case can be executed:*

1. The system administrator must have proper access rights to generate reports.

2. Relevant event data must be available in the system's database.

*Primary scenario that describes the normal course of this use case:*

1. The system administrator logs into the OEMS system with administrative privileges.

2. The administrator accesses the reporting section of the system.

3. The system provides a list of available report types, such as attendee statistics, ticket sales, or event feedback.

4. The administrator selects the desired report type to generate.

5. The system generates the report based on the selected parameters and data filters.

6. The report is displayed or downloaded in a suitable format, such as PDF or CSV.

7. The administrator can further analyze the report or share it with other stakeholders.

*Alternative cases for exception handling:*

1. The system encounters technical issues and fails to generate the requested report.

2. The administrator selects inappropriate parameters or filters, leading to inaccurate or irrelevant reports.

*Features incorporated in this business case:*

**EF-2:** *The home OEMS system shall provide customizable invitations and RSVP management.*

**EF-5:** *The home OEMS system shall offer a payment and ticketing module.*

*Business rules for this use case:*

**BR20:** *The system should ensure that generated reports are accurate and up-to-date.*

**BR23:** *Administrators should have proper access control to prevent unauthorized report generation.*

*Post conditions that must be true after this use case is executed:*

1. The system generates the requested report based on the administrator's specifications.

2. The report provides valuable insights and metrics related to the selected event data.

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