
SOFTWARE PLANNING AND UML (Approved)

for
ESPOLTEL HIRING MANAGER

Version 1.0

**Jeremy Rodrigo Poveda Gorotiza
José David Ramos Rios
Diego Fernando Flores Rengifo
Ariana Valentina Palacios Saenz
Alex Javier Vizuete Pereira**

Submitted to: Francisco Ramirez

January 17, 2025

Revision History

Name	Date	Reason for Changes	Version
Team 3	2025-1-10	Initial draft	1.0

Contents

1	Introduction	6
1.1	Summary	6
1.2	Key features and Objectives	6
2	Risk management, product and sprint backlogs and scheduling	7
2.1	Risk management	7
2.2	Product backlog	8
2.3	Sprint backlog	13
2.4	Scheduling	22
3	Static UML	24
3.1	Use Cases - Web Module	25
3.2	Use Cases - Mobile Module	43
3.3	Class Diagram - Web Module	50
3.4	Class Diagram - Mobile Module	56
3.5	Object Diagram	57
3.6	Component Diagram - Web Module	57
3.7	Component Diagram - Mobile Module	58
3.8	Deployment Diagram - Web Module	58
3.9	Deployment Diagram - Mobile Module	59
4	Behavior UML	60
4.1	Activity Diagram	61
4.2	Sequence Diagram	64
4.3	Status Diagram	86
4.4	Collaboration Diagram	87
5	Individual Contributions	88
6	Appendix	89
6.1	Appendix A: Github Repository	89
6.2	Appendix B: Acceptance Documents Agreement	89
6.3	Appendix C: Tools used	90

List of Figures

2.1	Activity Arrow Diagram of ESPOLTEL HIRING MANAGER	23
3.1	Web Module Use Cases Diagram of ESPOLTEL HIRING MANAGER	25
3.2	Mobile Module Use Cases Diagram of ESPOLTEL HIRING MANAGER	43
3.3	Package Format, with pattern State for the status, for Web Module	50
3.4	Package Staff, logic of users for Web Module	51
3.5	Package of Interview, with pattern State for the state, for Web Module	52
3.6	Package DataManager, with pattern Repository and Specification for Web Module	53
3.7	Package Project, with business logic of projects in ESPOLTEL for Web Module .	54
3.8	Package Signer, with a Facade pattern for use the FirmaEC's modules for Web Module	55
3.9	Package Notification, with Observer pattern for Mobile Module	56
3.10	Object Diagram of ESPOLTEL HIRING MANAGER	57
3.11	Web module component Diagram	57
3.12	Mobile module component Diagram	58
3.13	Web module deployment Diagram	58
3.14	Mobile module deployment Diagram	59
4.1	Activity Diagram: Postulation review, Part one	61
4.2	Activity Diagram: Postulation review, Part two	62
4.3	Activity Diagram: Make an Application/Postulation	63
4.4	Activity Diagram: Management of a project	64
4.5	Sequence Diagram 0	64
4.6	Sequence Diagram 1	65
4.7	Sequence Diagram 2	65
4.8	Sequence Diagram 3	66
4.9	Sequence Diagram 4	66
4.10	Sequence Diagram 5	67
4.11	Sequence Diagram 6	67
4.12	Sequence Diagram 7	68
4.13	Sequence Diagram 8	68
4.14	Sequence Diagram 9	69
4.15	Sequence Diagram 10	69
4.16	Sequence Diagram 11	70
4.17	Sequence Diagram 12	70
4.18	Sequence Diagram 13	71
4.19	Sequence Diagram 14	71
4.20	Sequence Diagram 15	72
4.21	Sequence Diagram 16	72
4.22	Sequence Diagram 17	73
4.23	Sequence Diagram 18	73
4.24	Sequence Diagram 19	74
4.25	Sequence Diagram 20	75
4.26	Sequence Diagram 21	76
4.27	Sequence Diagram 22	77

4.28 Sequence Diagram 23	78
4.29 Sequence Diagram 24	79
4.30 Sequence Diagram 25	80
4.31 Sequence Diagram 26	81
4.32 Sequence Diagram 27	82
4.33 Sequence Diagram 28	83
4.34 Sequence Diagram 29	84
4.35 Sequence Diagram 30	84
4.36 Sequence Diagram 31	85
4.37 Sequence Diagram 32	85
4.38 State Diagram: for Postulation status	86
4.39 State Diagram: for Contract status	86
4.40 State Diagram: for Interview status	87
4.41 Collaboration Diagram of ESPOLTEL HIRING MANAGER (Made with Lucid-Chart)	87
6.1 Acceptance of the client, Francisco Ramirez	89

List of Tables

2.1	Probability of Occurrence	7
2.2	Impact Levels	7
2.3	Risk Assessment and Action Protocols	8
2.4	Product Backlog of ESPOLTEL Hiring Manager	13
2.5	Sprint 1 of ESPOLTEL Hiring Manager	15
2.6	Sprint 2 of ESPOLTEL Hiring Manager	18
2.7	Sprint 3 of ESPOLTEL Hiring Manager	20
2.8	Sprint 4 of ESPOLTEL Hiring Manager	21
2.9	Activity Arrow table for Macro-activities ESPOLTEL Hiring Manager	22
3.1	Use Case Documentation - (UC001) Show Postulation Information	26
3.2	Use Case Documentation - (UC002) Create Aspirant Postulation	27
3.3	Use Case Documentation - (UC003) Review Profile	28
3.4	Use Case Documentation - (UC004) Review Postulation	29
3.5	Use Case Documentation - (UC005) Schedule an Interview	30
3.6	Use Case Documentation - (UC006) Register an Interview	31
3.7	Use Case Documentation - (UC007) Re-schedule an Interview	32
3.8	Use Case Documentation - (UC008) Select Best Aspirants	33
3.9	Use Case Documentation - (UC009) Request Additional Information	34
3.10	Use Case Documentation - (UC010) Generate Contracting Document	35
3.11	Use Case Documentation - (UC011) Send Contracting Document to aspirant	36
3.12	Use Case Documentation - (UC012) Send Contracting Documents to Manager	37
3.13	Use Case Documentation - (UC013) E-sign Contract Documents	38
3.14	Use Case Documentation - (UC014) View Contracts	39
3.15	Use Case Documentation - (UC015) View Projects	40
3.16	Use Case Documentation - (UC016) See Project's Information	41
3.17	Use Case Documentation - (UC017) See Profiles	42
3.18	Use Case Documentation - (UC018) Receive Notifications on Mobile	44
3.19	Use Case Documentation - (UC019) View Application Status on Mobile	45
3.20	Use Case Documentation - (UC020) View Contracts on Mobile	46
3.21	Use Case Documentation - (UC021) View Projects on Mobile	47
3.22	Use Case Documentation - (UC022) See Project's Information on Mobile	48
3.23	Use Case Documentation - (UC023) See Profiles on Mobile	49
5.1	Responsibilities of each member of team 3	88
6.1	Diagramming Tools Used	90

1 Introduction

1.1 Summary

This document presents a comprehensive framework for the design, planning, and execution of the ESPOLTEL HIRING MANAGER system. This product integrates a robust risk management strategy, a detailed project execution timeline, and a structured Sprint Backlog plan. Through the inclusion of Unified Modeling Language (UML) diagrams, we provide a thorough representation of both the static and behavioral logic of the system, ensuring that the architecture adheres to SOLID principles and eliminates implementation inefficiencies.

Our primary objective is to meticulously define the planning and breakdown of the system's static structure, logical flow, behavioral processes, implementation strategies, and activity sequences. These components collectively support the realization of a user-centric, scalable, and maintainable product.

1.2 Key features and Objectives

The ESPOLTEL HIRING MANAGER product is designed to streamline and enhance the recruitment process, leveraging a combination of web and mobile modules for maximum efficiency. Key objectives include:

1. **Risk Mitigation:** Developing a proactive risk management plan to address potential challenges in implementation and deployment.
2. **Comprehensive Planning:** Structuring the project execution into manageable phases using Agile methodologies.
3. **System Design:** Crafting static and behavioral UML diagrams to visualize the architecture, interactions, and workflows.
4. **Adherence to SOLID Principles:** Ensuring maintainability and scalability by avoiding anti-patterns and promoting clean code practices.

2 Risk management, product and sprint backlogs and scheduling

2.1 Risk management

In this section, we will identify, quantify, and classify the various risks that may arise during the software development process. Additionally, we will provide a detailed assessment of the likelihood of occurrence, the potential impact of each risk, and the corresponding protocols to be followed in the event they materialize.

Description	Probability Range
Not Probable: The event is highly unlikely to occur.	0% - 20%
Low Probability: The event is unlikely but possible.	21% - 40%
Moderate Probability: The event has an even chance of occurring.	41% - 60%
High Probability: The event is likely to occur.	61% - 80%
Very High Probability: The event is almost certain to occur.	81% - 100%

Table 2.1: Probability of Occurrence

Impact Level	Description
Low Impact	Minimal effect on the project. No significant changes required.
Moderate Impact	Some delays or adjustments needed but manageable within the team.
High Impact	Significant disruptions, requiring immediate attention and resource allocation.
Critical Impact	Severe consequences on project delivery, with major delays or failure possible.

Table 2.2: Impact Levels

The following table outlines the identified risks associated with the project, including their probability of occurrence, potential impact, and the corresponding action protocol.

ID	Name	Probability	Impact	Action Protocol
001	Changes in requirements after development completion	High Probability	High Impact	Establish a communication protocol to clarify that no new requirements will be accepted after the design phase is finalized.
002	Discovery of implicit requirements not considered in the design	Very High Probability	High Impact	Accept and address the risk by updating the design and implementing the missing requirements.
003	Need for developer training	High Probability	High Impact	Provide immediate training on the required frameworks to minimize delays and ensure smooth development progress.
004	Difficulty understanding prior implementation, causing delays	Low Probability	Critical Impact	Reduce the probability by consulting previous implementers to gain insights into the system before development begins.
005	Schedule misalignment affecting task timelines	Not Probable	High Impact	Mitigate the risk by redistributing tasks and holding regular progress meetings to stay on track.
006	Performance drop due to prior monolithic architecture	Low Probability	High Impact	Accept the risk, inform the client, and propose alternative solutions to improve performance.
007	Database schema not designed for extensions	Low Probability	Moderate Impact	Accept the risk and adapt the existing schema to accommodate the new requirements.
008	Insufficient documentation provided by the client	High Probability	Critical Impact	Reduce probability by maintaining active communication with the client to obtain necessary documentation.

Table 2.3: Risk Assessment and Action Protocols

2.2 Product backlog

ID	Priority	Dependencies	Item	Estimation (hours)
PB1	0	None	Research Spring Boot platform: Investigation of the architecture, modules, and functionalities of Spring Boot relevant to the project. Includes feasibility evaluation and the creation of a document with findings and recommendations.	4

ID	Priority	Dependencies	Item	Estimation (hours)
PB2	0	None	Definition of the database schema: Design the database schema, including the definition of tables, relationships, and constraints. An Entity-Relationship diagram and the SQL script for database creation will be generated.	8
PB3	1	PB1, PB2	As a user of ESPOLTEL Hiring Manager, I want to create my own account so that I can access all controls related to my role, ensuring my information and permissions are separate from other users.	6
PB4	1	PB3	As a user of ESPOLTEL Hiring Manager, I want to verify my email address upon registration so that I can ensure secure access to the system and confirm my identity.	8
PB5	2	PB3	As a user of ESPOLTEL Hiring Manager, I want to create my own account using the mobile app, so that I can access all controls corresponding to my role, and ensure that my information and permissions are separate from those of other users.	6
PB6	1	PB5	As a user of ESPOLTEL Hiring Manager, I want to verify my email address when registering from my mobile device, so that I can ensure secure access to the system and confirm my identity.	10
PB7	1	PB3	As a user of ESPOLTEL Hiring Manager, I want to log in securely using my credentials so that I can access features and project management tools.	4
PB8	1	PB7	As a user of ESPOLTEL Hiring Manager, I want to select my role (Aspirant, Project Manager, Project Director, or HR member) before logging in so that I am directed to the appropriate login process and access functionalities specific to my role.	6
PB9	2	PB7	As a user of ESPOLTEL, I want to securely log in to the system using my credentials on my mobile device, so that I can access the appropriate functions and features according to my user role.	5
PB10	2	PB8	As a user of ESPOLTEL, I want to be able to select my role (Aspirant, Project Manager, Project Director, or HR member) on my mobile device before logging in, so that I can be directed to the specific features and functionalities relevant to my role.	6

ID	Priority	Dependencies	Item	Estimation (hours)
PB11	3	PB3	As a user of ESPOLTEL Hiring Manager, I want to be able to recover my password through a secure and efficient process if I forget it, so that I can regain access to the system and continue with my responsibilities without delay.	5
PB12	3	PB5	As a user of ESPOLTEL Hiring Manager, I want to be able to recover my password through a secure and efficient process by email from my mobile device if I forget it, so that I can regain access to the system and continue with my responsibilities without delay.	6
PB13	2	PB1,PB2	As an aspirant or manager, I want to have access to contracts or confidential agreements pending my signature, so that I can review and sign them digitally within the web application.	12
PB14	1	P13	As an aspirant, I want to upload my digital certificate to the platform so that I can sign documents such as contracts or confidentiality agreements for the projects I have applied to.	5
PB15	1	P13	As a manager, I want to upload my digital certificate to the platform so that I can sign multiple documents such as contracts or confidentiality agreements for the projects I manage.	5
PB16	1	P14	As an aspirant, I want to digitally sign my contract and confidentiality agreement so that I can complete the paperwork required for my hiring process.	12
PB17	1	P15	As a manager, I want to digitally sign multiple documents, such as contracts or confidentiality agreements, simultaneously, so that I can save time and work more efficiently.	12
PB18	3	PB16	As an aspirant, I want to view the contracts of the projects I have applied for and that are currently active, so that I have a clear view of the agreements I have signed.	6
PB19	3	PB18	As an aspirant, I want to download the contracts of the projects I have applied for and that are currently active, so that I have a record of the agreements I have signed.	4
PB20	3	PB16	As an aspirant, I want to view the contracts of the projects I have applied for and that are currently active on my smartphone, so that I have a clear view of the agreements I have signed.	6
PB21	3	PB20	As an aspirant, I want to download the contracts of the projects I have applied for and that are currently active on my smartphone, so that I have a record of the agreements I have signed.	4

ID	Priority	Dependencies	Item	Estimation (hours)
PB22	1	PB16	As an HR member, I want to validate the digital signatures of aspirants so that I can ensure contracts and agreements are formalized.	8
PB23	2	PB3	As a project manager, I want to create a project by defining its name, description, start date, end date, and type, so that the project's objectives and timeline are clearly established.	12
PB24	2	PB23	As a project manager, I want to define roles and profiles required for the project, including necessary skills and experience for each profile, so that aspirants can understand the requirements and apply to suitable positions.	6
PB25	3	PB24	As a Director, I want to recommend an aspirant who has previously worked for ESPOLTEL for a role in a project, based on their past performance and experience, so that I have a worker I trust in my project.	8
PB26	2	PB24	As an HR member, I want to validate the profiles created by project directors so that I can edit, approve, the profiles and positions defined for a project, ensuring they align with the company's standards and requirements.	12
PB27	2	PB23	As a project manager or director at ESPOLTEL, I want to monitor on my smartphone the projects under my supervision, so that I can maintain better control and make informed decisions.	8
PB28	2	PB23	As a Director or Manager, I want to view the resources and budget assigned to my project, so that I can track project expenses and resource utilization.	10
PB29	1	PB8	As an aspirant, I want to apply for a position in a project of interest where I meet the required profile so that I can obtain the desired position.	10
PB30	2	PB29	As an aspirant, I want to cancel my postulation for a specific role or hiring profile, so that I can withdraw from a recruitment process if my circumstances change.	8
PB31	2	PB8, PB29	As an HR member, I want to schedule interviews with aspirants, specifying the date, time, and interviewer, so that the selection process can be efficiently conducted.	10
PB32	2	PB31	As a HR member, I want to record interview results and observations, including scores and comments, so that there is a formal record of each aspirant's evaluation.	8

ID	Priority	Dependencies	Item	Estimation (hours)
PB33	2	PB24, PB29	As an HR member, I want to verify the requirements based on the information of an aspirant, so that I can ensure they meet the necessary qualifications for a project.	8
PB34	3	PB32	As an HR member, I want to add private comments in aspirants' postulations so that I can keep a record of observations and notes during the selection process.	4
PB35	2	PB32, PB33, PB34	As an HR member, I want to select the best aspirants based on interview results and fulfilled requirements, so that I can identify the most suitable candidates for each role.	10
PB36	2	PB8	As an HR member, I want to create and manage forms for pre-hiring and hiring processes, defining mandatory fields and document uploads, so that aspirants can provide the necessary information.	15
PB37	2	PB8	As an HR member, I want to upload templates for contracts and agreements, so that appropriate templates are available for generating personalized documents for aspirants.	12
PB38	2	PB29, PB36	As an aspirant, I want to upload my personal documents (such as CV, ID, certificates, etc.) and relevant information by completing forms defined by HR , so that I can fulfill postulation requirements.	8
PB39	2	PB37	As an HR member, I want to generate contracts and agreements from templates, so that I can save time in creating personalized documents.	12
PB40	2	PB32, PB33, PB34	As an HR member, I want to view aspirants by specific skills and experience, so that I can make it easier to select candidates who meet the project requirements.	4
PB41	2	PB8	As a Director, HR Member, or Manager, I want to view the hires or personnel associated with a project, so that I have an overview of the team composition and recruitment progress.	10
PB42	2	None	As a user of ESPOLTEL Hiring Manager, I want to be able to search and filter information across the platform, including projects, aspirants, roles, documents, and other relevant data, so that I can quickly find and focus on the data I need.	8
PB43	1	PB10	As a user of the ESPOLTEL Hiring Manager mobile app, I need to receive notifications for any important events in the recruitment process, so that I can stay informed and respond promptly.	12

ID	Priority	Dependencies	Item	Estimation (hours)
PB44	2	PB8	As an aspirant, I want to monitor on my smartphone the projects I have applied for, so that I can stay updated on their progress and better manage my involvement.	10
PB45	2	PB31	As an aspirant, I want to receive notifications about my scheduled interviews, including reminders and updates, so that I can be prepared and attend interviews on time.	8
PB46	4	PB45	Testing and deployment	24

Table 2.4: Product Backlog of ESPOLTEL Hiring Manager

2.3 Sprint backlog

The project sprints will be 4 organized for 3 weeks duration.

Product Back-log Item	User Story	Tasks	Assigned To
PB1	Research Spring Boot platform (4 hours)	-Research architecture, modules, and functionalities of Spring Boot. - 3 hours -Feasibility evaluation of this framework. - 1 hour	- Jeremy Poveda, Diego Flores, Ariana Palacios - Alex Vizuete, Jose Ramos
PB2	Definition of the database schema (8 hours)	-Design the database schema (tables, relationships, and constraints). - 4 hours -Generate Entity-Relationship diagram and SQL script. - 4 hours	- Diego Flores, Ariana Palacios - Jeremy Poveda, Alex Vizuete
PB3	As a user of ESPOLTEL Hiring Manager, I want to create my own account so that I can access all controls related to my role, ensuring my information and permissions are separate from other users. (6 hours)	- Design UI for user registration (web). - 2 hours - Implement backend logic for user registration and role management. - 3 hours - Database integration for user accounts. - 1 hour	- Jeremy Poveda - Jose Ramos - Ariana Palacios
PB4	As a user of ESPOLTEL Hiring Manager, I want to verify my email address upon registration so that I can ensure secure access to the system and confirm my identity. (8 hours)	- Implement email sending functionality (e.g., using Spring Mail). - 3 hours - Create email verification endpoint. - 3 hours - Integrate email verification with registration flow. - 2 hours	- Alex Vizuete - Diego Flores - Jeremy Poveda

Product Back-log Item	User Story	Tasks	Assigned To
PB5	<p>As a user of ESPOLTEL Hiring Manager, I want to create my own account using the mobile app, so that I can access all controls corresponding to my role, and ensure that my information and permissions are separate from those of other users. (6 hours)</p>	<ul style="list-style-type: none"> - Design UI for user registration (mobile). - 2 hours - Implement backend logic for user registration and role management (mobile). - 3 hours - Database integration for user accounts (mobile). - 1 hour 	<ul style="list-style-type: none"> - Diego Flores - Jose Ramos - Ariana Palacios
PB6	<p>As a user of ESPOLTEL Hiring Manager, I want to verify my email address when registering from my mobile device, so that I can ensure secure access to the system and confirm my identity. (10 hours)</p>	<ul style="list-style-type: none"> - Adapt email sending functionality for mobile. - 3 hours - Create email verification endpoint (mobile). - 4 hours - Integrate email verification with mobile registration flow. - 3 hours 	<ul style="list-style-type: none"> - Alex Vizuete - Jeremy Poveda - Jose Ramos
PB7	<p>As a user of ESPOLTEL Hiring Manager, I want to log in securely using my credentials so that I can access features and project management tools. (4 hours)</p>	<ul style="list-style-type: none"> - Design UI for user login (web). - 1 hour - Implement backend logic for authentication. - 2 hours - Implement session management. - 1 hour 	<ul style="list-style-type: none"> - Jose Ramos - Ariana Palacios - Alex Vizuete
PB8	<p>As a user of ESPOLTEL Hiring Manager, I want to select my role (Aspirant, Project Manager, Project Director, or HR member) before logging in so that I am directed to the appropriate login process and access functionalities specific to my role. (6 hours)</p>	<ul style="list-style-type: none"> - Design UI for role selection. - 3 hours - Implement role-based access control logic. - 3 hours 	<ul style="list-style-type: none"> - Diego Flores - Jeremy Poveda
PB9	<p>As a user of ESPOLTEL, I want to securely log in to the system using my credentials on my mobile device, so that I can access the appropriate functions and features according to my user role. (5 hours)</p>	<ul style="list-style-type: none"> - Design UI for user login (mobile). - 2 hours - Implement backend logic for authentication (mobile). - 2 hours - Implement session management (mobile). - 1 hour 	<ul style="list-style-type: none"> - Jeremy Poveda - Ariana Palacios - Alex Vizuete

Product Back-log Item	User Story	Tasks	Assigned To
PB10	As a user of ESPOLTEL, I want to be able to select my role (Aspirant, Project Manager, Project Director, or HR member) on my mobile device before logging in, so that I can be directed to the specific features and functionalities relevant to my role. (6 hours)	<ul style="list-style-type: none"> - Design UI for role selection (mobile). - 3 hours - Implement role-based access control logic (mobile). - 3 hours 	<ul style="list-style-type: none"> - Diego Flores - Jose Ramos
PB11	As a user of ESPOLTEL Hiring Manager, I want to be able to recover my password through a secure and efficient process if I forget it, so that I can regain access to the system and continue with my responsibilities without delay. (5 hours)	<ul style="list-style-type: none"> - Design UI for password recovery. - 2 hours - Implement backend logic for password recovery. - 3 hours 	<ul style="list-style-type: none"> - Jose Ramos - Ariana Palacios
PB12	As a user of ESPOLTEL Hiring Manager, I want to be able to recover my password through a secure and efficient process by email from my mobile device if I forget it, so that I can regain access to the system and continue with my responsibilities without delay. (6 hours)	<ul style="list-style-type: none"> - Design UI for password recovery (mobile). - 2 hours - Implement backend logic for password recovery, including email sending (mobile). - 3 hours - Integrate password recovery with mobile login flow. - 1 hour 	<ul style="list-style-type: none"> - Diego Flores - Ariana Palacios - Alex Vizuete

Table 2.5: Sprint 1 of ESPOLTEL Hiring Manager

Product Back-log Item	User Story	Tasks	Assigned To
PB13	As an aspirant or manager, I want to have access to contracts or confidential agreements pending my signature, so that I can review and sign them digitally within the web application. (12)	<ul style="list-style-type: none"> Design UI for contract/agreement viewing. - 4 hours Implement backend logic for fetching pending documents. - 4 hours Integrate digital signature service/library. - 4 hours 	<ul style="list-style-type: none"> Jeremy Poveda Jose Ramos Alex Vizuete

Product Back-log Item	User Story	Tasks	Assigned To
PB14	As an aspirant, I want to upload my digital certificate to the platform so that I can sign documents such as contracts or confidentiality agreements for the projects I have applied to. (5)	Design UI for digital certificate upload. - 2 hours Implement backend logic for certificate storage and validation. - 3 hours	Diego Flores Ariana Palacios
PB15	As a manager, I want to upload my digital certificate to the platform so that I can sign multiple documents such as contracts or confidentiality agreements for the projects I manage. (5)	Design UI for digital certificate upload (Manager). - 2 hours Implement backend logic for certificate storage and validation (Manager). - 3 hours	Jeremy Poveda Alex Vizuete
PB16	As an aspirant, I want to digitally sign my contract and confidentiality agreement so that I can complete the paperwork required for my hiring process. (12)	Integrate digital signature functionality for aspirants. - 6 hours Design UI for signing contracts and agreements. - 3 hours Update database to store signature data and status. - 3 hours	Diego Flores Jeremy Poveda
PB17	As a manager, I want to digitally sign multiple documents, such as contracts or confidentiality agreements, simultaneously, so that I can save time and work more efficiently. (12)	Implement bulk/batch digital signature functionality. - 8 hours Design UI for bulk signing. - 2 hours Update backend logic to handle multiple signatures. - 2 hours	Diego Flores Ariana Palacios Jeremy Poveda
PB18	As an aspirant, I want to view the contracts of the projects I have applied for and that are currently active, so that I have a clear view of the agreements I have signed. (6)	Design UI for contract viewing (aspirant). - 3 hours Implement backend logic for fetching and displaying active contracts. - 3 hours	Alex Vizuete Jose Ramos
PB19	As an aspirant, I want to download the contracts of the projects I have applied for and that are currently active, so that I have a record of the agreements I have signed. (4)	Implement contract download functionality. - 2 hours Integrate with secure document storage. - 2 hours	Alex Vizuete Jose Ramos

Product Back-log Item	User Story	Tasks	Assigned To
PB20	As an aspirant, I want to view the contracts of the projects I have applied for and that are currently active on my smartphone, so that I have a clear view of the agreements I have signed. (6)	Design mobile UI for contract viewing. - 3 hours Adapt backend logic for mobile contract fetching. - 3 hours	Diego Flores Ariana Palacios
PB21	As an aspirant, I want to download the contracts of the projects I have applied for and that are currently active on my smartphone, so that I have a record of the agreements I have signed. (4)	Implement mobile contract download functionality. - 2 hours Integrate with mobile secure storage. - 2 hours	Diego Flores Jose Ramos
PB22	As an HR member, I want to validate the digital signatures of aspirants so that I can ensure contracts and agreements are formalized. (8)	Implement backend logic for signature validation. - 5 hours Design UI for displaying signature validation status. - 3 hours	Ariana Palacios Jose Ramos
PB23	As a project manager, I want to create a project by defining its name, description, start date, end date, and type, so that the project's objectives and timeline are clearly established. (12)	Design UI for project creation form. - 4 hours Implement backend logic for project creation and data validation. - 5 hours Database integration for project data. - 3 hours	Jose Ramos Ariana Palacios Diego Flores
PB24	As a project manager, I want to define roles and profiles required for the project, including necessary skills and experience for each profile, so that aspirants can understand the requirements and apply to suitable positions. (6)	Design UI for role/profile definition. - 3 hours Implement backend logic for storing role/profile data. - 3 hours	Jose Ramos Alex Vizuete
PB25	As a Director, I want to recommend an aspirant who has previously worked for ESPOLTEL for a role in a project, based on their past performance and experience, so that I have a worker I trust in my project. (8)	Design UI for aspirant recommendation. - 3 hours Implement backend logic for recommendation processing, including fetching past performance data. - 5 hours	Jeremy Poveda Alex Vizuete

Product Back-log Item	User Story	Tasks	Assigned To
PB26	As an HR member, I want to validate the profiles created by project directors so that I can edit, approve, the profiles and positions defined for a project, ensuring they align with the company's standards and requirements. (12)	Design UI for profile review and approval. - 4 hours Implement backend logic for profile validation workflow. - 5 hours Database integration for profile status. - 3 hours	Ariana Palacios Diego Flores Jeremy Poveda
PB27	As a project manager or director at ESPOLTEL, I want to monitor on my smartphone the projects under my supervision, so that I can maintain better control and make informed decisions. (8)	Design mobile UI for project monitoring. - 4 hours Implement mobile backend logic for retrieving project data. - 4 hours	Diego Flores Jose Ramos
PB28	As a Director or Manager, I want to view the resources and budget assigned to my project, so that I can track project expenses and resource utilization. (10)	Design UI for resource and budget viewing. - 4 hours Implement backend logic for retrieving resource and budget data. - 6 hours	Ariana Palacios Alex Vizuete

Table 2.6: Sprint 2 of ESPOLTEL Hiring Manager

Product Back-log Item	User Story	Tasks	Assigned To
PB29	As an aspirant, I want to apply for a position in a project of interest where I meet the required profile so that I can obtain the desired position. (10)	Design UI for project/position application. - 4 hours Implement backend logic for application processing. - 6 hours	Alex Vizuete Jose Ramos
PB30	As an aspirant, I want to cancel my postulation for a specific role or hiring profile, so that I can withdraw from a recruitment process if my circumstances change. (8)	Design UI for postulation cancellation. - 3 hours Implement backend logic for postulation cancellation. - 5 hours	Jeremy Poveda Diego Flores
PB31	As an HR member, I want to schedule interviews with aspirants, specifying the date, time, and interviewer, so that the selection process can be efficiently conducted. (10)	Design UI for interview scheduling. - 4 hours Implement backend logic for interview scheduling and notifications. - 6 hours	Diego Flores Ariana Palacios

Product Back-log Item	User Story	Tasks	Assigned To
PB32	As an HR member, I want to record interview results and observations, including scores and comments, so that there is a formal record of each aspirant's evaluation. (8)	Design UI for recording interview results. - 3 hours Implement backend logic for storing interview data. - 5 hours	Jeremy Poveda Diego Flores
PB33	As an HR member, I want to verify the requirements based on the information of an aspirant, so that I can ensure they meet the necessary qualifications for a project. (8)	Design UI for requirement verification. - 3 hours Implement backend logic for requirement checking. - 5 hours	Jose Ramos Ariana Palacios
PB34	As an HR member, I want to add private comments in aspirants' postulations so that I can keep a record of observations and notes during the selection process. (4)	Design UI for adding private comments. - 2 hours Implement backend logic for storing private comments. - 2 hours	Alex Vizuete Jeremy Poveda
PB35	As an HR member, I want to select the best aspirants based on interview results and fulfilled requirements, so that I can identify the most suitable candidates for each role. (10)	Design UI for aspirant selection. - 4 hours Implement backend logic for selection processing. - 6 hours	Diego Flores Jose Ramos
PB36	As an HR member, I want to create and manage forms for pre-hiring and hiring processes, defining mandatory fields and document uploads, so that aspirants can provide the necessary information. (15)	Design UI for form creation and management. - 5 hours Implement backend logic for form data storage and retrieval. - 7 hours Integrate document upload functionality. - 3 hours	Jose Ramos Alex Vizuete Ariana Palacios
PB37	As an HR member, I want to upload templates for contracts and agreements, so that appropriate templates are available for generating personalized documents for aspirants. (12)	Design UI for template upload and management. - 4 hours Implement backend logic for template storage and retrieval. - 5 hours Implement template versioning. - 3 hours	Jeremy Poveda Jose Ramos Alex Vizuete
PB38	As an aspirant, I want to upload my personal documents (such as CV, ID, certificates, etc.) and relevant information by completing forms defined by HR, so that I can fulfill postulation requirements. (8)	Implement document upload and form submission functionality. - 5 hours Update UI to integrate with forms defined by HR. - 3 hours	Ariana Palacios Alex Vizuete

Product Back-log Item	User Story	Tasks	Assigned To
PB39	As an HR member, I want to generate contracts and agreements from templates, so that I can save time in creating personalized documents. (12)	Implement backend logic for document generation from templates. - 8 hours Design UI for document generation. - 4 hours	Ariana Palacios Diego Flores Jeremy Poveda

Table 2.7: Sprint 3 of ESPOLTEL Hiring Manager

Product Back-log Item	User Story	Tasks	Assigned To
PB40	As an HR member, I want to view aspirants by specific skills and experience, so that I can make it easier to select candidates who meet the project requirements. (4)	Enhance search/filter functionality for aspirants. - 4 hours	Jeremy Poveda Diego Flores
PB41	As a Director, HR Member, or Manager, I want to view the hires or personnel associated with a project, so that I have an overview of the team composition and recruitment progress. (10)	Design UI for viewing project personnel. - 4 hours Implement backend logic for retrieving project personnel data. - 6 hours	Jose Ramos Alex Vizuete
PB42	As a user of ESPOLTEL Hiring Manager, I want to be able to search and filter information across the platform, including projects, aspirants, roles, documents, and other relevant data, so that I can quickly find and focus on the data I need. (8)	Design UI for search and filter functionality. - 3 hours Implement backend logic for search and filtering. - 5 hours	Alex Vizuete Jeremy Poveda
PB43	As a user of the ESPOLTEL Hiring Manager mobile app, I need to receive notifications for any important events in the recruitment process, so that I can stay informed and respond promptly. (12)	Set up push notification service (e.g., Firebase Cloud Messaging). - 4 hours Implement backend logic to trigger notifications. - 4 hours Integrate notifications with mobile app. - 4 hours	Diego Flores Jose Ramos Ariana Palacios

Product Back-log Item	User Story	Tasks	Assigned To
PB44	As an aspirant, I want to monitor on my smartphone the projects I have applied for, so that I can stay updated on their progress and better manage my involvement. (10)	Design mobile UI for application monitoring. - 4 hours Implement mobile backend logic for retrieving application status. - 6 hours	Jose Ramos Ariana Palacios
PB45	As an aspirant, I want to receive notifications about my scheduled interviews, including reminders and updates, so that I can be prepared and attend interviews on time. (8)	Implement notification logic for interview scheduling. - 5 hours Integrate with calendar/reminder system if needed. - 3 hours	Jeremy Poveda Alex Vizuete
PB46	Testing and deployment (24)	Functional testing. - 8 hours Integration testing. - 8 hours Performance testing. - 4 hours Deployment to staging/production. - 4 hours	All team members

Table 2.8: Sprint 4 of ESPOLTEL Hiring Manager

2.4 Scheduling

ID	Description	Dep	Product Back-log Items	Hours	Earliest Start Time	Lastest Finish Time	Float
A	System Foundation	None	PB1, PB2	12	0	12	0
B	User Management	A	PB3, PB4, PB5, PB6, PB7, PB8, PB9, PB10, PB11, PB12	62	12	74	0
C	Digital Signature	B	PB13, PB14, PB15, PB16, PB17, PB18, PB19, PB20, PB21, PB22	74	74	249	101
D	Project Creation	B	PB23, PB24, PB25, PB26, PB27, PB28	56	74	130	0
E	Aspirant Postulation	D	PB29, PB30	18	130	148	0
F	Interviews	D, E	PB31, PB32, PB33, PB34, PB35	40	148	227	39
G	Document Generation	E	PB36, PB37, PB38, PB39	47	148	195	0
H	Search and Filtering	E, F	PB40, PB41, PB42	22	188	249	39
I	Notifications	G	PB43, PB44, PB45	30	195	225	0
J	Testing and Deployment	I	PB46	24	225	249	0

Table 2.9: Activity Arrow table for Macro-activities ESPOLTEL Hiring Manager

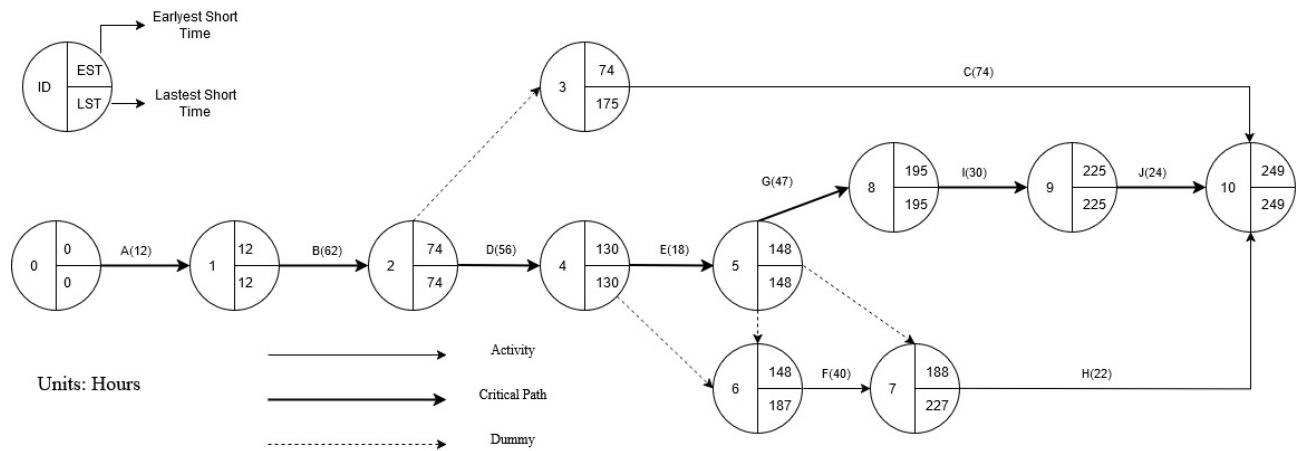


Figure 2.1: Activity Arrow Diagram of ESPOLTEL HIRING MANAGER

3 Static UML

3.1 Use Cases - Web Module

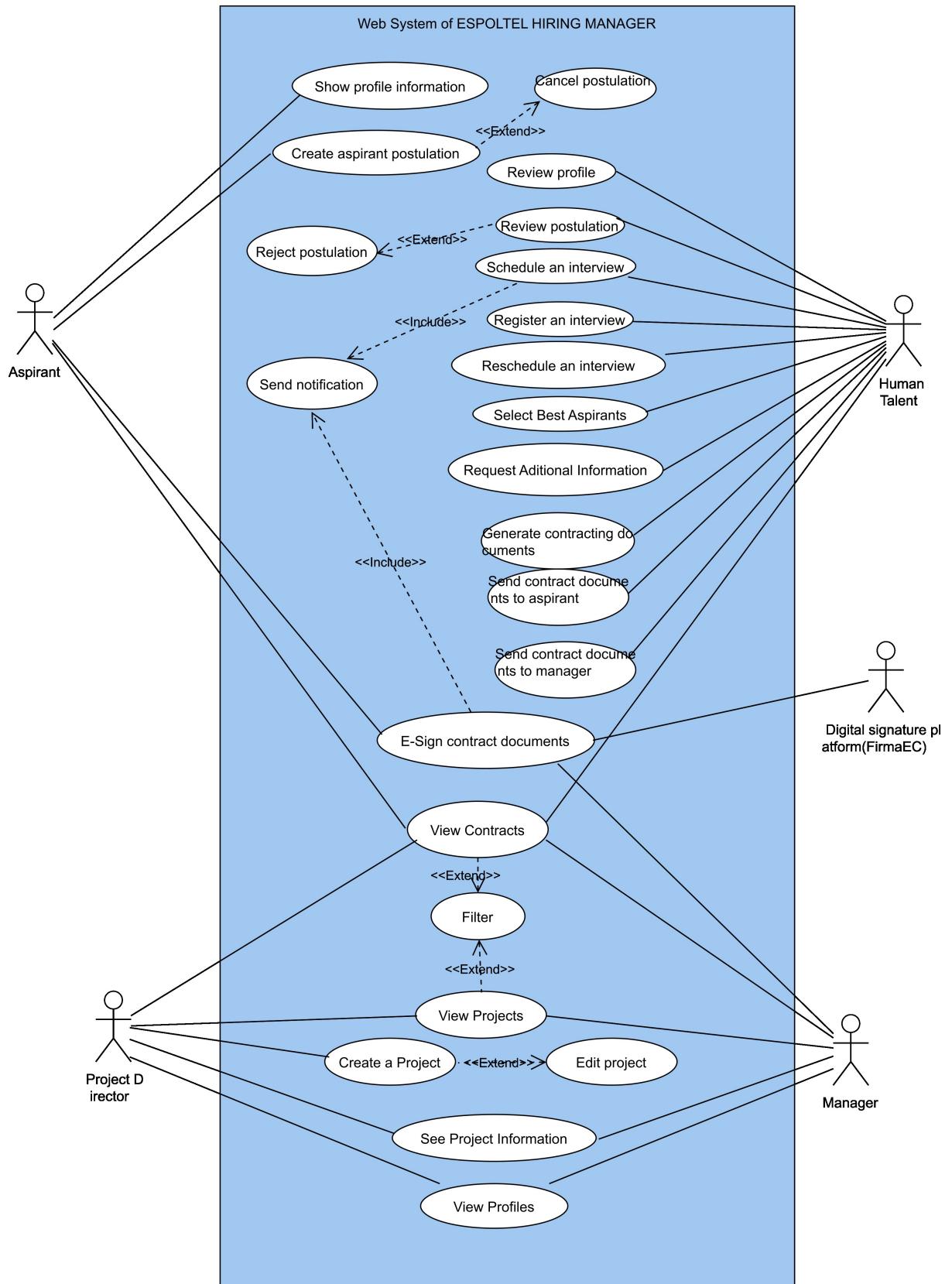


Figure 3.1: Web Module Use Cases Diagram of ESPOLTEL HIRING MANAGER

Field	Description
ID	UC001
Name	Show postulation information
Created by	Jeremy Poveda
Updated by	Jeremy Poveda
Date creation	8/12/24
Date last edition	3/1/25
Description	The system will show the aspirant the requirements, activities, and reference salary (e.g.) of the system using a code.
Actors	Aspirant
Extends	Nothing
Preconditions	The aspirant has his account created and is logged in, as well as the project code to which he is interested.
Postconditions	The aspirant only must see the profile he/she wants to apply for with the unique code.
Flow	<ol style="list-style-type: none"> 1. The aspirant enter into personnel login section. 2. The aspirant enter his credentials. 3. The system show a prompt in the home page to enter a code. 4. The aspirant enters the code of the project he/she is interested in. 5. The system shows the applicant the information (Job and profile description, activities to be performed, Project name, Project description, profile requirements, and Referencial salary) of the profile he/she wants to apply for.
Alternative Flow	There are no alternative flows.

Table 3.1: Use Case Documentation - (UC001) Show Postulation Information

Field	Description
ID	UC002
Name	Create aspirant postulation
Created by	José Ramos
Updated by	José Ramos
Date creation	8/12/24
Date last edition	7/01/25
Description	The aspirant wants to send information in the project they are interested in.
Actors	Aspirant
Extends / Includes	Cancel Postulation
Preconditions	<ul style="list-style-type: none"> • The aspirant has his account created and logged in, as well as the project code to which he is interested. • The aspirant has a valid project code.
Postconditions	The system registers the application of the aspirant.
Flow	<ol style="list-style-type: none"> 1. The aspirant logs in with his/her credentials. 2. The aspirant enters the valid code of a project. 3. The aspirant clicks on the project that appears on the screen. 4. The aspirant reads the project information. 5. The aspirant makes sure that he/she meets the minimum requirements to participate in the project. 6. The aspirant applies for the job. 7. The aspirant uploads the documents required by the system (Curriculum Vitae and copy of ID). 8. The aspirant sends the application.
Alternative Flow	<ol style="list-style-type: none"> 4a. The aspirant reads the project information. 1. The aspirant verifies that he or she does not meet the minimum requirements to participate in the project. 2. The aspirant returns to the home screen. 8a. The aspirant sends the application. 3. The aspirant realizes that he/she has postulated incorrectly. 4. The aspirant cancels application.

Table 3.2: Use Case Documentation - (UC002) Create Aspirant Postulation

Field	Description
ID	UC003
Name	Review profile
Created by	Jeremy Poveda
Updated by	Jeremy Poveda
Date creation	8/12/24
Date last edition	12/01/25
Description	Human Talent must review the profiles created by the director to ensure they meet the established standards and requirements.
Actors	Human Talent
Extends	Reject Profile
Preconditions	The director has created the profiles. The profiles have been sent to Human Talent for review.
Postconditions	Human Talent confirms that the profiles meet the required standards. Human Talent notifies the director about the approval or rejection of the profiles.
Flow	<ol style="list-style-type: none"> 1. Human Talent enters the profile review section. 2. Human Talent identifies the profiles created by the director. 3. Human Talent reviews the information of each profile. 4. Human Talent verifies that the profiles meet the required standards and requirements. 5. Human Talent edits in case of errors.
Alternative Flow	<ol style="list-style-type: none"> 4a. Human Talent identifies that the profiles do meet the required standards. <ol style="list-style-type: none"> 1. Human Talent accept the profile. 2. The profile enters in 'in hiring' status.

Table 3.3: Use Case Documentation - (UC003) Review Profile

Field	Description
ID	UC004
Name	Review postulation
Created by	José Ramos
Updated by	José Ramos
Date creation	8/12/24
Date last edition	12/01/25
Description	Human Talent verifies the submitted postulations, ensuring the aspirant's data and documentation meet the required standards.
Actors	Human Talent
Extends	Reject Postulation
Preconditions	The aspirant must have sent the form with his CV and ID.
Postconditions	The aspirant is notified via email if their postulation review was successful.
Flow	<ol style="list-style-type: none"> 1. Human Talent logs into the system and navigates to the postulation review section. 2. Human Talent selects a postulation to review. 3. Human Talent verifies the aspirant's data for consistency and correctness. 4. Human Talent reviews the documentation submitted by the aspirant (CV and copy of ID). 5. Human Talent writes observations or feedback if necessary. 6. Human Talent sends a notification email to the aspirant about the result of the review.
Alternative Flow	<ol style="list-style-type: none"> 3a. Human Talent identifies inconsistencies in the aspirant's data or finds incorrect documentation. 4. Human Talent writes a rejection message specifying the issues. 5. Human Talent removes the postulation from the approval process.

Table 3.4: Use Case Documentation - (UC004) Review Postulation

Field	Description
ID	UC005
Name	Schedule an interview
Created by	Team 3
Updated by	Alex Vizuete
Date creation	08/01/25
Date last edition	08/01/25
Description	Human Talent Staff need to schedule an interview for accepted aspirants by selecting a specific day and time.
Actors	Human Talent
Extends	None
Preconditions	<ul style="list-style-type: none"> Aspirant must be marked as accepted for the interview process.
Postconditions	<ul style="list-style-type: none"> Aspirants are notified about the scheduled interview. Human Talent Staff can see the interview in a calendar.
Flow	<ol style="list-style-type: none"> Human Talent Assistant navigates to the interviews tab. The Assistant clicks on the "Create New Interview" button. The Assistant selects a date using the input calendar and specifies the interview time. The Assistant selects the aspirant for the interview. The Assistant clicks the "Create" button. The interview is scheduled and displayed in the calendar in the interviews section.
Alternative Flow	None

Table 3.5: Use Case Documentation - (UC005) Schedule an Interview

Field	Description
ID	UC006
Name	Register an interview
Created by	Jeremy Poveda
Updated by	Jeremy Poveda
Date creation	9/01/25
Date last edition	12/01/25
Description	Human Talent Staff registers the outcome of an interview by reviewing the aspirant's requirements, adding observations, and saving the result.
Actors	Human Talent
Extends	None
Preconditions	<ul style="list-style-type: none"> An interview must have been scheduled with the aspirant.
Postconditions	<ul style="list-style-type: none"> The interview is marked as complete in the system. Observations and results are stored for the aspirant's record.
Flow	<ol style="list-style-type: none"> Human Talent Staff navigates to the "Interviews" section. The HT Staff selects the scheduled interview they wish to register. The HT Staff reviews the aspirant's requirements (e.g., submitted documents, qualifications). And with the In real life interview. The HT Staff writes observations about the aspirant's performance and any relevant notes. The HT Staff saves the results of the interview, marking it as completed.
Alternative Flow	None

Table 3.6: Use Case Documentation - (UC006) Register an Interview

Field	Description
ID	UC007
Name	Re-schedule an interview
Created by	Team 3
Updated by	Alex Vizuete
Date creation	8/01/25
Date last edition	12/01/25
Description	Human Talent Staff handles situations where the aspirant misses the interview or cannot attend. The interview can be re-scheduled, canceled, or removed as needed.
Actors	Human Talent
Extends	None
Preconditions	<ul style="list-style-type: none"> The interview must have been previously scheduled.
Postconditions	<ul style="list-style-type: none"> The interview is either re-scheduled, marked as canceled, or deleted from the system. The aspirant is notified about the change via email.
Flow	<ol style="list-style-type: none"> Human Talent Staff navigates to the "Interviews" section. The HT Staff identifies the interview to be re-scheduled or canceled. The HT Staff selects the option to re-schedule or cancel the interview. If re-scheduling: <ol style="list-style-type: none"> The Staff selects a new date and time for the interview. The Staff notifies the aspirant about the new schedule. If canceling: <ol style="list-style-type: none"> The interview is marked as canceled or removed from the system. The changes are saved in the system.
Alternative Flow	<ol style="list-style-type: none"> The Staff decides to delete the interview entirely: <ol style="list-style-type: none"> The interview is removed from the system. The aspirant is notified about the removal.

Table 3.7: Use Case Documentation - (UC007) Re-schedule an Interview

Field	Description
ID	UC008
Name	Select Best Aspirants
Created by	Jeremy Poveda
Updated by	Jeremy Poveda
Date creation	8/01/25
Date last edition	12/01/25
Description	Human Talent Staff selects the best aspirants based on interview results and the aspirant's profile, making sure they meet the requirements for the position.
Actors	Human Talent
Extends	None
Preconditions	<ul style="list-style-type: none"> • Aspirants must have completed their interviews. • The interview results must be available and recorded. • The aspirant's profile should meet the minimum requirements of the project.
Postconditions	<ul style="list-style-type: none"> • The best aspirants are selected based on their interview results and profile compatibility. • The selected aspirants are notified about their selection.
Flow	<ol style="list-style-type: none"> 1. Human Talent Staff navigates to the "Aspirants accepted" section. 2. The Staff reviews the list of aspirants who completed the interview. 3. The Staff compares the interview results and the aspirant's profile with the requirements for the position. 4. Based on the comparison, the Staff selects the best aspirants that meet the criteria. 5. The selected aspirants are notified by email about their selection. 6. The selected aspirants are marked in the system as chosen for the next steps.
Alternative Flow	<p>3a. If no aspirants meet the requirements:</p> <ol style="list-style-type: none"> a. Human Talent can decide to keep the search open for more aspirants or re-evaluate other candidates.

Table 3.8: Use Case Documentation - (UC008) Select Best Aspirants

Field	Description
ID	UC009
Title	Request Additional Information
Author	José Ramos
Updated by	José Ramos
Date creation	28/12/24
Date last edition	12/01/2025
Description	Human Talent must ask the applicant for additional information required to continue with the hiring flow.
Actors	Human Talent
Extends/Includes	Send notification
Preconditions	<ul style="list-style-type: none"> The applicant must pass the interview successfully.
Postconditions	<ul style="list-style-type: none"> The applicant receives the notification and must send the required documents to the Human Talent staff.
Flow	<ol style="list-style-type: none"> Human Talent logs in. Human Talent goes to the “Recruitment Forms” section. Human Talent selects the project they want to review. Human Talent selects one of the aspirants. Human Talent checks the correct documents with the checkbox. Human Talent presses the button to send the review. Human Talent writes a comment where they ask for the required documents. Human Talent sends the notification to the aspirants.
Alternative Flow	None

Table 3.9: Use Case Documentation - (UC009) Request Additional Information

Field	Description
ID	UC010
Title	Generate Contracting Document
Author	Jeremy Poveda
Updated by	Jeremy Poveda
Date creation	29/12/24
Date last edition	12/01/2025
Description	Human Talent uses the Recruitment Forms from the previous use case and a pre-created Word document template to generate a contracting document by merging the form data with the template. The corresponding data will be matched with placeholders in the Word document.
Actors	Human Talent
Extends/Includes	None
Preconditions	<ul style="list-style-type: none"> The applicant must have successfully passed the interview. The required documents must have been received and reviewed. A pre-created Word template for the contracting document exists.
Postconditions	<ul style="list-style-type: none"> A contracting document is generated with the applicant's data from the Recruitment Form. The generated document is saved and can be sent to the aspirant.
Flow	<ol style="list-style-type: none"> Human Talent logs in. Human Talent goes to the "Generación de documentos" section. Human Talent selects the recruitment form of the applicant they wish to generate the document for. Human Talent uploads the pre-created Word document template. Human Talent matches the corresponding fields in the form to the placeholders in the Word template. Human Talent generates the document by merging the form data with the template. Human Talent reviews the generated document. Human Talent saves the document for future use or sends it to the applicant.
Alternative Flow	<ul style="list-style-type: none"> If an error occurs while merging the form data with the template, Human Talent can attempt the process again or manually resolve the issue.

Table 3.10: Use Case Documentation - (UC010) Generate Contracting Document

Field	Description
ID	UC011
Title	Send Contracting Document to aspirant
Author	Jeremy Poveda
Updated by	Jeremy Poveda
Date creation	29/12/24
Date last edition	12/01/2025
Description	Human Talent sends the generated contracting documents to the aspirant for his/her esign.
Actors	Human Talent
Extends/Includes	None
Preconditions	<ul style="list-style-type: none"> The contracting document must have been generated and reviewed.
Postconditions	<ul style="list-style-type: none"> The applicant receives the document ready for e-signing.
Flow	<ol style="list-style-type: none"> Human Talent logs in. Human Talent goes to the "Generación de documentos" section. Human Talent selects the aspirant with the document to be sent. Human Talent clicks to send to aspirant. Human Talent sends the document.
Alternative Flow	None

Table 3.11: Use Case Documentation - (UC011) Send Contracting Document to aspirant

Field	Description
ID	UC012
Title	Send Contracting Documents to Manager
Author	Jeremy Poveda
Updated by	Jeremy Poveda
Date creation	29/12/24
Date last edition	12/01/2025
Description	Human Talent sends the generated contracting documents for multiple applicants to the manager for review.
Actors	Human Talent
Extends/Includes	None
Preconditions	<ul style="list-style-type: none"> The contracting documents must have been generated and reviewed for the applicants.
Postconditions	<ul style="list-style-type: none"> The manager receives the documents for review and final approval.
Flow	<ol style="list-style-type: none"> Human Talent logs in. Human Talent goes to the “Generación de documentos” section. Human Talent selects the applicants whose documents need to be sent. Human Talent clicks the option to send selected documents to the manager. Verify the esign of the aspirant. Human Talent sends the documents. If they are correctly esigned.
Alternative Flow	<p>5a. The esign it's incorrect.</p> <ol style="list-style-type: none"> Human talent asks the aspirant to e-sign again.

Table 3.12: Use Case Documentation - (UC012) Send Contracting Documents to Manager

Field	Description
ID	UC013
Title	E-sign Contract Documents
Author	Diego Flores
Updated by	Diego Flores
Date creation	23/12/24
Date last edition	12/1/25
Description	After the aspirant sends the personal data requested by human talent, they need to sign the respective contract to complete the hiring process.
Actors	Aspirant
Extends/Includes	None
Preconditions	<ul style="list-style-type: none"> • The aspirant submits preliminary documents (resume and ID copy). • Human Resources approves the preliminary documents and schedules an interview. • The aspirant must have attended the interview. • The aspirant must be accepted by Human Resources during the candidate acceptance process. • The aspirant submits the required documents that are requested. • Human Resources ensures the validity of the submitted documents. • The aspirant is notified to sign the contract to complete the hiring process.
Postconditions	<ul style="list-style-type: none"> • The aspirant is notified that they have been hired for the project they initially applied for.
Flow	<ol style="list-style-type: none"> 1. The aspirant gets notified to sign the contract through the app. 2. The aspirant logs into their account. 3. The aspirant goes to the contract module. 4. The aspirant selects the contract assigned by Human Talent. 5. The aspirant signs the contract.
Alternative Flow	<ol style="list-style-type: none"> 1. If the user forgets to sign the contract: 2. Five days after Human Talent has sent the contract, the aspirant is notified again to sign it.

Table 3.13: Use Case Documentation - (UC013) E-sign Contract Documents

Field	Description
ID	UC014
Title	View contracts
Author	Diego Flores
Updated by	Diego Flores
Date creation	16/12/24
Date last edition	3/1/25
Description	The manager through the mobile application will be able to find the applicants whose contracts are available to sign.
Actors	Manager
Extends	<ul style="list-style-type: none"> • Filter2
Preconditions	<ul style="list-style-type: none"> • The manager must have logged into their account
Postconditions	None
Flow	<ol style="list-style-type: none"> 1. The manager logs into their account from the mobile application. 2. The manager heads over to the "view contracts" module. 3. The manager filters the applicant's contract to review the number of pending contracts to be signed.
Alternative Flow	<ul style="list-style-type: none"> • Filter applicant's contract by project. • Filter applicant's contract by Employment Relationship.

Table 3.14: Use Case Documentation - (UC014) View Contracts

Field	Description
ID	UC015
Title	View Projects
Author	José Ramos
Updated by	José Ramos
Date creation	13/01/25
Date last edition	16/01/25
Description	The manager or project director will be able to see all the projects he or she is associated with, along with their description, staff, start and end dates, and project status.
Actors	Manager, Director
Extends	None
Preconditions	<ul style="list-style-type: none"> The manager/director must have an account in the system and must have previously created projects.
Postconditions	<ul style="list-style-type: none"> The manager/director ensures the flow of the application process for his projects and can act depending on the status of the project.
Flow	<ol style="list-style-type: none"> The manager/director enters the internal staff section. The manager/director selects the corresponding role from the options. The manager/director logs into the system with his credentials. The manager/director selects the "my projects" section. The manager/director sees the list of projects he has previously created to which he is linked.
Alternative Flow	None

Table 3.15: Use Case Documentation - (UC015) View Projects

Field	Description
ID	UC016
Title	See Project's Information
Author	Diego Flores
Updated by	Diego Flores
Date creation	08/01/25
Date last edition	08/01/25
Description	“See project’s details” is a system feature that allows the project director to review details of his/her projects, such as the number of applicants hired and their personal data, and the job application status of those applicants who haven’t been hired.
Actors	Project Director
Extends	Edit project
Preconditions	<ul style="list-style-type: none"> The director must have selected a project that’s displayed in the project’s table list.
Postconditions	<ul style="list-style-type: none"> The project director will be able to see detailed information about applicants and their job application status.
Flow	<ol style="list-style-type: none"> The director logs in to his/her account. The director clicks on “Mis proyectos.” The director clicks on any of the projects in the project’s table list.
Alternative Flow	<p>Project director edits a project:</p> <ol style="list-style-type: none"> The director logs in to his/her account. The director clicks on “Mis proyectos.” The director clicks on any of the projects in the project’s table list. The director clicks on “Estado de perfiles.” The director will be able to change the job project’s details such as the project’s name, description, and project duration. The director will also be able to add a new profile vacancy. <p>Project director clicks on “Estado de perfiles”:</p> <ol style="list-style-type: none"> The director logs in to his/her account. The director clicks on “Mis proyectos.” The director clicks on any of the projects in the project’s table list. The director clicks on “Estado de perfiles.” The project director will be able to review the details of the aspirants, including name, ID, and postulation status.

Table 3.16: Use Case Documentation - (UC016) See Project’s Information

Field	Description
ID	UC017
Title	See Profiles
Author	Jeremy Poveda
Updated by	Jeremy Poveda
Date creation	10/01/25
Date last edition	16/01/25
Description	This feature allows the project manager or project director to filter applicants by project and view their application status for each profile.
Actors	Project Manager, Project Director
Extends	None
Preconditions	<ul style="list-style-type: none"> The manager or project director must be logged into the system. The manager or project director must have at least one project with profiles and applicants associated.
Postconditions	<ul style="list-style-type: none"> The manager or project director will be able to filter applicants by project and review the status of their applications.
Flow	<ol style="list-style-type: none"> The manager or project director logs into the system. The manager or project director navigates to the “Profiles” section. The manager or project director applies a filter to select the desired project. The system displays a list of applicants for the selected project. The manager or project director reviews the postulation status for each applicant profile (e.g., accepted, pending contract sign, completed).
Alternative Flow	<p>Filter applicants by status:</p> <ol style="list-style-type: none"> The manager or project director logs into the system. The manager or project director navigates to the “Profiles” section. The manager or project director applies a filter to view applicants based on their application status (e.g., pending, accepted, rejected).

Table 3.17: Use Case Documentation - (UC017) See Profiles

3.2 Use Cases - Mobile Module

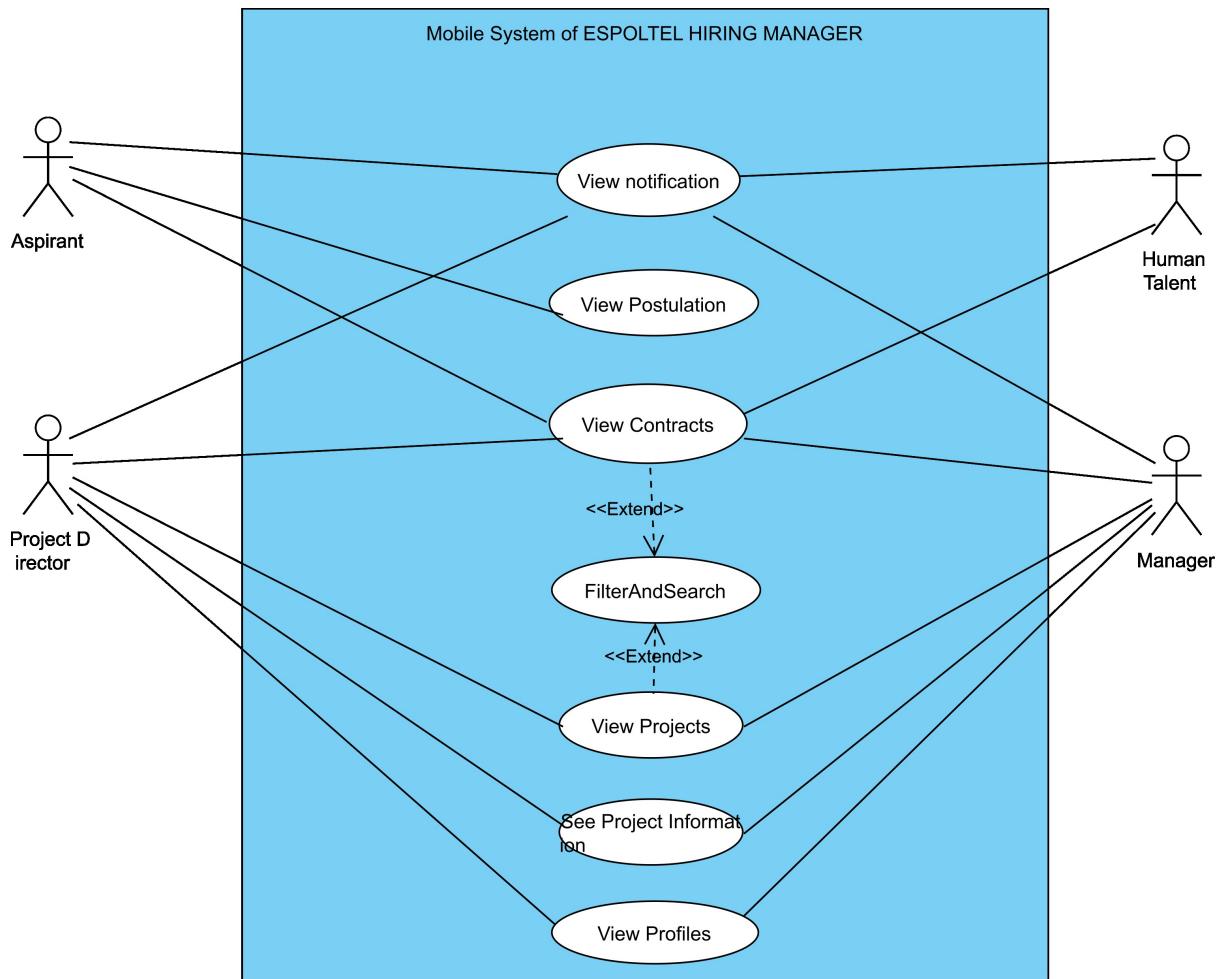


Figure 3.2: Mobile Module Use Cases Diagram of ESPOLTEL HIRING MANAGER

Field	Description
ID	UC018
Title	View Notifications on Mobile
Author	Jeremy Poveda
Updated by	Jeremy Poveda
Date creation	8/01/25
Date last edition	17/01/25
Description	This feature allows any user of ESPOLTEL HIRING MANAGER (Director, Aspirant, Manager, Human Talent) to receive notifications on their mobile device about important updates regarding the hiring process and project management.
Actors	Director, Aspirant, Manager, Human Talent
Extends	None
Preconditions	<ul style="list-style-type: none"> The user must have an account in the system. The user must have a mobile device with the ESPOLTEL HIRING MANAGER app installed. The user must have enabled notifications for the app.
Postconditions	<ul style="list-style-type: none"> The user will receive real-time notifications about relevant actions or updates in the hiring process and project status.
Flow	<ol style="list-style-type: none"> The user configures their mobile device to receive notifications from the ESPOLTEL HIRING MANAGER app. The system detects relevant events related to hiring or projects. The system sends a notification to the user's mobile device, informing them about events such as: <ul style="list-style-type: none"> A new candidate has been accepted or rejected. A document has been requested or received. A contract is ready for signature. A project has an important update. The status of an applicant's postulation has changed. The user receives the notification and can view additional details via the mobile app.
Alternative Flow	<p>If the user has notifications disabled:</p> <ol style="list-style-type: none"> The system will notify the user to enable notifications in their device settings. Once enabled, the user will begin receiving notifications as described in the main flow.

Table 3.18: Use Case Documentation - (UC018) Receive Notifications on Mobile

Field	Description
ID	UC019
Name	View application status on mobile
Created by	Jeremy Poveda
Updated by	Jeremy Poveda
Date creation	8/01/25
Date last edition	17/01/25
Description	The system allows the aspirant to view the status of their application (e.g., accepted, pending, rejected) for a specific project, using a unique code, optimized for mobile devices.
Actors	Aspirant
Extends	Nothing
Preconditions	The aspirant has an account created and is logged in, as well as the project code they are interested in. The system must be optimized for mobile use.
Postconditions	The aspirant will be able to see the status of their application for the selected project, with the unique code, on their mobile device.
Flow	<ol style="list-style-type: none"> 1. The aspirant opens the ESPOLTEL HIRING MANAGER app on their mobile device. 2. The aspirant enters their credentials in the login section. 5. The system displays the status (e.g., accepted, pending, rejected) of the profile they applied for, optimized for mobile viewing.
Alternative Flow	There are no alternative flows.

Table 3.19: Use Case Documentation - (UC019) View Application Status on Mobile

Field	Description
ID	UC020
Title	View contracts on mobile
Author	Jeremy Poveda
Updated by	Jeremy Poveda
Date creation	8/12/24
Date last edition	16/12/24
Description	The manager, through the mobile application, will be able to find the applicants whose contracts are available to sign and review them easily on their mobile device.
Actors	Manager
Extends	<ul style="list-style-type: none"> • Filter
Preconditions	<ul style="list-style-type: none"> • The manager must have logged into their account on the mobile application.
Postconditions	None
Flow	<ol style="list-style-type: none"> 1. The manager opens the ESPOLTEL HIRING MANAGER mobile application and logs into their account. 2. The manager navigates to the "View contracts" module. 3. The manager applies filters to view and review the applicants' contracts available to be signed on their mobile device.
Alternative Flow	<ul style="list-style-type: none"> • Filter applicants' contracts by project. • Filter applicants' contracts by Employment Relationship.

Table 3.20: Use Case Documentation - (UC020) View Contracts on Mobile

Field	Description
ID	UC021
Title	View Projects on Mobile
Author	José Ramos
Updated by	Jeremy Poveda
Date creation	8/01/25
Date last edition	16/01/25
Description	The manager or project director will be able to view all the projects they are associated with, along with their descriptions, staff, start and end dates, and project status, directly from their mobile device.
Actors	Manager, Director
Extends	None
Preconditions	<ul style="list-style-type: none"> The manager or director must have an account in the system and must have previously created projects.
Postconditions	<ul style="list-style-type: none"> The manager or director will be able to monitor the application process for their projects and take necessary actions based on the project status, directly from their mobile device.
Flow	<ol style="list-style-type: none"> The manager or director opens the ESPOLTEL HIRING MANAGER mobile app. The manager or director navigates to the "My Projects" section. The manager or director logs into the system using their credentials. The system displays a list of projects that the manager or director is associated with, showing project descriptions, staff, start and end dates, and project status.
Alternative Flow	None

Table 3.21: Use Case Documentation - (UC021) View Projects on Mobile

Field	Description
ID	UC022
Title	See Project's Information on Mobile
Author	Diego Flores
Updated by	Diego Flores
Date creation	08/01/25
Date last edition	08/01/25
Description	“See project’s details” is a system feature that allows the project director to review details of his/her projects from the mobile app, such as the number of applicants hired and their personal data, and the job application status of those applicants who haven’t been hired.
Actors	Project Director
Extends	Edit project
Preconditions	<ul style="list-style-type: none"> The director must have selected a project displayed in the project’s list on the mobile app.
Postconditions	<ul style="list-style-type: none"> The project director will be able to see detailed information about applicants and their job application status directly from their mobile device.
Flow	<ol style="list-style-type: none"> The director opens the mobile app and logs into their account. The director navigates to the "My Projects" section in the app. The director selects a project from the list of their projects displayed in the app.
Alternative Flow	<p>Project director edits a project:</p> <ol style="list-style-type: none"> The director opens the mobile app and logs into their account. The director navigates to the "My Projects" section in the app. The director selects a project from the list of their projects. The director taps on "Profile Status." The director can edit project details such as name, description, and project duration, and add new profile vacancies. <p>Project director clicks on “Profile Status”:</p> <ol style="list-style-type: none"> The director opens the mobile app and logs into their account. The director navigates to the "My Projects" section. The director selects a project from the list. The director taps on "Profile Status." The director can review the applicants’ details including name, ID, and postulation status.

Table 3.22: Use Case Documentation - (UC022) See Project’s Information on Mobile

Field	Description
ID	UC023
Title	See Profiles on Mobile
Author	Jeremy Poveda
Updated by	Jeremy Poveda
Date creation	8/01/25
Date last edition	16/01/25
Description	This feature allows the project manager or project director to filter applicants by project and view their application status for each profile directly from their mobile device.
Actors	Project Manager, Project Director
Extends	None
Preconditions	<ul style="list-style-type: none"> The manager or project director must be logged into the system via the mobile app. The manager or project director must have at least one project with profiles and applicants associated.
Postconditions	<ul style="list-style-type: none"> The manager or project director will be able to filter applicants by project and review the status of their applications directly from their mobile device.
Flow	<ol style="list-style-type: none"> The manager or project director opens the mobile app and logs into the system. The manager or project director navigates to the “Profiles” section in the app. The manager or project director applies a filter to select the desired project from the list. The system displays a list of applicants for the selected project. The manager or project director reviews the postulation status for each applicant profile (e.g., accepted, pending contract sign, completed).
Alternative Flow	<p>Filter applicants by status on mobile:</p> <ol style="list-style-type: none"> The manager or project director opens the mobile app and logs into the system. The manager or project director navigates to the “Profiles” section in the app. The manager or project director applies a filter to view applicants based on their application status (e.g., pending, accepted, rejected).

Table 3.23: Use Case Documentation - (UC023) See Profiles on Mobile

3.3 Class Diagram - Web Module

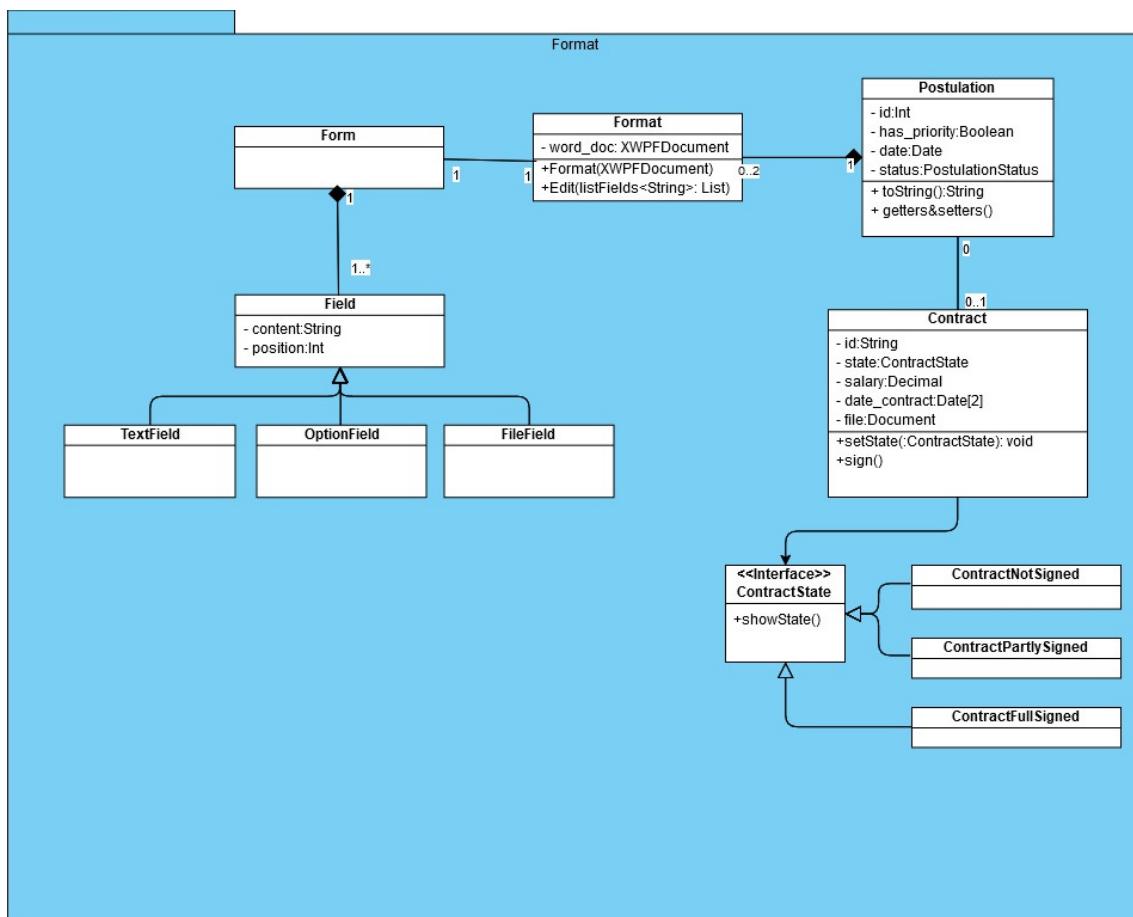


Figure 3.3: Package Format, with pattern State for the status, for Web Module

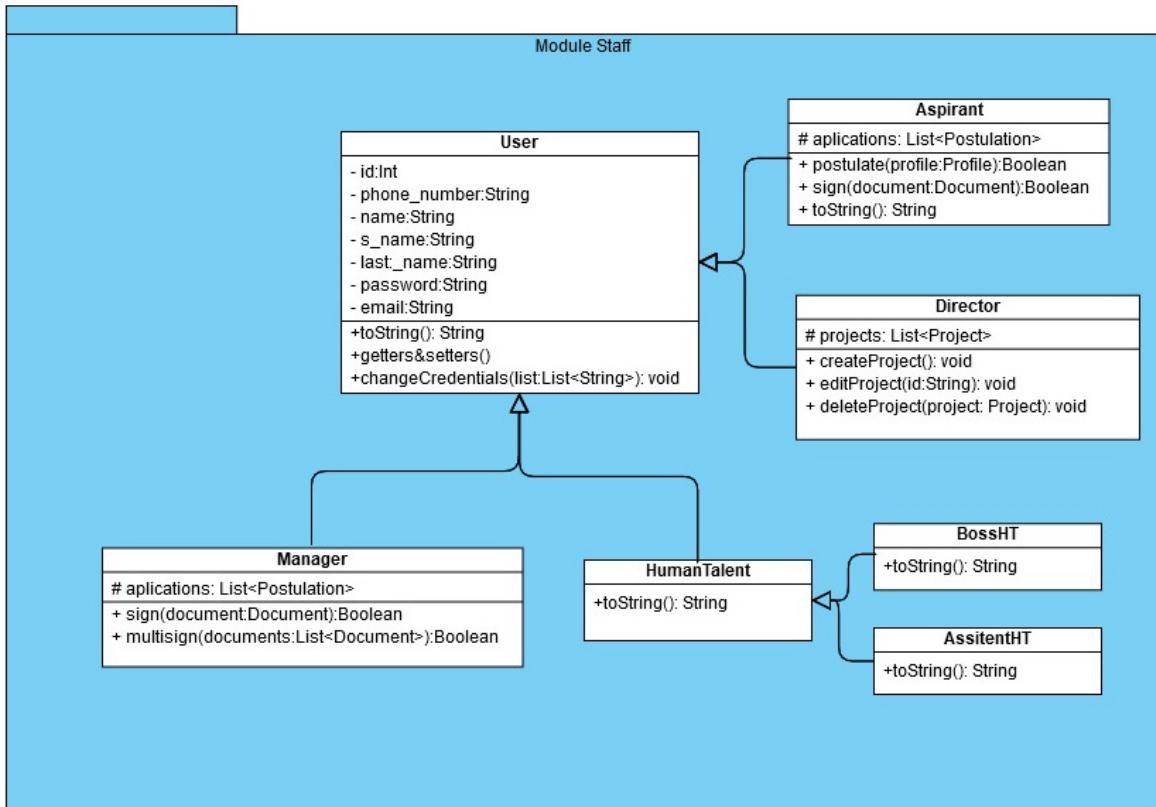


Figure 3.4: Package Staff, logic of users for Web Module

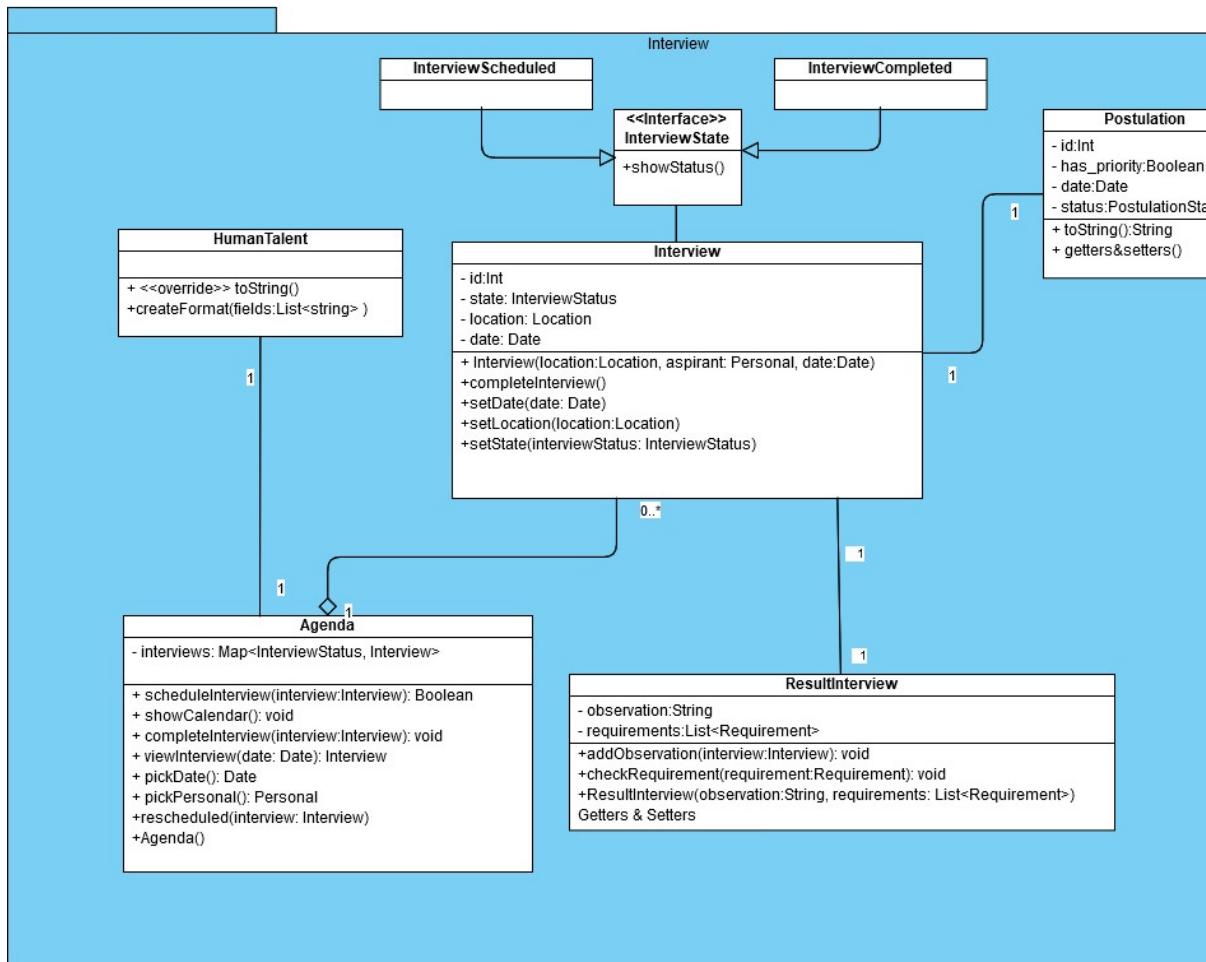


Figure 3.5: Package of Interview, with pattern State for the state, for Web Module

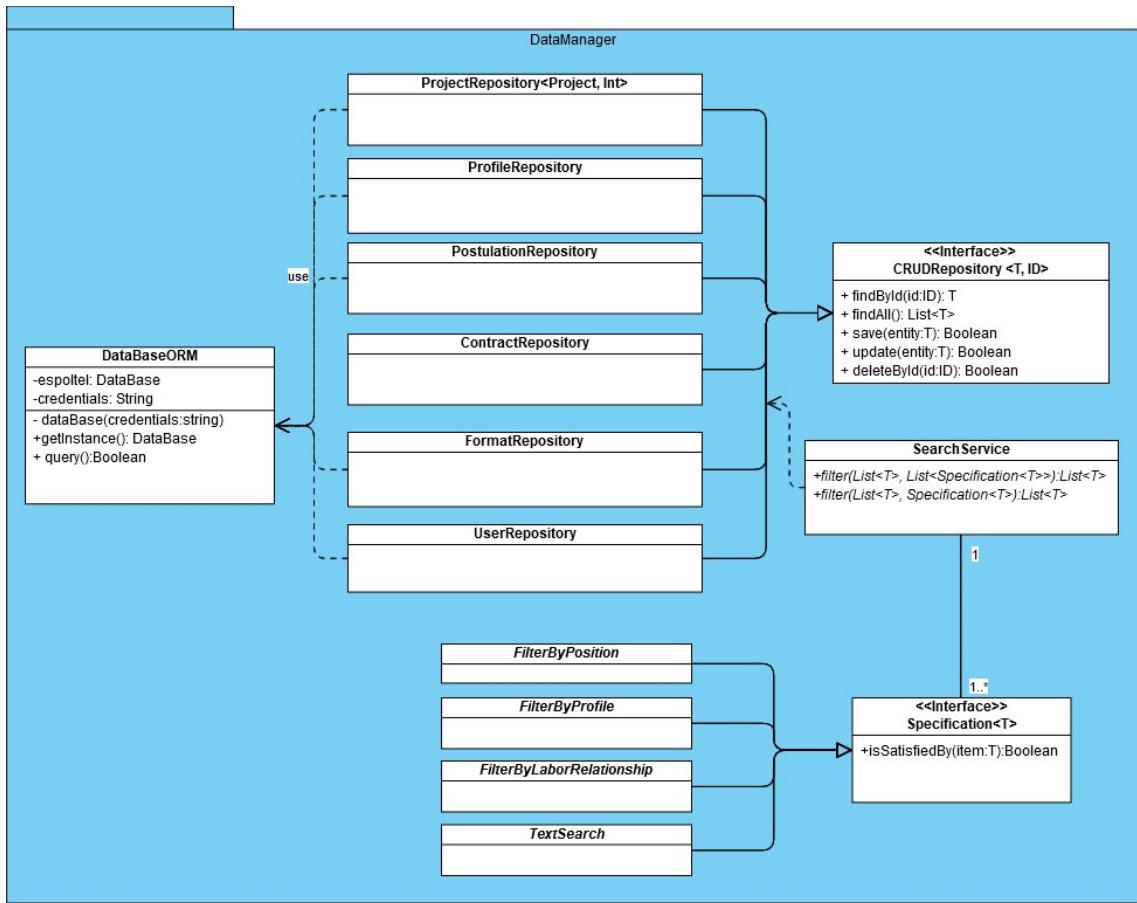


Figure 3.6: Package DataManager, with pattern Repository and Specification for Web Module

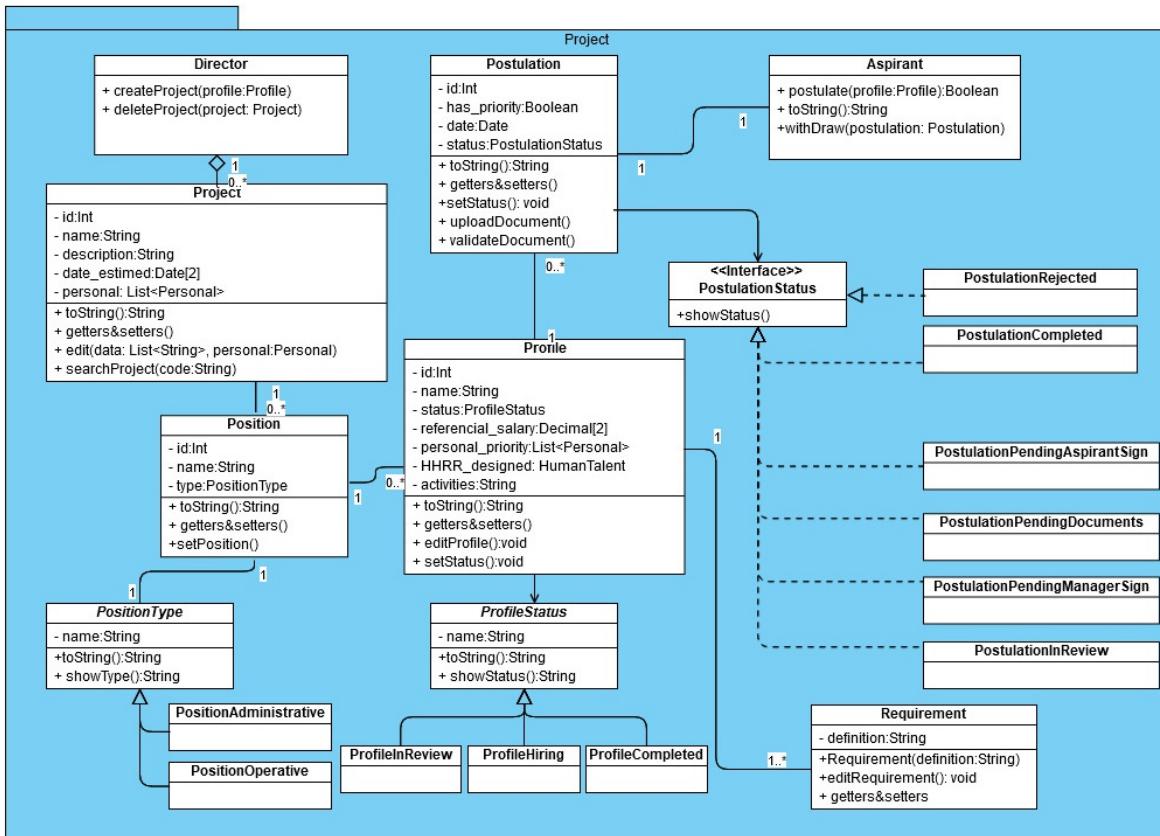


Figure 3.7: Package Project, with business logic of projects in ESPOLTEL for Web Module

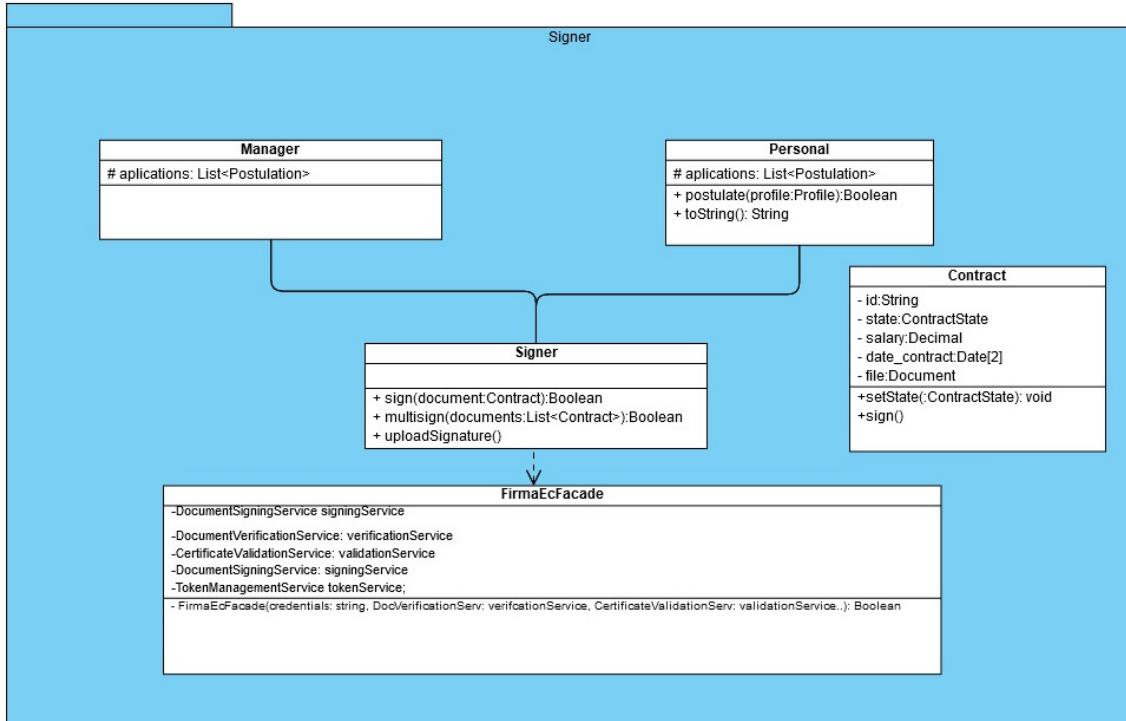


Figure 3.8: Package Signer, with a Facade pattern for use the FirmaEC's modules for Web Module

3.4 Class Diagram - Mobile Module

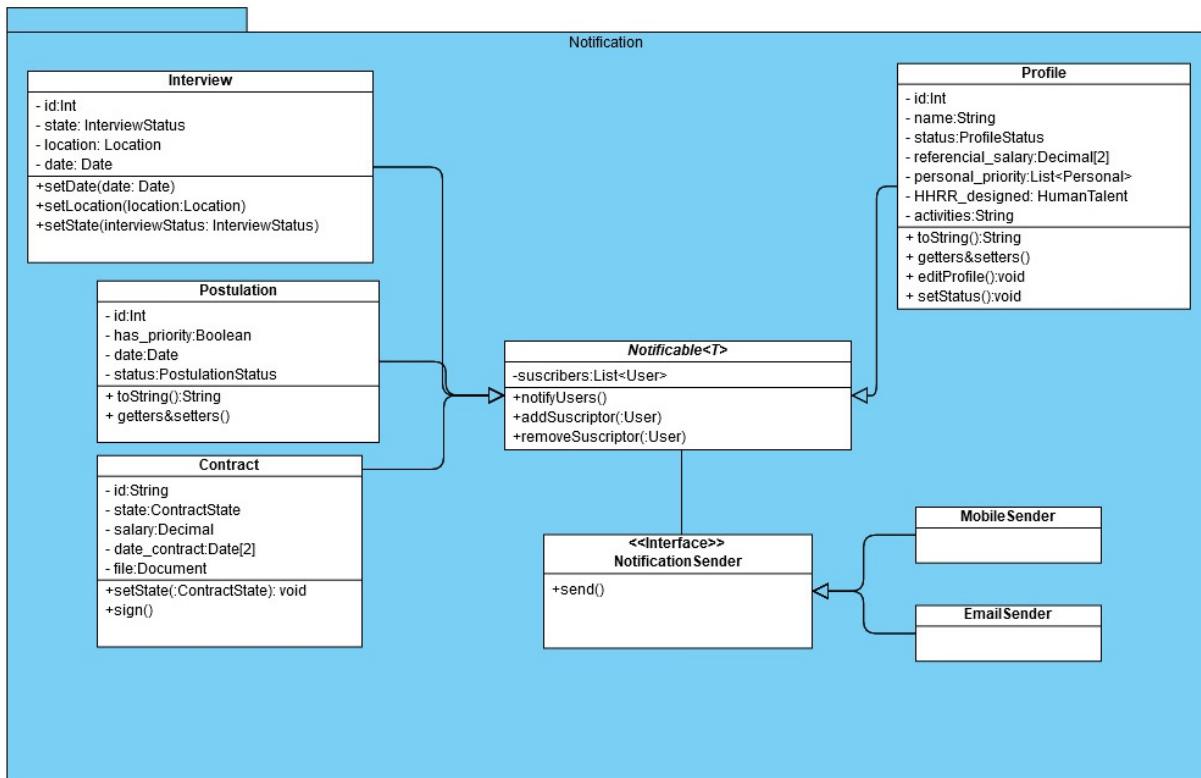


Figure 3.9: Package Notification, with Observer pattern for Mobile Module

3.5 Object Diagram

Made with
Visual Paradigm
For non-commercial use

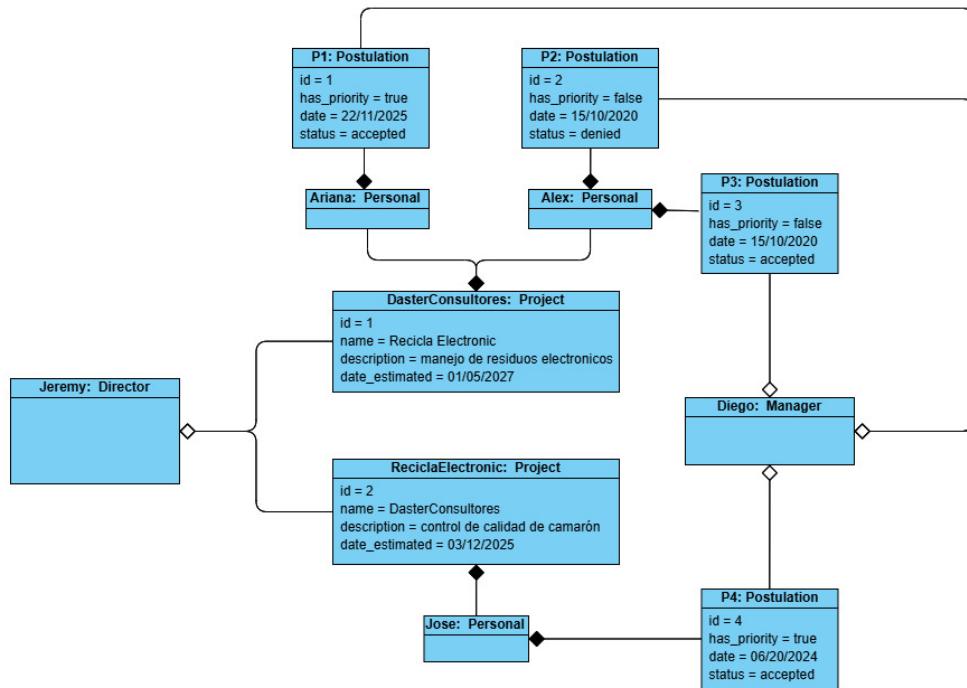


Figure 3.10: Object Diagram of ESPOLTEL HIRING MANAGER

3.6 Component Diagram - Web Module

Made with
Visual Paradigm
For non-commercial use

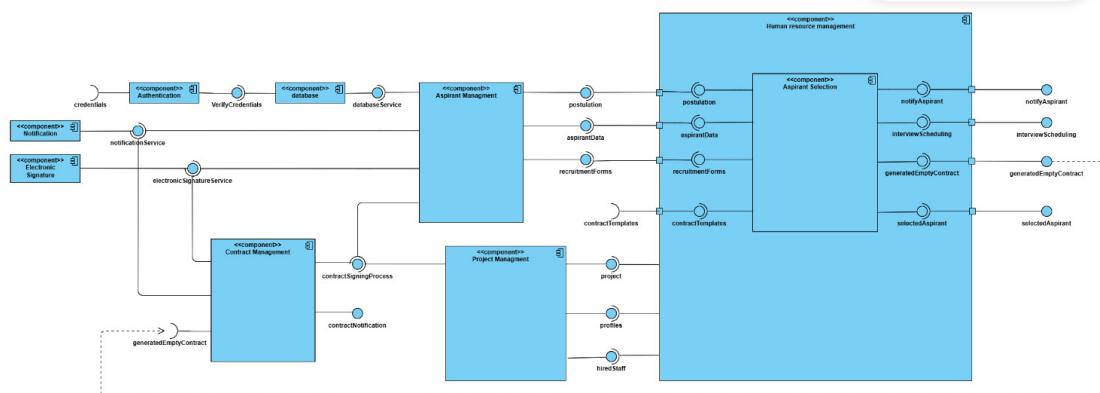


Figure 3.11: Web module component Diagram

3.7 Component Diagram - Mobile Module

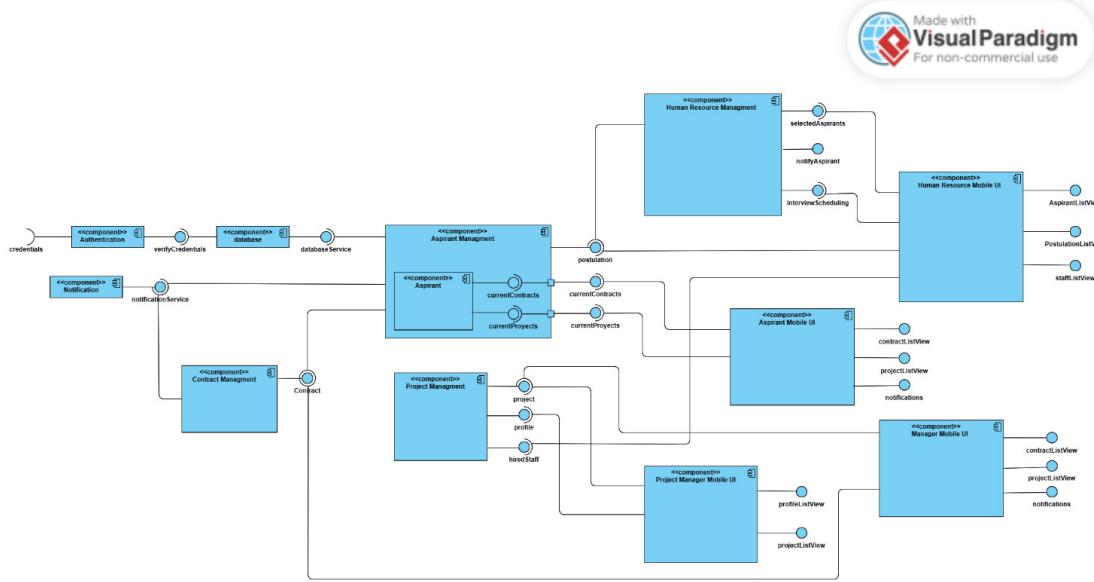


Figure 3.12: Mobile module component Diagram

3.8 Deployment Diagram - Web Module

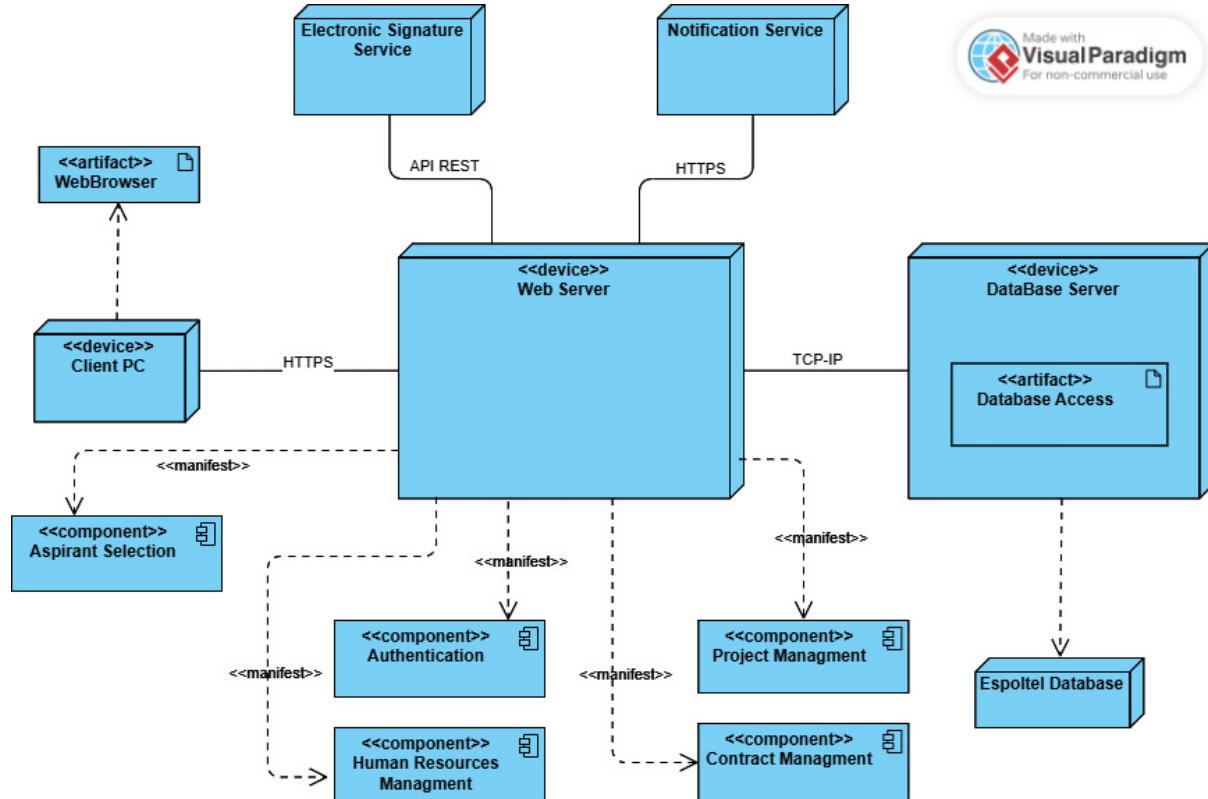


Figure 3.13: Web module deployment Diagram

3.9 Deployment Diagram - Mobile Module

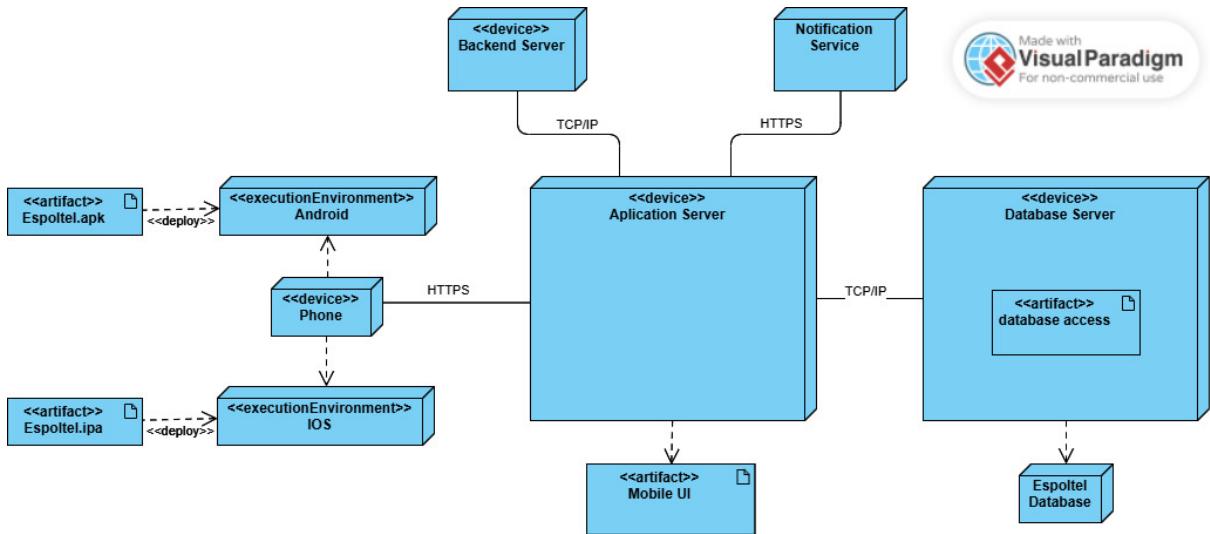


Figure 3.14: Mobile module deployment Diagram

4 Behavior UML

4.1 Activity Diagram

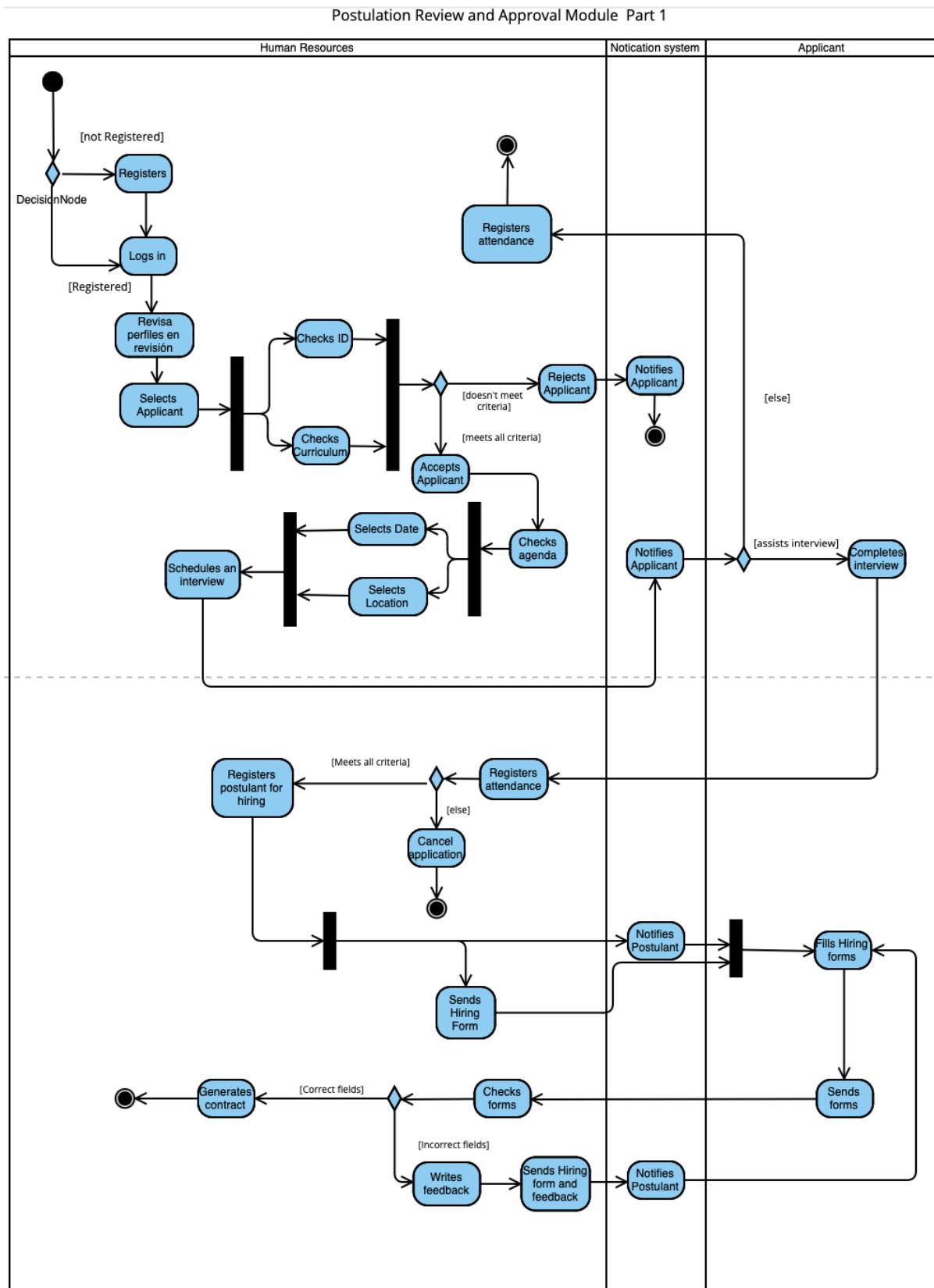


Figure 4.1: Activity Diagram: Postulation review, Part one
61

Postulation Review and Approval Module Part 2

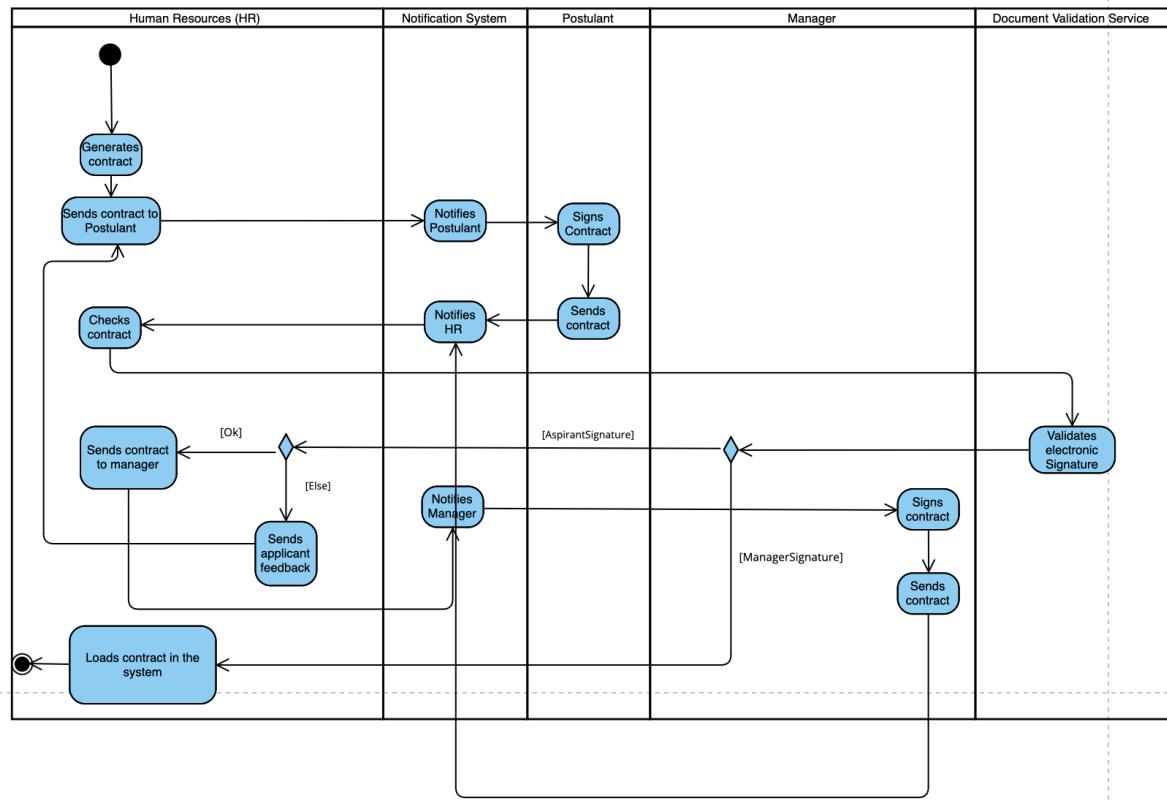


Figure 4.2: Activity Diagram: Postulation review, Part two

Application Module

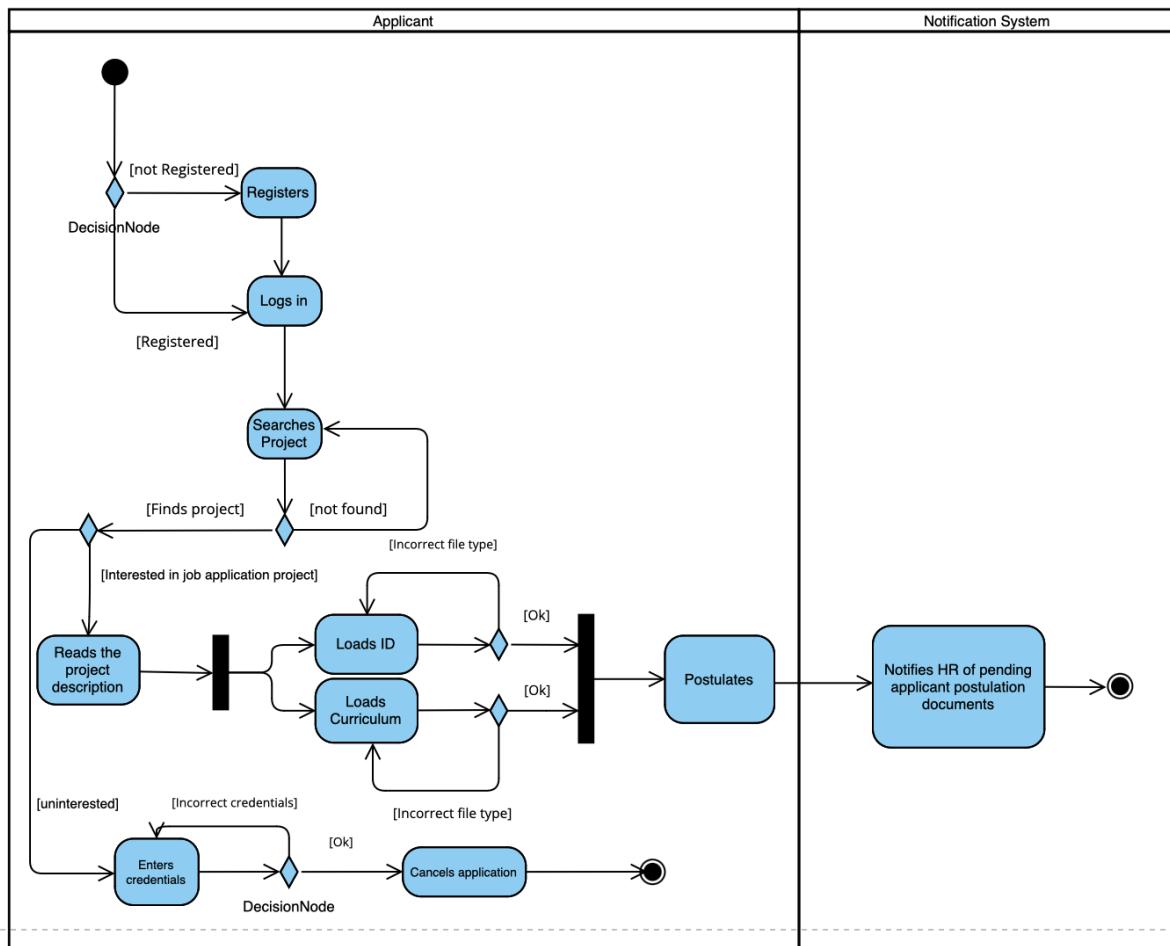


Figure 4.3: Activity Diagram: Make an Application/Postulation

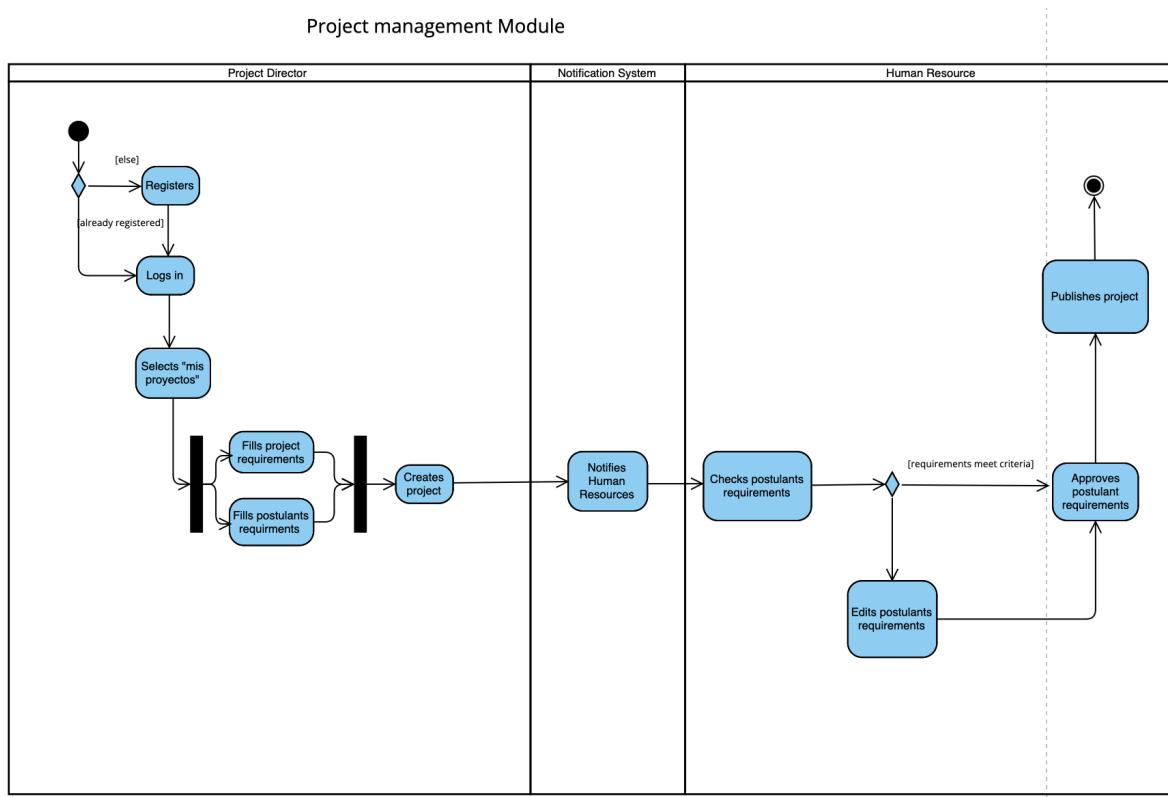


Figure 4.4: Activity Diagram: Management of a project

4.2 Sequence Diagram

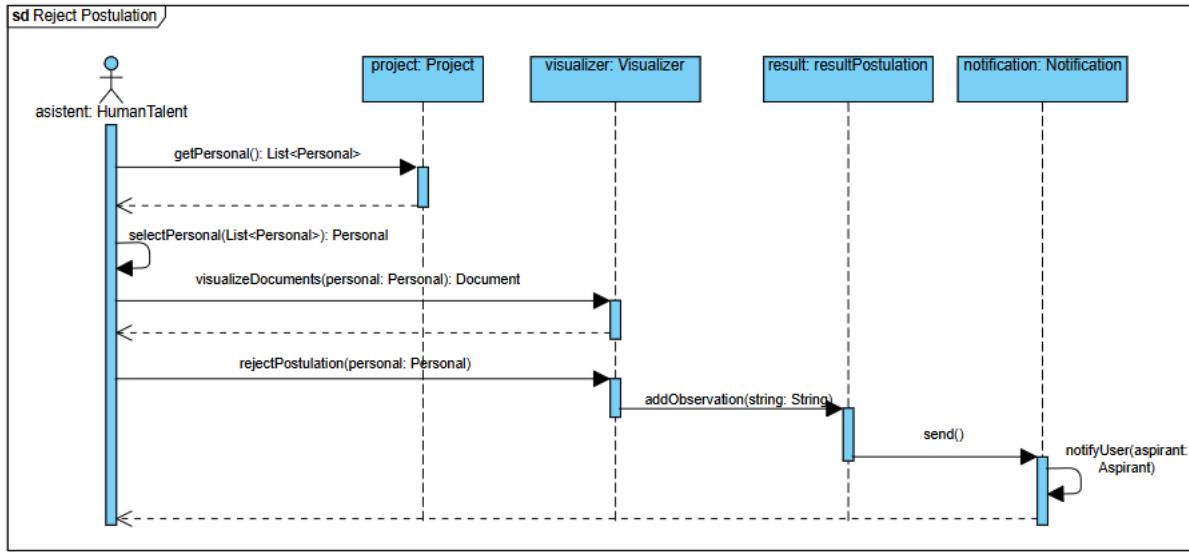


Figure 4.5: Sequence Diagram 0

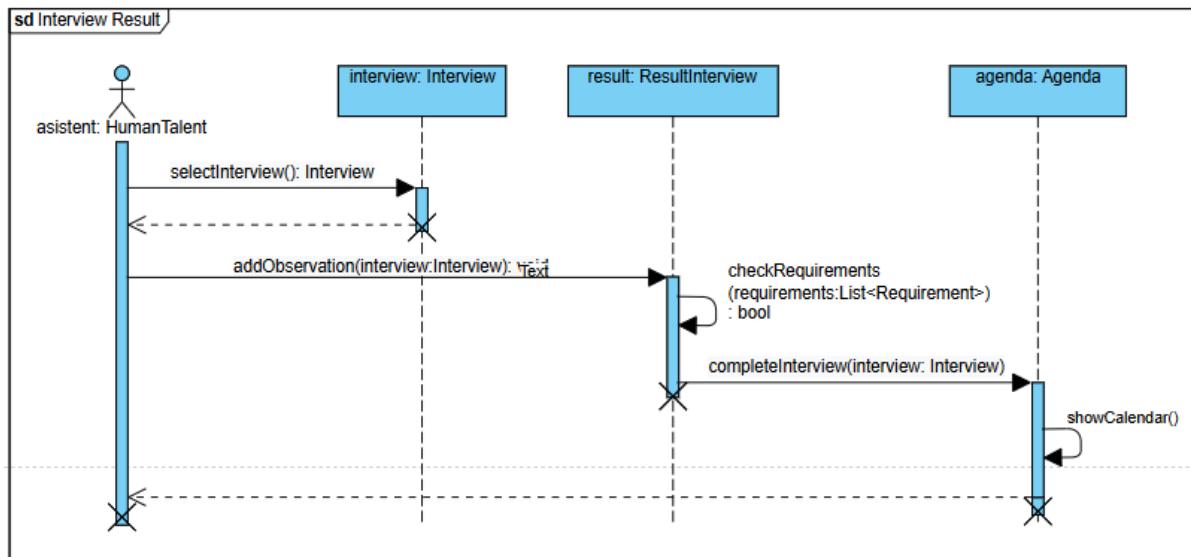


Figure 4.6: Sequence Diagram 1

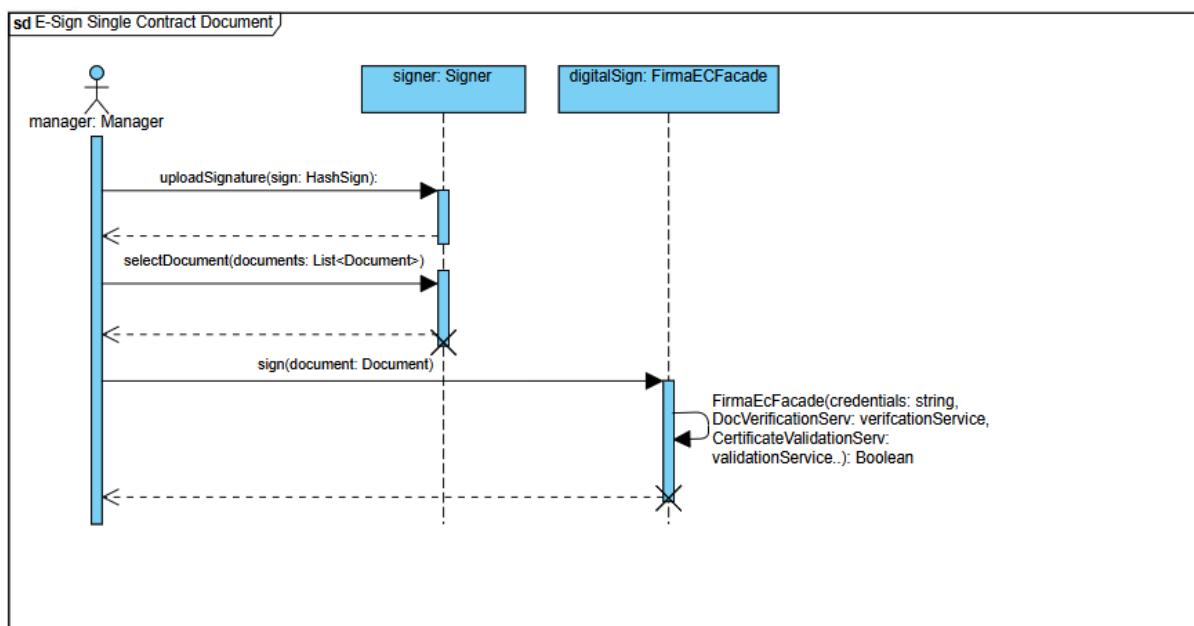


Figure 4.7: Sequence Diagram 2

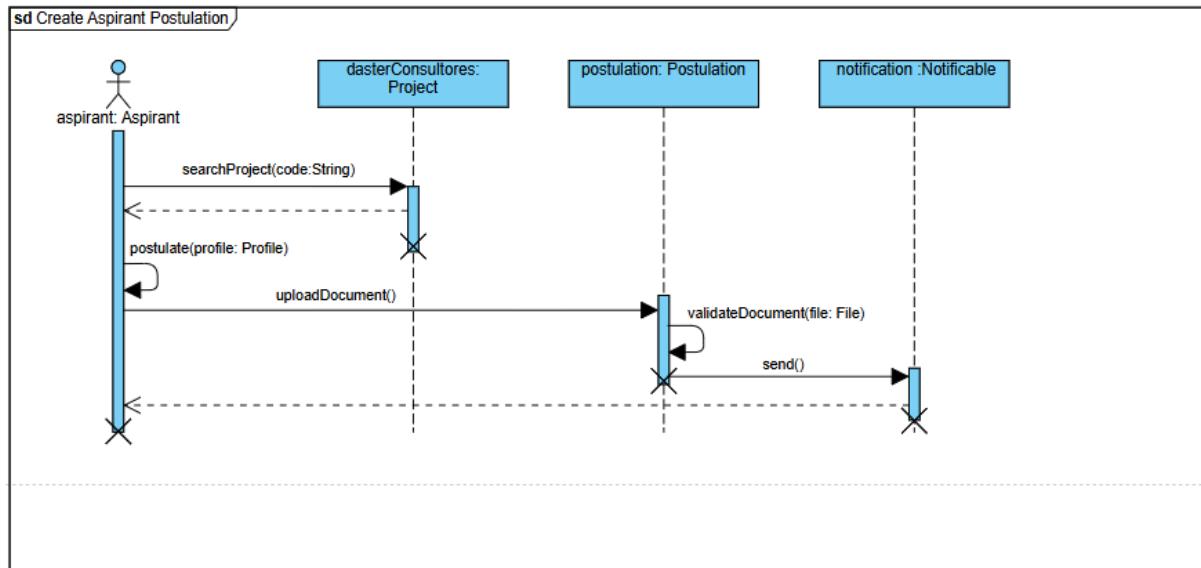


Figure 4.8: Sequence Diagram 3

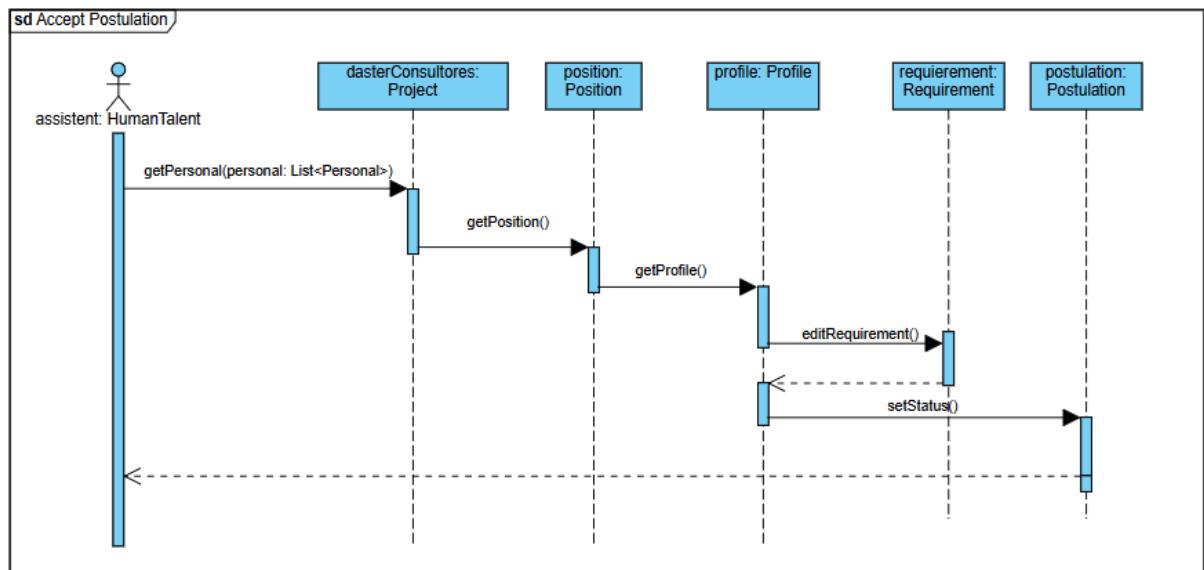


Figure 4.9: Sequence Diagram 4

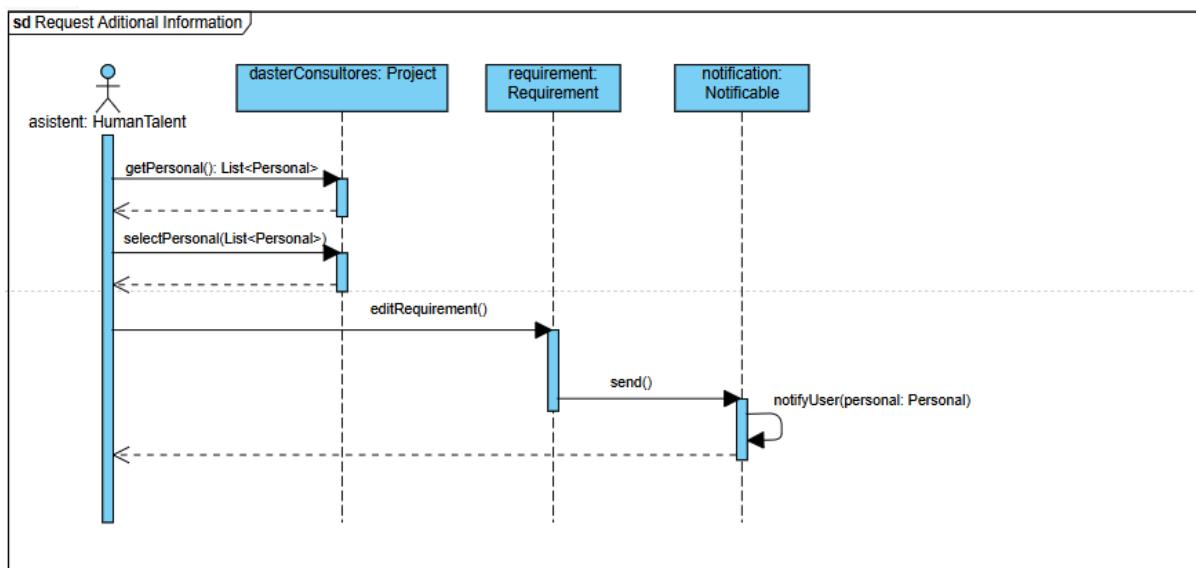


Figure 4.10: Sequence Diagram 5

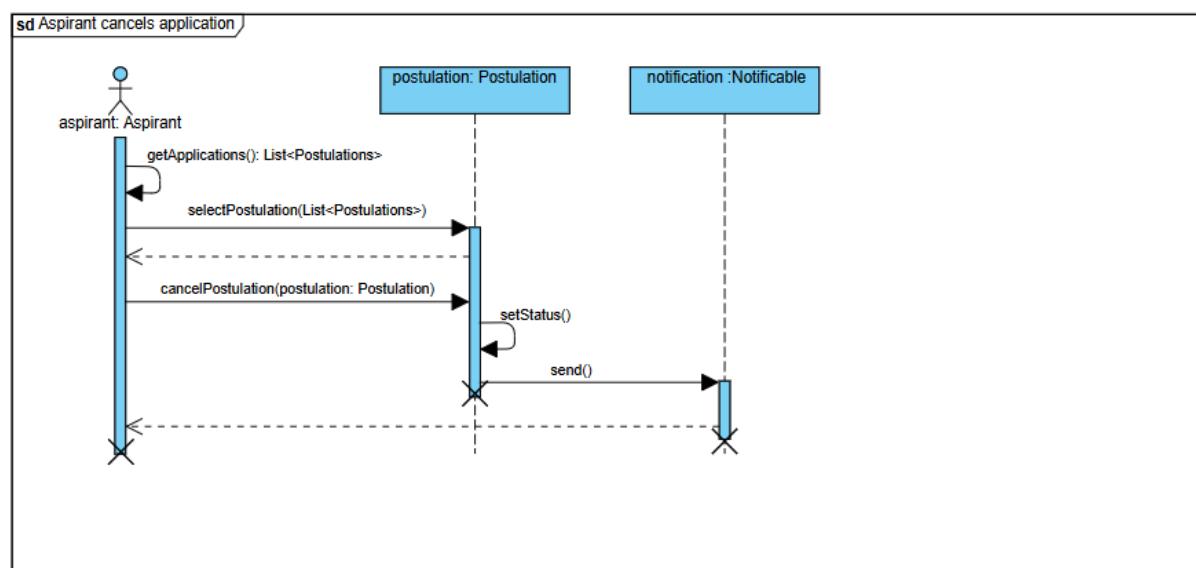


Figure 4.11: Sequence Diagram 6

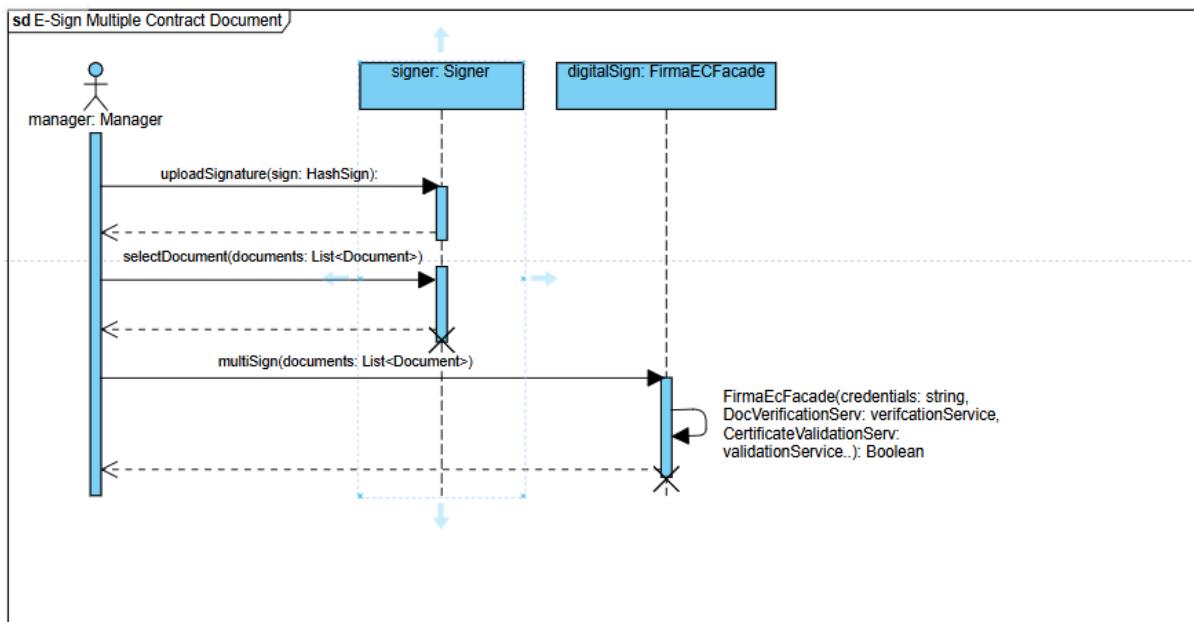


Figure 4.12: Sequence Diagram 7

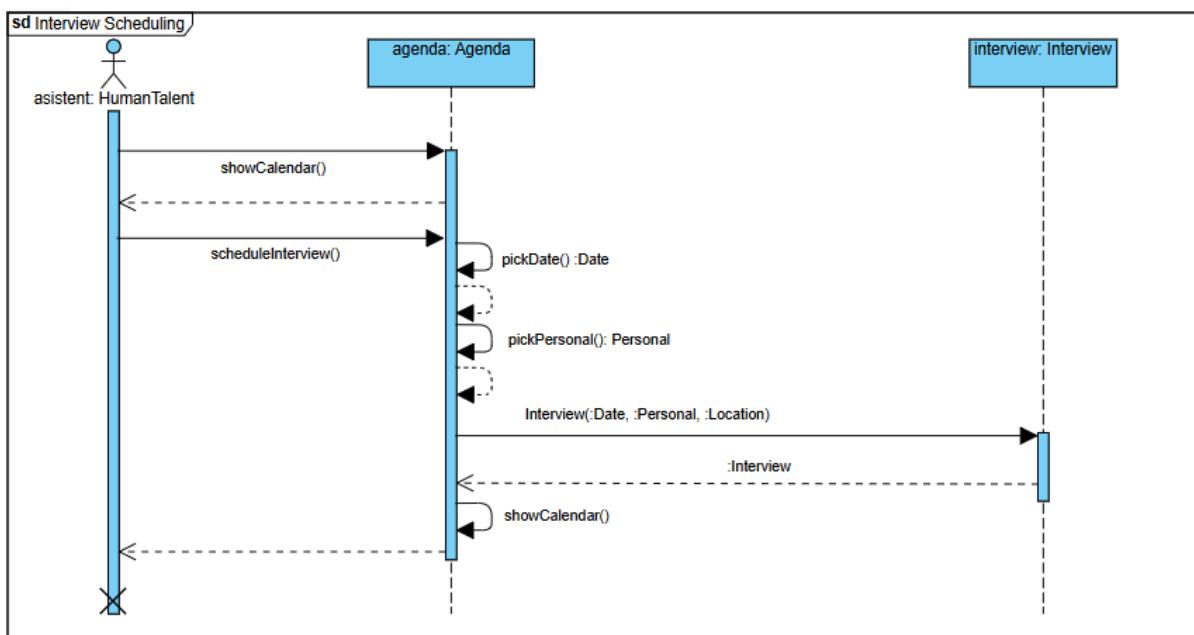


Figure 4.13: Sequence Diagram 8

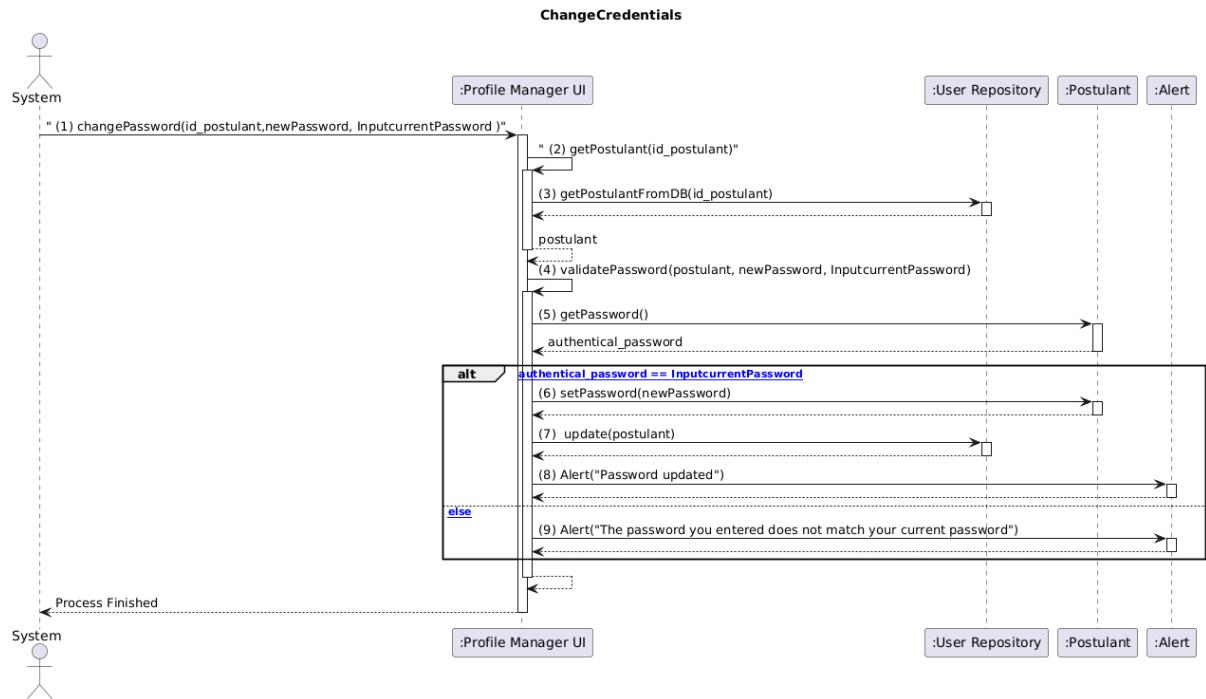


Figure 4.14: Sequence Diagram 9

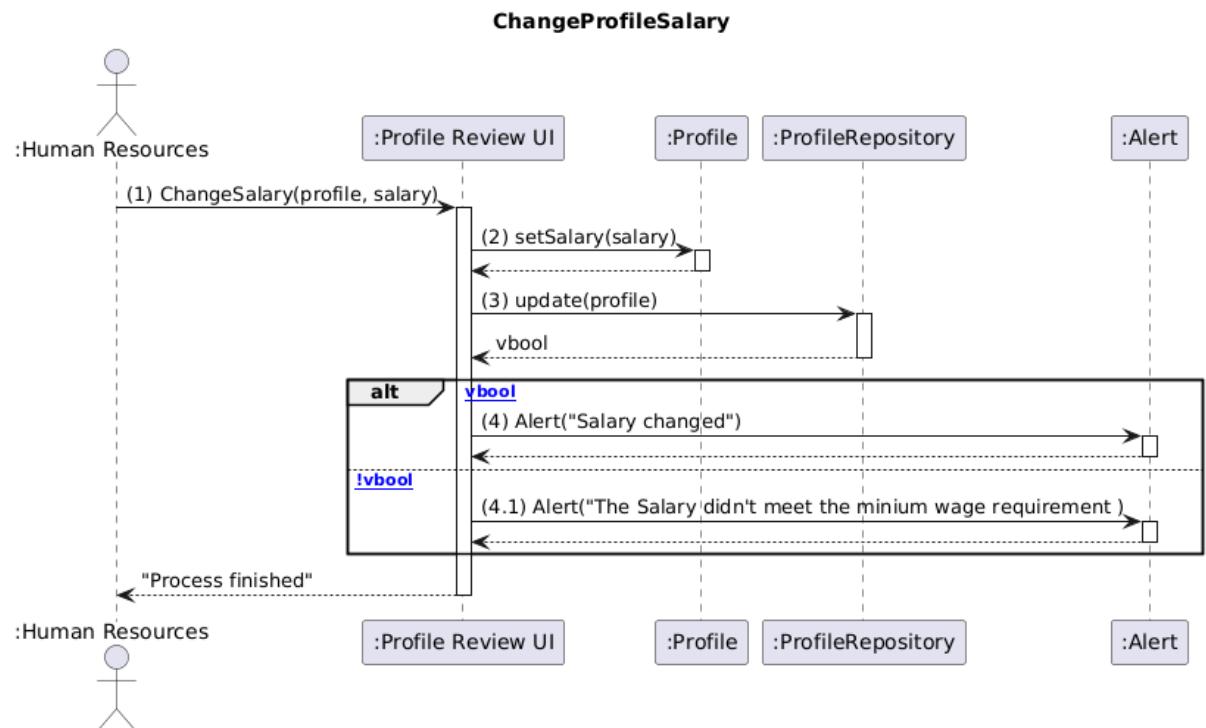


Figure 4.15: Sequence Diagram 10

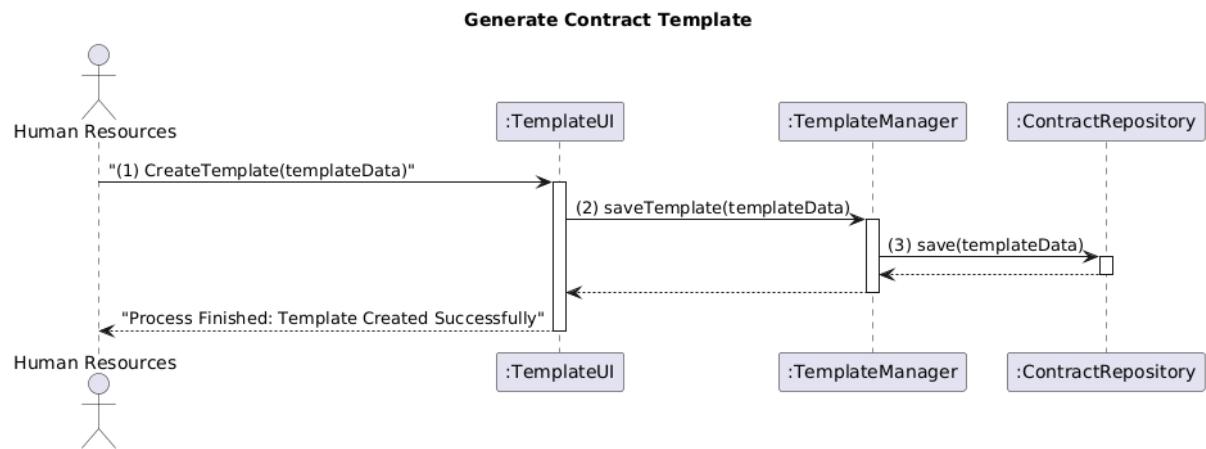


Figure 4.16: Sequence Diagram 11

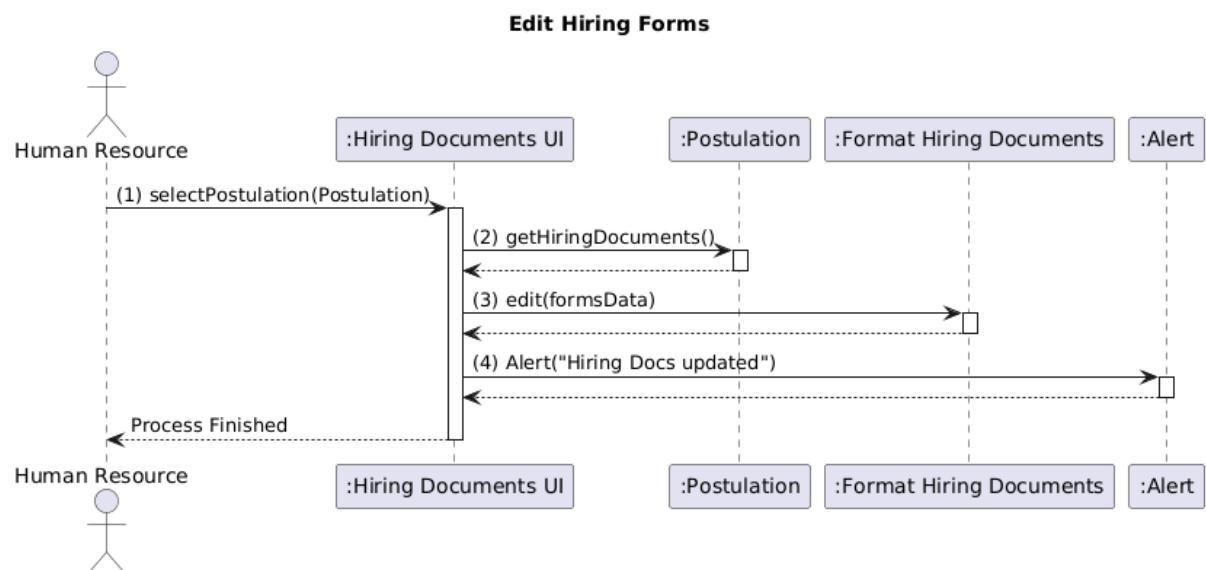


Figure 4.17: Sequence Diagram 12

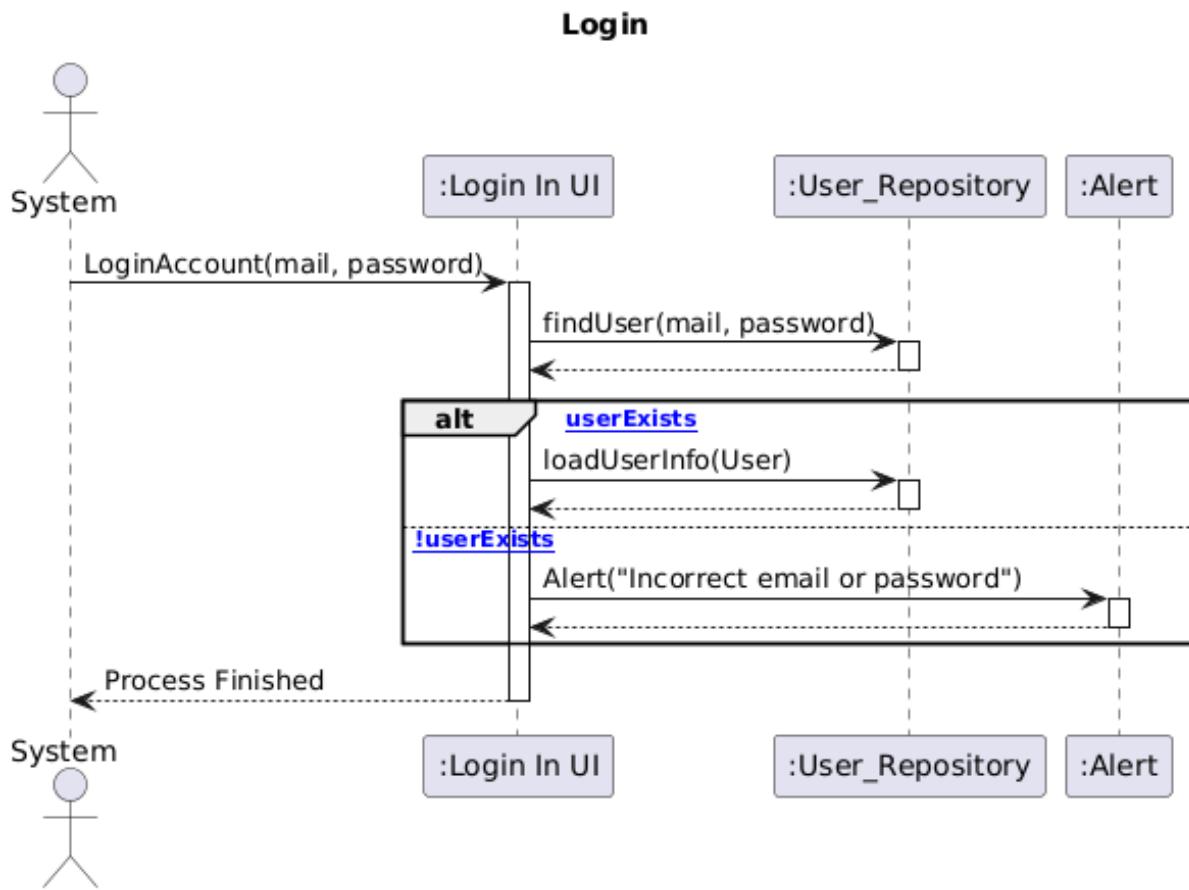


Figure 4.18: Sequence Diagram 13

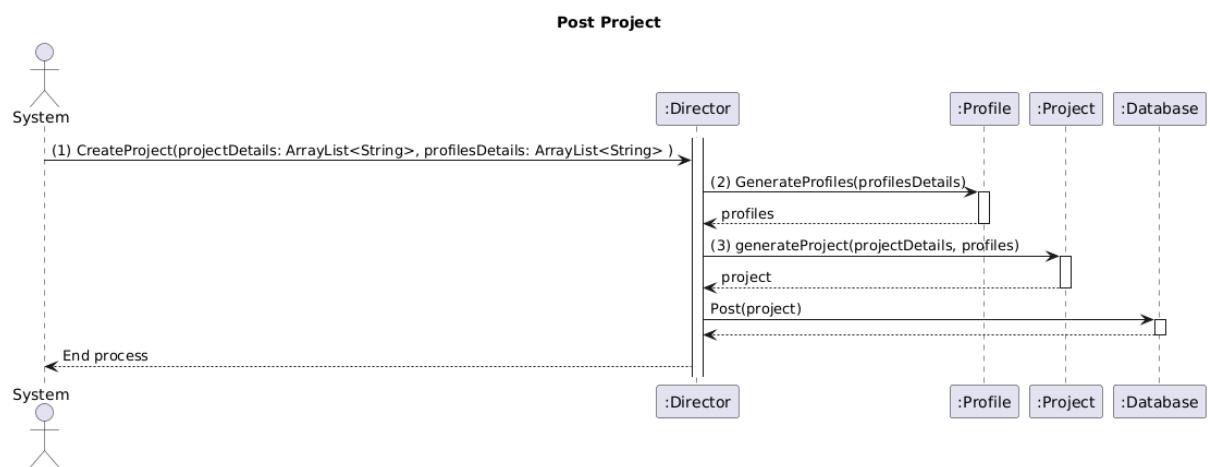


Figure 4.19: Sequence Diagram 14

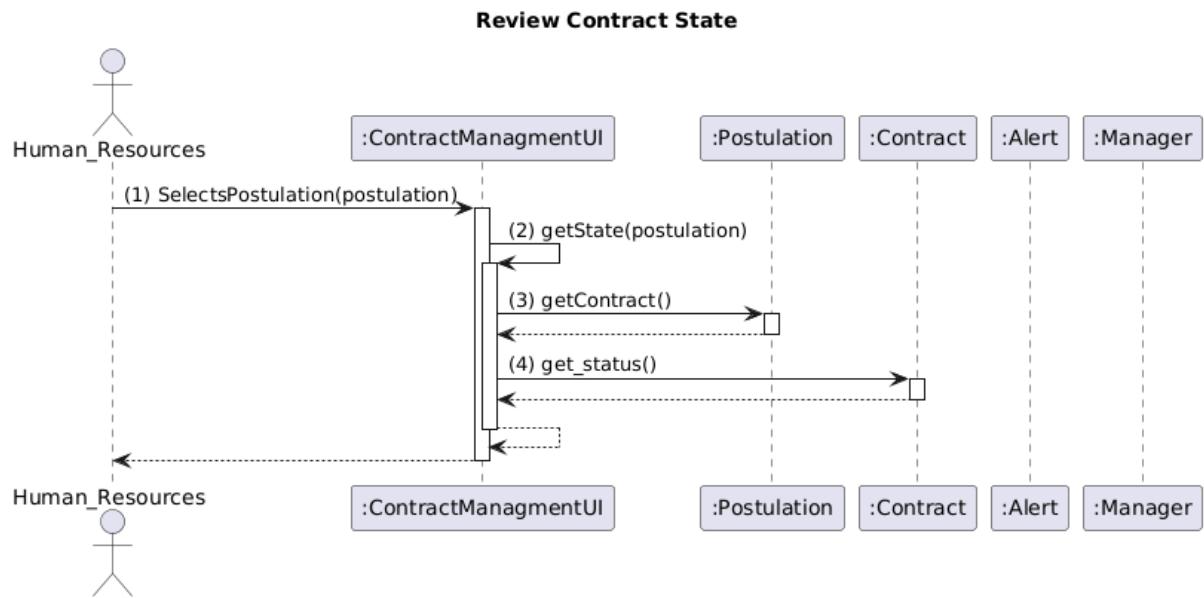


Figure 4.20: Sequence Diagram 15

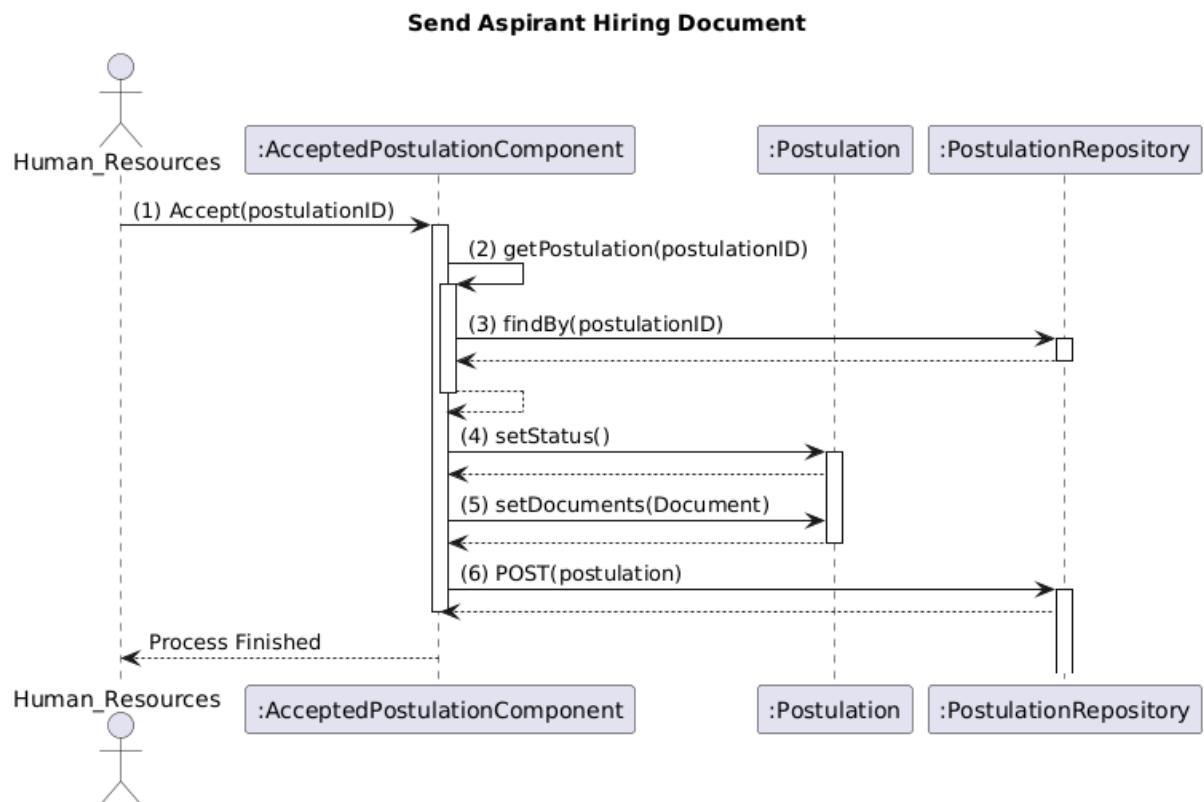


Figure 4.21: Sequence Diagram 16

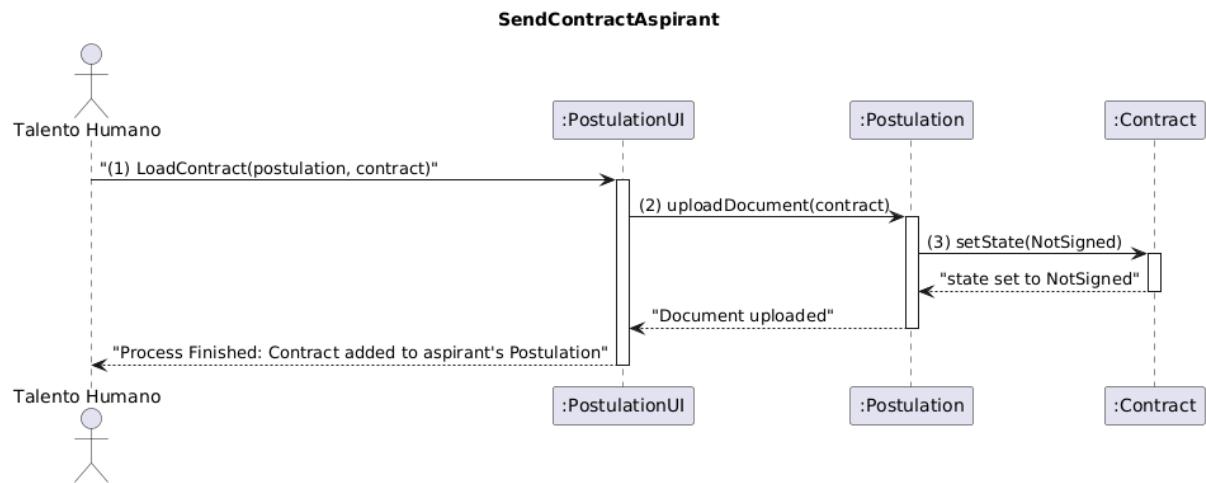


Figure 4.22: Sequence Diagram 17

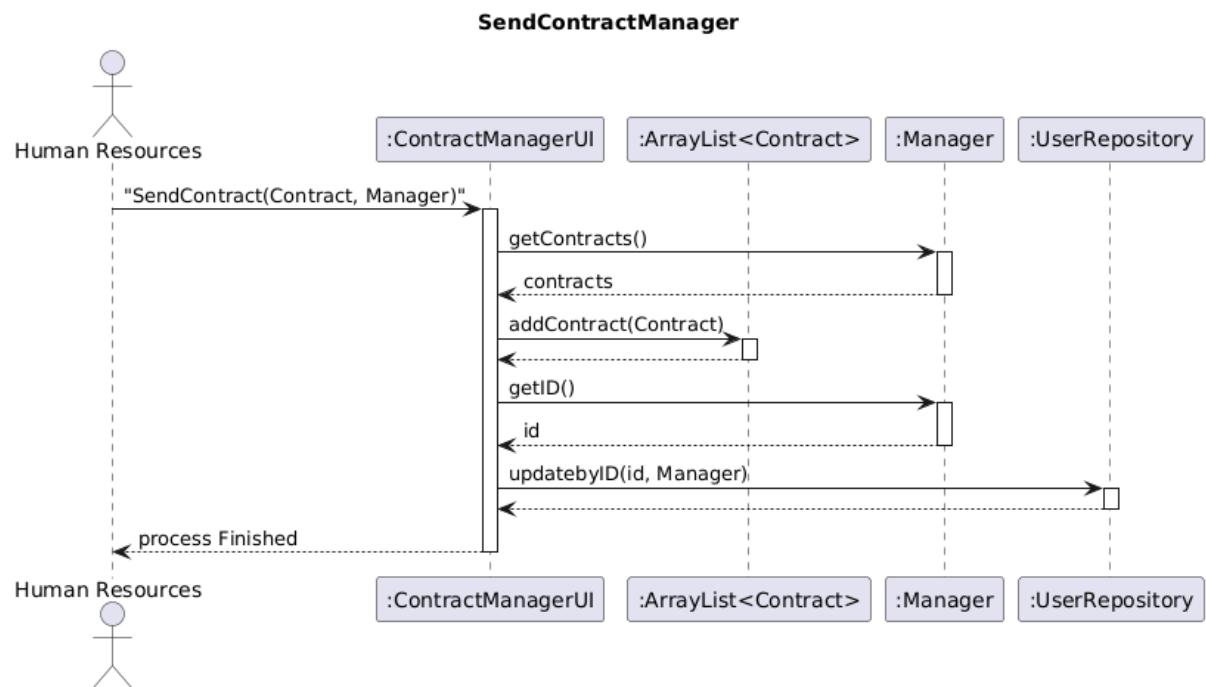


Figure 4.23: Sequence Diagram 18

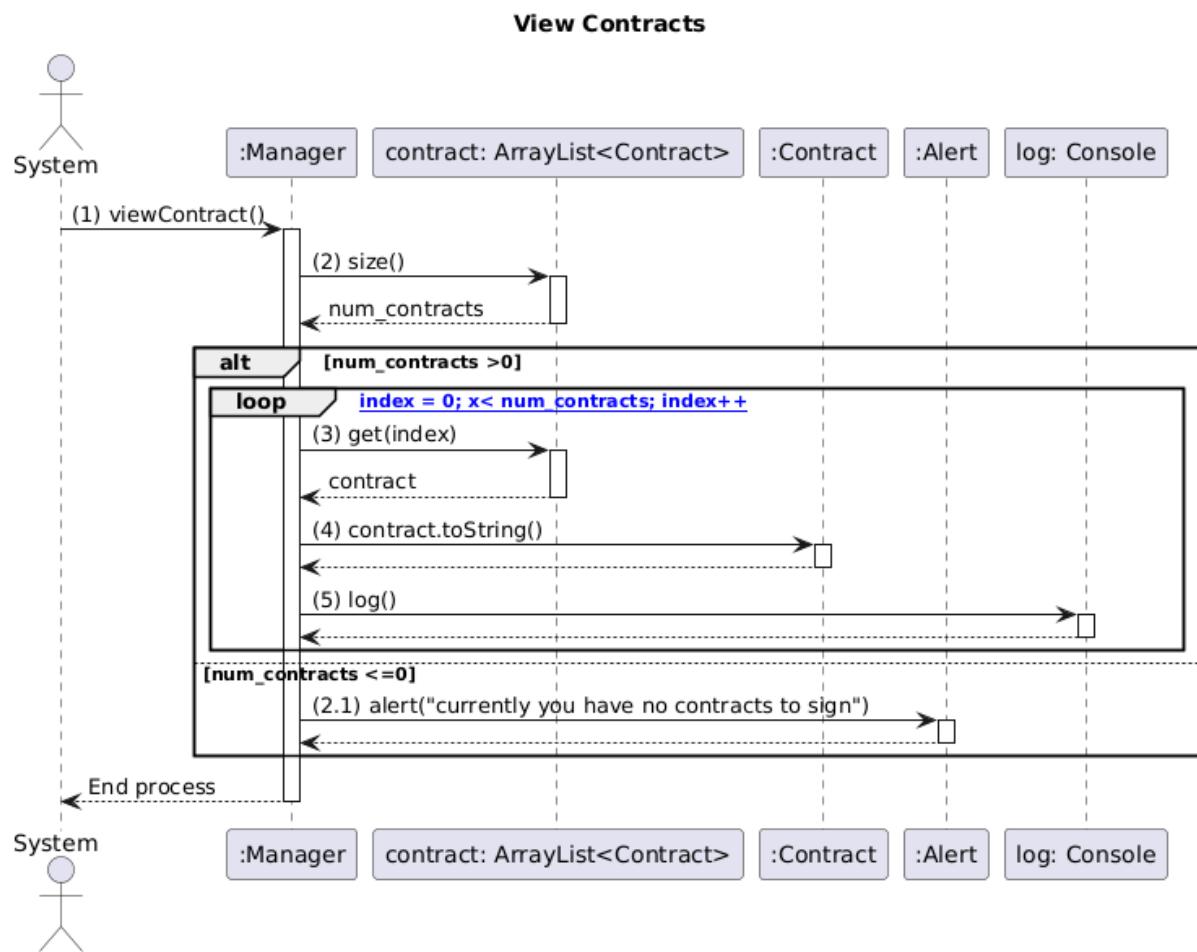


Figure 4.24: Sequence Diagram 19

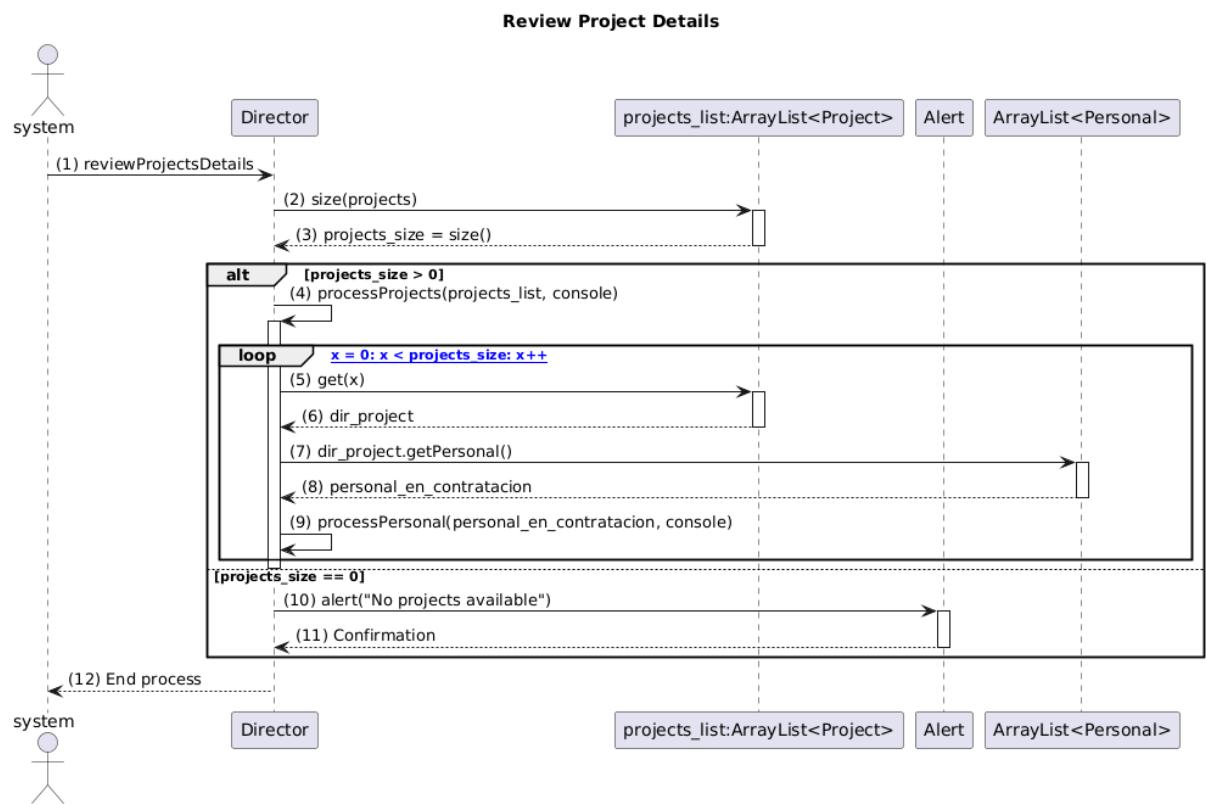


Figure 4.25: Sequence Diagram 20

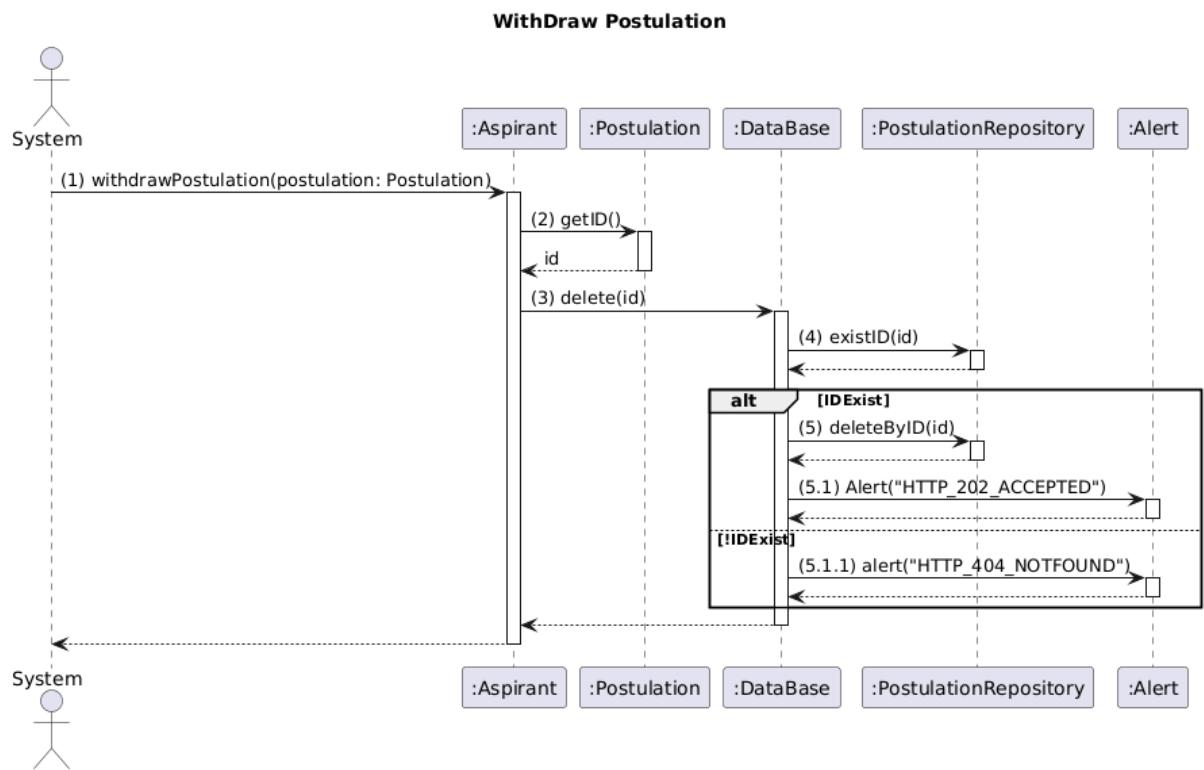


Figure 4.26: Sequence Diagram 21

Add Profile To Project

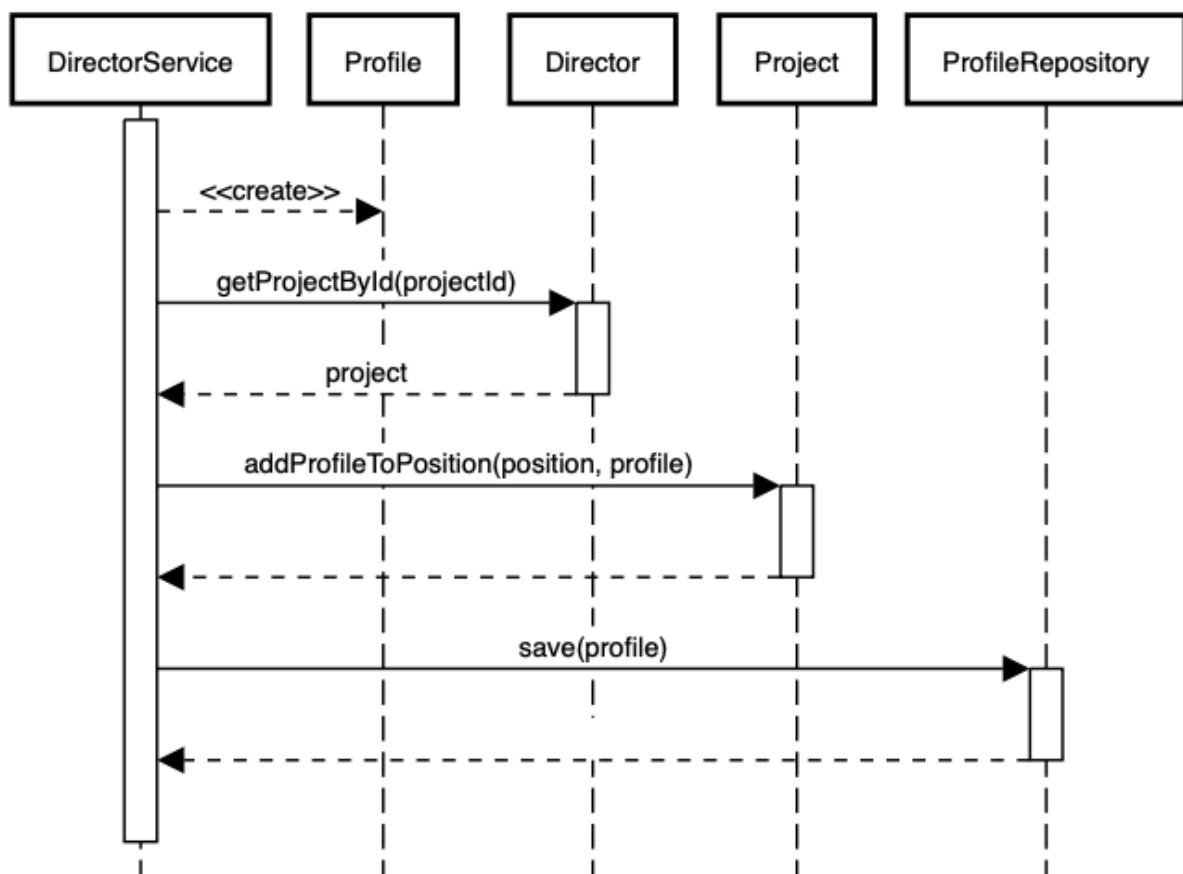


Figure 4.27: Sequence Diagram 22

Complete Interview

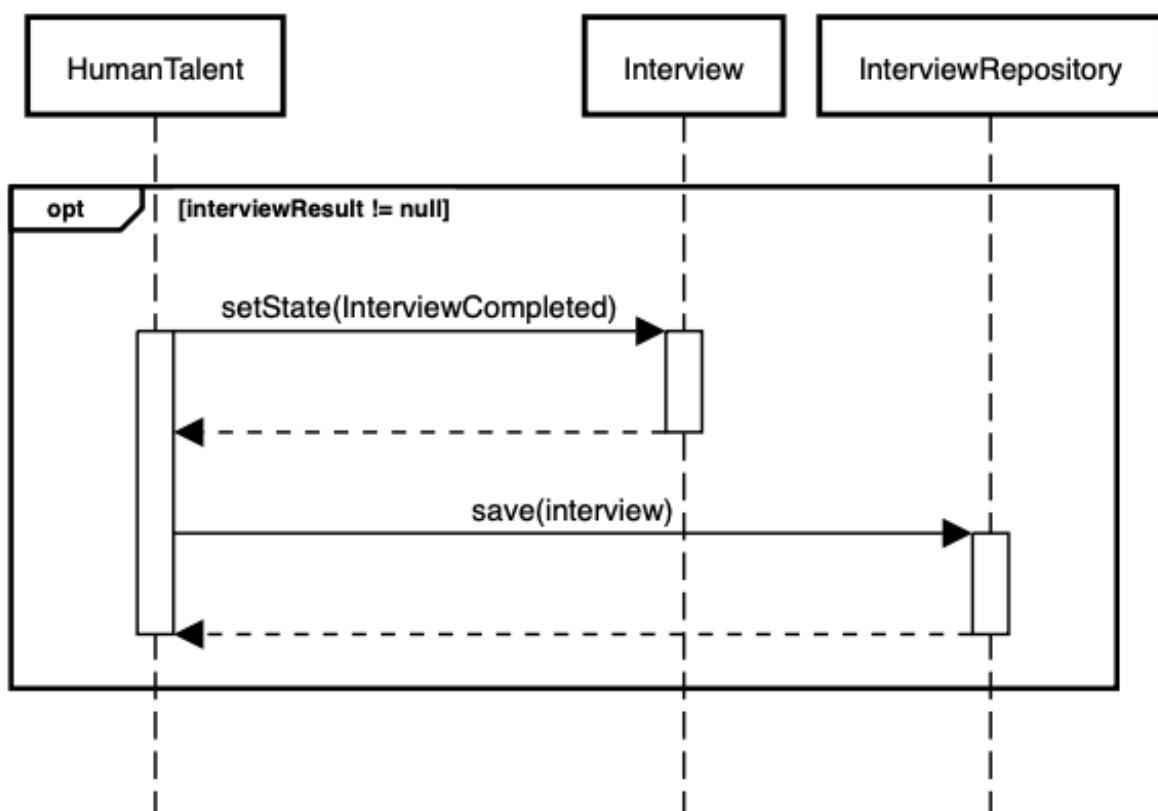


Figure 4.28: Sequence Diagram 23

Create Project

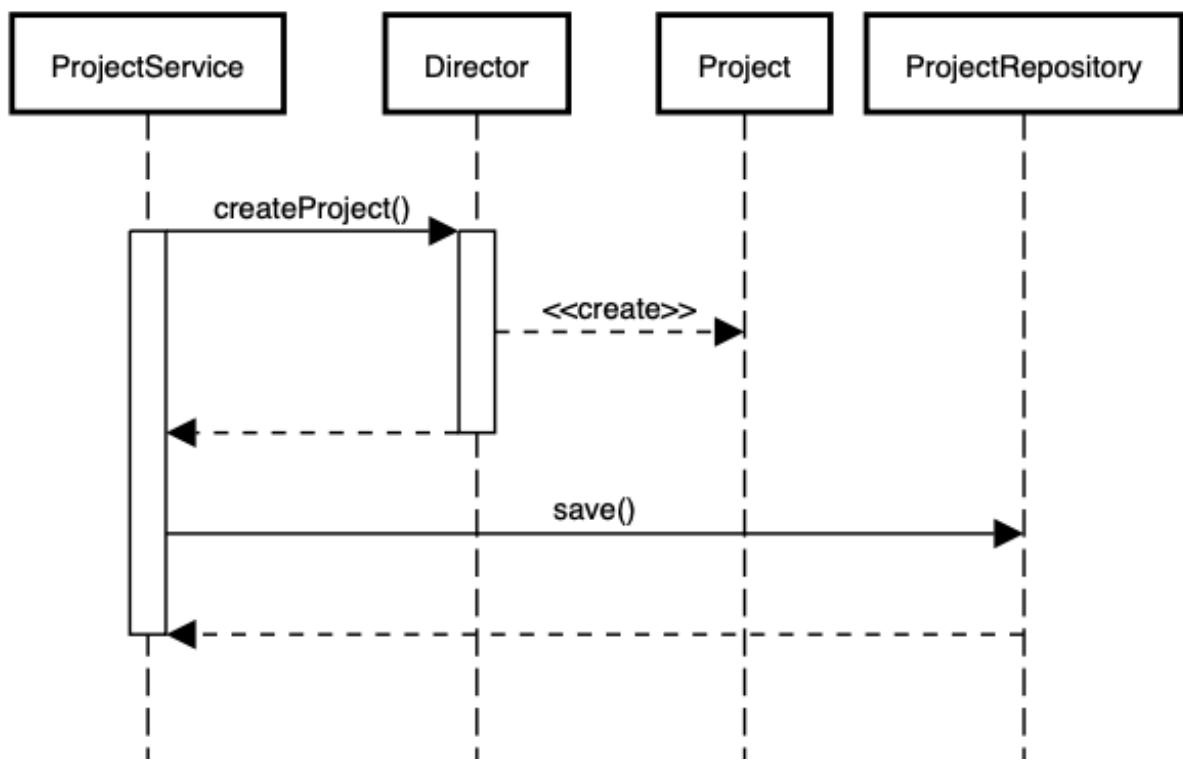


Figure 4.29: Sequence Diagram 24

Delete Project

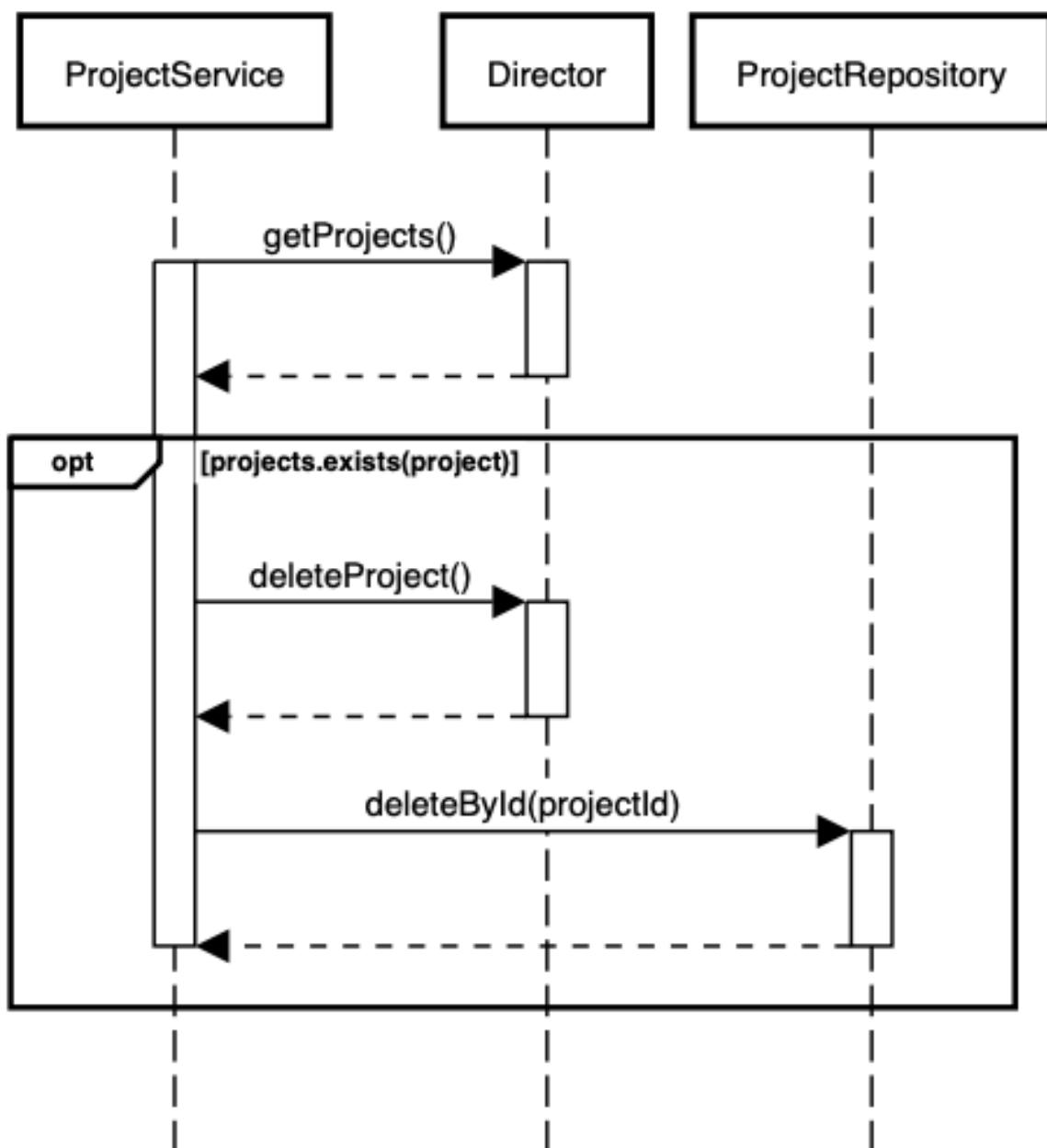


Figure 4.30: Sequence Diagram 25

E-sign single contract document Aspirant

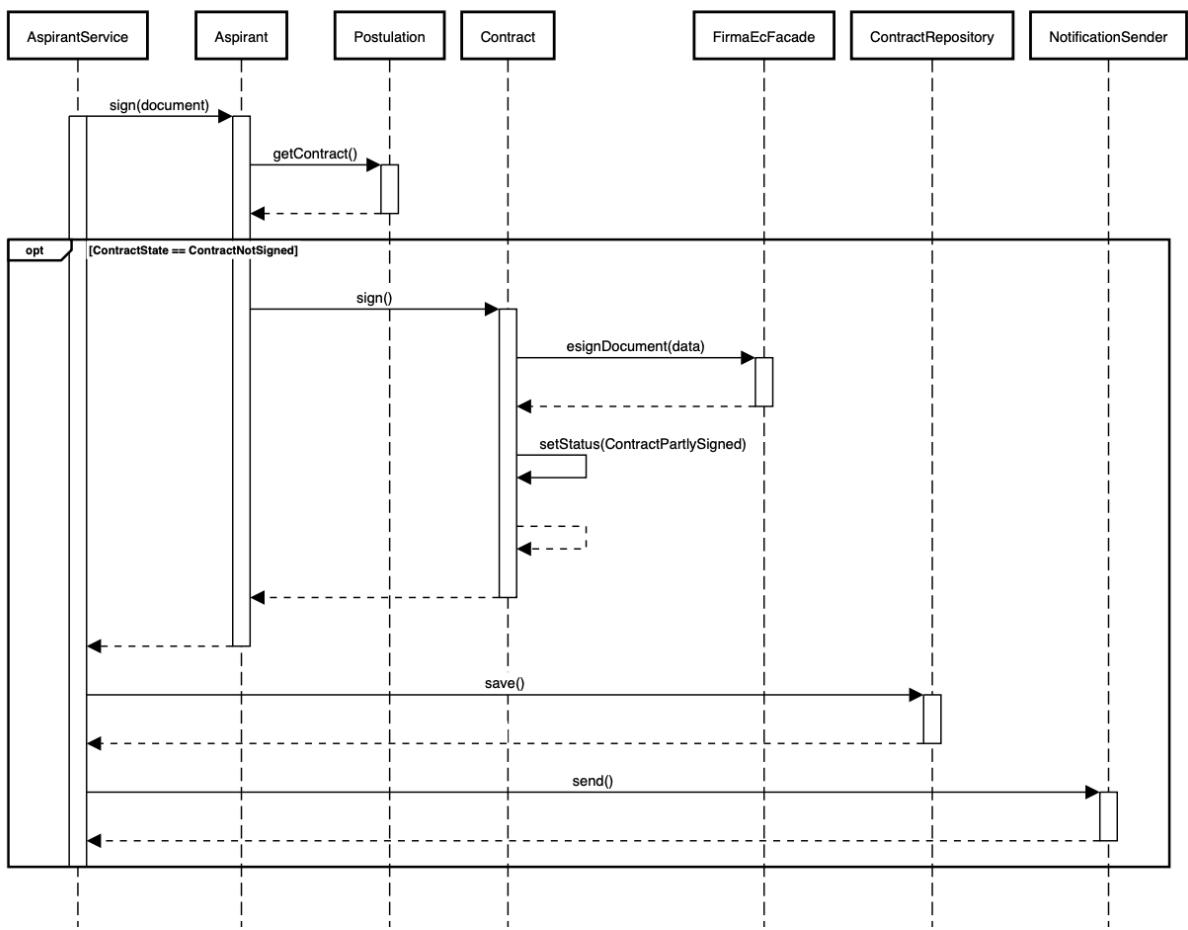


Figure 4.31: Sequence Diagram 26

Hire Aspirant

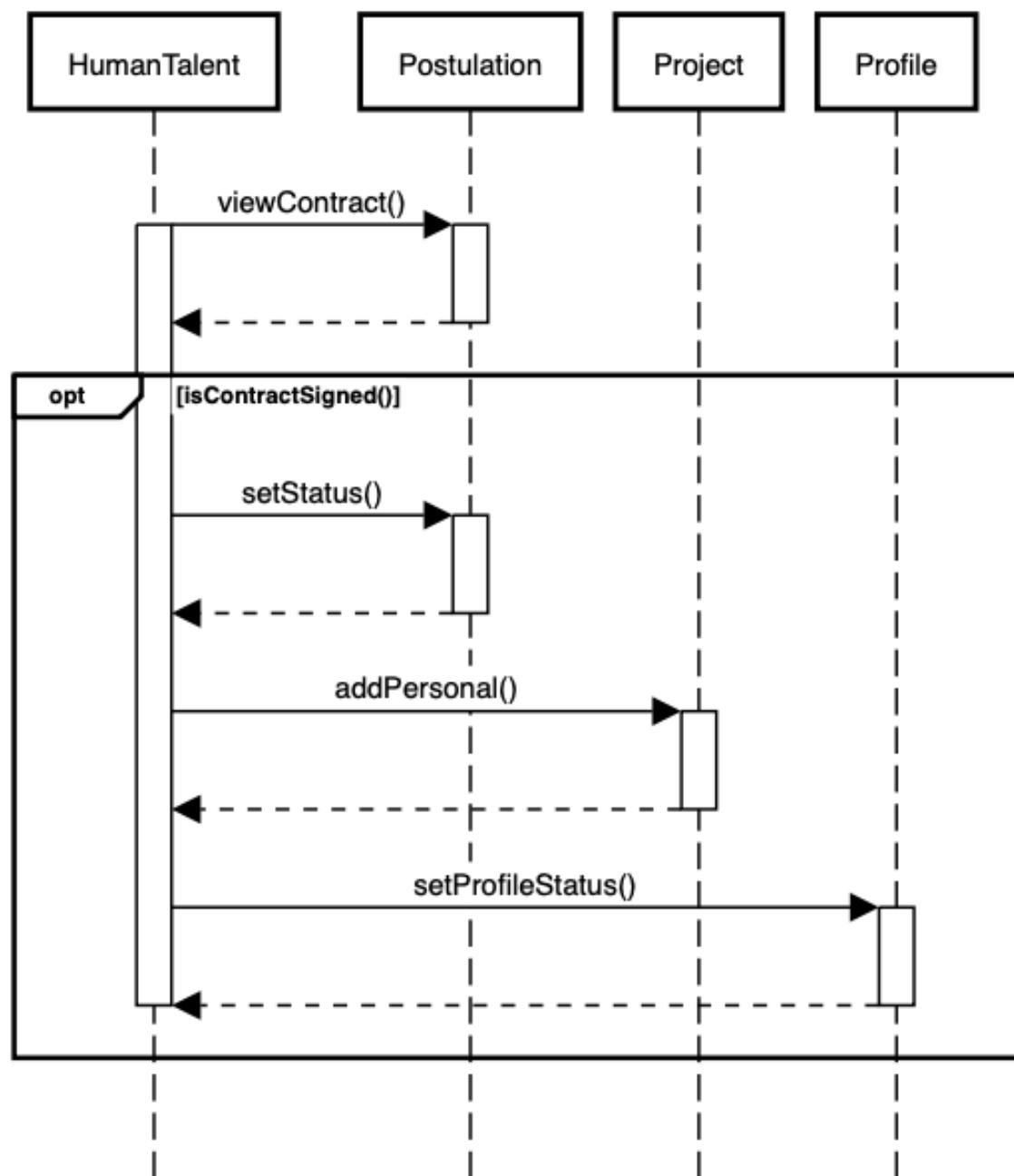


Figure 4.32: Sequence Diagram 27

Reschedule Interview

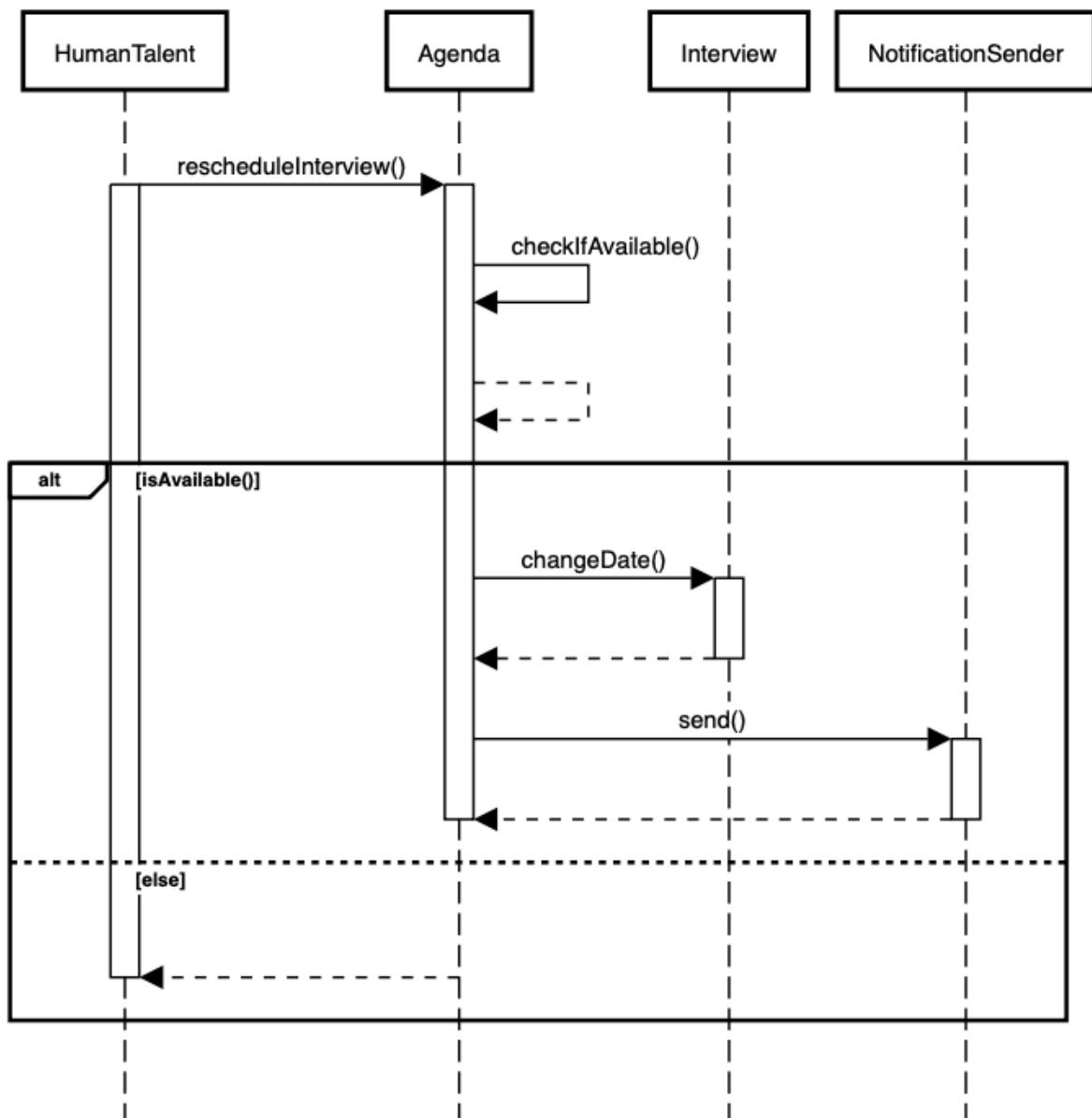


Figure 4.33: Sequence Diagram 28

Search Profile To Apply

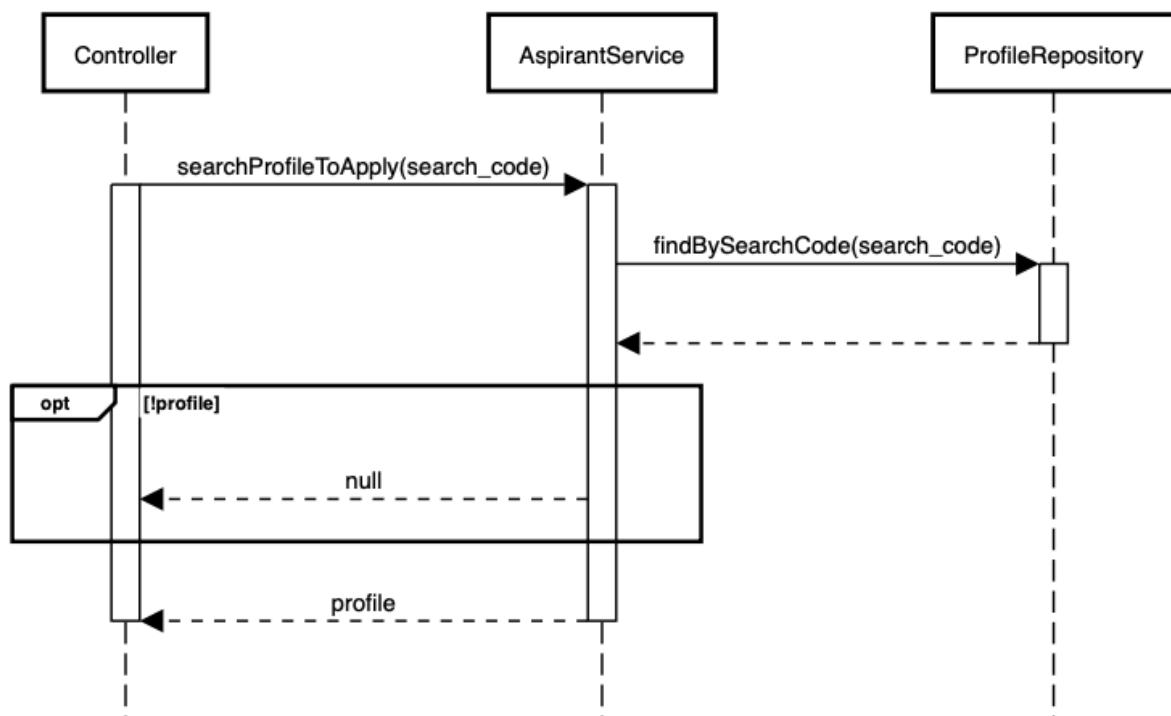


Figure 4.34: Sequence Diagram 29

Recommend Aspirant

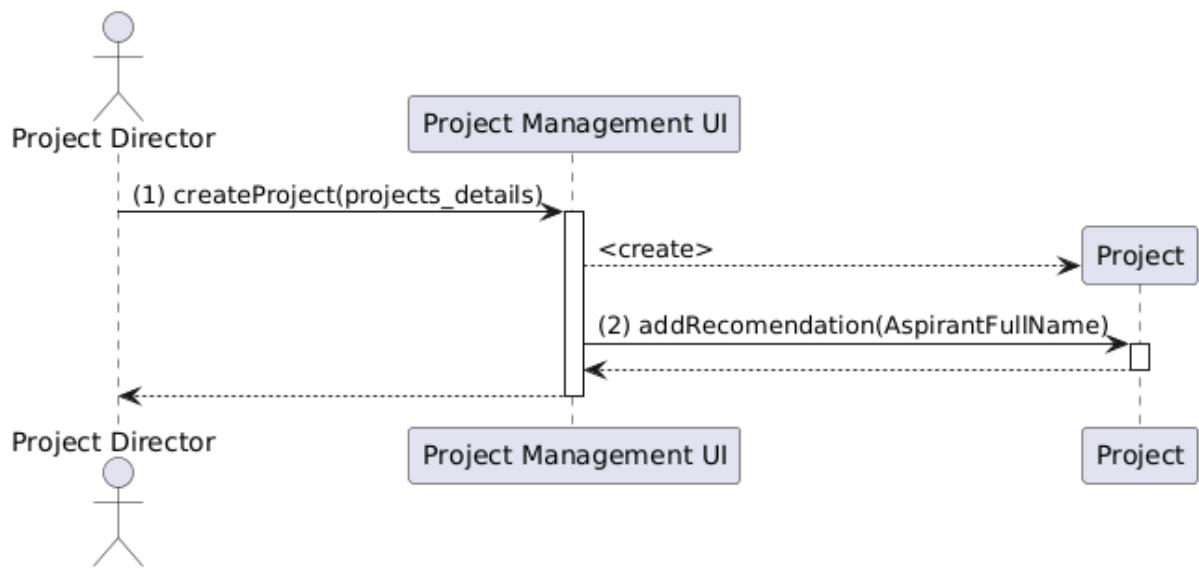


Figure 4.35: Sequence Diagram 30

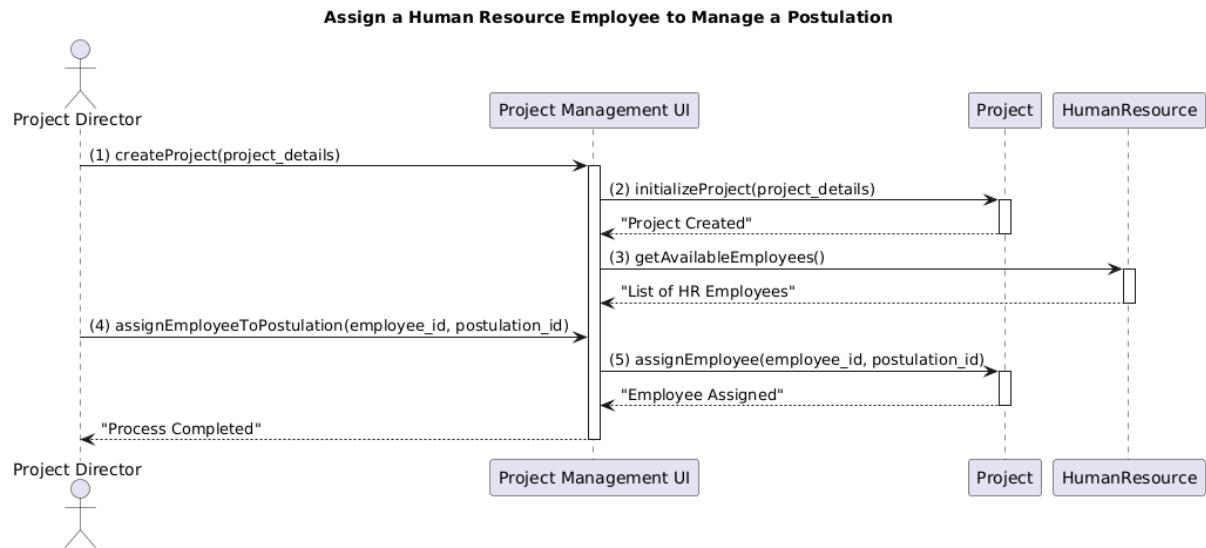


Figure 4.36: Sequence Diagram 31

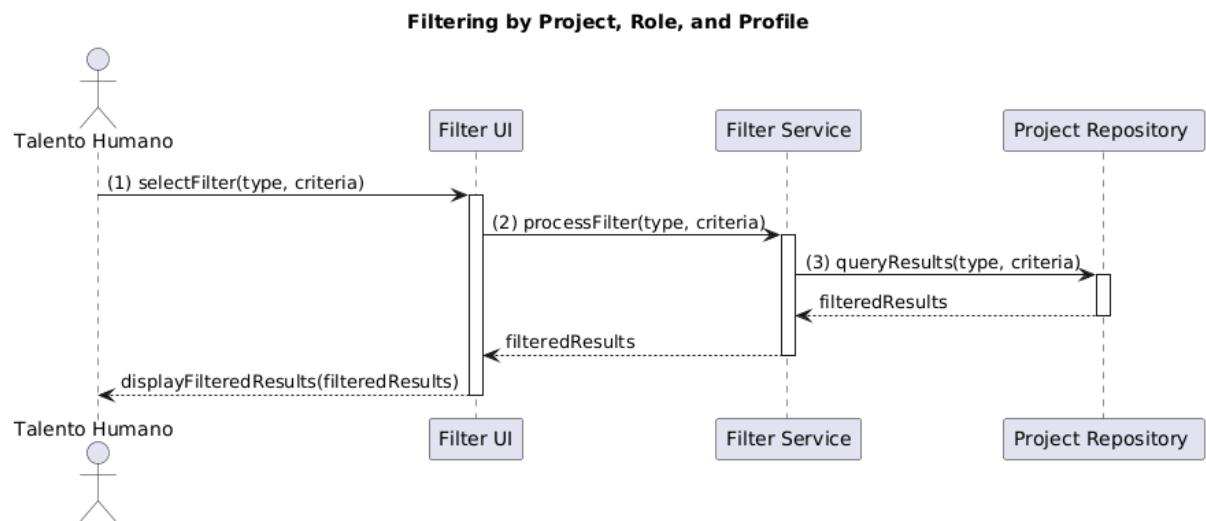


Figure 4.37: Sequence Diagram 32

4.3 Status Diagram

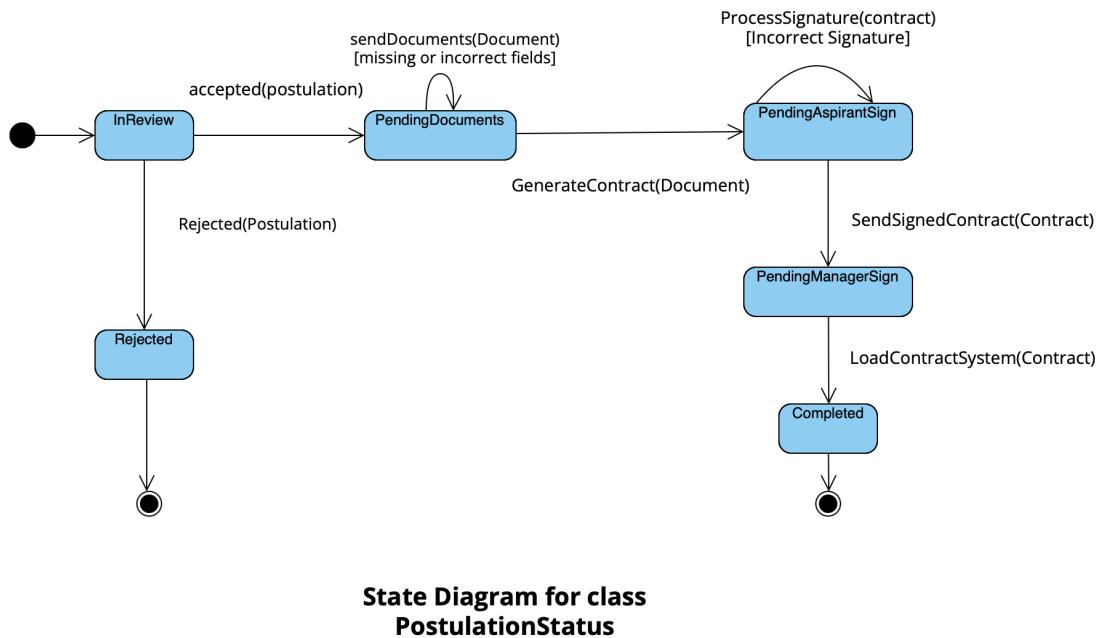


Figure 4.38: State Diagram: for Postulation status

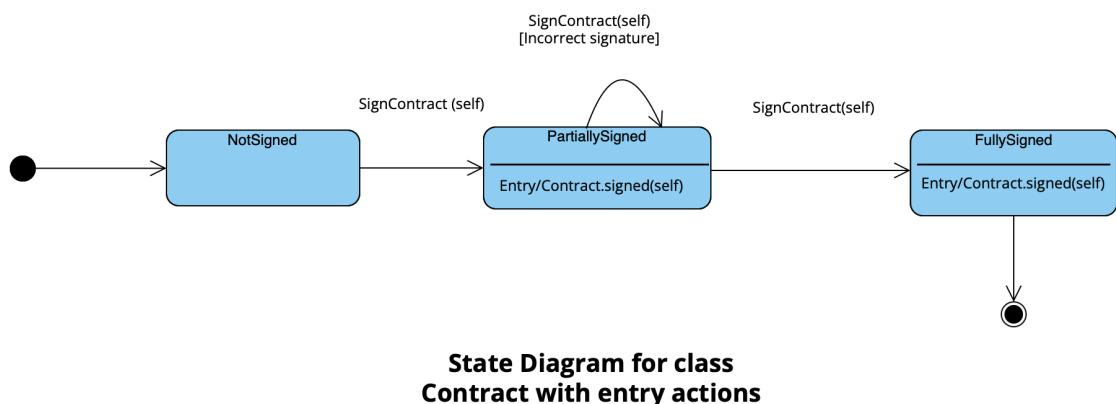
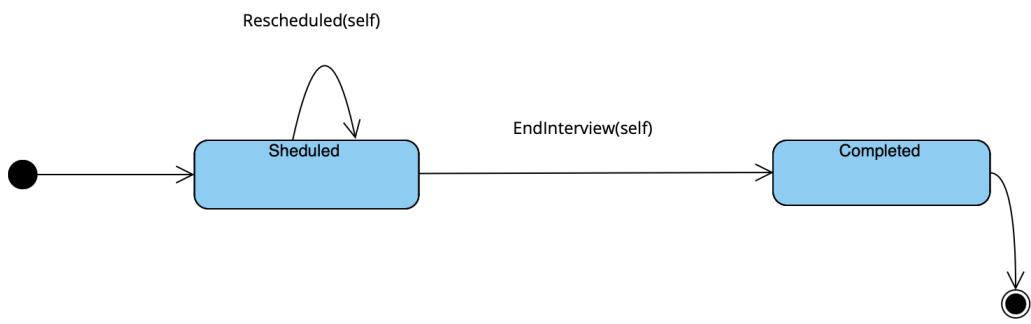


Figure 4.39: State Diagram: for Contract status



State Diagram for class Interview

Figure 4.40: State Diagram: for Interview status

4.4 Collaboration Diagram

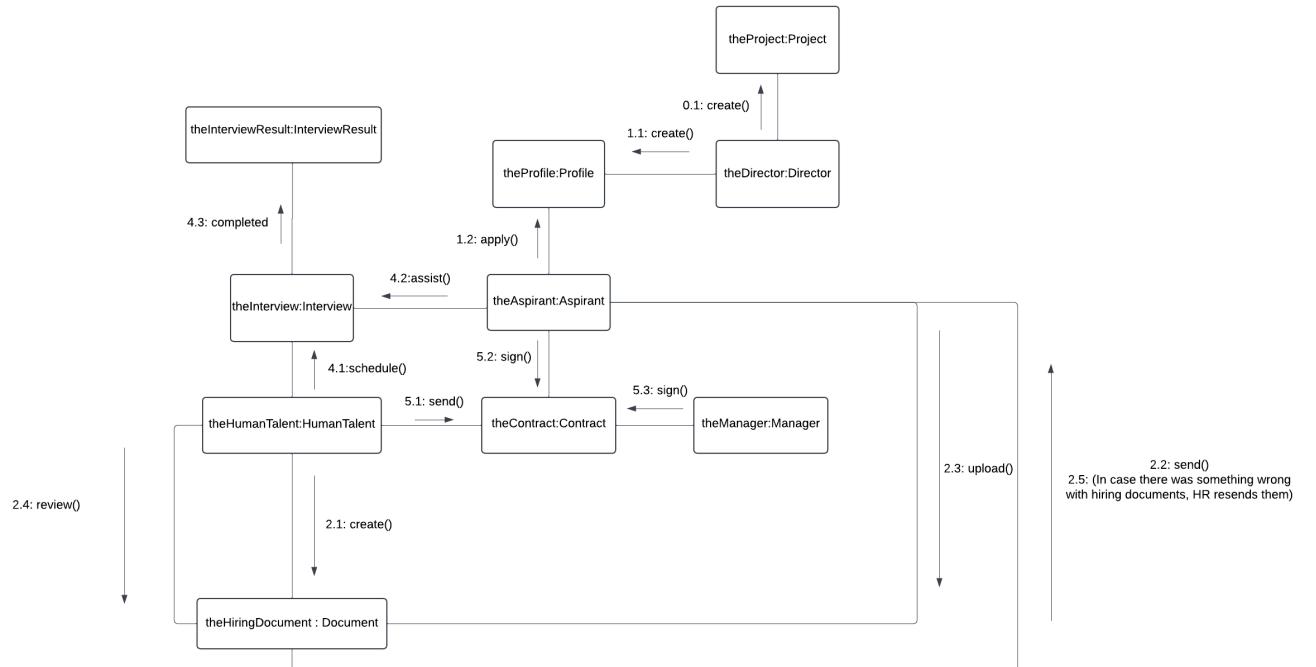


Figure 4.41: Collaboration Diagram of ESPOLTEL HIRING MANAGER (Made with Lucid-Chart)

5 Individual Contributions

Student's Names	Contributions
Jeremy Rodrigo Poveda Gorotiza	Risk Management, Product, Sprint backlog, review and creation of LaTeX document, class diagrams with patterns, use case documentation.
Diego Fernando Flores Rengifo	Creation of use cases, activity diagrams, state diagrams, class diagrams, sequence diagrams, and collaboration diagram help.
José David Ramos Rios	Creation of sequence diagrams, creation of "interview" module in class diagram, product backlog review, documentation of use case diagrams.
Ariana Valentina Palacios Saenz	Review document, creation of object, component, deployment and collaboration diagrams
Alex Javier Vizuete Pereira	Creation of use cases, sequence diagrams, document revision, help with recompiling images, help with the collaboration diagram.

Table 5.1: Responsibilities of each member of team 3

6 Appendix

6.1 Appendix A: Github Repository

The versioning of the project prototype has been managed using Github. You can find it through the following link ESPOLTEL's versioning project:

[Repository link](#)

6.2 Appendix B: Acceptance Documents Agreement

Acta de aprobación del Documento

Por la presente, ESPOLTEL el día 10 de enero de 2025, procede a la firma de la presente acta de aceptación del documento de especificaciones y los diagramas UML, sprint backlog, gestión de riesgos, etc. conforme a lo acordado entre el equipo 3 de Ingeniería de Software y ESPOLTEL, con el objetivo de formalizar la aceptación de los entregables detallados en los mencionados documentos.

1. Detalles del Documento:

- **Nombre del documento:** Documento de Especificaciones y Gestión de riesgos, Spring Backlog, Cronograma y Diagramas UML.
- **Alcance:** El documento detalla las especificaciones técnicas y los diagramas UML necesarios para el desarrollo del proyecto ESPOLTEL HIRING MANAGER.

Las partes involucradas han revisado detenidamente los documentos entregados y, habiendo resuelto cualquier duda o comentario, ambas partes expresan su conformidad con el contenido de dicho documento.

A continuación, la firma del cliente en esta acta como prueba de la aceptación formal del documento de especificaciones y diagramas UML

Responsable del Cliente: **Francisco Ramírez**



Firma del Cliente: _____

Figure 6.1: Acceptance of the client, Francisco Ramirez

6.3 Appendix C: Tools used

Tool	Description
Visual Paradigm	A comprehensive tool used for creating various UML diagrams, ER diagrams, and flowcharts. It supports both software modeling and system design.
pLaTeX	A tool for high-quality typesetting in LaTeX, often used for documents, academic papers, and presentations with a focus on clear formatting and mathematical typesetting.
SequenceDiagram.org	An online tool for creating and visualizing sequence diagrams, often used to model interactions between different parts of a system in a step-by-step manner.

Table 6.1: Diagramming Tools Used