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Faculty of Engineering.

Computing Engineering

Subject: Software Modeling

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Project: Forms

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20231020203

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04 october 2024.

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Project introduction

The goal of this project is to develop an online form application, allowing users to create, customize, and share forms for data collection. The application will be accessible from any device, with a robust backend implemented in both Python and Java. Users will be able to sign up, log in, create different types of forms (open-ended, multiple choice, etc.), and view responses in a clear and organized manner.

Business model

The business model for the online form application is based on a freemium approach, offering basic functionalities for free and advanced features through a subscription plan. The goal is to attract a large number of users with essential features and convert a portion of these users into paying subscribers for premium features.

Customer Segments:

1. **Individual Users:** People who need to create forms occasionally or for personal projects.
2. **Businesses:** Organizations that need to collect data from employees, customers, or users through customized forms.
3. **Educational Institutions:** Schools, universities, and educational centers that want to use forms for surveys, exams, or collecting student data.
4. **Researchers:** Professionals who need to collect information for research, market studies, or large-scale surveys.

Value Proposition:

1. **Ease of Use:** A friendly and simple interface to create forms without technical experience.
2. **Accessibility:** Ability to access forms from any device with an Internet connection.
3. **Variety of Question Types:** Option to add multiple-choice, short-answer, long-answer, matrix questions, among others.
4. **Customization:** Allowing forms to be customized in style, design, and branding.
5. **Data Analysis:** Provide tools for data visualization and export results in different formats.

6. **Security and Privacy:** Protect data with encryption and comply with privacy regulations.

Revenue Streams:

1. **Freemium Plan:** Free access to basic functionalities, such as limited forms, number of questions, and response storage.
2. **Premium Subscription Plans:**
 - **Personal Plan:** For individual users with higher limits on questions and responses, as well as basic customization.
 - **Business Plan:** For companies needing advanced forms with more analysis options, brand customization, and technical support.
 - **Institutional Plan:** Targeted at educational institutions and researchers, offering collaborative features and larger data volumes.

Channels:

1. **Web Platform:** Accessible from any browser.
2. **Mobile App:** A native app for iOS and Android that allows form creation and response from mobile devices.
3. **Digital Marketing:** Advertising on social media, SEO, and email marketing campaigns targeting potential users.

Customer Relationships:

1. **Self-Service:** Most features are designed for users to self-manage form creation and distribution.
2. **Customer Support:** Basic support for free users and priority support for premium plan users.
3. **Community and Forums:** Spaces where users can interact, solve questions, and share tips about using the platform.

Cost Structure:

1. **Development and Maintenance:** Costs associated with platform development (frontend, backend, security).
2. **Infrastructure:** Costs for servers, cloud storage, and bandwidth.
3. **Customer Support:** Costs for customer support staff, especially for premium users.
4. **Marketing and Advertising:** Costs for digital campaigns to acquire and retain customers.
5. **Feature Updates:** Costs to keep the application competitive, including new functionalities and improvements.

Business rules

- **User Authentication:** Only registered users will be able to create, edit, and view forms and responses.
- **Form Creation:** Users can create customized forms with various question types (multiple choice, short answer, long answer, etc.).
- **Sharing Forms:** Forms can be shared via links or email.
- **Answering Forms:** Any user can answer forms without the need to authenticate.
- **Question Limit:** Forms can contain up to 100 questions.
- **Response Viewing:** Users can view and export responses in various formats (PDF, CSV).
- **Form History:** Users will have access to a history of created and answered forms.

Stakeholders

- **users**
- **Business**
- **Researchers**
- **Development teams**
- **Customer Support**

Tools

Programming languages : Python, JAVA

User stories

- ☐ As a user, I want to register on the platform to create and manage forms.
- ☐ As a user , I want to log in to access my forms and responses.
- ☐ As a user , I want to create a customized form to collect specific data.
- ☐ As a user , I want to edit the forms I have created previously to adjust them according to my needs.
- ☐ As a user, I want to personalize type of the question
- ☐ As user , I want I want to answer forms
- ☐ As a user , I want to share my forms via link or email to collect responses.
- ☐ As a user , I want to view the responses to my forms clearly and download them if necessary.
- ☐ As a user , I want to see a history of the forms I've created and manage them as needed.

Entities

- User
- Forms
- Questions
- Answers
- Forms History
- suscription

Diagrams

CRC CARDS

Usuario Abstracto	
<ul style="list-style-type: none">· Almacenar y gestionar la información básica del usuario (ID, nombre, email).· Crear formularios.· Ver el historial de formularios creados.· Obtener detalles de la suscripción.	<ul style="list-style-type: none">· Formulario· Suscripción· Usuario Básico· Usuario Premium

Usuario Básico	
<ul style="list-style-type: none">· Crear formularios básicos.· Consultar el historial de formularios.	<ul style="list-style-type: none">· Formulario· Usuario Abstracto

Usuario Premium	
<ul style="list-style-type: none">· Crear formularios avanzados.· Exportar respuestas en diferentes formatos.	<ul style="list-style-type: none">· Formulario· Usuario Abstracto· Suscripción

<ul style="list-style-type: none"> · Personalizar el diseño de los formularios. 	
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Formulario	
<ul style="list-style-type: none"> · Almacenar el título, las preguntas y respuestas. · Agregar preguntas a un formulario. · Compartir el formulario a través de un enlace. · Editar el formulario. · Obtener y mostrar las respuestas de los usuarios.. 	<ul style="list-style-type: none"> · Pregunta · Usuario Abstracto · Respuesta

Pregunta	
<ul style="list-style-type: none"> · Almacenar el texto de la pregunta. · Definir el tipo de respuesta (método abstracto). 	<ul style="list-style-type: none"> · Pregunta Opción Múltiple · Pregunta Texto · Pregunta Matriz · Formulario

Pregunta Opción Múltiple	
<ul style="list-style-type: none"> · Almacenar el texto de la pregunta y las opciones disponibles. · Obtener el tipo de respuesta (opción múltiple). 	<ul style="list-style-type: none"> · Pregunta · Formulario

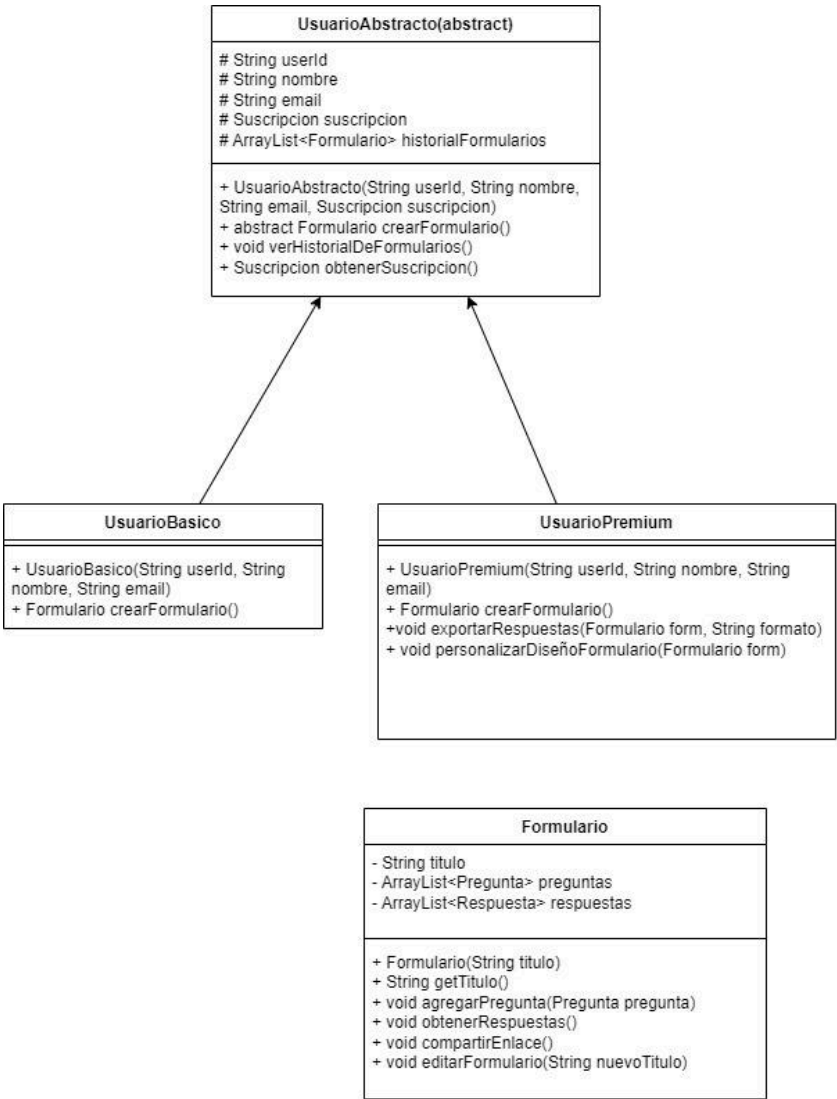
Pregunta Texto	
<ul style="list-style-type: none"> · Almacenar el texto de la pregunta. · Obtener el tipo de respuesta (texto libre). 	<ul style="list-style-type: none"> · Pregunta · Formulario

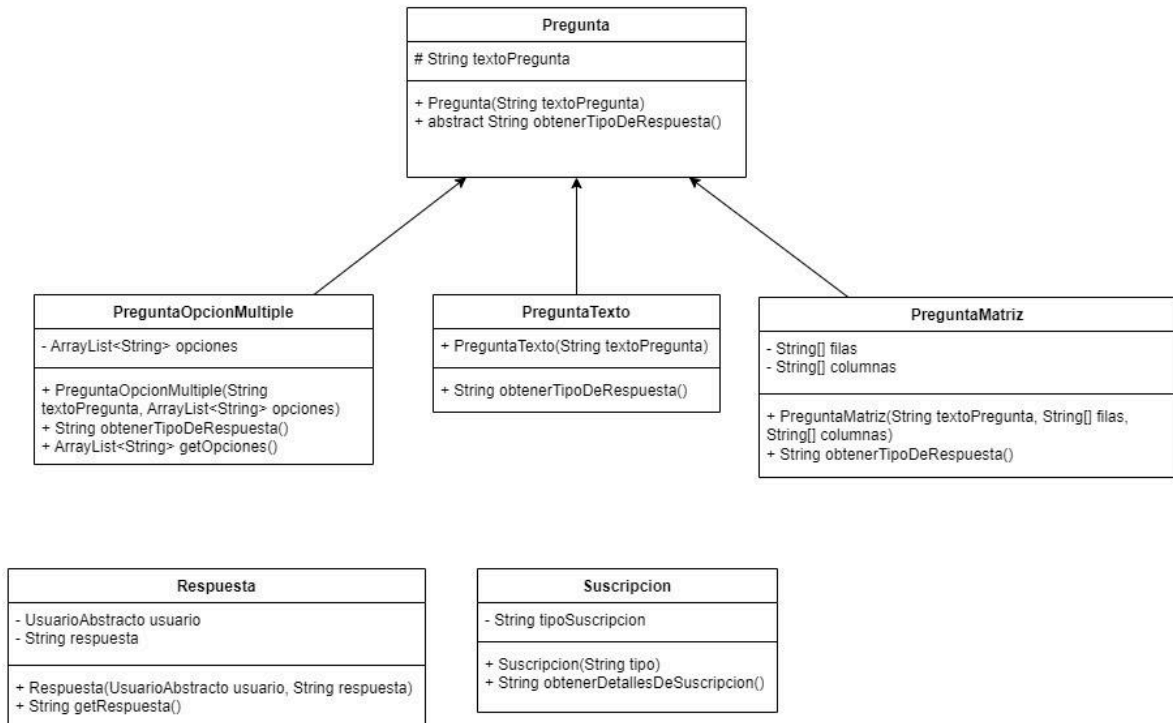
Pregunta Matriz	
<ul style="list-style-type: none"> · Almacenar el texto de la pregunta, las filas y columnas de la matriz. · Obtener el tipo de respuesta (matriz). 	<ul style="list-style-type: none"> · Pregunta · Formulario

Respuesta	
<ul style="list-style-type: none"> · Almacenar la respuesta de un usuario. · Asociar la respuesta a un formulario. 	<ul style="list-style-type: none"> · Usuario Abstracto · Formulario

Suscripción	
<ul style="list-style-type: none"> · Almacenar y gestionar el tipo de suscripción del usuario. · Proveer detalles de la suscripción (básica, premium). 	<ul style="list-style-type: none"> · Usuario Abstracto

Class Diagram

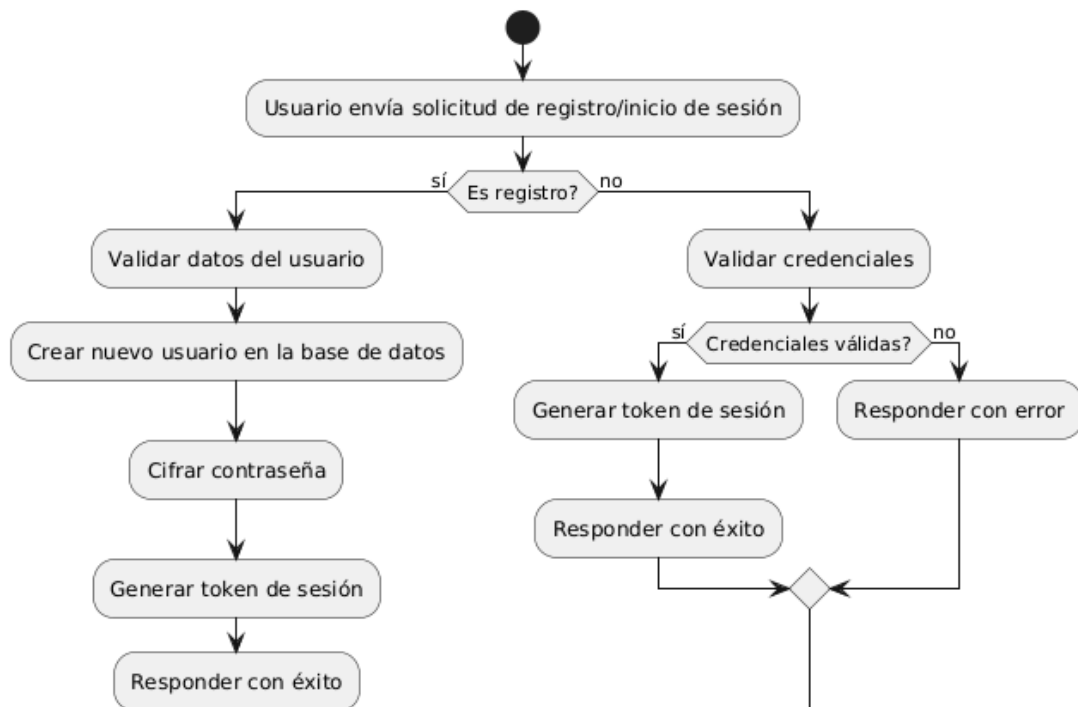




Model Process

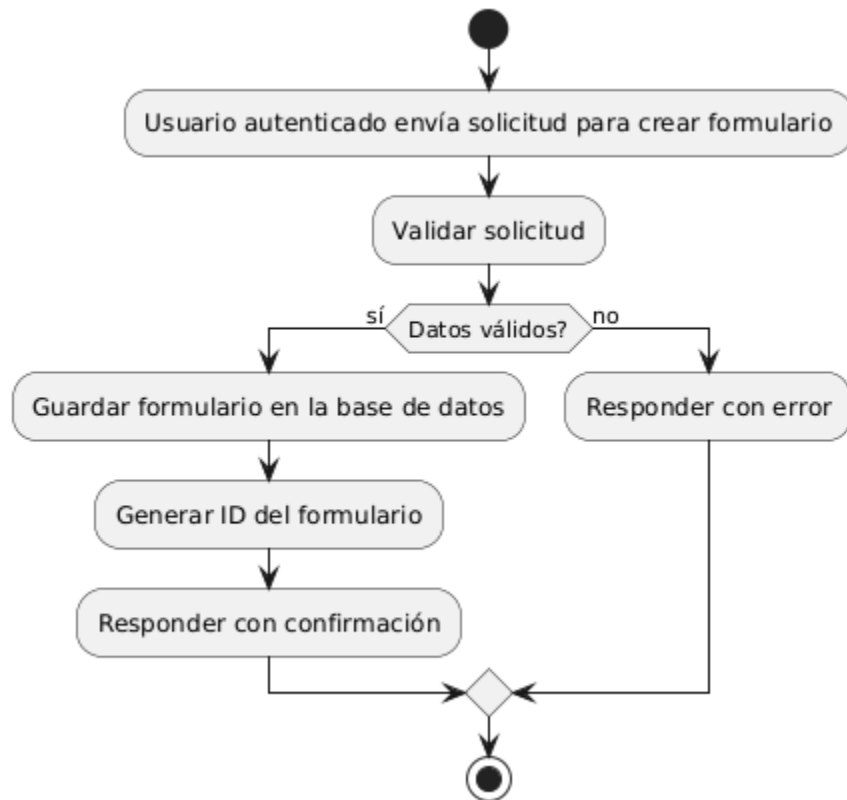
1. Login/Sign in

-Activity Diagram

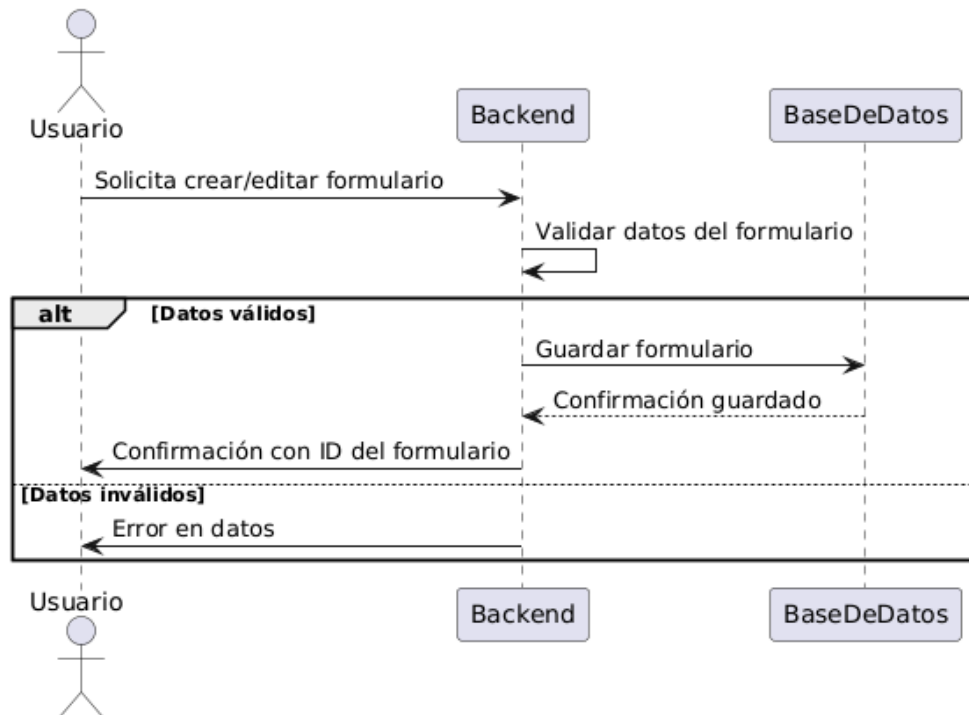


2. Created and edit forms

-Activity Diagram

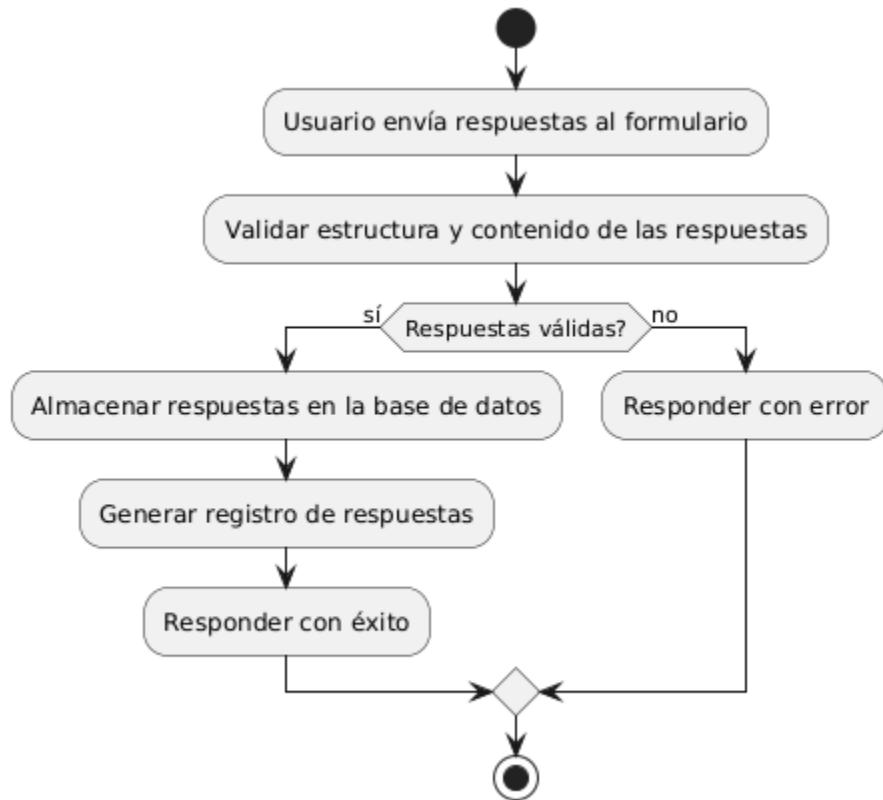


-Sequence Diagram

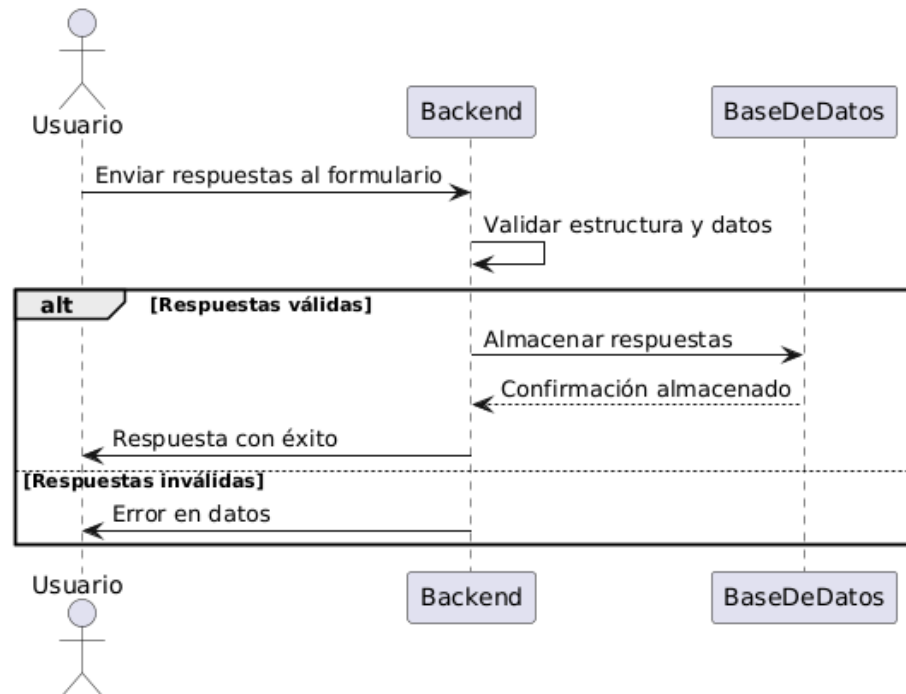


3. Form response

- Activity Diagram

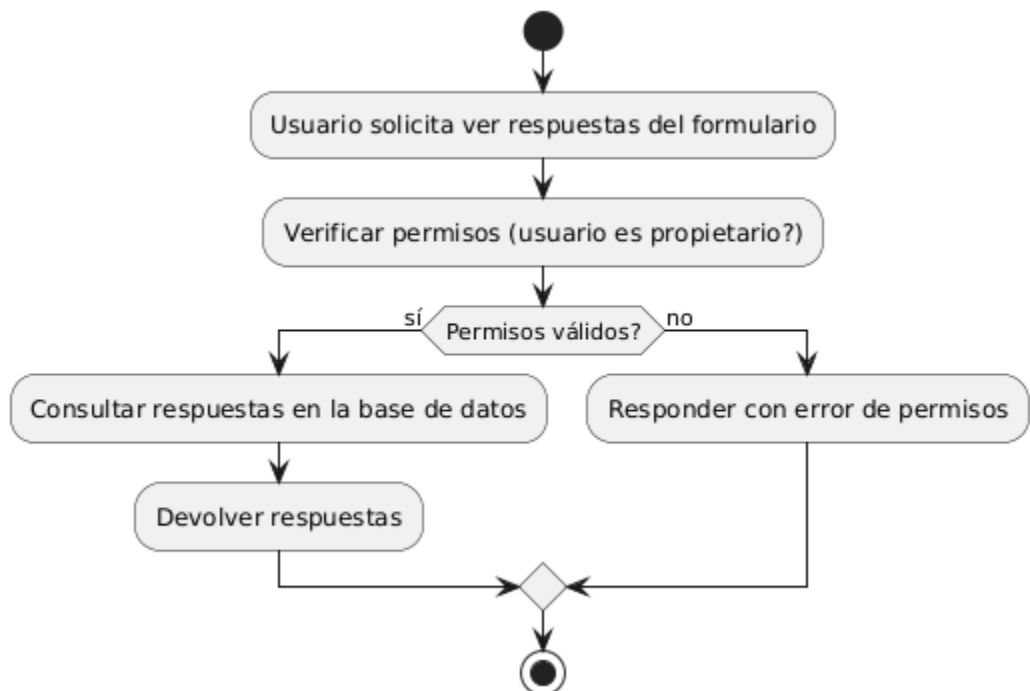


- Sequence Diagram

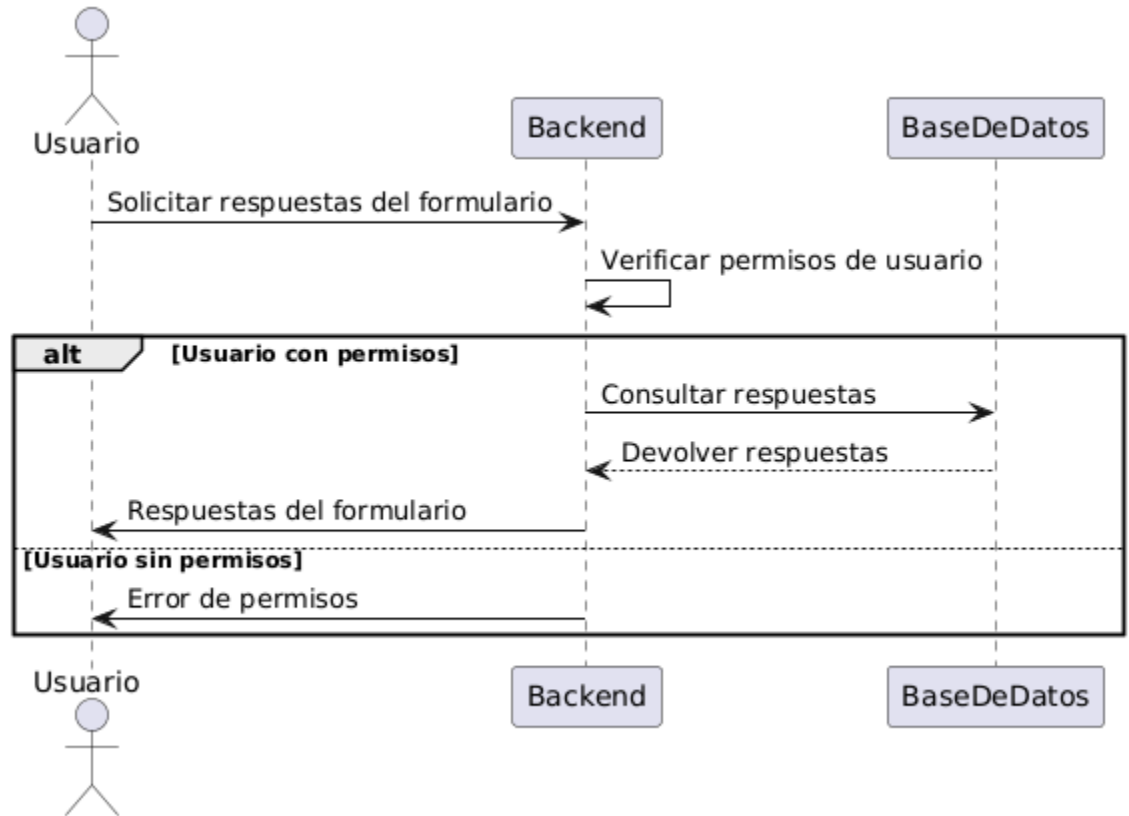


4. Display of responses

- Activity Diagram

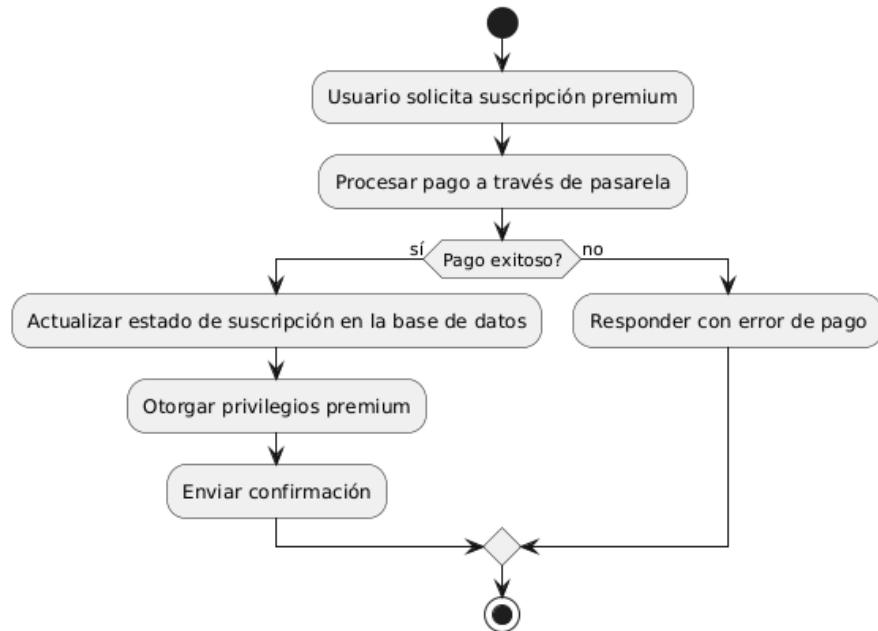


- Sequence Diagram



5. subscription

- Activity Diagram



- Sequence Diagram

