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**SYSTEM REQUIREMENTS DOCUMENT**

Andres Espin,Carlos Jaya,Josue

Computer Science Department, University of the Armed Forces ESPE

2296: Advanced Web Applications

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# Lista de Cambios

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| HISTORIAL DE CAMBIOS | | | | | |
| **Num.** | **Name** | **Date** | **Reason for changes** | **Descriptions** | **Version** |
| 1 | Andres Espin | 10/11/2024 | Edit DRS | Create the document for the system requirements | Version 1 |
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**DSYSTEM REQUIREMENTS DOCUMENT**

# Introducción

This system requirements document presents a detailed and structured overview of the elements necessary for the development of a web platform for the comprehensive management of a foreign policy and diplomacy club. In particular, this platform seeks to optimize activities related to the human talent area, facilitating the incorporation of new applicants, the management of absence justifications, and the automation of communications, currently carried out manually. This document, based on IEEE 830 regulations, provides clear and comprehensive guidance on the needs of the system, ensuring that all relevant aspects of the project are considered and documented accurately.

The proposed platform aims not only to reduce the administrative burden on Erick's team, but also to ensure a fluid user experience through an intuitive interface and functionalities that facilitate the management of key processes, such as the reception of applications and the automation of notifications by email and WhatsApp. This will allow the team to optimize the time and resources invested in the manual registration of applicants and the management of absence justifications.

Throughout this document, the project participants are described in detail, including their specific roles and responsibilities, as well as their expectations and competencies. In addition, the system's objectives are defined, which are aligned with improving the user experience, ensuring the efficiency of the human talent management and justification processes, and facilitating the scalability and security of the system. Each objective is broken down into specific sub-objectives that guide the development and implementation of the platform, ensuring that the client's needs and expectations are effectively met.

The document includes an exhaustive catalogue of functional and non-functional requirements, essential for the success of the project. The functional requirements address aspects such as the creation of modules for the reception and management of applications, the registration and organization of applicants, the automated sending of notifications, and the tracking of justifications for absences. On the other hand, the non-functional requirements focus on key areas such as modular architecture, security, and system documentation, ensuring that the system is robust and adaptable to future club needs. This document not only serves as a guide for the development team, but also acts as a contract between developers and stakeholders, establishing a clear framework for communication and collaboration throughout the project lifecycle.

# Project participants

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| StakeHolders | Description | Agent | Contact information | Availability | Job position |
| Customer | Leader of the human talent area | Erick Herrera | 0982868850 | Monday-Friday  8:00am – 6:00pm  Saturday  8:00am – 2:00pm | He is in charge of managing human resources within the club. |
| Area leader | Manages the area that corresponds to him within the club | Several people | 0958870928 | Monday-Friday  8:00am – 6:00pm  Saturday  8:00am – 2:00pm | There are 5 areas within the club and each area handles different things. |
|  |  |  |  |  |  |
| Developmenteam | The bug Slayer | Andres Espin,Carlos Jaya, Josue Guallichico | 096 938 6949 | Monday-Friday  5:00 pm – 7:00pm | They are responsible for carrying out the creation of the project |

# Initial system description

# System Objectives

|  |  |
| --- | --- |
| **Obj-01** | Ensure Security |
| **Versión** | 1.0 |
| Authors | Andres Espin,Carlos Jaya, Josue Guallichico |
| Sources | Erick, administrador del area de recursos humanos del club. |
| **Description** | The system must ensure the security of data flow within the platform, safeguarding personal information of applicants and club members, and protecting against unauthorized access. The platform will also guarantee that all processes related to application submissions, attendance tracking, and justifications are securely managed to prevent data breaches and misuse of information. |
| Sub-objectives | 1. Secure user and club member information, ensuring it is not accessible by unauthorized parties. 2. Manage data flow in a way that both club administrators and members have a secure and reliable experience. 3. Maintain complete and up-to-date technical documentation that describes the system architecture, components, and data flow.. |
| Importance | Moderate |
| Urgency | High |
| Status | Pending |
| Stability | Medium |
| Comments | Implement monitoring protocols to detect any unauthorized access attempts or potential security threats. |

Tabla 2 Objetivo del Sistema 01

|  |  |
| --- | --- |
| **Obj-02** | Streamline Application Management |
| **Versión** | 1.0 |
| Authors | Andres Espin,Carlos Jaya, Josue Guallichico |
| Sources | Erick, administrador del area de recursos humanos del club. |
| **Description** | The system must simplify the process of receiving and managing applications for new club members. Currently handled manually through Google Forms, the platform will automate data collection, organization, and notifications for applicants, allowing talent management to easily track and review applicant information. |
| Sub-objectives | * Create an automated module for receiving applications with organized applicant data. * Develop notification systems to inform applicants of their application status via email and WhatsApp. * Enable easy access for administrators to review applicant data and track application progress. |
| Importance | High |
| Urgency | High |
| **Status** | Pending |
| Stability | High |
| **Comentarios** | Automation should reduce the manual workload of the team, enabling a faster and more efficient application review process. |

Tabla 3 Objetivo del Sistema 02

|  |  |
| --- | --- |
| **Obj-03** | Optimize Absence Justification Process |
| **Versión** | 1.0 |
| Authors | Andres Espin,Carlos Jaya, Josue |
| Sources | Erick, administrador del area de recursos humanos del club. |
| **Description** | The platform will allow club members to submit justifications for absences, with an automated process for review, approval, and notifications. This will replace the current manual system of sending justifications and authorizations, streamlining the workflow for both club members and administrators. |
| Sub-objectives | * Create a module for members to submit absence justifications with relevant details. * Enable automated notifications for club administrators to review justifications and approve or deny them. * Maintain a record of absence justifications, accessible to administrators for future reference. |
| Importance | High |
| Urgency | High |
| **Status** | Pending |
| Stability | High |
| **Comentarios** | This structure outlines objectives with a focus on security, application management, and absence justification, tailored to the needs of Erick’s club management system. |

Tabla 4Objetivo del Sistema 03

# System Requirements Catalog

## Information Requirement

|  |  |
| --- | --- |
| **IRQ-01** | Applicant Management |
| **Version** | 1.0 (10/11/2024) |
| Authors | Andres Espin,Carlos Jaya, Josue Guallichico |
| Sources | Erick, administrador del area de recursos humanos del club. |
| **Objetivos asociados** | Obj-01: Ensure Security  Obj-02: Streamline Applicant Management |
| Associated Requirements | Notification module, Application review module |
| Description | The system must allow the secure reception and storage of applicant information, facilitating review and management by the club's human resources team. |
| Lifetime | Permanent |
| Simultaneous Occurrences | Unlimited |
| Importance | Vital |
| Urgency | Immediate |
| Status | Pending for development |
| Stability | High |
| Comments | Applicant management should include automated notifications to inform applicants about the status of their application. |

Tabla 5 Requisito de almacenamiento de información 1

|  |  |
| --- | --- |
| **IRQ-2** | Absence Justification System |
| **Version** | 1.0 (10/11/2024) |
| Authors | Andres Espin,Carlos Jaya, Josue Guallichico |
| Sources | Erick, club’s HR administrator |
| **Objetivos asociados** | Obj-01: Ensure Security  Obj-03: Optimize Absence Justification Process |
| Associated Requirements | Justification module, Authorization notifications |
| Description | The system must allow club members to submit absence justifications, which will be reviewed and authorized by the administration team. |
| Lifetime | Permanent |
| Simultaneous Occurrences | Unlimited |
| Importance | Vital |
| Urgency | Immediate |
| Status | Pending for development |
| Stability | High |
| Comments | The justification process should include an approval workflow and notifications to both the member and the administrator once the justification is authorized or rejected. |

Tabla 6Requisito de almacenamiento de información 2

## Functional requirements

### Use case diagrams

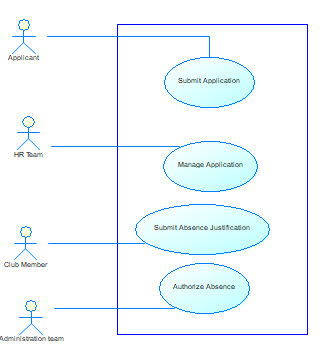


Figura 4 Apartado de Planes de Internet

### 5.2.1.1 USE CASE APPLICANT MANAGEMENT:

|  |  |  |
| --- | --- | --- |
| **UC-01** | Application Reception and Management | |
| **Version** | 1.0 (10/11/2024) | |
| Authors | Andres Espin,Carlos Jaya, Josue | |
| Sources | Erick, manager of the club's human resources area. | |
| Associated Objectives | * Obj-02: Streamline Applicant Management | |
| Associated Requirements | RQ-01: Applicant Management | |
| **Description** | The system should allow club applicants to submit their applications through an online form on the platform. The system will organize and securely store this information for review by the human resources team. | |
| Precondition | The applicant must have access to the platform and complete the application form. | |
| Normal Sequence | **Step** | **Action** |
| 1 | The applicant accesses the application form. |
| 2 | The applicant completes and submits the form. |

|  |  |  |
| --- | --- | --- |
|  | 3 | he system organizes the information and notifies the human resources team. |
| Precondition | The applicant must have access to the platform and complete the application form. | |
| Exceptions | **Step** | **Action** |
| 1 | Error loading the form. The applicant should be notified and allowed to retry. |
| 2 | Internet connection issue. The system will display an error message and invite the user to retry. |
|  | 3 | Incomplete form. The system will not allow submission until all required fields are filled. |
| Performance | **Step** | **Time Queue** |
| 1 | 2 seconds |
| Expected Frequency | 20 times/day | |
| Importance | High, as it is crucial for attracting new applicants. | |
| Urgency | High | |
| **Status** | Proposed | |
| Stability | High | |
| Comments | It is essential that the system notifies both administrators and applicants about the status of their applications. | |

Tabla 7Requisito funcional 01

### 5.2.1.2 USE CASE: JUSTIFICATION OF ABSENCES:

|  |  |  |
| --- | --- | --- |
| **UC-02** | Absence Justification Submission | |
| **Version** | 1.0 (10/11/2024) | |
| Authors | Andres Espin,Carlos Jaya, Josue | |
| Sources | Erick, manager of the club's human resources area. | |
| Associated Objectives | * O Obj-03: Optimize Absence Justification Process | |
| Associated Requirements **s** | IRQ-02: Absence Justification System | |
| **Description** | The system should allow club members to submit justifications for absences through a dedicated form, which will be reviewed by the administration. This feature automates notifications regarding the acceptance or rejection of justifications. | |
| Precondition | The member must have access to the platform and an account with appropriate permissions. | |
| Normal Sequence | **Step** | **Actions** |
| 1 | The member accesses the absence justification form. |
| 2 | The member completes and submits the justification with relevant details. |
|  | 3 | The system notifies the administration team for review. |
|  | 4 | The administration approves or rejects the justification. |
|  | 5 | The system notifies the member of the decision. |

|  |  |  |
| --- | --- | --- |
| Postcondition | The justification is recorded in the system, and the member is informed of the outcome. | |
| Exceptions | **Steps** | **Actions** |
| 1 | Error loading the form. Notify the member and allow retry. |
| 2 | Decision pending. Send reminder to the administration team. |
|  | 3 | Incomplete form. The system will not allow submission until all required fields are filled. |
| Performance | **Step** | Time Queue |
| 1 | 2 seconds |
| Expected Frequency | 20 times/day | |
| Importance | High, as it is crucial for attracting new applicants. | |
| Urgency | High | |
| Status | Proposed | |
| Stability | High | |
| Comments | Automating this process reduces the manual workload for administrators and ensures members are promptly informed of decisions. | |

Tabla 8 Requisito funcional 02

5.2.1.3 USE CASE: NOTIFICATION MANAGEMEN

|  |  |  |
| --- | --- | --- |
| **UC-03** | Contact section | |
| **Version** | 1.0 (10/11/2024) | |
| Authors | Andres Espin,Carlos Jaya, Josue | |
| Sources | Erick, manager of the club's human resources area. | |
| Associated Objectives | * Obj-02: Streamline Applicant Management * Obj-03: Optimize Absence Justification Process | |
| Associated Requirements | Notification module | |
| **Description** | The system should automatically send notifications to members regarding important updates, such as application status changes, absence justification decisions, and upcoming events. | |
| Precondition | A member or applicant is registered in the system with contact information. | |
| Normal Sequence | **Step** | **Action** |
| 1 | The system detects an event that requires notification (e.g., application approval). |
| 2 | The system prepares and sends a notification via email and/or WhatsApp. |
| 3 | The member receives the notification. |

|  |  |  |
| --- | --- | --- |
| Postcondition | The member is informed of relevant updates. | |
| Exceptions | **Step** | **Action** |
| 1 | Notification delivery failure. The system will retry or log an error. |
| Performance | **Step** | **Queue time** |
| 1 | 1 second |
| Expected Frequency | 50 times/day | |
| Importance | High, it is of high importance for the stablishment that it can communicate with its clients | |
| Urgency | High | |
| Status | Proposed | |
| Stability | High | |
| Comments | This feature ensures timely communication with members, enhancing the efficiency of the club’s operations. | |

Tabla 9Requisito funcional 03

### 5.2.1.4 USE CASE: ADMINISTRATOR DASHBOARD

|  |  |  |
| --- | --- | --- |
| **UC-04** | Administrator Dashboard Access and Management | |
| **Version** | 1.0 (10/11/2024) | |
| Authors | Andres Espin,Carlos Jaya, Josue | |
| Sources | Erick, manager of the club's human resources area. | |
| Associated Objectives | * Obj-01: Ensure Security * Obj-02: Streamline Applicant Management * Obj-03: Optimize Absence Justification Process | |
| Associated Requirements | IRQ-01: Applicant Management  IRQ-02: Absence Justification System | |
| **Description** | The system should provide an administrator dashboard that allows authorized personnel to manage applications, review absence justifications, and monitor notifications. | |
| Precondition | The user must have administrator permissions. | |
| Normal Sequence | **Step** | **Action** |
| 1 | The administrator logs into the dashboard. |
| 2 | |  | | --- | |  | | The administrator accesses sections to review applications, justifications, and notifications. | |
| 3 | The administrator can approve/reject justifications, update applicant statuses, and monitor activity logs. |

|  |  |  |
| --- | --- | --- |
| Postcondition | The administrator manages club operations effectively. | |
| Exceptions | **Steps** | **Action** |
| 1 | Login error or unauthorized access attempt. The system will log the attempt and deny access. |
| 2 | System error in accessing dashboard sections. Notify the administrator and provide troubleshooting options. |
| **Performance** | **Step** | Time Queue |
| 1 | 2 seconds |
| Expected Frequency | 20 times/day | |
| Importance | Critical | |
| Urgency | Immediate | |
| Status | Proposed | |
| **Stability** | High | |
| Comments | A centralized dashboard improves operational oversight, ensuring efficient club management. | |

Tabla 10Requisito funcional 04

### Definition of actors

|  |  |
| --- | --- |
| **ACT-01** | Applicant |
| Description | Individual interested in joining the club, who submits an application through the platform. |
| Comments | Their participation is essential as they are the main users of the application module, interacting directly with the system to apply for membership. |

Tabla 11 Actor 01

|  |  |
| --- | --- |
| **ACT-02** | Club Administrator |
| Description | Person responsible for managing applications, reviewing absence justifications, and overseeing club activities through the administrator dashboard. |
| Comments | Provides essential operational oversight, ensuring smooth and efficient management of applications, justifications, and notifications within the platform. |

Tabla 12Actor 02

|  |  |
| --- | --- |
| **ACT-03** | Club Member |
| Description | An accepted member of the club who can submit absence justifications and receive notifications for important club updates. |
| Comments | Plays a key role in maintaining up-to-date records within the club, interacting with the system to justify absences and stay informed on relevant events. |

Tabla 13Actor 03

|  |  |
| --- | --- |
| **ACT-04** | System Administrator |
| Description | Technical support responsible for the system's maintenance, ensuring security, data integrity, and resolving technical issues. |
| Comments | Crucial for system upkeep and troubleshooting, this role is responsible for implementing updates, monitoring security, and ensuring the platform operates without issues. |

## Non-functional requirements

|  |  |
| --- | --- |
| **RNF-001** | Performance |
| **Version** | 1.0 (10/11/2024) |
| Authors | Andres Espin,Carlos Jaya, Josue |
| Sources | Erick, manager of the club's human resources area. |
| **References** | Obj-02: Streamline Applicant Management  UC-01: Application Reception and Management  UC-03: Automatic Notifications to Members  IRQ-01: Applicant Management |
| **Category** | Performance |
| **Description** | The system must handle 50 simultaneous application submissions without impacting performance. Response time should not exceed 2 seconds under a load of 500 simultaneous users. CPU usage should remain below 80% during load testing with 500 simultaneous users, and memory usage should not exceed 6GB under these conditions. |
| **Importance** | High |
| **Status** | Pending verification |
| **Coments** | This requirement ensures the system performs optimally under expected load, meeting client expectations for efficiency and responsiveness. |

Tabla 15 Requisitos no funcional 01

|  |  |
| --- | --- |
| **RNF-002** | Security |
| **Version** | 1.0 (10/11/2024) |
| Authors | Andres Espin,Carlos Jaya, Josue |
| Sources | Erick, manager of the club's human resources area. |
| **References** | Obj-01: Ensure Security  UC-04: Administrator Dashboard Access and Management  IRQ-02: Absence Justification System |
| **Category** | Security |
| **Description** | The system must secure all sensitive information related to applicants and members, ensuring data encryption both in transit and at rest. Access to administrative features must be restricted to authorized personnel, and the system should implement multi-factor authentication for administrator access. |
| **Importance** | High |
| **Status** | Pending verification |
| **Coments** | This requirement ensures the system performs optimally under expected load, meeting client expectations for efficiency and responsiveness. This requirement is essential to protect member and applicant data, ensuring only authorized access and compliance with data protection standards. |

Tabla 17 Requisitos no funcional 02

|  |  |
| --- | --- |
| **RNF-003** | Scalability |
| **Version** | 1.0 (10/11/2024) |
| Authors | Andres Espin,Carlos Jaya, Josue |
| Sources | Obj-02: Streamline Applicant Management  Obj-03: Optimize Absence Justification Process |
| **References** |  |
| **Category** | Scalability |
| **Description** | The system must be designed to support the growth of the club’s membership base, with the ability to accommodate an increase in simultaneous users, notifications, and justifications without degrading performance. |
| **Importance** | High |
| **Status** | Pending verification |
| **Coments** | Scalability is necessary to ensure the system remains functional and responsive as the club expands, allowing for a smooth increase in user load over time. |

Tabla 19 Requisitos no funcional 03

# Referencias

IEEE. (2008). *IEEE Std 830-1998: Requirements Specification According to the IEEE 830 Standard* (Revised ed.). IEEE.