Unity University

Faculty of Engineering and Technology

Department of Computer Science and MIS

Influencer Hub

Final Project Document

Submitted to department of Computer Science in partial fulfilment of the requirements for the degree of Bachelor of Science in Computer Science

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Abstract

Finding the right social media influencers to promote products in Ethiopia can be a real headache. Everything's done manually, making it tough to find the right influencers, negotiate deals, and pay them on time. Influencer Hub, a website built for the Ethiopian market, solves these problems. It offers an easy registration, detailed influencer profiles, and efficient search features to quickly find suitable partners. The website even recommends good influencers based on companies needs and provides secure messaging, online agreements, and easy payments. This makes finding influencers faster, leads to better collaborations, and builds trust within the community. With its feedback system and focus on user experience, Influencer Hub is making influencer marketing in Ethiopia more efficient and effective, setting an example for other emerging markets.

Acknowledgement

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List of Abbreviations

Abbreviation	Definition
API	Application Programming Interface
CPU	Central Processing Unit
CSS	Cascading Style Sheets
ETB	Ethiopian Birr (currency)
GUI	Graphical User Interface
HTML	Hypertext Markup Language
IDE	Integrated Development Environment (e.g., Visual Studio Code)
IT	Information Technology
JavaScript	Programming language used for web development
JPEG	Joint Photographic Experts Group
JSON:	JavaScript Object Notation
Material-UI	React-based UI framework
MERN	MongoDB, Express.js, React, Node.js (a stack for web development)
MongoDB	NoSQL database program
MS-Office	Microsoft Office (software suite)
Node.js	Server-side JavaScript runtime environment
NoSQL	Not only SQL
OS	Operating System
PDF	Portable Document Format
RAM	Random Access Memory

RDBMS	Relational Database Management System
React.js	JavaScript library for building user interfaces
RMMM	Risk Mitigation, Monitoring, and Management
SSD	Solid State Drive
Tailwind CSS	Utility-first CSS framework
UI	User Interface
UX	User Experience
WBS	Work Breakdown Structure

Chapter One - Introduction

1.1 Background Information

In recent years, influencer marketing has become an effective tool for companies to reach their target audience. The social media influencer market in Ethiopia is growing, and there is a wide range of influencers from different industries. However, there is currently no centralized platform where companies can easily connect with these influencers.

The Influencer Hub project aims to address this gap with a user-friendly website that acts as a central hub for companies and businesses to connect with Ethiopian social media influencers. The site offers companies a simple and powerful interface to search, filter, and engage with influencers based on their interests, audience demographics, and level of engagement. By creating this platform, companies have access to a wide range of influencers, allowing them to build influential partnerships and effectively reach their desired audience in Ethiopia. This project not only benefits companies and influencers but also promotes the growth and professionalism of the social media influencer marketing industry in Ethiopia.

1.2 Statement of the Problem

The current process of finding the right social media influencers for company/business partnerships in Ethiopia are time-consuming, inefficient, and lacks a centralized platform. They have to spend a lot of time searching on social media, sending emails, and asking for recommendations. This fragmented approach makes it challenging to identify and connect with the right influencers efficiently.

Without a central place that gathers and sorts of influencer information, companies have a hard time finding and choosing the right influencers for their campaigns. This can lead to missed opportunities and make it difficult for companies to reach their desired audience effectively.

To address this problem, The Influencer Hub will make it easy for companies to find and connect with influencers in Ethiopia. With advanced search options, companies can discover influencers that match their needs. This will help create successful partnerships and effective marketing campaigns.

1.3 Objectives

1.3.1 General Objective

The general objective of the Influencer Hub project is to develop a website that serves as a hub for companies to connect with influencers.

1.3.2 Specific Objectives

- To design a user-friendly website to propose system.
- To implement a search feature.
- To integrate a secure payment system.
- To deploy the system with precision and seamless functionality.
- To conduct comprehensive testing.

1.4 Scope of the Project

The Influencer Hub website project aims to create a user-friendly platform that facilitates collaboration between businesses in Ethiopia and local social media influencers. Key features include influencer search, filtering by niche, and seamless collaboration. The system will exclusively focus on Ethiopian influencers and operate in English.

1.5 Tools and Methodologies

In the development of the Influencer Hub project, a strategic selection of tools and methodologies has been employed to ensure efficiency and effectiveness throughout the project lifecycle.

1.5.1 Data Collection Methodologies

The data collection methodologies adopted for the Influencer Hub project are designed to gather comprehensive information about influencers and their audience demographics. This includes a combination of qualitative and quantitative methods:

Surveys: We'll ask social media influencers and their followers questions using Google Forms to find out things like:

- Who are their followers (age, interests, etc.)?
- How much do people interact with their content?
- How well their posts do.

Interviews: We'll talk to companies that collaborate with social media influencers to advertise their products. We'll ask them:

- How influencer marketing works in Ethiopia
- What they like and dislike about using influencers
- What challenges do they face?

Observations: We'll observe how influencer marketing is happening in Ethiopia now to see how we can make our website better.

1.5.2 System Development Methodology

We'll use a hybrid approach combining Agile and OOSAD methodologies to build the Influencer Hub. This blend ensures flexibility, efficiency, and a clear focus on delivering value. Here's how it works:

- We'll design modular, reusable elements, making future updates seamless.
- Agile ensures we tackle high-impact features first, while OOSAD provides detailed, structured modeling.
- Agile's iterative process allows for quick adjustments, and OOSAD's object-oriented approach simplifies system changes.
- Teams can collaborate effectively while working on separate components, speeding up development.
- OOSAD's object-oriented design mirrors real-world entities, making the system easier to understand and manage.

This hybrid approach ensures a balance between flexibility, structure, and efficient teamwork.

1.5.3 Development Tools

To achieve the objectives of the Influencer Hub project, the following development tools have been selected:

1. **Front-End Tools**:
    - **HTML**: Used for structuring web content.
    - **CSS**: Styles and designs web pages.
    - **JavaScript**: Adds interactivity to websites.
2. **Back-End Tools**:
    - **Node.js**: Executes server-side code for efficient back-end services.
    - **Express.js**: A minimal and flexible Node.js web application framework.
    - **Mongoose**: An Object Data Modeling (ODM) library for MongoDB and Node.js, providing a schema-based solution to model application data[1].
3. **Frameworks**:
    - **Material-UI**: React-based UI framework for modern interfaces.

- **Tailwind CSS**: Simplifies custom design without extensive CSS coding.
- **React.js**: Library for building user interfaces.

4. **Database**:
    - **MongoDB**: Flexible NoSQL database for storing unstructured data.
5. **Version Control**:
    - **Git**: Tracks code changes during development.
6. **Browsers**:
    - **Google Chrome**: Fast, secure browser.
    - **Microsoft Edge**: Microsoft's browser with advanced features.
    - **Mozilla Firefox**: Customizable, privacy-focused browser.
7. **API Testing:**
    - **Insomnia**: A powerful tool for testing RESTful APIs.
8. **Text Editors/IDEs:**
    - **Visual Studio Code (VS Code):** A popular and versatile code editor with a rich ecosystem of extensions. (Collins, T, n.d.).

1.6 Beneficiaries

The Influencer Hub project will benefit various stakeholders, including:

- **Businesses**: looking to promote their products and services using social media influencers.
- **Social media Influencers**: content creators who have a lot of followers on social media and want to work with companies to make money.
- **Marketing agencies:**people or agencies who help businesses with advertising in Ethiopia. They can use the platform to connect with influencers for their clients.
- **Customers**: people who will see ads from companies that are more relevant to them because they're coming from people they already follow.

1.7 Schedule

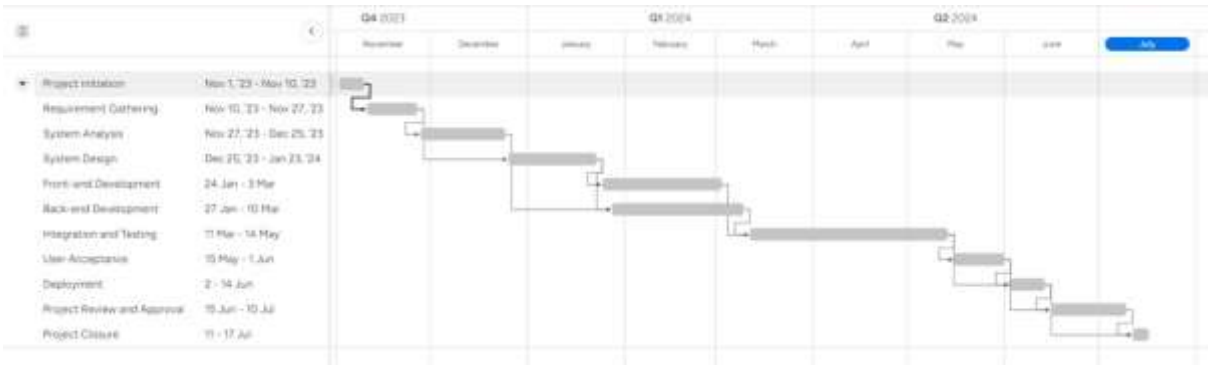


Figure 1 Project Chart

Chapter Two - Project Management

2.1 Introduction

“Project management is the application of knowledge, skills, tools, and techniques to project activities to meet project requirements” (Schwalbe, 2021).

Project management is super important for developing the Influencer Hub project a success. This chapter will give you a basic understanding of how we're going to manage the project. We'll talk about the strategies, plans, and methods we'll use to reach our goals.

The Influencer Hub project is all about connecting companies and influencers to work together on marketing campaigns. To make this project a success, we need to plan carefully, manage our resources, and be ready for any problems that might come up.

Why is good project management so important?

- **Keeps us on track:** We'll have clear goals and timelines, so we don't fall behind.
- **Saves money and time:** We'll focus on the right things and avoid wasting resources.
- **Makes sure the project helps the company grow:** We'll make sure the Influencer Hub project fits in with the company's overall plans.
- **Keeps things organized:** We'll make it easier to handle tasks and solve problems.
- **Keeps quality high:** We'll meet deadlines, stay within budget, and make sure the project meets our high standards.

This chapter will talk about how to manage this project, covering things like:

- **Planning**: Setting up the project roadmap
- **Resources**: Making sure we have the right people and tools
- **Finance**: Planning how much we'll spend
- **Team**: Building a strong team to work on the project
- **Process**: Defining the steps we'll take
- **Risks**: Thinking about potential problems and how to handle them

2.2 Project Planning – WBS

The Work Breakdown Structure (WBS) serves as a visual and hierarchical representation of the tasks and activities essential for the successful completion of the Influencer Hub project. Each level

of the WBS outlines specific components, ensuring clarity and a structured approach to project planning. The detailed WBS is presented below:

Table 1 Project Planning – WBS

Task no	Task Name	Start date	End date	Duration (In days)	Dependency
1	Project Initiation	Nov 1	Nov 10	10	-
1.1	Define Project Scope	Nov 1	Nov 5	5	-
1.2	Establish Project Objectives	Nov 6	Nov 7	2	1.1
1.3	Form Project Team	Nov 8	Nov 9	2	1.2
1.4	Develop Project Charter	Nov 10	Nov 10	1	1.3
2	Requirements Gathering	Nov 11	Nov 27	17	-
2.1	Identify Stakeholders	Nov 11	Nov 16	6	1.4
3	System Analysis	Nov 27	Dec 25	29	-
3.1	Current System Overview	Nov 27	Dec 6	10	2.4, 3.2.2
3.1.1	Evaluate Existing Platforms	Dec 7	Dec 18	10	2.4
3.2	Proposed System Overview	Dec 19	Dec 25	7	3.1
3.2.1	Define System Architecture	Dec 19	Dec 26	8	2.4, 3.1.2, 3.2.2
3.2.2	Specify Functional Requirements	Dec 27	Jan 5	10	2.4
3.2.3	Define Non-Functional Requirements	Jan 6	Jan 13	8	2.4, 1.3, 2.2
4	System Design	Jan 6	Jan 23	18	
4.1	Design Goals	Jan 6	Jan 10	5	3.2.1
4.2	Design Trade-offs	Jan 11	Jan 17	7	3.2.1, 1.4.1
4.3	Subsystem Decomposition	Jan 18	Jan 23	4	4.2
4.3.1	Front-end Design	Jan 18	Feb 7	15	4.2

4.3.2	Back-end Design	Feb 8	Feb 7	15	4.2
4.4	Design Phase Models	Feb 8	Mar 3	24	4.3
4.4.1	Class Modelling	Feb 22	Feb 21	12	4.3.1, 4.3.2
4.4.2	Persistent Model	Feb 22	Mar 3	10	4.3.2, 4.4.1
4.4.3	User Interface Design	Mar 7	Mar 7	14	4.3.1, 4.3.2
4.4.4	Deployment Diagram	Mar 7	Mar 11	8	4.4.1,4.4.2, 4.4.3
4.4.5	Network Design	Mar 7	Apr 6	10	4.4.2
5	Implementation	Mar 11	May 16	78	4
5.1	Develop Front-end Components	Mar 11	May 14	20	4.4.1, 4.4.3
5.2	Implement Back-end Functionality	Apr 6	May 15	30	4.4.2, 4.4.3
5.3	Integrate Database Management	May 16	Jun 12	28	4.4.2, 4.4.3
6	Conclusion and Recommendation	Jun 12	Jul 17	19	5
6.1	Project Review	Jun 12	Jun 16	5	5.4, 6.2
6.2	Lessons Learned	Jun 17	Jun 17	8	5.4
6.3	Future Recommendations	Jun 15	Jul 10	10	5.4

2.3 Resource Planning

Resource planning is crucial for the Influencer Hub project, ensuring the allocation and optimization of human and material resources throughout the project lifecycle.

2.3.1 Human Resource Planning

Table 2Human resource Planning

Role	Requirements	Head Count	Qualification	Responsibility
Project Manager	Strong project management, MERN stack experience	1	Relevant project management certification (optional)	Overall project supervision, team management, communication
Full-Stack Developer (MERN)	Expert in JavaScript, React, Node.js, Express, MongoDB, REST APIs, good understanding of UI/UX	4	Computer Science degree or equivalent experience	Front-end development, back-end logic, database interactions, API design &implementation

2.3.2 Material / Equipment Planning

Table 3 Hardware resource planning

Item/tools	Quantity	Specification	Justification
Laptops	3	Core i5+ processor, 8GB+ RAM, SSD storage	For documentation, Development and testing the project
Smart Phones	3	Any reliable phone	Communication, collaboration, potential recording for user feedback
External Monitor (Optional)	1	High resolution, 24" or larger	Improved workflow for developers

Table 4 Software resource planning

Item	Specification	Justification
Word processing and document Creation	MS-office	Essential for creating project documentation
UI designing tool	Figma	Utilized for designing the user interface and other graphical designs
Code Editor	Visual Studio Code	The main program we'll use to write the code.
Web Browsers	Chrome (mostly), Firefox,	To make sure the website looks good on different browsers (like Chrome, Firefox) and to find problems.
Database	MongoDB	Where we'll store all the information for the website.
Database Tool	MongoDB Compass	Helps us see and manage the data in MongoDB.
Version Control	Git	Tracks all the changes we make to the code, so we can go back if we need to.
Communication & Meetings	Telegram	For chatting with each other, having meetings, and sending updates.

2.4 Financial Planning

2.4.1 Human Resource Financial Plan

Table 5 Human Resource Financial Plan

Role	Head Count	Monthly Salary by person (ETB)	Duration (Months)	Total Cost (ETB)
Project manager	1	15,000	8	120,000
Full-Stack Developer (MERN)	4	5,000	8	160,000
Total expense				280,000

2.4.2 Material / Equipment Financial Plan

We've allocated a budget of 71,400 ETB for vital hardware resources, covering 5 laptops, 5 smartphones, 1 printer, and 2 flash drives. This breakdown details the quantity, unit price, and total cost for each item, ensuring effective expense planning.

Table 6 Hardware Resource Financial Plan

Item/tools	Quantity	Unit price (ETB)	Total price (ETB)
Laptops	2	15,000	30,000
Smart Phones	2	20,000	40,000
External Monitor (Optional)	1	6,000	6,000
Internet service (Unlimited)	one year data	6,600	6,600
Total expense			82,600

Using free software like MS-Office, Figma, Visual Studio Code, GitHub, and Windows 10 is great for our Influencer Hub project. It helps us save money because we don't have to buy licenses for these essential tools.

Table 7 Software Resource Financial Plan

Item	Specification	Justification
Word processing and document Creation	MS-office	Free
UI designing tool	Figma	Free
Code Editor	Visual Studio Code	Free
Web Browsers	Chrome (mostly), Firefox,	Free
Database	MongoDB	Free
Database Tool	MongoDB Compass	Free
Version Control	Git	free
Communication & Meetings	Telegram	Free

2.4.3 Project Budget

The overall budget for our project, considering human resource, material/equipment, and software expenses, is 357,000 ETB. This budget allocation is designed to ensure effective project planning and execution while minimizing unnecessary expenditures and the software expenses are minimized by utilizing free tools, contributing to cost savings for the Influencer Hub project.

Table 8 Project budget

Category	Expenses (ETB)
Human Resource Expenses	280,000
Material/Equipment Expenses	82,600
Software Expenses	Free
Total Project Budget	362,600

2.5 Team Organization

For our final project, we've chosen to embrace an Agile approach to building our website, focusing on iterative development, collaboration, and continuous learning. We believe Agile is the perfect fit for our team because:

- As students, we might have new ideas or things come up that change our plans. Agile lets us adjust our plans easily as we go along.
- Agile is about trying things out, seeing what works, and then improving. This is great for us because we're still learning how to program.
- Agile is all about teamwork. We'll share ideas, help each other out, and make sure everyone is on the same page.
- We'll break our project into smaller chunks called "sprints". At the end of each sprint, we'll have something working that we can show off and see how we're doing.

Even though Agile might sound a bit less organized than other ways of working, we think it's the best choice for us. We're excited to try it out and see how it helps us build a great website while learning a lot along the way!

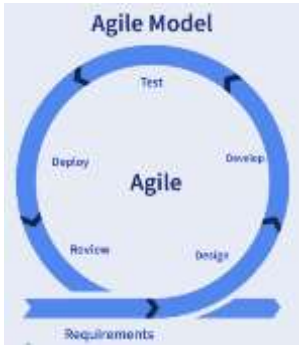
2.6 Process Model

A process model refers to the structured method or framework used to manage and execute a project (Visual Paradigm, T, n.d.).It outlines the steps, stages, and activities that guide the project from initiation to completion. For the Influencer Hub project, we've chosen the **Agile process model**. Agile is characterized by its flexibility, iterative development, and emphasis on collaboration, making it well-suited for our dynamic project requirements.

We choose Agile as our process model for the Influencer Hub project due to several advantages it offers over other process models:

- Adaptability to change: Agile helps us make project changes easily, which is important for a dynamic project like Influencer Hub.
- Continuous feedback: Agile focuses on getting regular input, making sure the project meets expectations and allowing quick adjustments for better quality.
- Enhanced collaboration: Agile encourages team and stakeholders, reducing misunderstandings and making sure everyone shares the same project goals.

- Continuous improvement: Agile methodology is designed to promote continuous improvement. Teams are encouraged to reflect on their processes and make changes as needed to improve efficiency and quality.



Source:

Figure 2 Agile model

2.7 Risk MMM Plan

Weaver (2008) describes risk as, “An uncertain event or condition, that if it occurs, has a positive or negative effect on a project's objective”.

Also, the Risk Mitigation, Monitoring, and Management (RMMM) plan is a comprehensive strategy for addressing and controlling risks throughout the project lifecycle e (Risk Mitigation, Monitoring, and Management (RMMM) Plan, 2020). The Risk Mitigation, Monitoring, and Management (RMMM) plan for the Influencer Hub project involves a proactive approach to handle potential risks effectively. We'll be regularly assessing potential risks during team meetings, keeping our risk list updated. The project manager will be responsible for overseeing this process, ensuring the team is aware of potential challenges and has plans in place to address them. This allows us to anticipate and mitigate risks effectively, keeping our project on track and ensuring a successful outcome.

2.7.1 Risk Items Table

Table 9 Risk items

Risk ID	Risk description	Impact	Severity	Risk type
R1	Software failure	High	High	Technical
R2	Computer crash	High	High	
R3	Difficulty with implementation	High	High	

R4	Poor definition of scope	Medium	Medium	Scope
R5	Lack of experience	High	High	Human Resource
R6	Budget shortage	High	High	Cost
R7	Delivery deadline uncertainty	High	High	Schedule
R8	Poor internet connection	Medium	Medium	External

2.7.2 RMMM Plan

Table 10 Software Failure

SoftwareFailure			
RiskId:R1	Date:Dec09, 2023	Impact: high	probability:20%
Description: The software we use might have problems, causing the whole system to crash.			
Risk Mitigation: We'll make sure software, operating systems, and security programs are always up-to-date. ▪ We'll use antivirus, firewalls, and other tools to protect against cyberattacks and malware.			
Risk Monitoring: ▪ We'll use tools to constantly check that the software is working properly.			
Risk Management: ▪ We'll work together to fix problems quickly if they happen. ▪ We'll have a backup plan in case the software fails completely. ▪ Establish a dedicated team for monitoring and addressing software stability concerns.			
Current Status: Not occurred		Assigned: Yohannes Lemma	

Table 11 Computer Crash

Computer Crash			
RiskId:R2	Date:Dec09, 2023	Impact: high	probability:20%
Description: Computers might crash, losing data and disrupting the project.			
Risk Mitigation: ▪ We will set up duplicate computer.			
Risk Monitoring: ▪ We'll use tools (software) to watch for signs of problems before they cause crashes.			
Risk Management: ▪ We'll make regular backups of all our data.			
CurrentStatus: Monitored		Assigned: Zerihun Tsedeke	

Table 12 Implementing the Design

Difficulty Implementing the Design			
RiskId:R3	Date:Dec09, 2023	Impact: high	probability:20%
Description: It might be hard to build the system exactly as planned, leading to delays and extra work.			
Risk Mitigation: ▪ We'll build a test version first to find and fix problems early on. ▪ We'll keep talking to each other to make sure everyone is on the same page.			
Risk Monitoring: ▪ We'll check on our progress often to see if we're on track. ▪ We'll make sure everyone has the resources and support they need.			
Risk Management:			

▪ Recognizing the academic context, we will ensure the team has access to additional learning materials and mentorship.	
CurrentStatus:Monitored	Assigned:Yohannes Lemma

Table 13 Poor Definition of Scope

Poor Definition of Scope			
RiskId:R4	Date:Dec09, 2023	Impact:Medium	probability:15%
Description: We might not be clear on what exactly the project should include, leading to confusion and extra work.			
Risk Mitigation: ▪ We'll create a very clear and detailed plan for the project. ▪ We'll get everyone involved in defining what the project should do. ▪ We'll review the plan regularly to make sure we're still on the right track.			
Risk Monitoring: ▪ Regularly review and update the project scope document as needed. ▪ Monitorstakeholderfeedbackforanyindicationsofscope-relatedissues.			
Risk Management:			
CurrentStatus:Monitored		Assigned:Tewodros Tigabu	

Table 14 Lack of Experience

Lackof Experience			
RiskId:R5	Date:Dec09, 2023	Impact: high	probability:20%
Description: Some team members might not have enough experience in certain areas.			
Risk Mitigation:			

▪ We'll provide training, pair them with more experienced mentors, and reassess tasks if needed.
Risk Monitoring: ▪ We'll check on their progress and encourage them to talk about what they need help with.
Risk Management: ▪ We might bring in outside experts or adjust the timeline and resources.

CurrentStatus:Monitored	Assigned: Solomon Asefa

Table 15 Budget Shortage

Budget Shortage			
RiskId:R6	Date:Dec09, 2023	Impact: high	probability:20%
Description:We might not have enough money to finish the project with quality.			
Risk Mitigation: ▪ We have a detailed budget and will be careful with spending.			
Risk Monitoring: ▪ We'll track our expenses and watch for any signs of budget trouble.			
Risk Management: ▪ We'll make a plan to cut costs or find more money.			
CurrentStatus:Monitored		Assigned: Solomon Asefa	

Table 16 Delivery Deadline Uncertainty

DeliveryDeadline Uncertainty			
RiskId:R7	Date:Dec09, 2023	Impact: high	probability:10%
Description:We might not meet the deadline.			

Risk Mitigation: ▪ We'll use Agile to be flexible, check progress regularly, and catch problems early.	
Risk Monitoring:	
▪ We'll track deadlines and look for potential delays.	
Risk Management: ▪ We'll figure out why there are delays and make a plan to fix them.	
CurrentStatus:Monitored	Assigned: Solomon Asefa

Table 17 Poor internet connection

Poorinternetconnection			
RiskId:R8	Date:Dec09, 2023	Impact:Medium	probability:80%
Description:Unreliable internet can affect our work.			
Risk Mitigation: ▪ We've already considered this in our budget and will have backup plans like mobile hotspots and different internet provider.			
Risk Monitoring: ▪ We will create alternate ways for team members to communicate in case of internet outages.			
Risk Management: ▪ We will have a backup internet connection or use mobile hotspots to make sure we can stay connected online.			
Current Status: happening		Assigned: Zerihun Tsedeke	

Chapter Three - System Analysis

3.1 Introduction

The analysis phase answers the questions of who will use the system, what the system will do, and where and when it will be used. During this phase, the project team investigates any current system(s), identifies opportunities for improvement, and develops a concept for the new system. Th is phase has three steps:

1. An analysis strategy is developed to guide the project team's eff orts. Such a strategy usually includes an analysis of the current system (called the as-is system) and its problems and then ways to design a new system (called the to-be system).
2. Th e next step is requirements gathering (e.g., through interviews or questionnaires). The analysis of this information—in conjunction with input from the project sponsor and many other people—leads to the development of a concept for a new system. Th e system concept is then used as a basis to develop a set of business analysis models, which describe how the business will operate if the new system is developed.
3. Th e analyses, system concept, and models are combined into a document called the system proposal, which is presented to the project sponsor and other key decision makers (e.g., members of the approval committee) who decide whether the project should continue to move forward (Dennis, Wixom, Tegarden, & Seeman, 2020, p.3).

The following sections will delve into specific details of the current and proposed systems, capture the fundamental aspects of system analysis, and set the stage for a successful software development endeavour.

3.2 Current System Overview

In Ethiopia, collaborating online for businesses and social media influencers can be challenging as they often rely on personal connections, social media, and word-of-mouth to find each other. This can be a time-consuming and effortful process. Hence, there is a need for a better way to connect and cooperate online.

In the current scenario of social media influencer marketing, businesses and marketing agencies start by identifying the need for influencer collaboration. They search for influencers on various social media platforms like Instagram, Facebook, TikTok, Telegram, YouTube, etc., analyzing the content they post, and their followers. This involves thorough research into influencers' content, engagement rates, and audience demographics. Companies or agencies may also attend events and

conferences to network with potential influencers and evaluate their personalities and suitability for collaboration.

In addition to social media and networking events, personal connections are also used to find social media influencers. Companies may know someone who knows these influencers, like a friend of a friend, which helps them get an inside scoop on whether these influencers are suitable to work with or not.

Once a company finds a suitable influencer, they discuss the terms of their collaboration, including the kind of posts and delivery times, and put everything in writing in a contract. Alternatively, they may reach an oral agreement during these discussions, providing a more informal approach. The influencer then creates and publishes content promoting the company or its products/services on their social media channels. After the campaign, the influencer invoices the company/agency for their services, leading to potential payment delays. Payment methods include sending money to the influencer's bank account, writing a check, or using cash.

This fragmented and manual process can lead to inefficiencies, missed opportunities, and a lack of transparency and standardization in influencer marketing collaborations. Therefore, the Influencer Hub project aims to simplify this process by creating a centralized platform that streamlines the identification, collaboration, and payment processes for both companies and influencers.

3.3 Proposed System Overview

The current influencer marketing landscape will be transformed by the proposed system by introducing a unified platform that aims to enhance efficiency, transparency, and collaboration between companies and influencers. The system intends to resolve the shortcomings of the current manual processes and provide a structured approach to influencer marketing in Ethiopia.

Both companies and influencers can register on Influencer Hub through a simple registration process. To ensure credibility and reliability, the administrators check the trade licenses of companies during registration. Influencers need to fulfill specific requirements, such as having a minimum number of followers on TikTok, Telegram, and other platforms, depending on the platform they choose. The administrators examine these criteria and audience demographics to match influencers with companies that share similar values and reach.

After registration, companies and influencers can create detailed profiles. Companies can showcase their identity and purpose, while influencers can highlight their personality and interests. For influencers, the next step is to display their best work, including posts, videos, or content that reflects their style. It is similar to creating a visual resume that companies can explore.

The platform's search functions allow companies to actively search for influencers, who can provide the system with their follower count, content style, and engagement. The algorithm then analyzes influencer posts, taking into account factors like likes, shares, and comments, as well as past collaborations to ensure successful partnerships.

Using a weighted scoring system, the platform prioritizes important factors such as the number of followers or the level of engagement, to ensure that companies and influencers are matched up correctly and can create impactful and authentic content together.

The interface is user-friendly and allows both companies and influencers to input their preferences and see recommended matches. Once a company is interested, they can use the secure messaging platform to contact influencers, discuss collaboration details, negotiate terms, and ensure a good fit.

The entire agreement and payment process happen digitally, without the need for any paperwork. Influencers can submit their content for company approval, and the platform's secure payment system automatically pays them upon approval, eliminating delays and ensuring timely payouts.

To further build trust within the community, influencers and companies can leave reviews for each other based on their collaborations.

In summary, Influencer Hub offers a streamlined registration process, ensures authenticity, and provides a seamless experience from showcasing influencer profiles to collaborating with companies and receiving timely payments. It's the go-to platform for trustworthy and streamlined collaborations, whether you're a company or an influencer.

3.3.1 Functional Requirements

A functional requirement relates directly to a process a system has to perform or information it needs to contain. For example, requirements stating that a system must have the ability to search for available inventory or to report actual and budgeted expenses are functional requirements. Functional requirements flow directly into the creation of functional, structural, and behavioural models that represent the functionality of the evolving system (Dennis et al., 2020, p.87).

1. **User Registration**
    - **Description**:
        - The system will allow companies to register by providing necessary information.
        - The system will allow Influencers to register by providing necessary information.
        - The system will enable admins to approve or reject user registration requests.
    - **Criticality**: Critical

- **Technical Issues**: Validating trade license by admin, verifying social media accounts, verifying email, creating an account, and sending approval notifications.
- **Dependency**: None

2. **User Data Management**

- **Description**:
    - The system will allow admins to access, view, and manage both companies and influencers.
    - The system will allow the company to access, view, and manage their account.
    - The system will allow the company to access, view, and manage their account.
- **Criticality**: High
- **Dependency**: None

3. **Influencer Search**

- **Description**: The system will allow companies to search for influencers.
- **Criticality**: High
- **Dependency**: User Authentication

4. **Collaboration Management**

- **Description**:
    - The system will allow companies to send collaboration requests to influencers,
    - Influencers can accept or reject collaboration requests.
- **Criticality**: Medium
- **Dependency**: Influencer Search

5. **Company/Influencer Profile View**

- **Description**:
    - The system will allow collaborators to view detailed information about companies.
    - The system will allow companies to view detailed information about influencers.
- **Criticality**: Medium
- **Technical Issues**: Profile access and information display.
- **Dependency**: Collaboration Management

6. **Messaging Interface**

- **Description**: The system will provide a messaging interface for direct communication between companies and influencers.
- **Criticality**: Medium
- **Technical Issues**: Messaging interface, notification system, and message exchange.
- **Dependency**: Company/Influencer Profile View

7. **Campaign Management**

- **Description**:
  - The system will allow companies to create, manage, and track influencer campaigns.
  - The system will allow influencers to create content and manage campaign.
- **Criticality**: High
- **Technical Issues**: Login check, campaign management, and agreement access.
- **Dependency**: Influencer Search and Profile View

8. **Payment Management**

- **Description**:
  - The system will allow the company to make payments for campaigns.
  - The system will allow influencers to receive payments for campaigns
- **Criticality**: High
- **Technical Issues**: Payment details entry, payment processing, and updating campaign status.
- **Dependency**: Campaign Management

9. **Leave Review**

- **Description**:
  - The system will provide an interface for the company to leave reviews and ratings for the company.
  - The system will provide an interface for the influencer to leave reviews and ratings for the influencer.
- **Criticality**: Medium
- **Technical Issues**: Review interface, submission, and display.

- **Dependency**: User Registration

10. **Report Generation**

- **Description**:
    - The system will allow admins to generate various reports on user activities, campaigns, and financial transactions.
    - The system will allow companies to generate various reports on their activities, campaigns, and financial transactions.
- **Criticality**: High
- **Technical Issues**: Admin authentication, selecting report type, specifying criteria, and generating reports.
- **Dependency**: User Data Management

These functional requirements are the foundation of the Influencer Hub system. They provide the essential features that allow companies and influencers to work together effectively. These features make it possible for businesses to find the right influencers, communicate with them, and manage their collaborations, ultimately leading to successful marketing campaigns.

3.3.2 Non-Functional Requirements

These are the quality constraints that the system must satisfy according to the project contract. The priority or extent to which these factors are implemented varies from one project to another. They are also called non-behavioural requirements (Dennis et al., 2020, p.87).

➢**Compatibility**: Ensure the system's compatibility with various devices, and browsers allowing users to access the platform from different platforms and environments. The system should be compatible with at least 90% of popular devices (smartphones, tablets, laptops) and browsers (Chrome, Firefox, Safari) commonly used by the target audience.

➢**Security:** Implement robust security measures to protect user data and ensuring confidentiality. The system must achieve a security audit score of 95% or higher, as assessed by an independent third-party security firm. This audit should be conducted annually.

➢**Usability:** Design an intuitive and user-friendly interface to enhance user experience

for both companies and influencers. 90% of randomly selected users should be able to complete the basic tasks (registration, collaboration initiation) within the system in less than 5 minutes during usability testing.

- **Reliability:** Ensure the system's reliability by minimizing downtime and implementing effective error handling mechanisms. The system should maintain an uptime of 99.9% over a 3-month period, measured by tracking system availability 24/7.

- **Performance:** Optimize system performance to provide quick response times for searches, messaging, and overall interactions. The system should provide search results to users within 3 seconds, support concurrent messaging for at least 100 users without delays, and load user profiles within 2 seconds.

The proposed system, with its comprehensive set of functional and non-functional requirements, aims to create a robust and efficient platform that transforms influencer marketing in Ethiopia.

3.4 System Models - Requirement Determination

Th e purpose of requirements determination is to turn the very high-level explanation of the business requirements stated in the system request into a more precise list of requirements that can be used as inputs to the rest of analysis (creating functional, structural, and behavioural models). Th is expansion of the requirements ultimately leads to the design of the system (Dennis et al., 2020, p.87).

3.4.1 Essential Use Case Modelling

"An essential use case is a structured narrative, expressed in the language of the application domain and of users, comprising a simplified, generalized, abstract, technology-free and implementation independent description of one task or interaction that is complete, meaningful, and well-defined from the point of view of users in some role or roles in relation to a system and that embodies the purpose or intentions underlying the interaction" (Constantine and Lockwood, 1999).

3.4.1.1 Use Case Diagram

Use case diagrams describe the high-level functions and scope of the system. These diagrams also identify the interactions between the system and its actors. The use cases and actors in use case diagrams describe what the system does and how the actors use it, but not how the system operates internally.

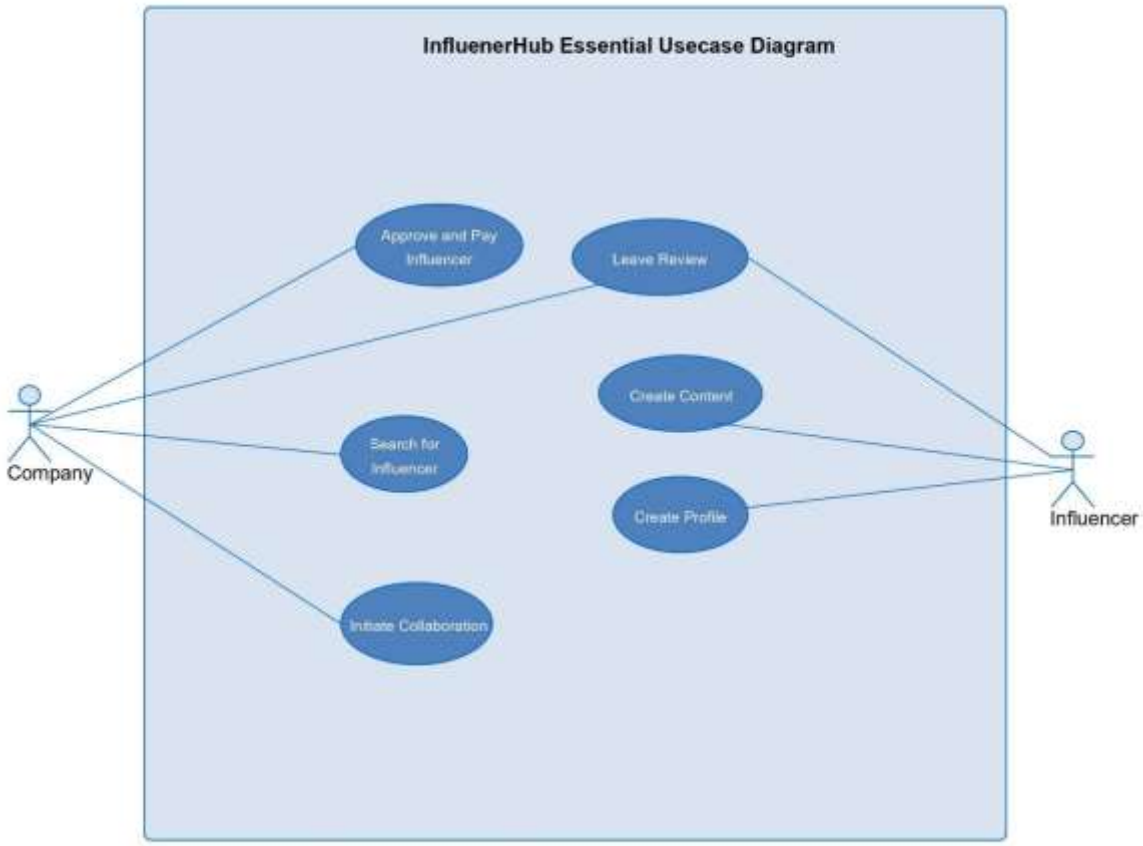


Figure 3 Use Case Diagram

3.4.1.2 Use Case Documentation

Table 18 Essential Use Case Documentation

Use Case ID	**UC01**
Use Case Name	Create Profile
Description	This use case describes the process of influencers creating a profile on the platform to showcase their experience and attract potential collaborations.
Actors	Influencer
Pre-Condition	The Influencer is interested in collaborating with companies for influencer marketing campaigns.
Post-Condition	The Influencer has a profile that companies can potentially discover during their manual search for influencers.

Basic Course of Action	1. Influencer accesses the social media platform. 2. Influencer enters profile information, including areas of expertise, interests, target audience demographics, and social media statistics (follower count, engagement rates, etc.). 3. Influencer uploads samples of past work (photos, videos, blog posts) to showcase their content creation skills. 4. Influencer publishes the profile. 5. The profile is visible on the platform for companies to discover. 6. The use case ends.
Alternative Course of Action	A: Profile Information Incomplete or Inaccurate A1. Influencer identifies incomplete or erroneous information and corrects it. A2. Influencer publishes the profile again. A3. The use case continues from step 5 of the Basic Course of Action. B: Influencer Uncomfortable Sharing Information B1. Influencer decides not to share detailed information and abandons the profile creation process. B2. The use case ends.

Use Case ID	**UC02**
Use Case Name	Search for Influencer
Description	This use case describes the process of a company manually searching for suitable influencers for marketing campaigns on social media platforms.
Actors	Company
Pre-Condition	Company has identified a need for influencer marketing.
Post-Condition	Company identifies a shortlist of potential influencers.

Basic Course of Action	1. Company accesses various social media platforms (Instagram, Facebook, TikTok, etc.). 2. Company uses search functions and filters to find influencers based on criteria such as expertise, audience demographics, and social media engagement. 3. Company reviews the profiles of shortlisted influencers. 4. Company analyzes influencer content, engagement, and audience demographics. 5. Company selects potential influencers for further evaluation. 6. The use case ends.
Alternative Course of Action	A: Difficulty Finding Suitable Influencers A1. Company struggles to find suitable influencers due to inadequate search criteria or platform limitations. A2. Company revises search criteria and tries again. A3. The use case continues from step 3 of the Basic Course of Action. B: Lack of Resources for Thorough Research B1. Company lacks resources or time for thorough research and relies on personal connections or third-party recommendations to find influencers. B2. The use case continues from step 5 of the Basic Course of Action.

Use Case ID	**UC03**
Use Case Name	Initiate Collaboration
Description	This use case describes the process of a company reaching out to a potential influencer and negotiating campaign details manually.
Actors	Company

Pre-Condition	Company has identified a shortlist of influencers.
Post-Condition	Company and influencer agree on collaboration terms.
Basic Course of Action	1. Company directly contacts the influencer through social media messaging or email. 2. Company discusses campaign details with the influencer, including desired content, timelines, and compensation. 3. Company and influencer negotiate terms and finalize collaboration details. 4. Company and influencer establish a formal contract outlining the collaboration terms. 5. The use case ends.
Alternative Course of Action	A: Influencer Unresponsive A1. Influencer does not respond to the company's initial contact attempt. A2. Company follows up with additional messages or tries to contact other shortlisted influencers. A3. The use case continues from step 1 of the Basic Course of Action. B: Disagreement on Collaboration Terms B1. Company and influencer disagree on collaboration terms such as compensation or content requirements. B2. Company negotiates with the influencer to reach a mutually acceptable agreement. B3. If an agreement is not reached, the company may contact another shortlisted influencer. B4. The use case continues from step 1 of the Basic Course of Action if a new influencer is contacted.

Use Case ID	UC04
Use Case Name	Create Content
Description	This use case describes the process of an influencer creating and publishing content promoting the company on their social media channels based on the agreed-upon terms.
Actors	Influencer
Pre-Condition	Company and influencer have agreed on campaign details.
Post-Condition	Influencer publishes campaign content.
Basic Course of Action	1. The Influencer develops content (post, video, etc.) according to the company's specifications. 2. The Influencer submits the content to the company for approval. 3. The Company reviews the content and requests any necessary revisions. 4. The Influencer makes revisions if needed and resubmits the content. 5. The Company approves the final content. 6. The Influencer publishes the content on their social media platforms. 7. The use case ends.
Alternative Course of Action	A: Content Revisions Required A1. Company requests revisions to the content due to misalignment with campaign goals or quality standards. A2. Influencer makes the necessary revisions and resubmits the content. A3. The use case continues from step 5 of the Basic Course of Action. B: Publication Delays

	B1. Influencer faces delays in creating or publishing the content due to unforeseen circumstances. B2. Influencer communicates the delay to the company and provides a revised timeline. B3. The use case continues from step 4 of the Basic Course of Action.

Use Case ID	**UC05**
Use Case Name	Approve and pay influencer
Description	This use case describes the process of a company manually approving an influencer's invoice and processing payment for their services.
Actors	Company
Pre-Condition	The Influencer has published the campaign content.
Post-Condition	The Company pays the influencer for their services.
Basic Course of Action	1. The influencer sends an invoice to the company for the agreed-upon compensation. 2. The company manually processes the invoice payment (bank transfer, check, cash). 3. The company records the payment transaction for accounting purposes. 4. The use case ends.
Alternative Course of Action	A: Invoice Delays or Disputes A1. The company identifies delays or disputes in the invoice details. A2. The company communicates with the influencer to resolve any issues.

	A3. The use case continues from step 2 of the Basic Course of Action. B: Payment Processing Slow or Inconvenient B1. Payment processing encounters delays or logistical challenges. B2. The company resolves the issues and completes the payment. B3. The use case continues from step 2 of the Basic Course of Action.

Use Case ID	**UC06**
Use Case Name	Leave Review
Description	This use case describes the process where companies and influencers leave reviews for each other after completing a collaboration on a social media platform.
Actors	Company, Influencer
Pre-Condition	Company and influencer have completed a collaboration.
Post-Condition	Both parties leave reviews for each other.
Basic Course of Action	**Company** 1. The company decides whether to leave a review for the influencer. 2. The company writes a review on the influencer's professionalism, communication, content quality, and overall experience working together. **Influencer** 3. The influencer decides whether to leave a review for the company. 4. The influencer writes a review on the company's communication clarity, promptness of payment, and overall experience working with them. 5. The use case ends.

	A: No Review Left A1. Either party decides not to leave a review. A2. The use case ends.

3.4.2 Essential UI Prototype

Agile Modeling (n.d.) explains that user interface (UI) prototyping is a crucial early phase in UI development. It involves creating a digital mock-up of a future customer-facing interface, allowing visualization and testing of user journeys before investing heavily in actual product development. It represents the general ideas behind the UI but not the exact details. Essential UI prototypes depict user interface requirements in a technology-independent manner, just as essential use case models do for behavioural requirements. An essential user interface prototype is effectively the initial state—the starting point of the user interface prototype for a system. It models user interface requirements that are evolved through analysis and design to result in the final user interface for a system, enabling the team to explore usability aspects of the system.

Figure 4 Sign in

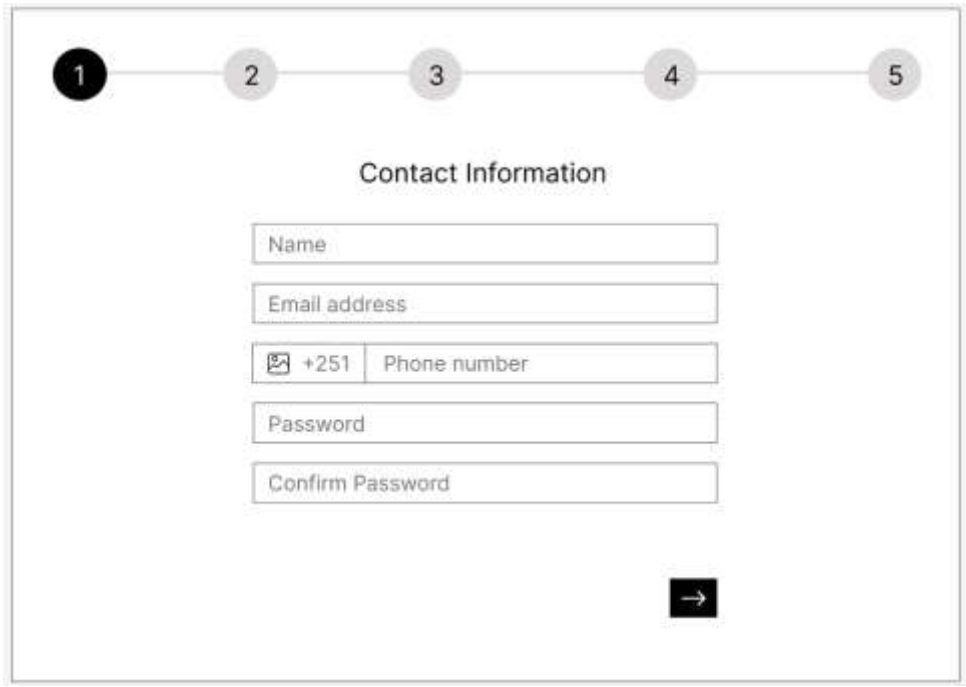


Figure 5 Sign up

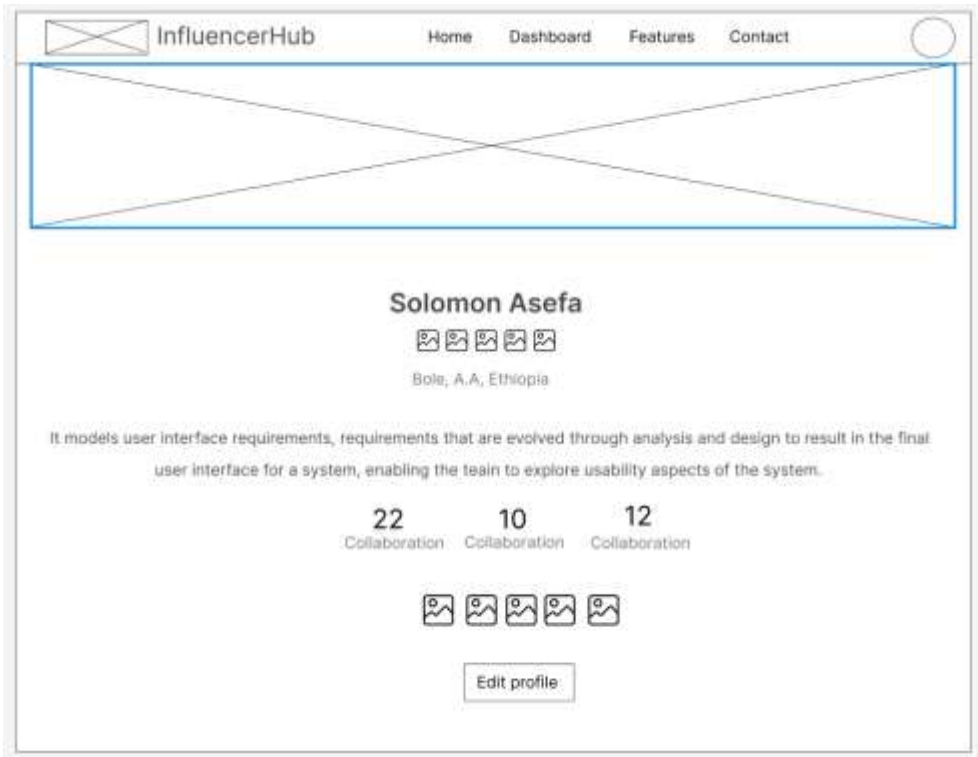


Figure 6 Profile

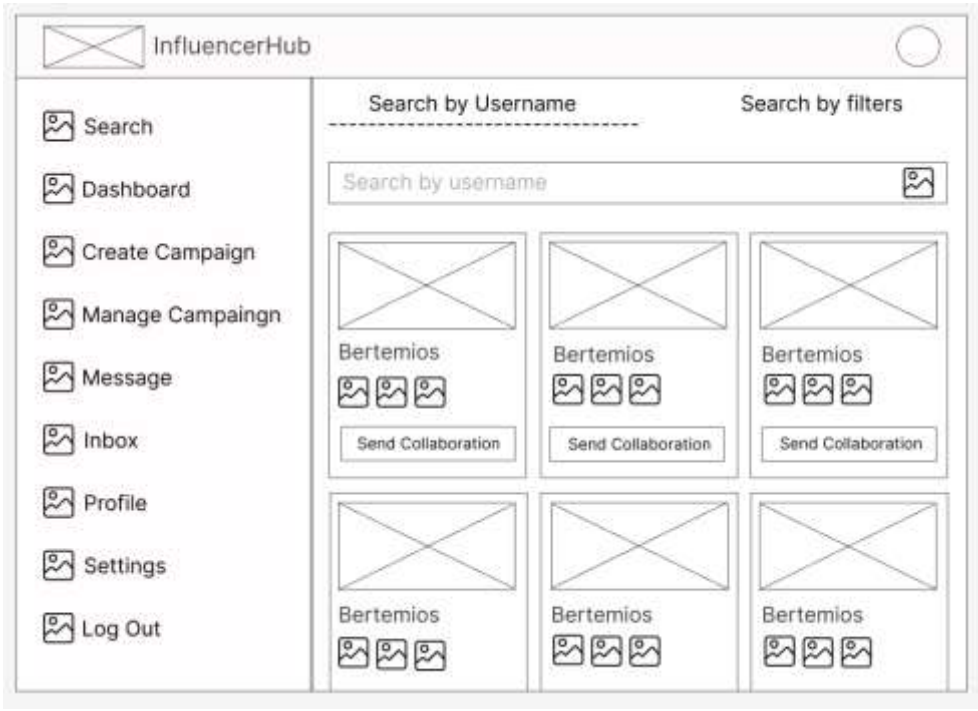


Figure 7 Search for influencer

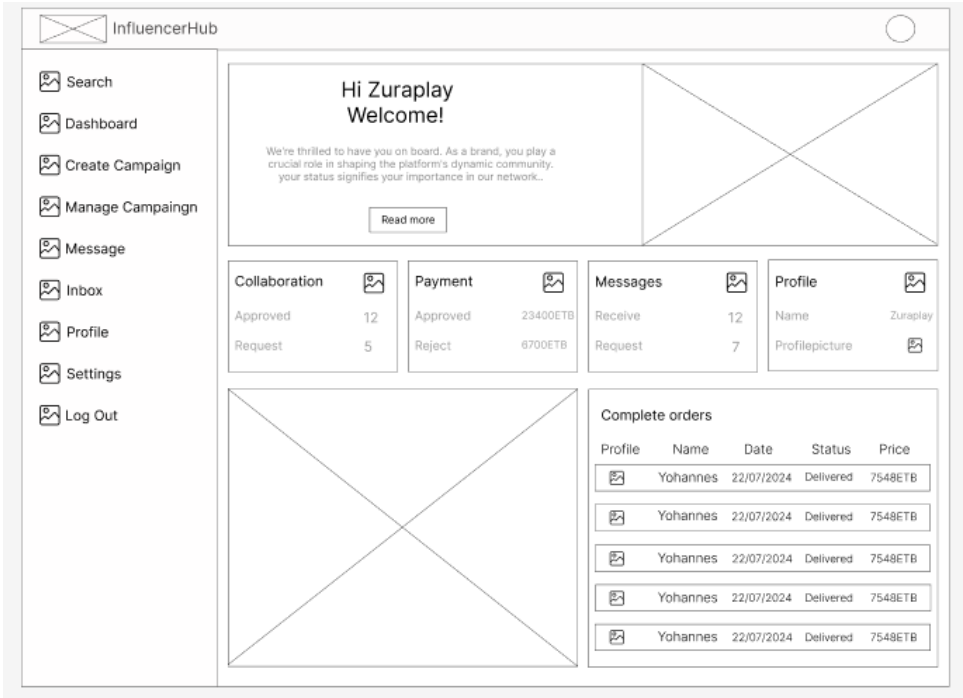


Figure 8 Dashboard

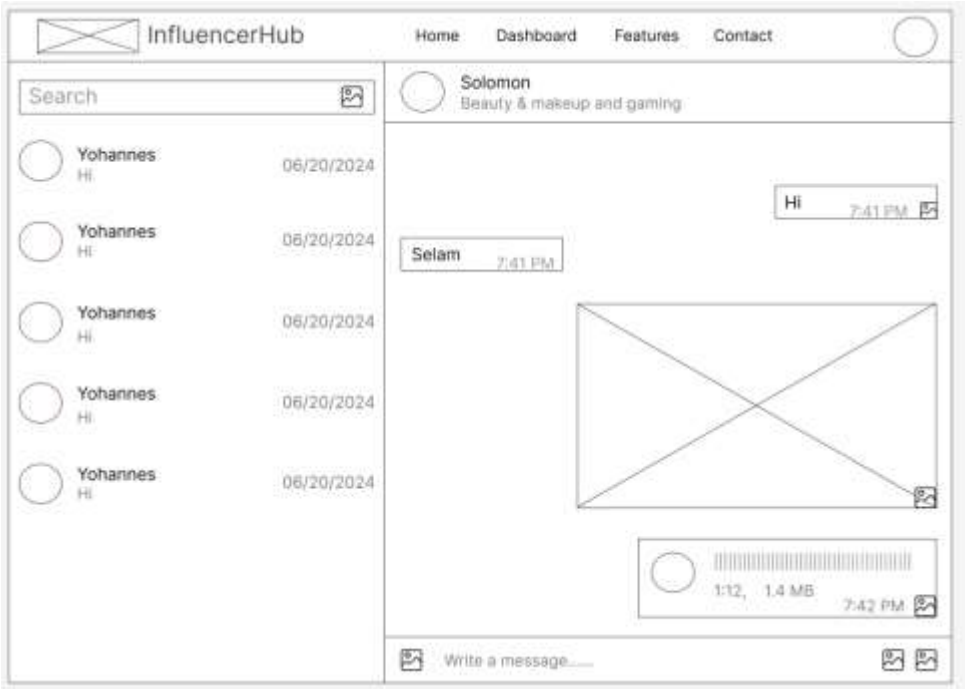


Figure 9 Message

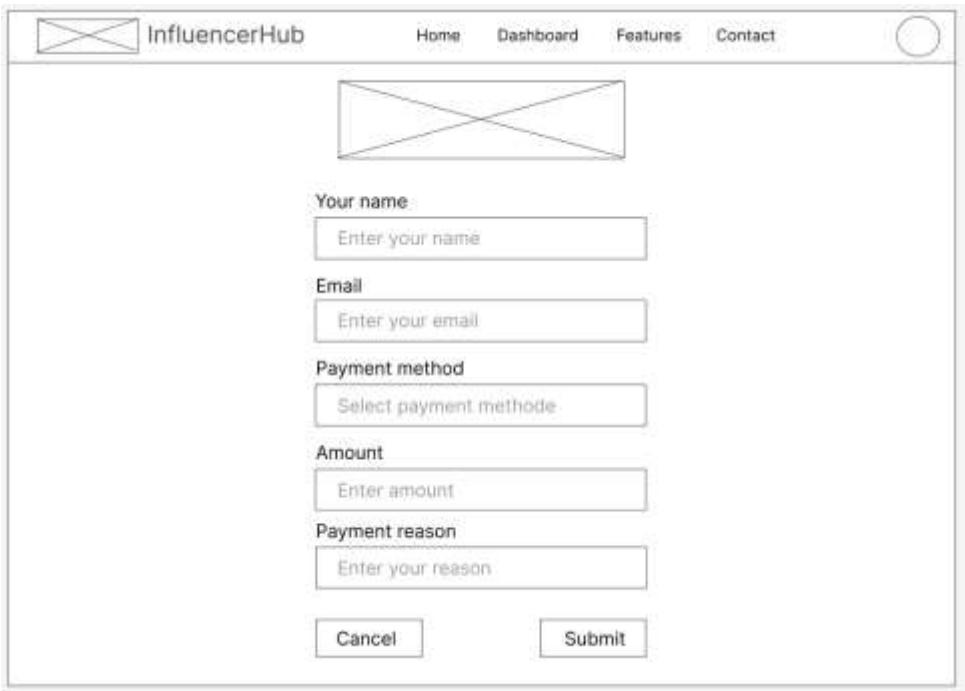


Figure 10 payment

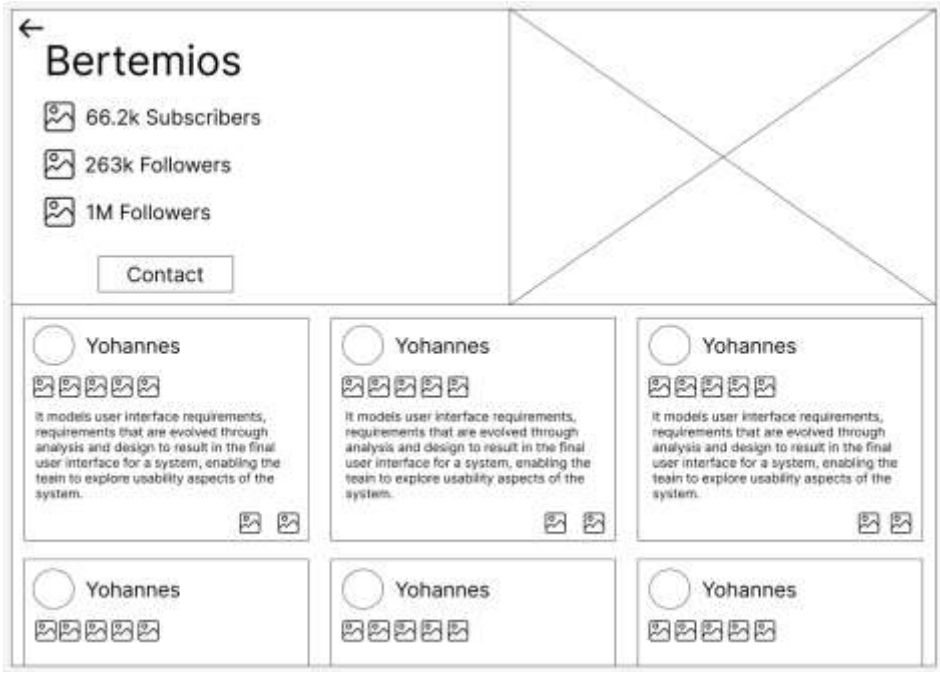


Figure 11 review

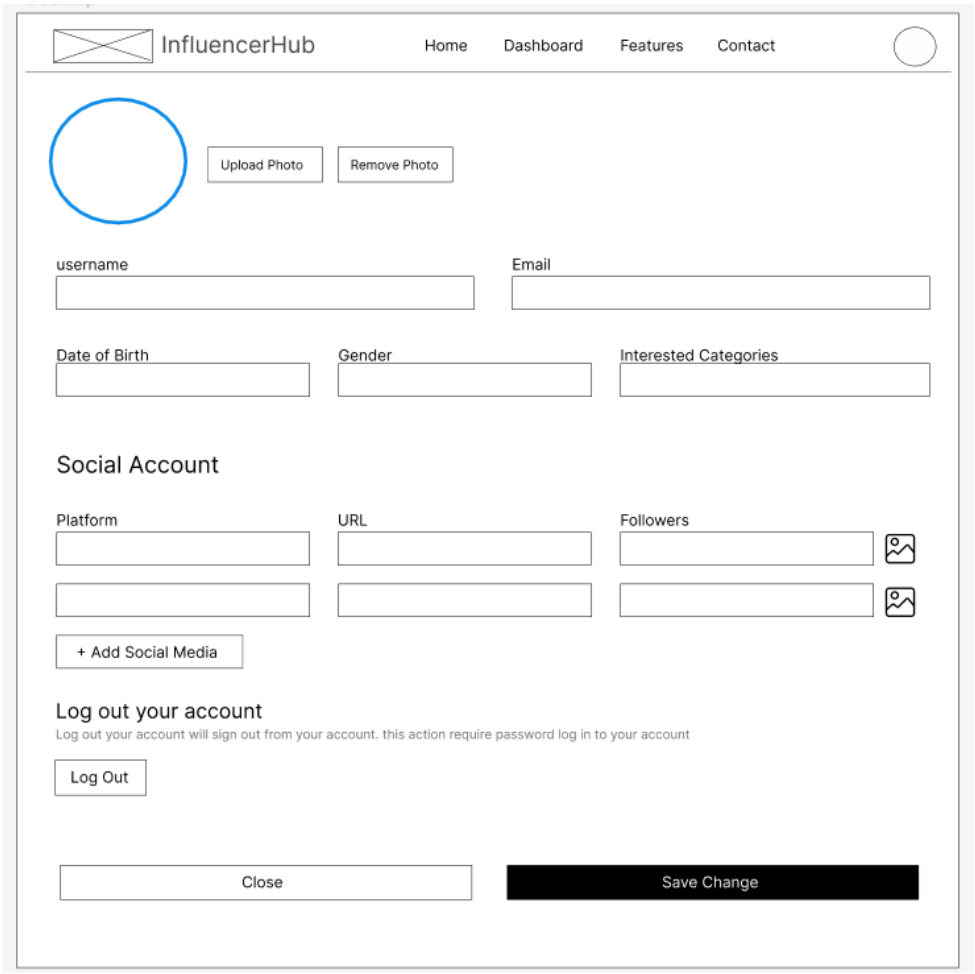


Figure 12 profile update

3.4.3 User Interface Flow Diagram

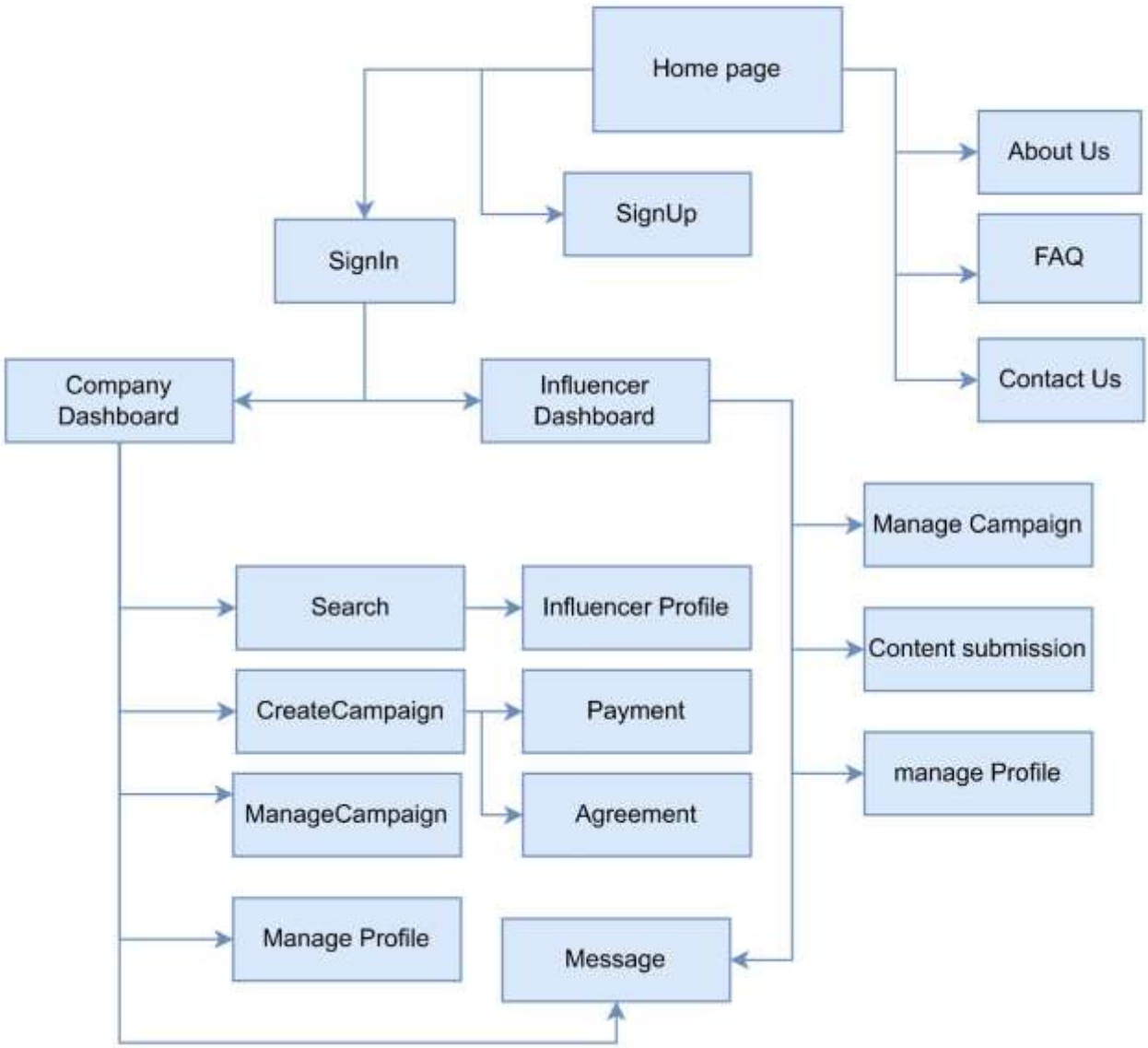


Figure 13 User Interface Flow Diagram

3.4.4 Supplementary Specifications

"Supplementary specifications capture the system requirements that are not readily captured in the use cases of the use-case model" (Supplementary Specifications, 2023). This often include Business Rules, Constraints, Change Case.

3.4.4.1 Business Rules

Business rules guide the everyday decision-making within businesses by outlining the relationships between objects, such as customer names and their corresponding orders. This translation of an organization's business activities into concrete business logic allows software

engineers and business analysts to apply these rules within workflow tools or other applications to enable process automation.

User Registration & Verification

Table 19 Business Rule

Business Rule Id	**BR01.1**
Business Rule Name	**Trade License Verification**
Description	Companies must provide a valid trade license during registration. The admin will verify the license authenticity.

Business Rule Id	**BR02.1**
Business Rule Name	**Email Verification**
Description	All users (companies and influencers) must verify their email address by clicking a verification link sent during registration.

Business Rule Id	BR03.1
Business Rule Name	**Social Media Account Verification**
Description	Influencers must provide valid, active social media accounts on [list supported platforms] with a minimum of [specified follower count] for each platform. The admin will verify the accounts and follower count.

Business Rule Id	**BR04.1**
Business Rule Name	**Collaboration Proposal Approval**
Description	Collaboration request require approval from the company. The system will automatically notify both (company, influencer) parties of the approval status.

Business Rule Id	BR05.1
Business Rule Name	**Content Approval**
Description	Content created by influencers for company collaborations must be approved by the company before publication. The company can review and request edits to the content before it is published. The system will facilitate content submission and approval processes.

Business Rule Id	BR06.1
Business Rule Name	**Payment Terms**
Description	Payment terms and conditions for collaborations must be agreed upon by both companies and influencers before the collaboration begins. Companies must specify payment amounts, methods, and timelines within the collaboration agreement.

Business Rule Id	BR06.2
Business Rule Name	**Secure Payment Processing**
Description	All financial transactions must be processed securely through [specify payment gateway(s)]. The system will integrate with these gateways to ensure secure payment processing.

Business Rule Id	BR07.1
Business Rule Name	**Feedback and Reviews**
Description	Companies and influencers are encouraged to provide feedback and reviews for each other after collaborations. The system will allow users to provide ratings and written feedback to improve future interactions.

3.4.4.2 Constraints

These are some of the constraints that apply to our project: -

Table 20 Constraint

Constraint Id	**C01**
Constraint Name	Budget Constraint
Description	The initial development phase is limited to a 258,000ETB budget.

Constraint Id	**C02**
Constraint Name	Time Constraints
Description	Launch the project within eight months from initiation.

Constraint Id	**C03**
Constraint Name	Resource Constraints
Description	The project team consists of five developers (students).

3.4.4.3 Change Case

A change case is a strategic tool used in project management to outline new potential requirements or modifications to existing requirements within a system. It serves as a proactive measure for addressing future changes and is typically modelled in a straightforward manner.

Table 21 Change Case

ID	**CC01**
Change Case Name	Multi-Language Support
Description	Add support for different languages so people from all over the country can use the platform.
Likelihood	This is very likely and can be done within six months of starting the platform.

Impact	This will help more people use the platform and make it feel more welcoming.

ID	**CC02**
Change Case Name	Social Media Integration
Description	Connect the platform with new social media sites to help users work together and reach more users.
Likelihood	This is very likely and can be done within a year of starting the platform.
Impact	This will keep the platform up-to-date and attract more users to use it in the future.

ID	**CC03**
Change Case Name	More Payment Options
Description	Let users pay with different methods like digital wallets, making it easier to use.
Likelihood	This is very likely, and could take one to two years after starting the platform.
Impact	This will encourage users to keep using the platform and attract more users, making it a bigger success.

ID	**CC04**
Change Case Name	Social Media API for Validation
Description	Use special tools from social media sites to check how many followers users have and automatically system confirm their accounts are real without administration.
Likelihood	This is likely and can be done within a year of starting the platform.

Impact	This will help ensure users are who they say they are and make the platform more reliable.

ID	**CC05**
Change Case Name	Payment Gateway Integration
Description	Add a secure system for accepting payments from users.
Likelihood	This is very likely and should be done before launch to ensure smooth transactions.
Impact	This is crucial for any platform that involves financial transactions, allowing users to pay for services or products conveniently.

3.5 System Models - Analysis

A systematic approach employed by analysts to comprehend and document the functional aspects of a system. It serves as a vital mechanism for facilitating effective communication between the development team and stakeholders, particularly customers.

3.5.1 System Use Case Modelling

System Use Case Modelling: This is a technique used to identify, clarify, and organize system requirements. A system use-case model illustrates the interactions between various user types and the system, delineating how each user's goals are achieved through these interactions. It specifies the intended behaviour of the system, ensuring that all user goals are met effectively.

3.5.1.1 Use Case Diagram

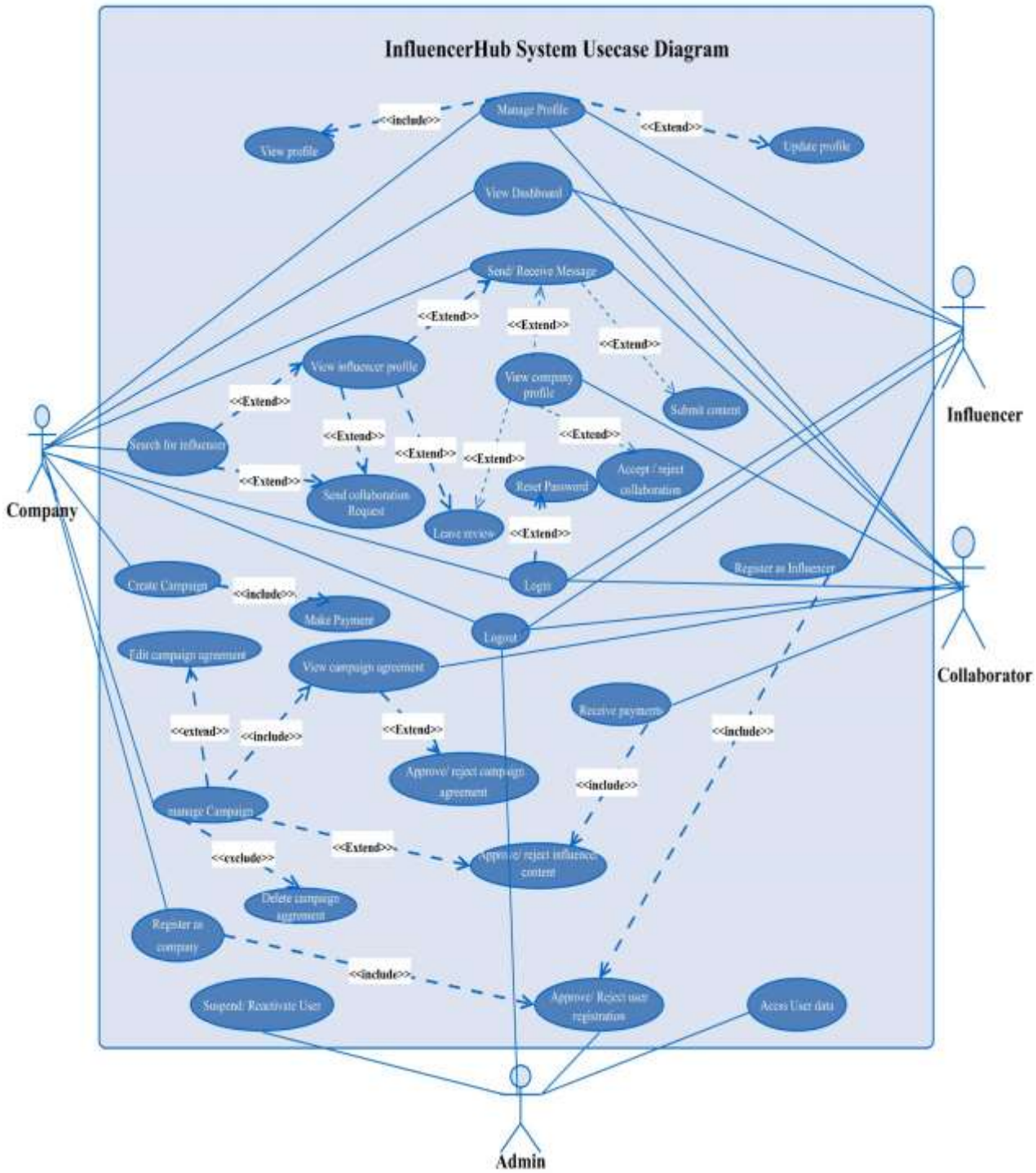


Figure 14 System Use Case

3.5.1.2 Use Case Documentation

Table 22 Use Case Documentation

Use Case ID	**SUC01**
Use Case Name	Register as Company
Description	This use case describes the process of a company registering on the Influencer Hub platform.
Actors	Company, Admin
Pre-Condition	▪ The company has access to the internet and a device to register. ▪ The company has a valid trade license. ▪ The company has a valid email address.
Post-Condition	The company successfully registers and obtains a registered account on Influencer Hub (upon approval).
Basic Course of Action	1. The Company user accesses the Influencer Hub registration page. 2. Company user enters company information (name, contact details, etc.). 3. The Company user submits the registration form. 4. The system validates the provided information for accuracy and completeness. 5. The admin reviews the company's profile and approves the registration if all requirements are met via SUC03- Approve/Reject User Registration. 6. The Company user receives notification of registration is approved. 7. The use case ends.
Alternative Course of Action	A: Form Validation Fails A1. The system identifies incomplete or erroneous information and prompts the company to fill in all required fields and correct the provided information appropriately.

	A2. The Company user corrects the information and resubmits the registration form. A3. The use case continues from step 4 of the Basic Course of Action. B: Registration Rejection B1. The admin reviews the company registration and trade license verification results. B2. If the trade license is invalid or the registration is rejected for any other reason, the admin notifies the company about the rejection via email. B3. The use case ends.
Includes	SUC03- Approve/Reject User Registration
Extends	-

Use Case ID	**SUC02**
Use Case Name	Register as Influencer
Description	This use case describes the process of an influencer registering on the Influencer Hub platform.
Actors	Influencer, Admin
Pre-Condition	▪ The influencer has access to the internet and a device to register. ▪ The influencer has at least one social media account with the minimum required number of followers/subscribers. ▪ The influencer has a valid email address.
Post-Condition	The influencer successfully registers and obtains a registered account on Influencer Hub
Basic Course of Action	1. The Influencer accesses the registration page of the Influencer Hub platform.

	2. The Influencer enters their personal information, including name, contact details, etc., and provides social media links. 3. The system validates the provided information for accuracy and completeness. 4. The admin reviews the influencer's profile and approves the registration if all requirements are met via SUC03- Approve/Reject User Registration. 5. The Influencer receives a notification of registration is approved. 6. The use case ends.
Alternative Course of Action	A: Form Validation Fails A1. The system identifies incomplete or erroneous information and prompts the influencer to fill in all required fields and correct the provided information appropriately. A2. The influencer corrects the information and resubmits the registration form. A3. The use case continues from step 4 of the Basic Course of Action. B: Registration Rejection B1. The admin reviews the company registration and trade license verification results. B2. If the influencer's social media account is invalid, or if the registration is rejected for any other reason, the admin notifies the influencer about the rejection via email. Additionally, the Admin may specify a minimum follower count requirement for registration. B3. The use case ends.
Includes	SUC03- Approve/Reject User Registration
Extends	None

Use Case ID	**SUC03**

Use Case Name	Approve/Reject User Registration
Description	This use case describes the process by which an admin approves or rejects a registration request from an influencer or company on the Influencer Hub platform.
Actors	Admin
Pre-Condition	▪ The admin has access to the Influencer Hub admin panel. ▪ The influencer or company has submitted their registration request, including all required information.
Post-Condition	The influencer or company is notified of the approval or rejection of their registration.
Basic Course of Action	1. The system notifies the admin about a pending registration request. 2. The admin logs into the Influencer Hub admin panel and accesses the pending registration request. 3. The Admin reviews the submitted information against the platform's criteria. ▪ For influencers: The admin reviews personal information (name, email, profile picture), social media links, and other relevant details. ▪ For companies: The admin reviews company information (name, website, contact details), trade license (if required), and other relevant details. 4. Admin approves registration: If the submitted information meets the criteria: ▪ The admin approves the registration. ▪ The system sends a confirmation email to the influencer or company, granting them access to the Influencer Hub platform. ▪ The user's account status is updated to "Active" in the system.

	5. Admin rejects registration: If the submitted information does not meet the criteria: ▪ The admin rejects the registration. ▪ The system sends a notification email to the influencer or company, explaining the reasons for rejection. ▪ The email may include instructions on how to resubmit the registration with the required information. ▪ The user's account status is updated to "Rejected" in the system. 6. The use case ends.
Alternative Course of Action	A: If the admin requires further information or clarification from the influencer or company, the request can be placed on hold. A1. The admin sends a notification email to the influencer or company, requesting additional information. A2. The system updates the user's account status to "Pending Information". A3. Once the requested information is provided, the admin can resume the approval/rejection process according to the Basic Course of Action.
Includes	-
Extends	-

Use Case ID	**SUC04**
Use Case Name	Access User Data
Description	This use case describes the process by which an admin views the list of all registered users on the Influencer Hub platform.
Actors	Admin
Pre-Condition	▪ The admin has access to the internet and a device to log into the admin panel.

	▪ The admin has valid credentials to access the Influencer Hub admin panel.
Post-Condition	The admin successfully views the list of registered users on the Influencer Hub platform.
Basic Course of Action	1. The admin logs into the Influencer Hub admin panel. 2. The admin navigates to the 'Users' section. 3. The admin views the list of all registered users, which includes influencers and companies. 4. The admin has the option to filter or sort the list based on various criteria such as registration date, user type, etc. 5. The use case ends.
Alternative Course of Action	A: Export User Data A1. The admin selects the option to export the list of users. A2. The system generates an export file (e.g., CSV, Excel) of the user data. A3. The admin downloads the export file for reporting or analysis purposes. A4. The use case ends.
Includes	-
Extends	-

Use Case ID	**SUC05**
Use Case Name	Suspend/Reactivate User
Description	This use case describes the process by which an admin suspends or reactivates a user account (company or influencer) on the Influencer Hub platform.
Actors	Admin

Pre-Condition	▪ The admin has access to the internet and a device to log into the admin panel. ▪ The admin has valid credentials to access the Influencer Hub admin panel.
Post-Condition	The targeted user account is either suspended or reactivated depending on the chosen action.
Basic Course of Action	1. The admin logs into the Influencer Hub admin panel. 2. The admin accesses the user management dashboard. 3. The admin searches for the specific user account using search criteria such as company name, influencer name, or email address. 4. The admin reviews the user's profile and activity history to assess the situation (optional, depending on the reason for suspension). 5. The admin selects either "Suspend Account" or "Reactivate Account" from the user management options. 6. The system prompts the admin to confirm the action and provide an optional reason for suspension (if suspended). 7. Upon confirmation, the system: ▪ Suspends the account: Restricts user login access. ▪ Reactivates the account: Re-enables user login access. 8. The system notifies the user of the suspension or reactivation via email. 9. The use case ends.
Alternative Course of Action	A: User Not Found A1. If the Admin cannot locate the user account through the search function, they refine the search criteria. A2. The use case continues from step 3 of the Basic Course of Action.
Includes	-
Extends	-

Use Case ID	SUC06
Use Case Name	Login
Description	This use case describes the process by which a user logs in to access their account on the Influencer Hub platform.
Actors	Company, Influencer, Collaborator
Pre-Condition	▪ The user has a registered and verified account on Influencer Hub. ▪ The user has access to the internet and a device to log in.
Post-Condition	The user is successfully logged in and directed to their dashboard/search page.
Basic Course of Action	1. The user selects the login option on the Influencer Hub platform. 2. The system displays login section. 3. The user inputs their email address, password, and selects their user type (Company, Influencer, Collaborator). 4. The system validates the provided credentials against the database. 5. Upon successful validation, the system logs the user in. 6. The user is redirected to their dashboard/search. 7. The use case ends.
Alternative Course of Action	A: Invalid Credentials A3. The system displays an error message. A3. The user has the option to try again or reset their password via SUC07 - Reset Password. A4. The use case continues from step 3 of the Basic Course of Action
Includes	-
Extends	SUC07 - Reset Password

Use Case ID	SUC07
Use Case Name	Reset Password
Description	A user (Company, Influencer, or Collaborator) resets their forgotten password to regain account access.
Actors	Influencer, Company, Collaborator
Pre-Condition	▪ The user has forgotten their password. ▪ The user has a valid email address associated with their account.
Post-Condition	The user resets their password and can log in to their account.
Basic Course of Action	1. The user selects "Forgot Password" on the login page. 2. The user enters their registered email address and selects their user type. 3. The system verifies the email address. 4. If valid, the system sends a password reset link to the user's email. 5. The user clicks the link in the email. 6. The system directs the user to a password reset page. 7. The user enters and confirms a new password. 8. The system validates and updates the password. 9. The user sees a confirmation message. 10. The user can now log in with the new password via SUC06 - Login. 11. The use case ends.
Alternative Course of Action	A: Invalid Email Address A1. The system displays an error message. A2. The user re-enters the correct email address and user type. A3. The use case continues from step 2 of the Basic Course of Action
Includes	-
Extends	-

Use Case ID	SUC08
Use Case Name	Search for Influencer
Description	A company searches for influencers on the Influencer Hub platform.
Actors	Company
Pre-Condition	The company is logged into the Influencer Hub platform.
Post-Condition	The company finds influencers matching their search criteria.
Basic Course of Action	1. The company navigates to the influencer search page. 2. The company inputs search criteria (e.g., Username, platform, follower range, content category). 3. The system filters influencers based on the criteria. 4. The system presents a list of influencers that match the search criteria. 5. The company reviews the profiles of the suggested influencers via SUC09 - View influencer profile. 6. The use case ends.
Alternative Course of Action	A: No Matches Found A1. If no influencers match the criteria, the system notifies the company. A2. The company can adjust the search criteria and search again. A3. The use case continues from step 2 of the Basic Course of Action.
Includes	SUC09 - View influencer profile
Extends	▪ SUC12 - Send/recieve Message ▪ SUC10 - Send collaboration Request

Use Case ID	SUC09

Use Case Name	View influencer Profile
Description	This use case describes the process where a company reviews the profile of an influencer on the Influencer Hub platform
Actors	Company
Pre-Condition	▪ The company has logged into the Influencer Hub platform. ▪ The company has already searched for influencers.
Post-Condition	The company has viewed detailed information about the influencer.
Basic Course of Action	1. The company navigates to the influencer profile section. 2. The company selects an influencer of interest from the search results (SUC08 - Search for Influencer). 3. The system displays the influencer's profile with detailed information. 4. The company reviews the influencer's profile to assess suitability for collaboration. 5. The use case ends.
Alternative Course of Action	A: Profile Loading Error A1. If the influencer's profile fails to load, the system displays an error message. A2. The company has the option to refresh the page to attempt loading the profile again. A3. The use case continues from step 3 of the Basic Course of Action.
Includes	-
Extends	▪ SUC09 - View influencer profile ▪ SUC12 - Send/recieve Message ▪ SUC10 - Send collaboration Request ▪ SUC20 - Leave Review

Use Case ID	SUC10
Use Case Name	Send collaboration request
Description	This use case describes the process where a company initiates a collaboration request to an influencer on Influencer Hub.
Actors	Company
Pre-Condition	The company has logged into the Influencer Hub platform via SUC06 - Login. The company has already searched for and selected an influencer for collaboration via SUC08 - Search for Influencer.
Post-Condition	The influencer receives a collaboration request from the company.
Basic Course of Action	1. The company selects the influencer's profile from the search results via SUC08 - Search for Influencer. 2. The system displays influencer's profile 3. The company clicks the "Send Collaboration Request" button. 4. The system notifies the influencer about the collaboration request. 5. The use case ends.
Alternative Course of Action	A: Delivery Issue A3. The system alerts the company about the delivery issue. A4. The company can attempt to resend the collaboration request. A5. The use case continues from step 5 of the Basic Course of Action.
Includes	-
Extends	-

Use Case ID	SUC11
Use Case Name	View company Profile

Description	This use case describes the process where a collaborator reviews the profile of a company on the Influencer Hub platform.
Actors	Collaborator
Pre-Condition	The collaborator has logged into the Influencer Hub platform via SUC06 - Login. The collaborator has already searched for companies of interest via SUC08 - Search for Influencer.
Post-Condition	The collaborator has viewed detailed information about the company.
Basic Course of Action	1. The system displays the company's profile with detailed information. 2. The collaborator reviews the detailed information about the company. 3. The use case ends.
Alternative Course of Action	A: Profile Loading Error A1. If the company's profile fails to load, the system displays an error message. A2. The collaborator can refresh the page to attempt loading the profile again. A3. The use case continues from step 1 of the Basic Course of Action.
Includes	-
Extends	▪ SUC19 - Accept/ Reject Collaboration ▪ SUC12 - Send/recieve Message

Use Case ID	**SUC12**
Use Case Name	Send/Receive Message

Description	This use case describes the process where a collaborator or company uses the messaging feature on the Influencer Hub platform
Actors	Collaborator, Company
Pre-Condition	▪ The collaborator or company has logged into the Influencer Hub platform.
Post-Condition	Messages have been successfully exchanged between the collaborator and the company.
Basic Course of Action	1. The collaborator or company navigates to the direct messaging section. 2. The system displays messaging section. 3. The collaborator or company selects the conversation thread with the intended recipient. 4. The system displays the message history, showing previous communications. 5. The collaborator or company composes a new message. 6. The collaborator or company sends the message. 7. The system notifies the recipient about the new message. 8. The recipient views the message and responds accordingly. 9. The use case ends.
Alternative Course of Action	A: Message Sending Error A5. If the system encounters an error while sending the message, it displays an error message. A6. The collaborator or company can retry sending the message. A7. The use case continues from step 5 of the Basic Course of Action.
Includes	-
Extends	-

Use Case ID	SUC13
Use Case Name	Manage campaign
Description	This use case details the process wherein a company manages an influencer campaign on the Influencer Hub platform.
Actors	Company
Pre-Condition	▪ The company has logged into the Influencer Hub platform. ▪ The campaign has created on the Influencer Hub platform.
Post-Condition	The campaign has been successfully managed.
Basic Course of Action	1. The Company navigates to the “Manage Campaign” section. 2. View campaign agreement details via SUC18- View Campaign Agreement and can navigate to edit campaign agreement The use case ends via SUC26- Edit Campaign Agreement. 3. The use case ends.
Alternative Course of Action	A: Fail to display Manage Campaign” section. A2. The System displays an error message. A3. The Company can refresh the page. A4. The use case continues from step 2 of the Basic Course of Action.
Include	SUC18- View Campaign Agreement
Extend	-

Use Case ID	SUC14
Use Case Name	Create campaign
Description	This use case describes the process where a company creates a campaign on the Influencer Hub platform, including making payment during creation.
Actors	Company

Pre-Condition	The influencer has accepted the collaboration request from the company via SUC19 - Accept/ Reject Collaboration
Post-Condition	The campaign is successfully created on the Influencer Hub platform.
Basic Course of Action	1. The company navigates to the “Create Campaign” section within the Influencer Hub platform. 2. The system displays campaign creation form. 3. The company fills out the campaign creation form. 4. The company makes a payment to cover the campaign budget via SUC25- Make Payment. 5. The system generates a campaign agreement based on the provided details. 6. The use case ends.
Alternative Course of Action	A: Campaign Creation Form Submission Failure A3. The system displays an appropriate error message indicating the reason for failure. A4. The company has the option to review and correct the form entries. A5. The process continues from step 2 of the Basic Course of Action.
Include	SUC25 – Make Payment
Extend	-

Use Case ID	**SUC15**
Use Case Name	Submit Content
Description	This use case describes the process where a collaborator submits their created content link for a company's campaign on the Influencer Hub platform.
Actors	Collaborator
Pre-Condition	▪ The campaign has been created and is ongoing.

	▪ The collaborator has content with its link ready for submission.
Post-Condition	The company receives the submitted content on the Influencer Hub platform.
Basic Course of Action	1. The collaborator navigates to the company's profile. 2. The collaborator goes to the messaging section and selects "Submit Content." 3. The collaborator uploads the content link as per the campaign's specifications. 4. The system confirms the upload and stores the content securely. 5. The system notifies the company of the new content submission. 6. The use case ends.
Alternative Course of Action	A: Upload Failure A3. If the upload fails, the system displays an error message. A4. The collaborator can retry the upload. A5. The use case continues from step 3 of the Basic Course of Action.
Include	-
Extend	-

Use Case ID	**SUC16**
Use Case Name	Approve/ Reject Influencer Content
Description	This use case describes the process where a company evaluates content submitted by a collaborator and decides whether to approve, request revisions, or reject it. Upon approval, the collaborator receives payment simultaneously.
Actors	Company
Pre-Condition	The company has received a notification of the content submission from the collaborator.

Post-Condition	▪ The company communicates their decision regarding the content to the collaborator. ▪ The collaborator receives payment simultaneously.
Basic Course of Action	1. The company receives a notification of the content submission. 2. The company reviews the submitted content. 3. The company decides to: ▪ Approve the content and proceed with the campaign. ▪ Request revisions from the collaborator. ▪ Reject the content and provide reasons for rejection. 4. The system updates the decision in the database. 5. If the content is approved, the system processes the payment to the collaborator via SUC17- Receive Payment. 6. The use case ends.
Alternative Course of Action	A: Approval Process Failure A3. If the approval process fails, the system displays an error message. A4. The company can retry the approval process. A5. The use case continues from step 3 of the Basic Course of Action.
Include	SUC17- Receive Payment
Extend	-

Use Case ID	**SUC17**
Use Case Name	Receive Payment
Description	This use case describes the process where a collaborator receives payment from the company.
Actors	Collaborator
Pre-Condition	The influencer's content has been approved by the company.

Post-Condition	The influencer receives the agreed-upon payment in their linked account.
Basic Course of Action	1. The company approves the influencer's submitted content. 2. The system processes the payment to the influencer's designated account. 3. The influencer receives the payment. 4. The use case ends.
Alternative Course of Action	A: Content Not Approved A1. If the content is not approved, the company communicates the rejection to the influencer. A2. No payment is processed. A3. The use case ends.
Include	SUC16 - Approve/ Reject Influencer Content
Extend	-

Use Case ID	**SUC18**
Use Case Name	View Campaign Agreement
Description	This use case describes the process where a company or collaborator views the agreement details of a campaign on the Influencer Hub platform.
Actors	Company, Collaborator
Pre-Condition	▪ A campaign has been created. ▪ The agreement has been generated by the system.
Post-Condition	The campaign agreement details are successfully viewed.
Basic Course of Action	1. Actor navigates to the "Manage Campaign" section via SUC13-Manage campaign. 2. Actor selects the campaign they wish to view the agreement for. 3. System displays the campaign agreement details.

	4. The use case ends.
Alternative Course of Action	A: Agreement Details Loading Error A3. If the agreement details do not load, the system displays an error message. A4. The actor can refresh the page to attempt loading the details again. A5. The use case continues from step 3 of the Basic Course of Action.
Include	-
Extend	-

Use Case ID	**SUC19**
Use Case Name	Accept/ Reject Collaboration
Description	This use case describes the process where a collaborator decides whether to accept or reject the request.
Actors	Collaborator
Pre-Condition	The collaborator has received a collaboration request from a company.
Post-Condition	The collaborator has either accepted the collaboration, leading to the creation of a campaign, or rejected it.
Basic Course of Action	1. The collaborator navigates to their dashboard. 2. The collaborator reviews the company's profile via SUC11 - View company Profile . 3. The collaborator decides to: ▪ Accept the collaboration, which triggers the campaign creation process. ▪ Reject the collaboration. 4. The system updates the collaboration status based on the collaborator's decision.

	5. The use case ends.
Alternative Course of Action	A: Accessing Collaboration Request Error A1. The system displays an error message. A2. The collaborator can retry accessing the request. A3. The use case continues from step 1 of the Basic Course of Action.
Include	-
Extend	-

Use Case ID	**SUC20**
Use Case Name	Leave Review
Description	This use case describes the process where a company or collaborator leaves a review and rating reflecting their experience after a collaboration campaign.
Actors	Company, Collaborator
Pre-Condition	A collaboration campaign between the company and the collaborator has been completed.
Post-Condition	A review is published on the profile of the company or collaborator, providing valuable insights for other users.
Basic Course of Action	1. The user navigates to the completed collaboration's review section. 2. The system displays review section. 3. The user selects a rating and writes a review detailing their experience. 4. The user submits the review. 5. The system confirms the submission and displays the review on the relevant profile. 6. The use case ends.

Alternative Course of Action	A: Review Submission Failure A3. The system displays an error message. A4. The user can attempt to resubmit the review. A5. The use case continues from step 3 of the Basic Course of Action.
Include	-
Extend	-

Use Case ID	**SUC21**
Use Case Name	Manage Profile
Description	This use case describes the process where actors can update their profile details and view their profile on the Influencer Hub platform.
Actors	Company, Influencer, Collaborator
Pre-Condition	Actor is logged into their Influencer Hub account via SUC06 - Login.
Post-Condition	The actor has successfully managed their account details.
Basic Course of Action	1. The actor navigates to the account management section. 2. The system displays profile details 3. The actor view profile via View Profile 4. The actor edits profile details as necessary via SUC23 - Update Profile. 5. The actor views their detailed profile. 6. The use case ends.
Alternative Course of Action	A: Accessing profile Error A1. The system displays an error message. A2. The collaborator can retry accessing the request. A3. The use case continues from step 1 of the Basic Course of Action. A4. The use case continues from step 1 of the Basic Course of Action.

Include	SUC24 - View profile
Extend	SUC23 - Update profile

Use Case ID	**SUC22**
Use Case Name	View Dashboard
Description	This use case describes the process where users can access a centralized view to monitor and access all their activities on the Influencer Hub platform.
Actors	Company, Influencer, Collaborator
Pre-Condition	The user is logged into their account on the platform via SUC06 - Login.
Post-Condition	The user has accessed the dashboard and can view all relevant activities.
Basic Course of Action	1. The user selects the "Dashboard" option. 2. The system displays the dashboard with an overview of the user's activities 3. The use case ends.
Alternative Course of Action	A: Dashboard Loading Error A1. The system displays an error message. A2. The user can refresh the page. A3. The use case continues from step 1 of the Basic Course of Action.
Include	-
Extend	-

Use Case ID	**SUC23**
Use Case Name	Update Profile
Description	This use case describes the process where actors update their profile details on the Influencer Hub platform.
Actors	Company, Influencer, Collaborator

Pre-Condition	The actor is logged into their account on the platform via SUC06 - Login.
Post-Condition	The actor has successfully updated their profile data
Basic Course of Action	1. The actor navigates to the profile section. 2. The system displays the profile via 3. The actor edits profile details as necessary. 4. The actor submits the updated profile information. 5. The system validates and saves the updated profile details. 6. The system confirms the successful update to the actor. 7. The use case ends.
Alternative Course of Action	A: Error While Editing Profile Details A1. The system displays an error message. A2. The actor can attempt to edit the profile details again. A3. The use case continues from step 3 of the Basic Course of Action.
Include	SUC24-View Profile
Extend	-

Use Case ID	**SUC24**
Use Case Name	View Profile
Description	This use case describes the process where actors view their profile details on the Influencer Hub platform.
Actors	Company, Influencer, Collaborator
Pre-Condition	The actor has logged into their account on the platform via SUC06 - Login.
Post-Condition	The actor has successfully viewed their profile details.
Basic Course of Action	1. The actor navigates to the profile section. 2. The system displays the actor's profile with detailed information.

	3. The use case ends.
Alternative Course of Action	A: Profile Loading Error A1. The system displays an error message. A2. The actor can refresh the page. A3. The use case continues from step 1 of the Basic Course of Action.
Include	-
Extend	SUC23 - Update profile

Use Case ID	**SUC25**
Use Case Name	Make Payment
Description	This use case describes the process where a company makes a payment on the Influencer Hub platform.
Actors	Company
Pre-Condition	▪ The company has sufficient funds in their account. ▪ The company has a registered and verified payment method.
Post-Condition	Payment is processed and recorded in the system.
Basic Course of Action	1. The company navigates to the payment section. 2. The System displays the payment section. 3. The company enters payment details and amount. 4. The system validates the payment details. 5. The system processes the payment and updates the company's account balance. 6. The system confirms the payment to the company. 7. The use case ends.

Alternative Course of Action	A: Payment Failure A2. If the payment fails, the system displays an error message. A3. The company can update their payment information and retry the payment. A4. The use case continues from step 2 of the Basic Course of Action.
Include	-
Extend	-

Use Case ID	**SUC26**
Use Case Name	Edit Campaign Agreement
Description	This use case describes the process where a company edits the details of an ongoing campaign on the Influencer Hub platform.
Actors	Company
Pre-Condition	▪ The company has logged into the Influencer Hub platform via SUC06 - Login. ▪ The campaign has been created and is ongoing.
Post-Condition	Campaign details are successfully updated.
Basic Course of Action	1. The company navigates to the “Manage Campaign” section. 2. The system displays campaigns. 3. The company selects the campaign they wish to edit. 4. The company updates the campaign details (e.g., objectives, target audience, budget, deadline). 5. The system validates and saves the updated campaign details. 6. The system confirms the successful update to the company. 7. The use case ends.

Alternative Course of Action	A: Campaign Details Update Failure A3. The system displays an error message. A4. The company can retry the update process. A5. The use case continues from step 3 of the Basic Course of Action.
Include	View Campaign
Extend	-

Use Case ID	**SUC27**
Use Case Name	Approve/ Reject Campaign Agreement
Description	This use case describes the process where a company or collaborator approves or rejects a campaign agreement on the Influencer Hub platform.
Actors	Collaborator
Pre-Condition	▪ A campaign agreement has been generated by the system via SUC14 - Create Campaign. ▪ The collaborator has logged into the Influencer Hub platform via SUC06 - Login.
Post-Condition	▪ The campaign agreement is either approved or rejected. ▪ If approved, the campaign proceeds to the next phase of execution. ▪ If rejected, the other party is notified, and necessary adjustments or alternatives may be pursued.
Basic Course of Action	1. The Collaborator navigates to the "Campaign Agreements" section. 2. The system displays Campaign Agreements. 3. The Collaborator views the Campaign Agreements via SUC18- View Campaign Agreement. 4. The Collaborator selects the campaign agreement they wish to review.

	5. The system displays the campaign agreement details, including objectives, target audience, budget, influencer requirements, and terms. 6. The Collaborator thoroughly reviews the agreement details. 7. The Collaborator decides to either approve or reject the agreement: ▪ **Approve:** o The Collaborator clicks the "Approve" button. o The system confirms the approval and updates the campaign status. o The system notifies the other party (company or collaborator) about the approval. ▪ **Reject:** o The actor clicks the "Reject" button. o The system prompts the actor to provide reasons for rejection. o The actor submits the rejection with reasons. o The system notifies the other party (company or collaborator) about the rejection and the provided reasons. 8. The use case ends.
Alternative Course of Action	A: Agreement Approval or Rejection Failure A3. The system displays an error message. A4. The collaborator can retry the approval or rejection process. A5. If the issue persists, the actor can contact support for assistance. A6. The use case continues from step 6 of the Basic Course of Action.
Include	SUC18- View Campaign Agreement
Extend	-

Use Case ID	SUC28
Use Case Name	Delete Campaign
Description	This use case describes the process where a company deletes an existing campaign on the Influencer Hub platform.
Actors	Company
Pre-Condition	▪ The Company has logged into the Influencer Hub platform via SUC06 - Login. ▪ The campaign to be deleted exists and is accessible by the company.
Post-Condition	▪ The campaign is successfully deleted from the platform. ▪ All associated data with the campaign is removed, and relevant parties are notified.
Basic Course of Action	1. The company navigates to the "Manage Campaign" section. 2. The system displays Campaign Agreements. 3. The Collaborator views the Campaign Agreements via SUC18-View Campaign Agreement. 4. The company selects the campaign they wish to delete. 5. The system displays the campaign details and a "Delete" option. 6. The company clicks the "Delete" button. 7. The system prompts the company to confirm the deletion. 8. The company confirms the deletion. 9. The system processes the deletion, removes the campaign and all associated data from the database. 10. The system notifies the company and any associated collaborators about the campaign deletion. 11. The use case ends.

Alternative Course of Action	A: Campaign Deletion Failure A5. The system displays an error message. A6. The company can retry the deletion process. A7. If the issue persists, the company can contact support for assistance. A8. The use case continues from step 5 of the Basic Course of Action.
Include	SUC18 - View Campaign Agreement
Extend	-

Use Case ID	**SUC29**
Use Case Name	Logout
Description	This use case describes the process of a user logging out of the Influencer Hub platform.
Actors	Company, Influencer, Admin
Pre-Condition	▪ The user is logged into the Influencer Hub platform. ▪ The user has access to the internet and a device.
Post-Condition	The user is successfully logged out of the Influencer Hub platform and redirected to the login page.
Basic Course of Action	1. The user clicks on the "Logout" button on the Influencer Hub platform. 2. The system processes the logout request. 3. The system ends the user's session and clears any session data. 4. The user is redirected to the login page. 5. The use case ends.
Alternative Course of Action	A: System Error during Logout A1. The system encounters an error while processing the logout request. A2. The system displays an error message to the user. A3. The user can retry logging out by clicking the "Logout" button again.

	A4. The use case continues from step 2 of the Basic Course of Action.
Include	SUC06 - Login
Extend	-

3.5.2 Sequence Diagram

A sequence diagram is an interaction diagram that details how operations are carried out in a system; it is used primarily to show the interactions between objects in the sequential order that those interactions occur.

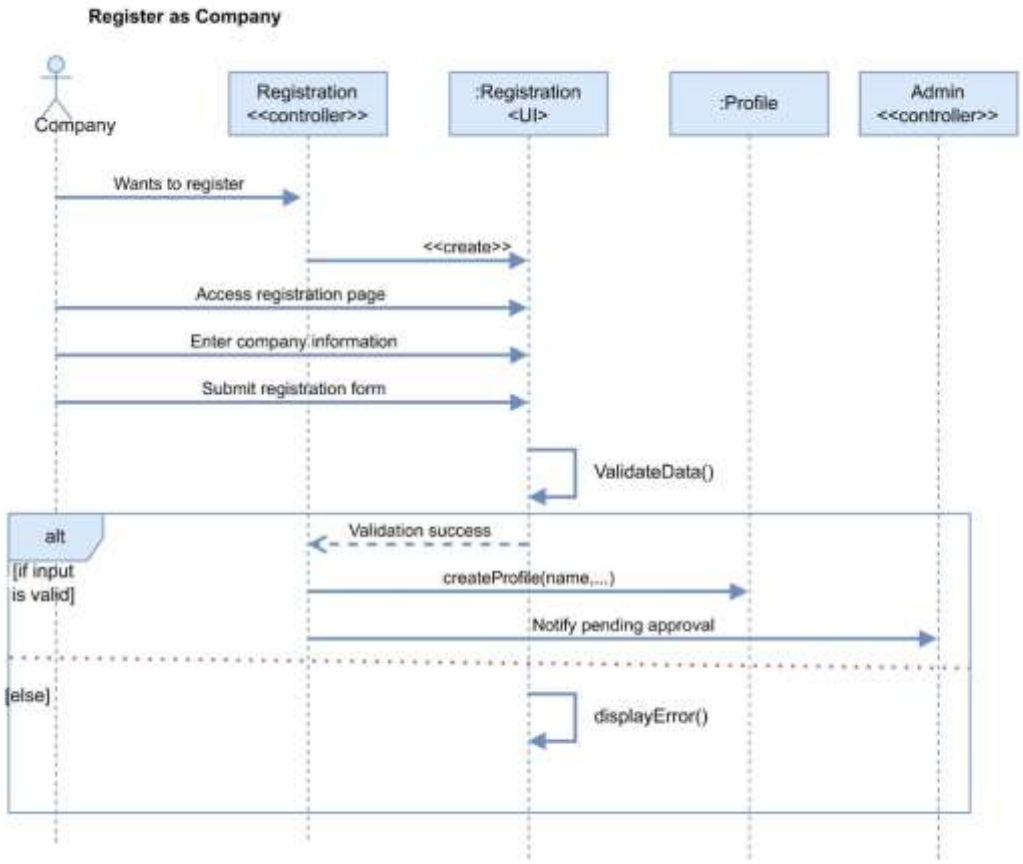


Figure 15 sequence diagram

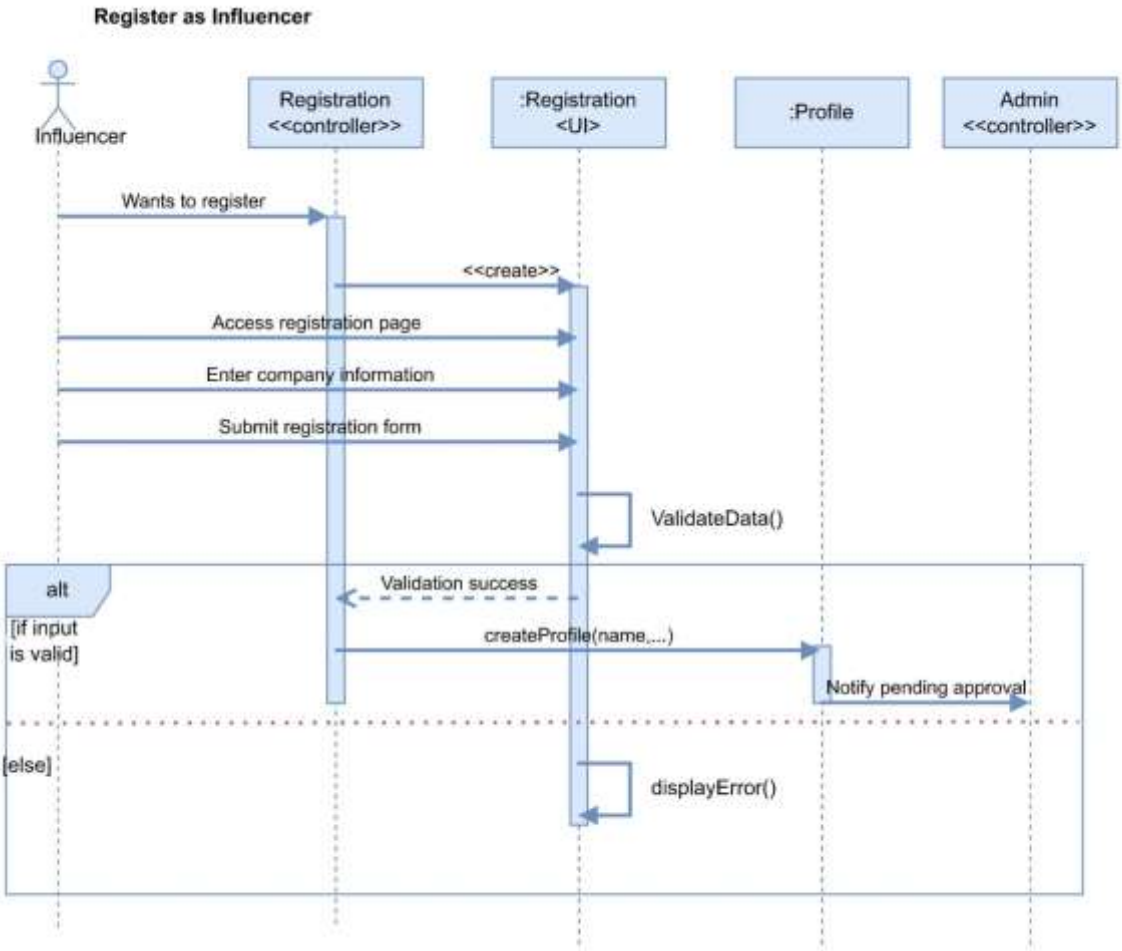


Figure 16 register as influencer

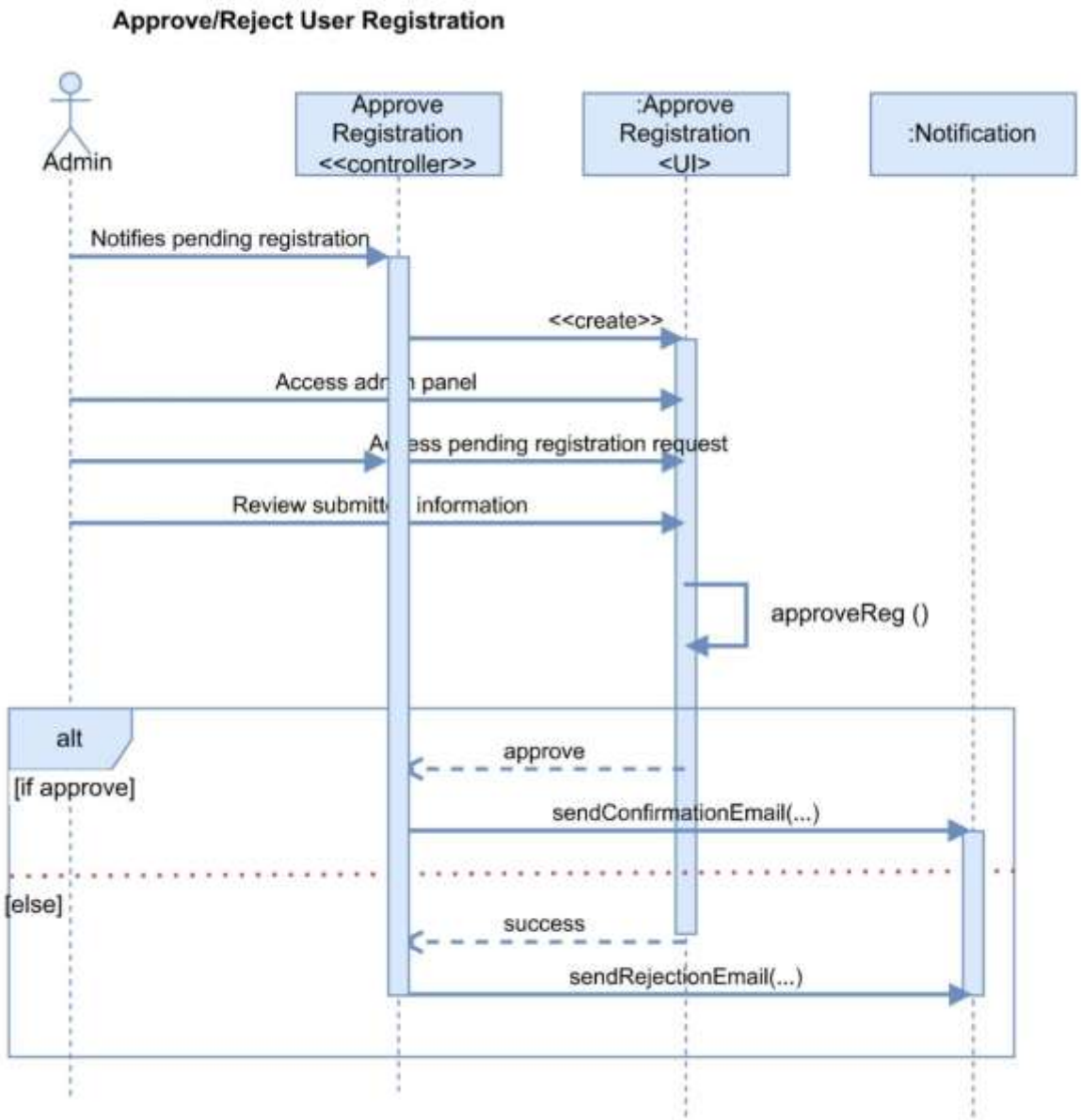


Figure 17 approve/reject user register

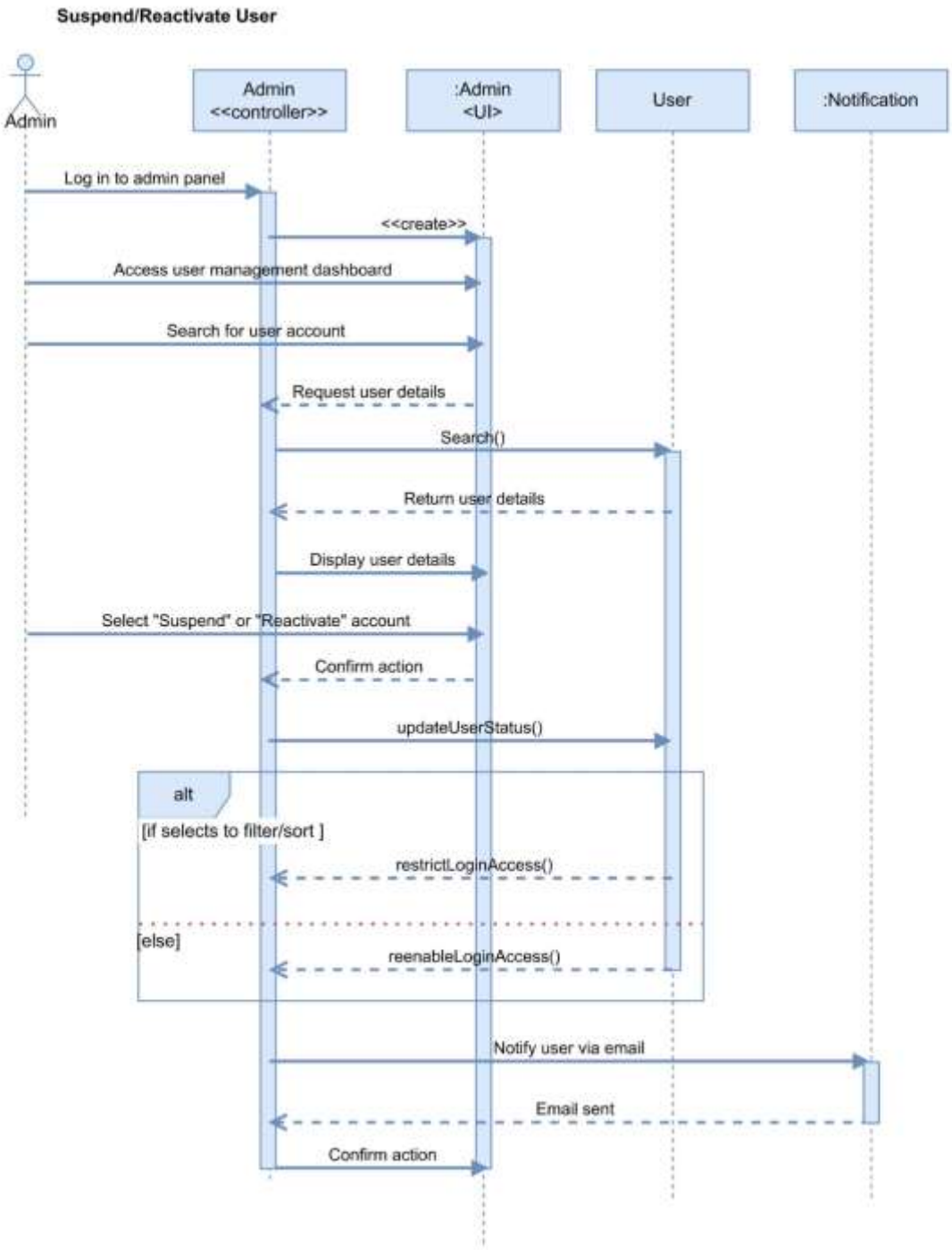


Figure 18 suspend/reactivate user

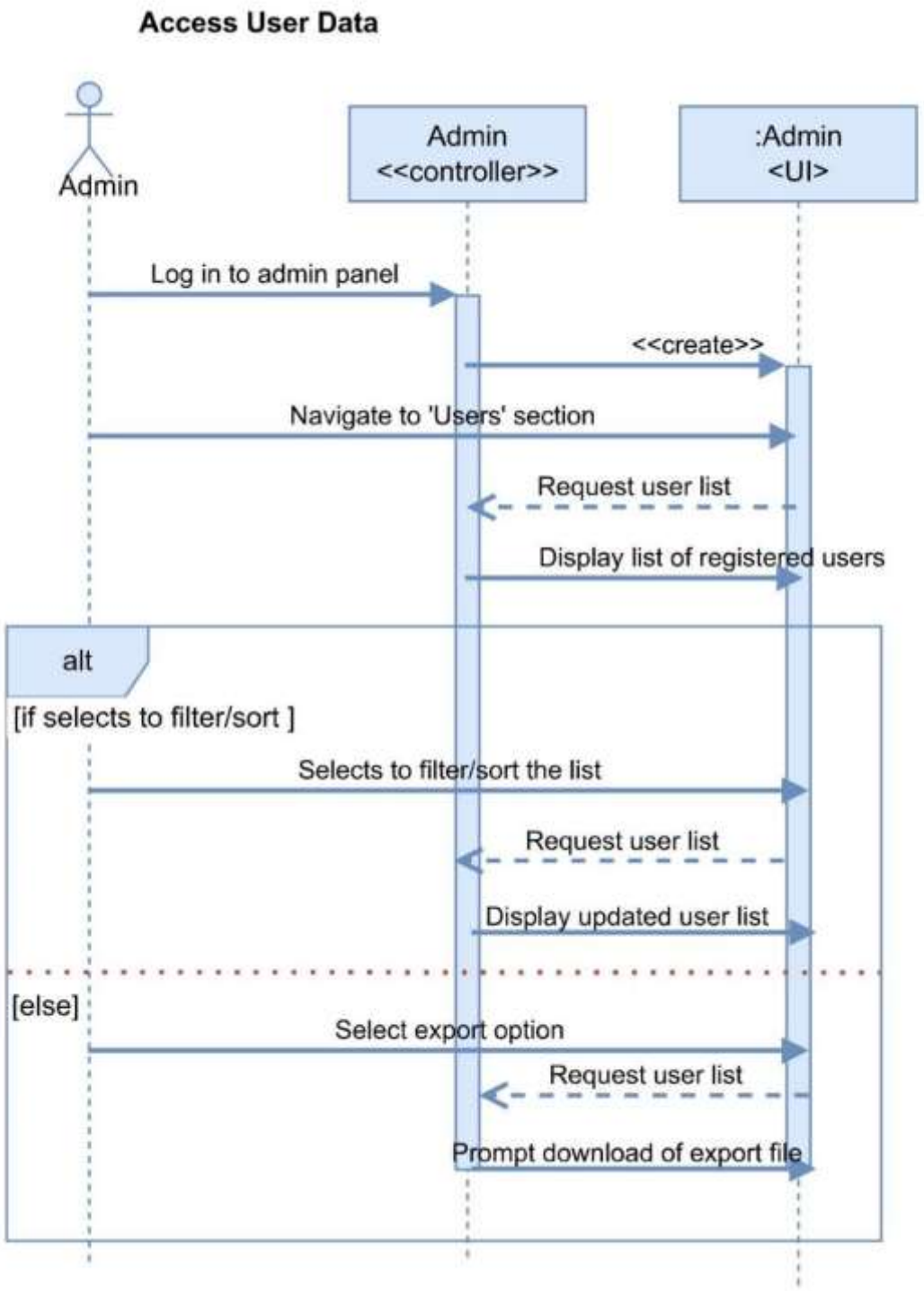


Figure 19 access user data

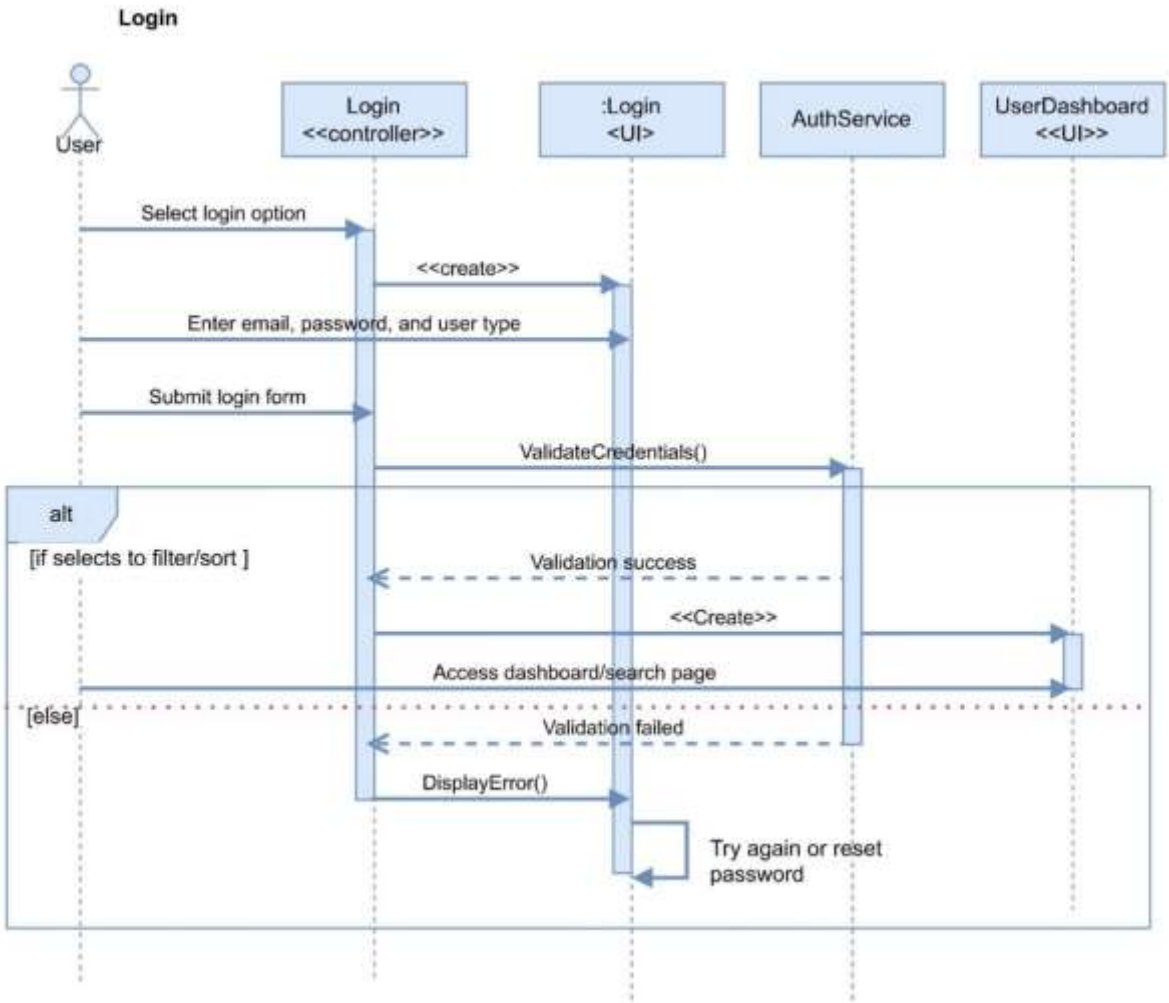


Figure 20 login

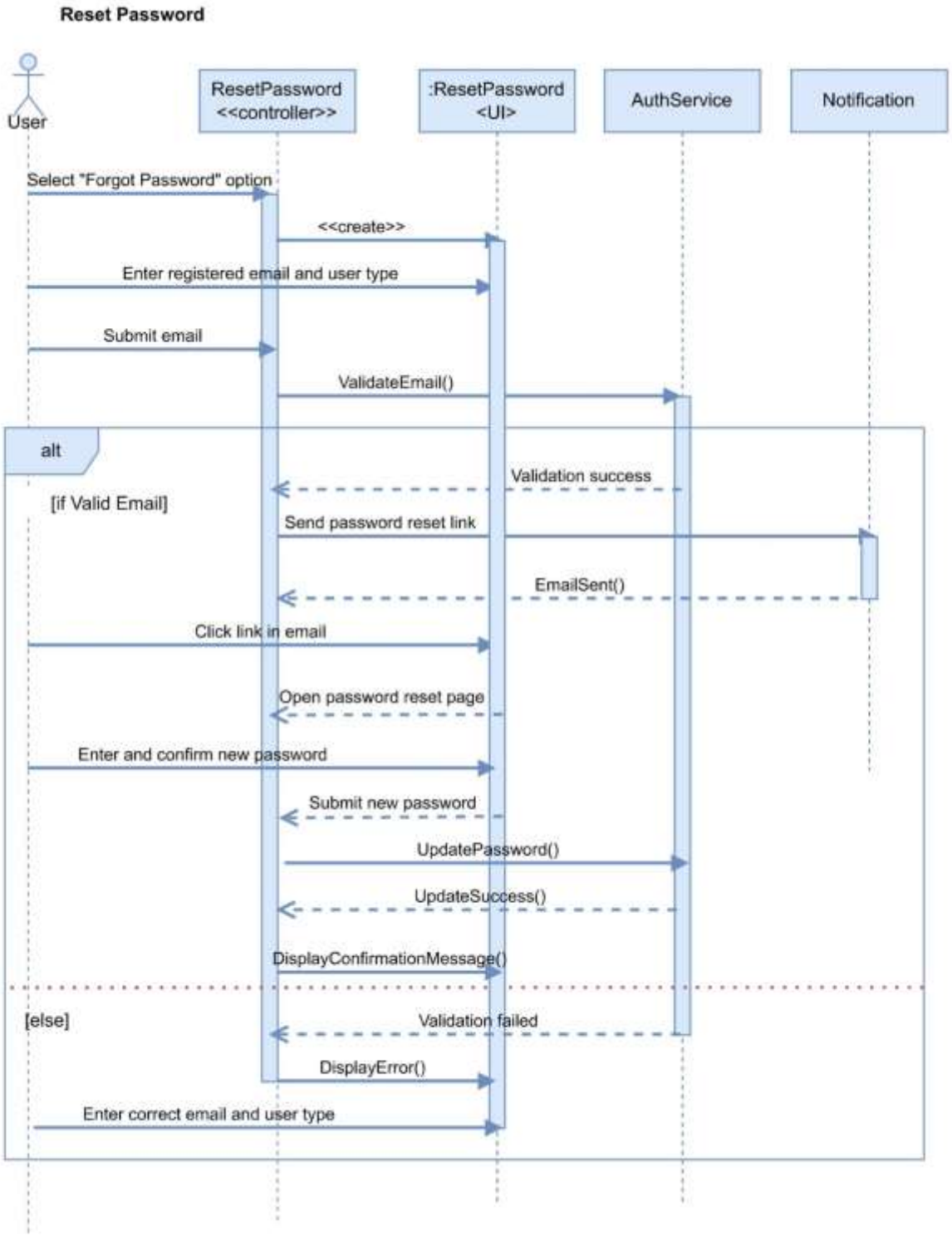


Figure 21 reset password

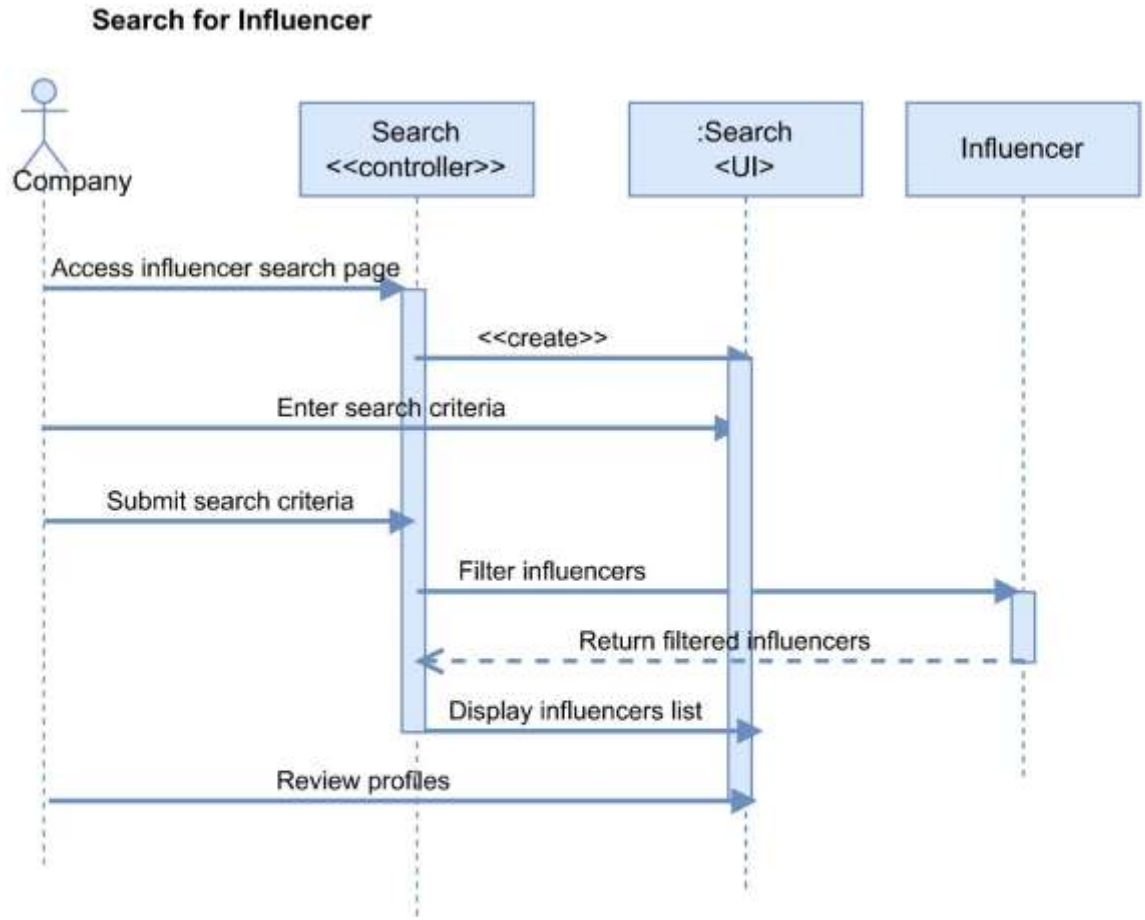


Figure 22 search for influencer

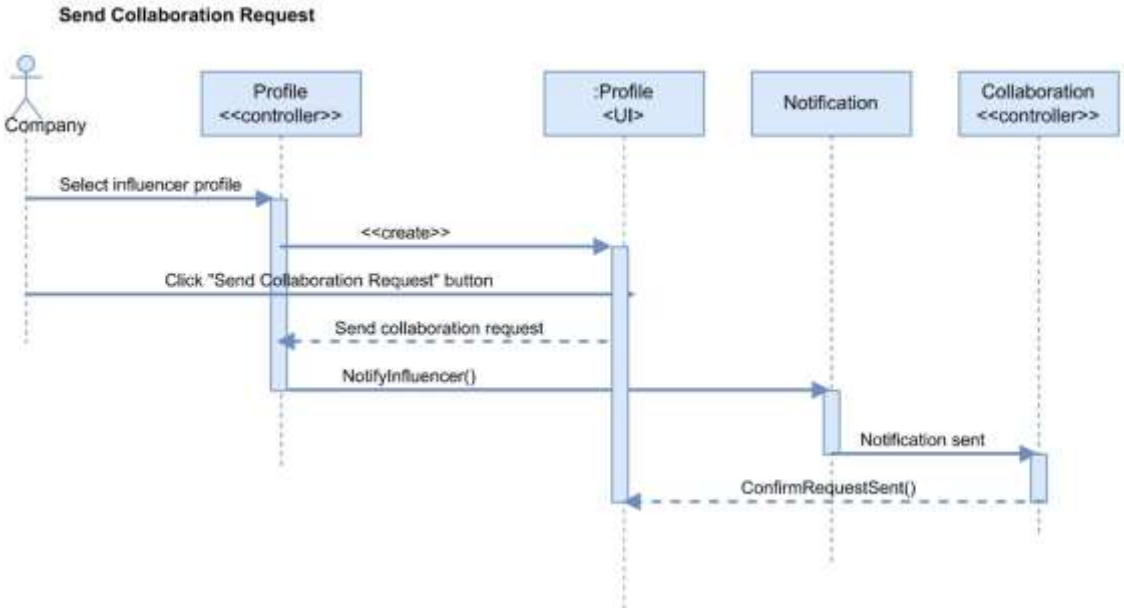


Figure 23 send collaboration request

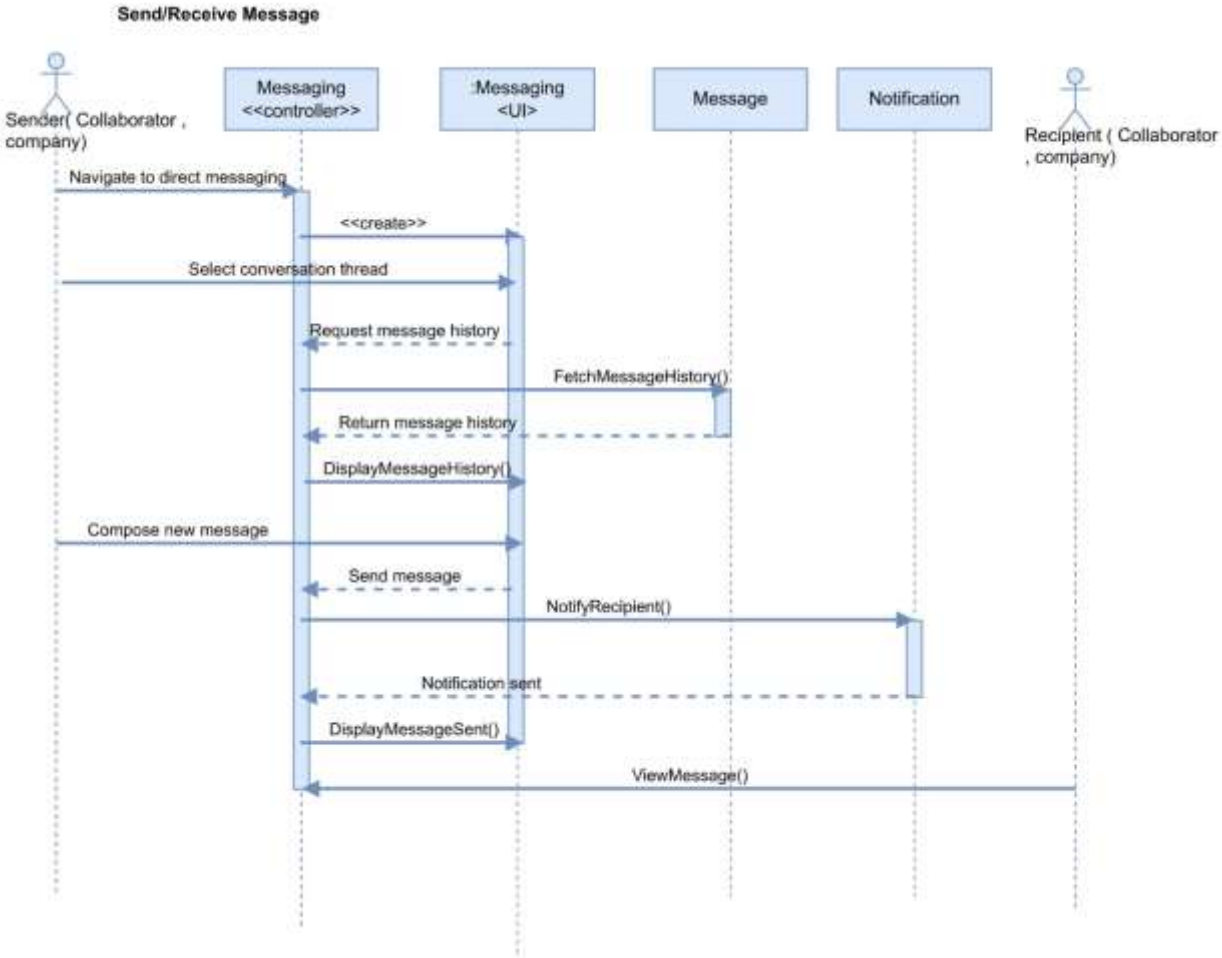


Figure 24 send /request message

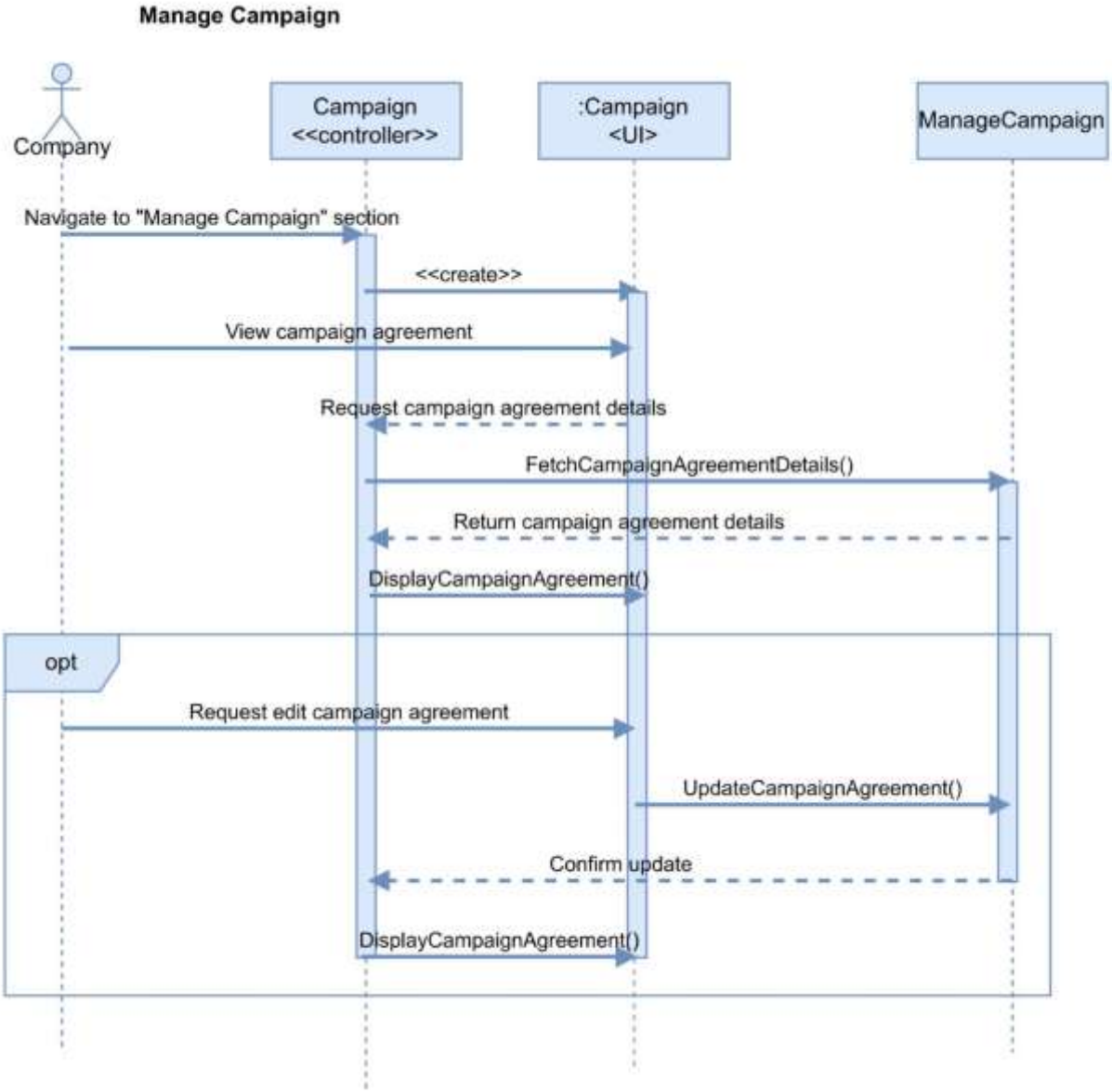


Figure 25 manage campaign

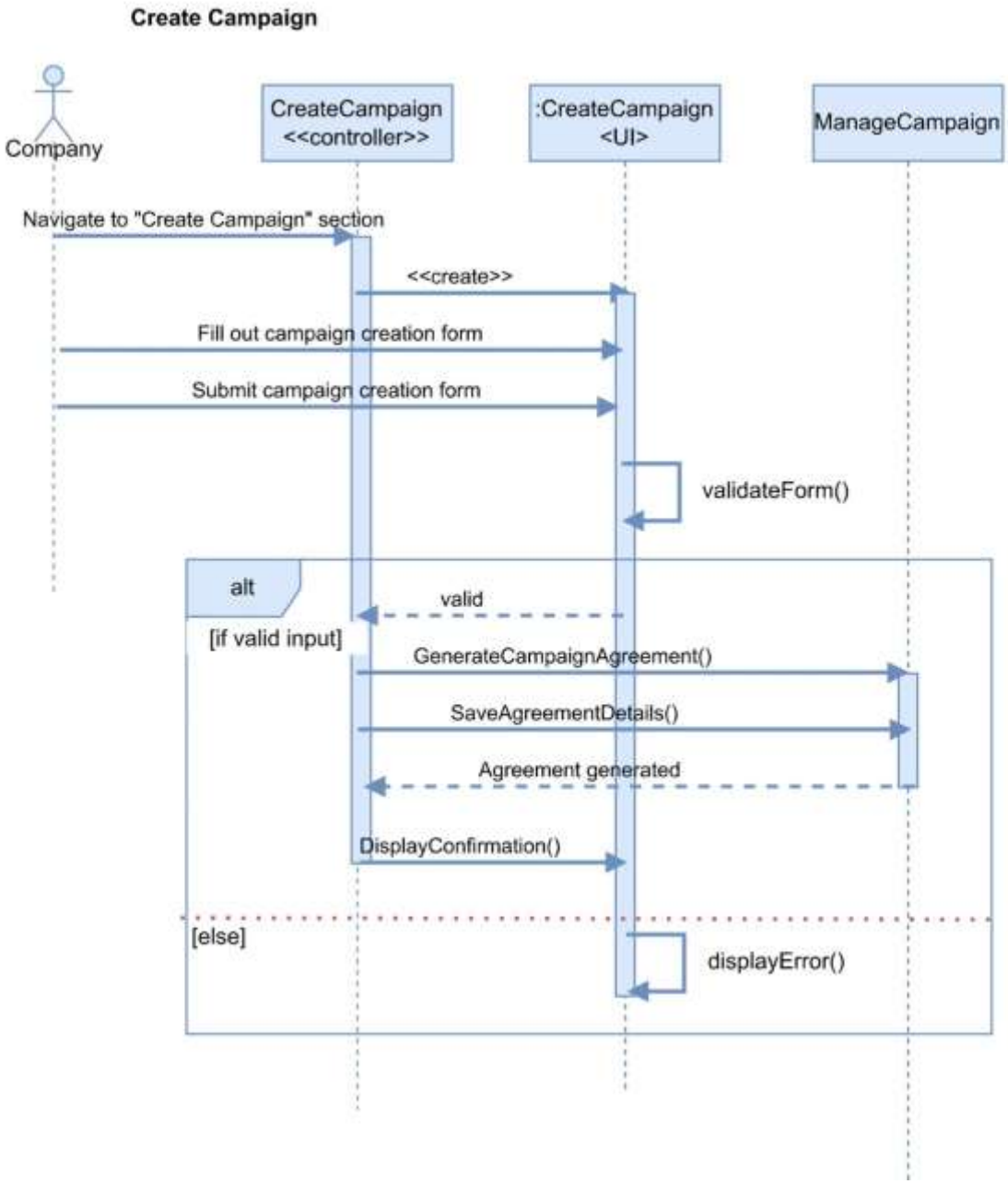


Figure 26 create campaign

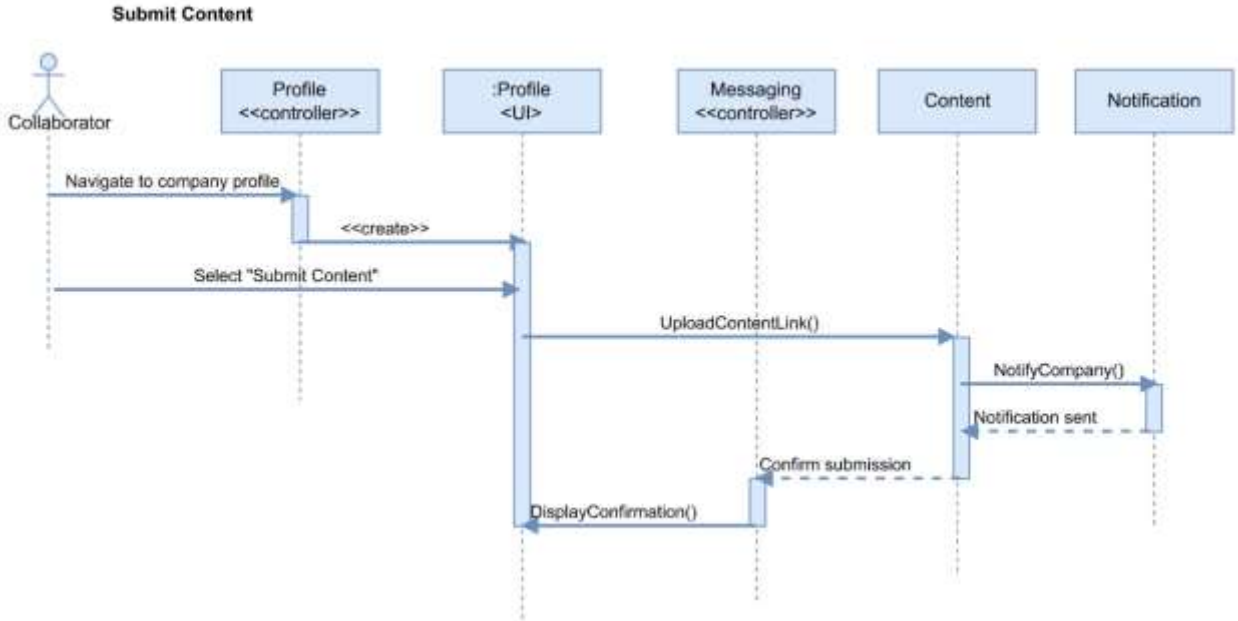


Figure 27 submit content

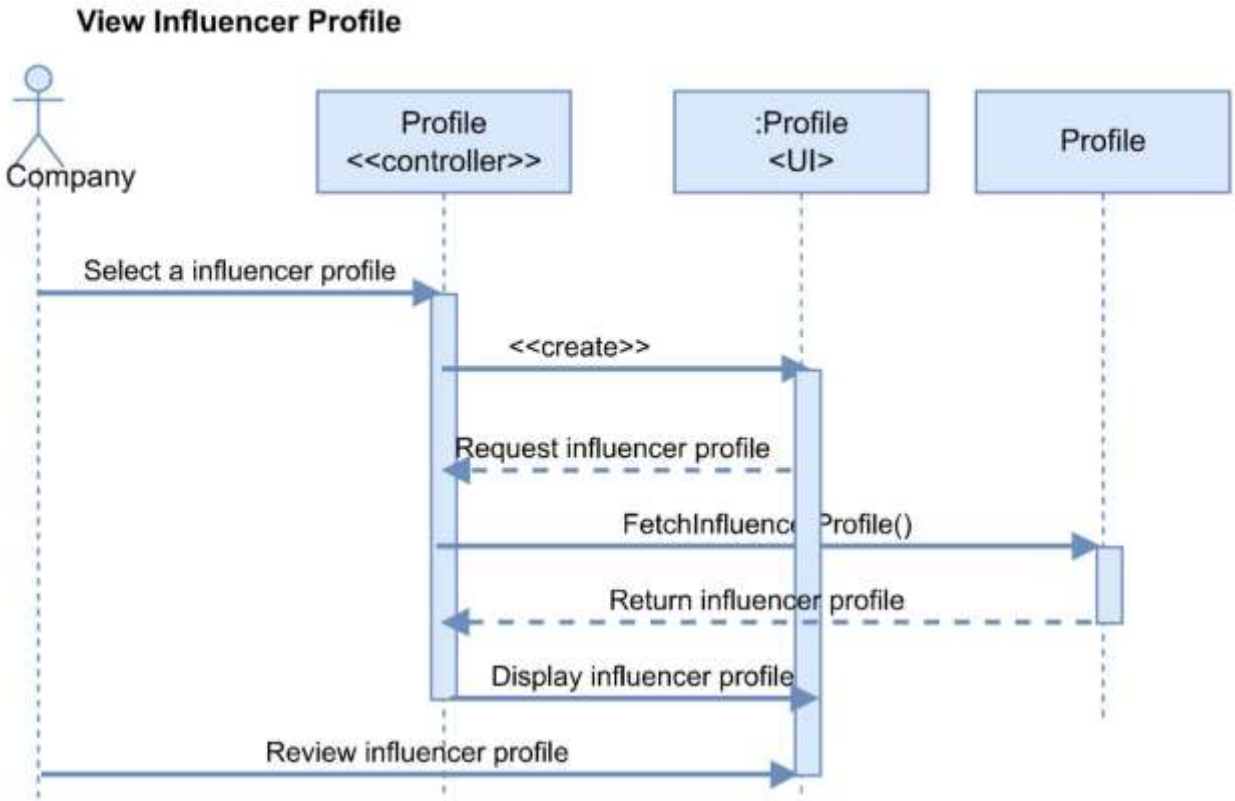


Figure 28 view influencer profile

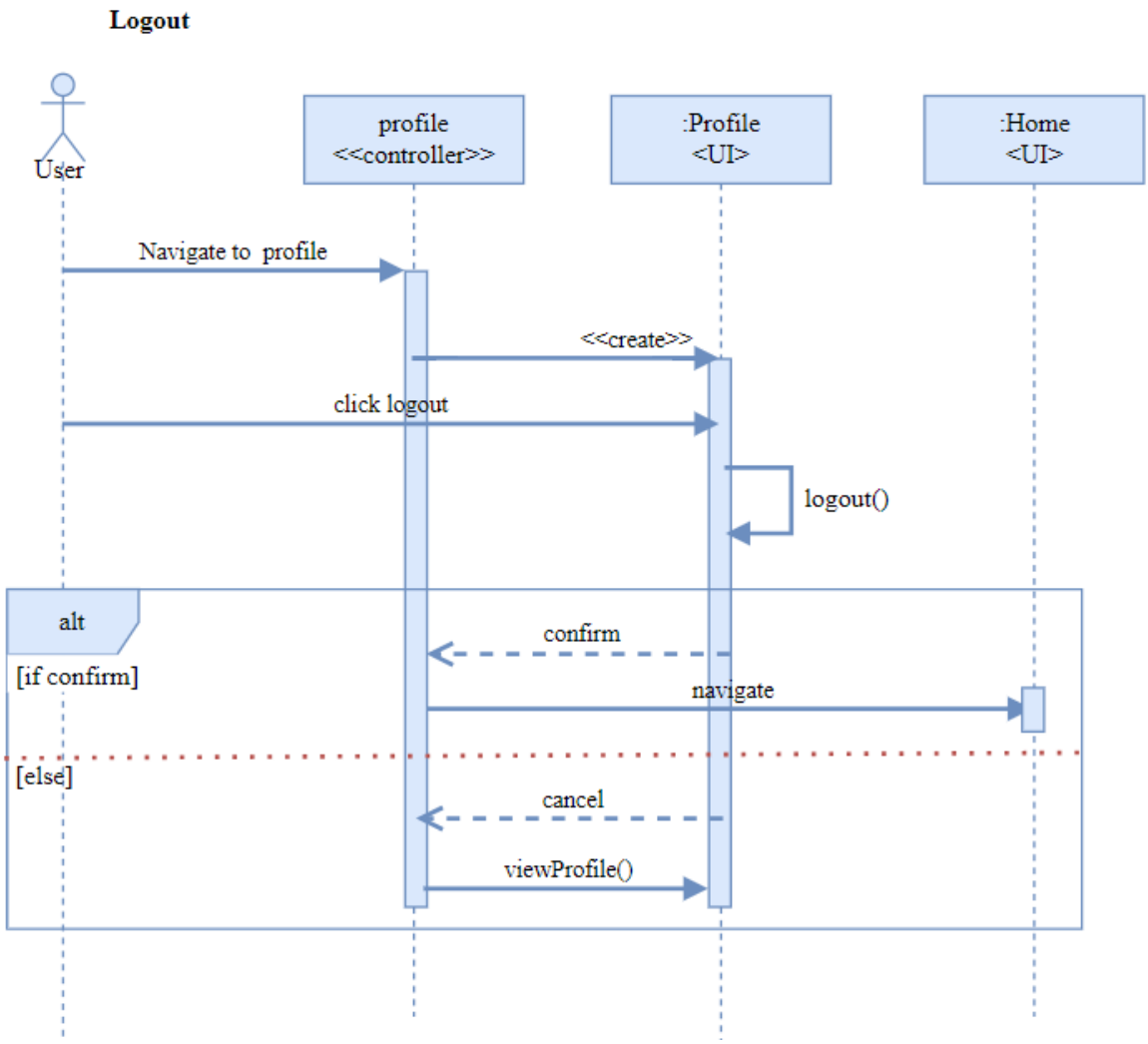


Figure 29 Logout

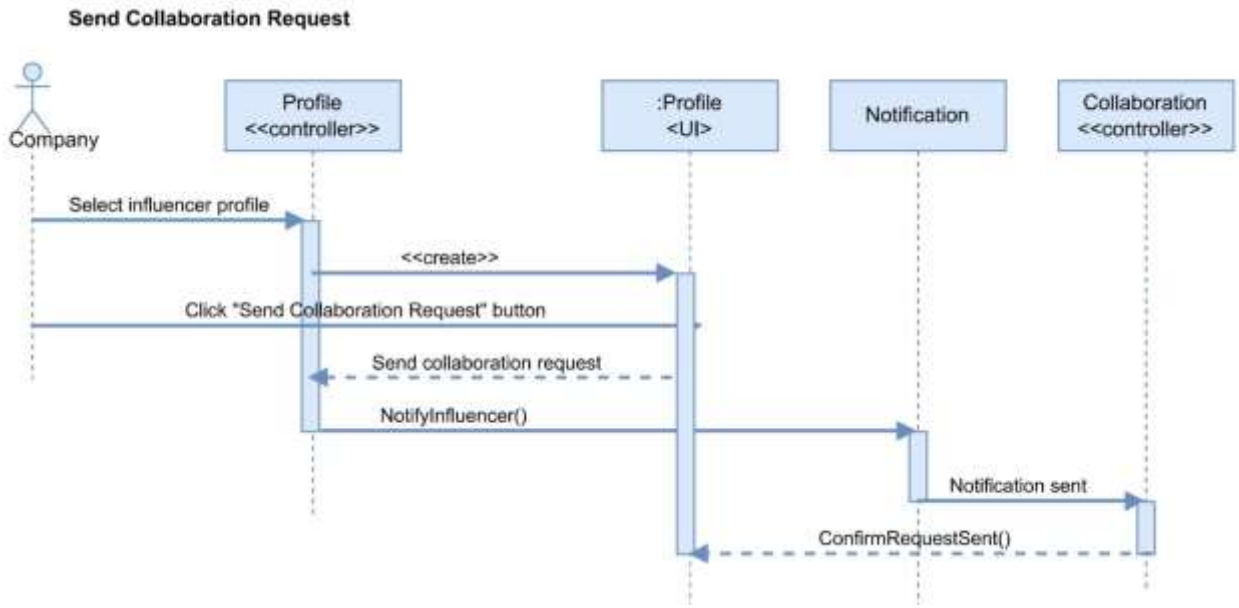


Figure 30 send collaboration request

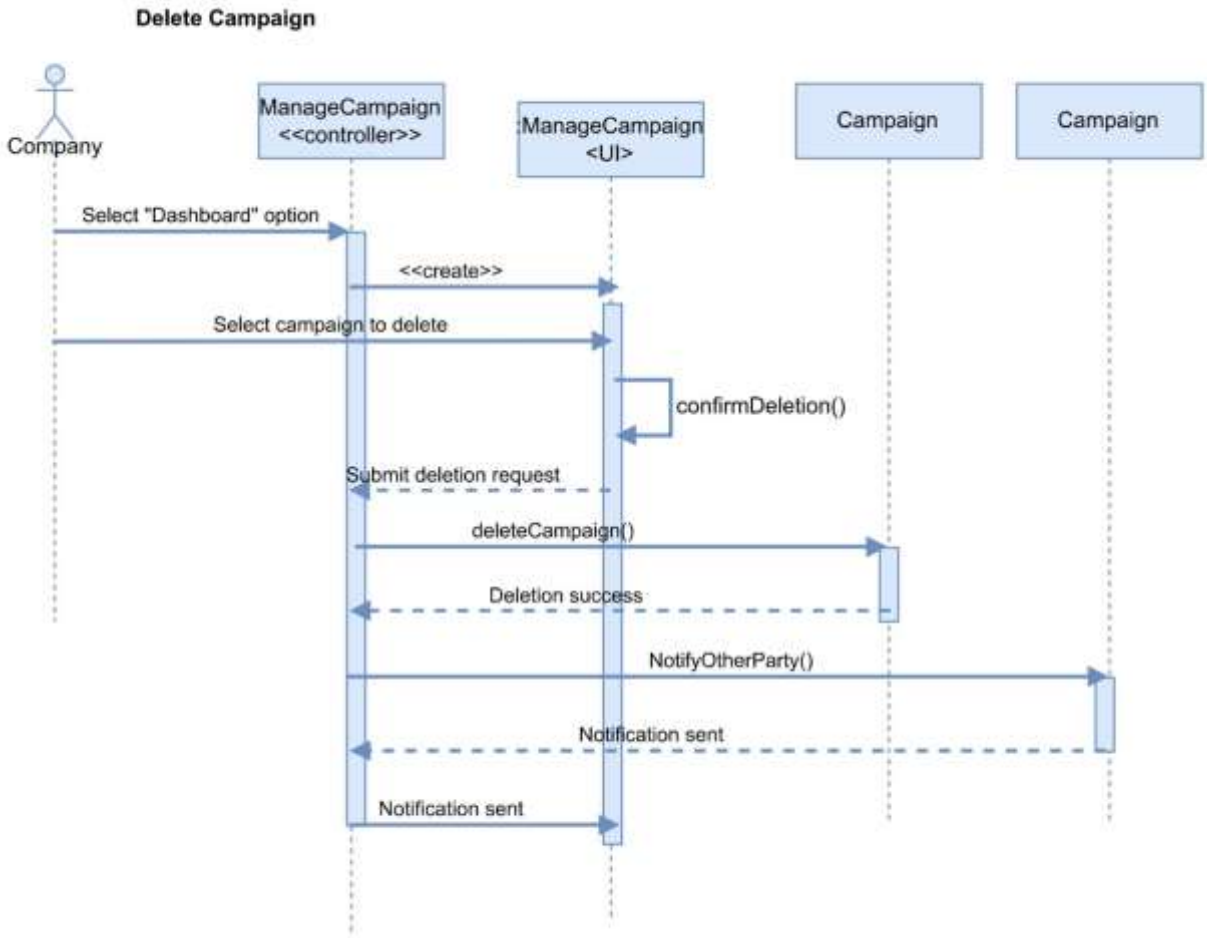


Figure 31 delete campaign

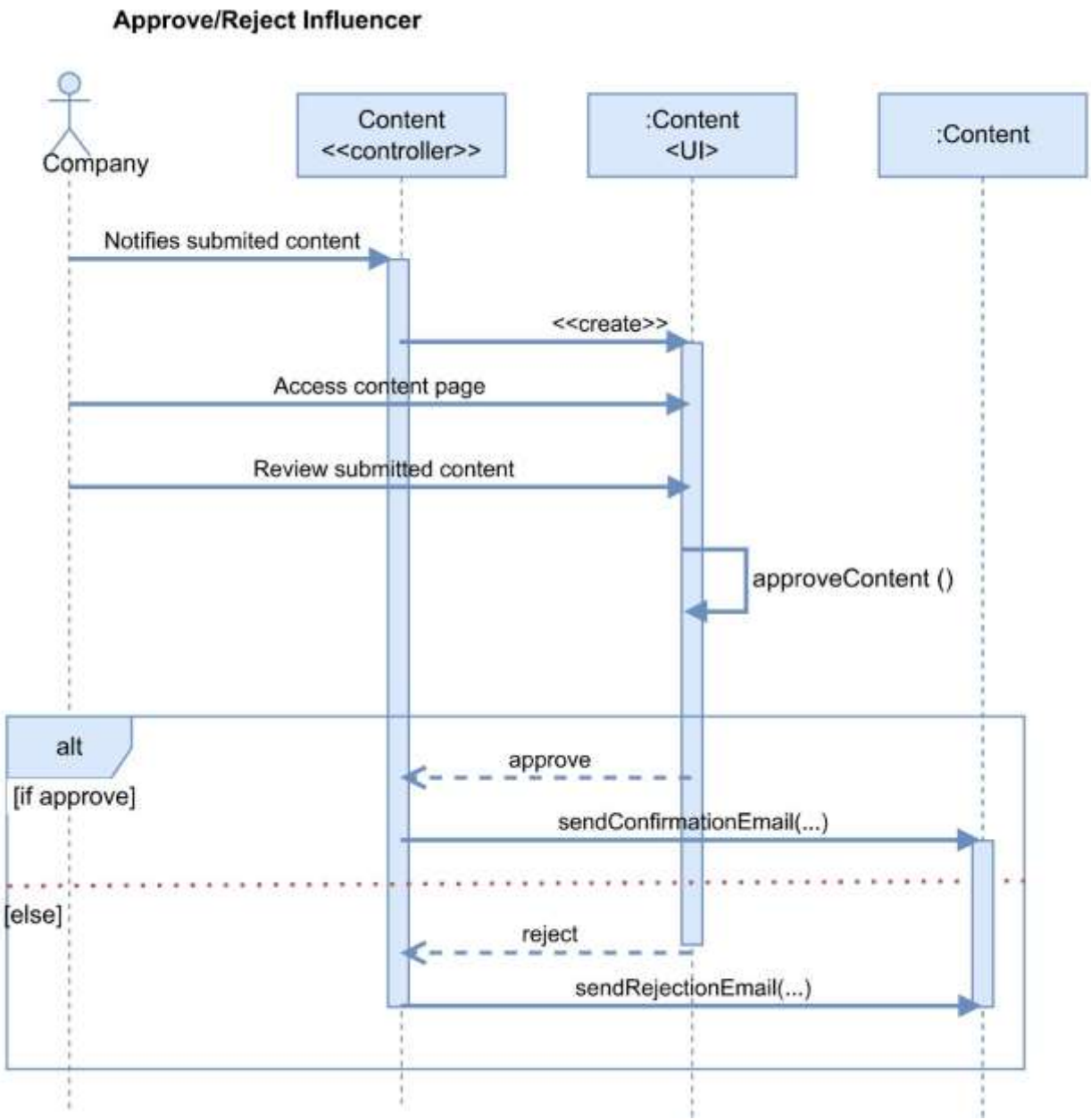


Figure 32 approve/request influencer

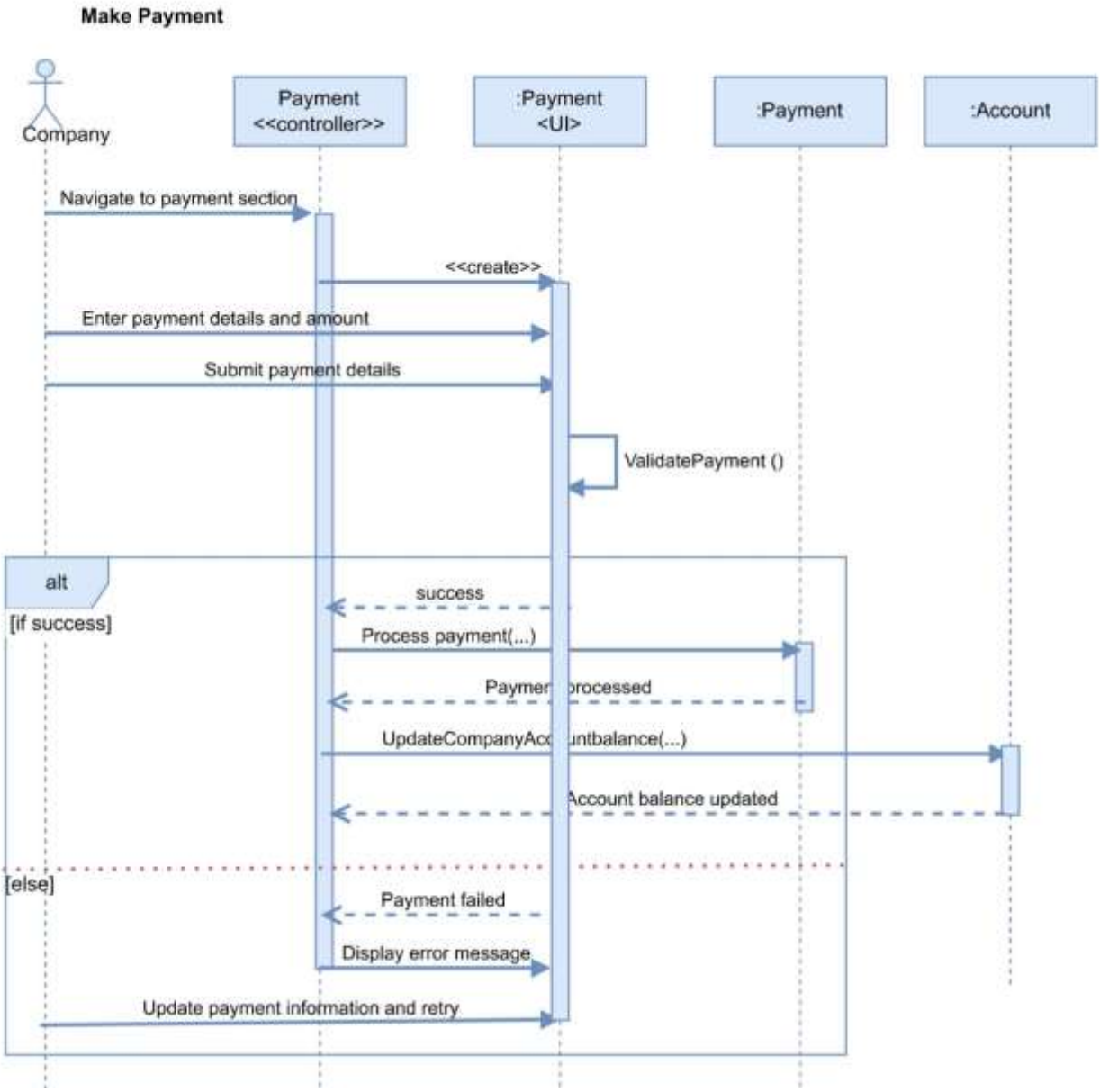


Figure 33 make payment

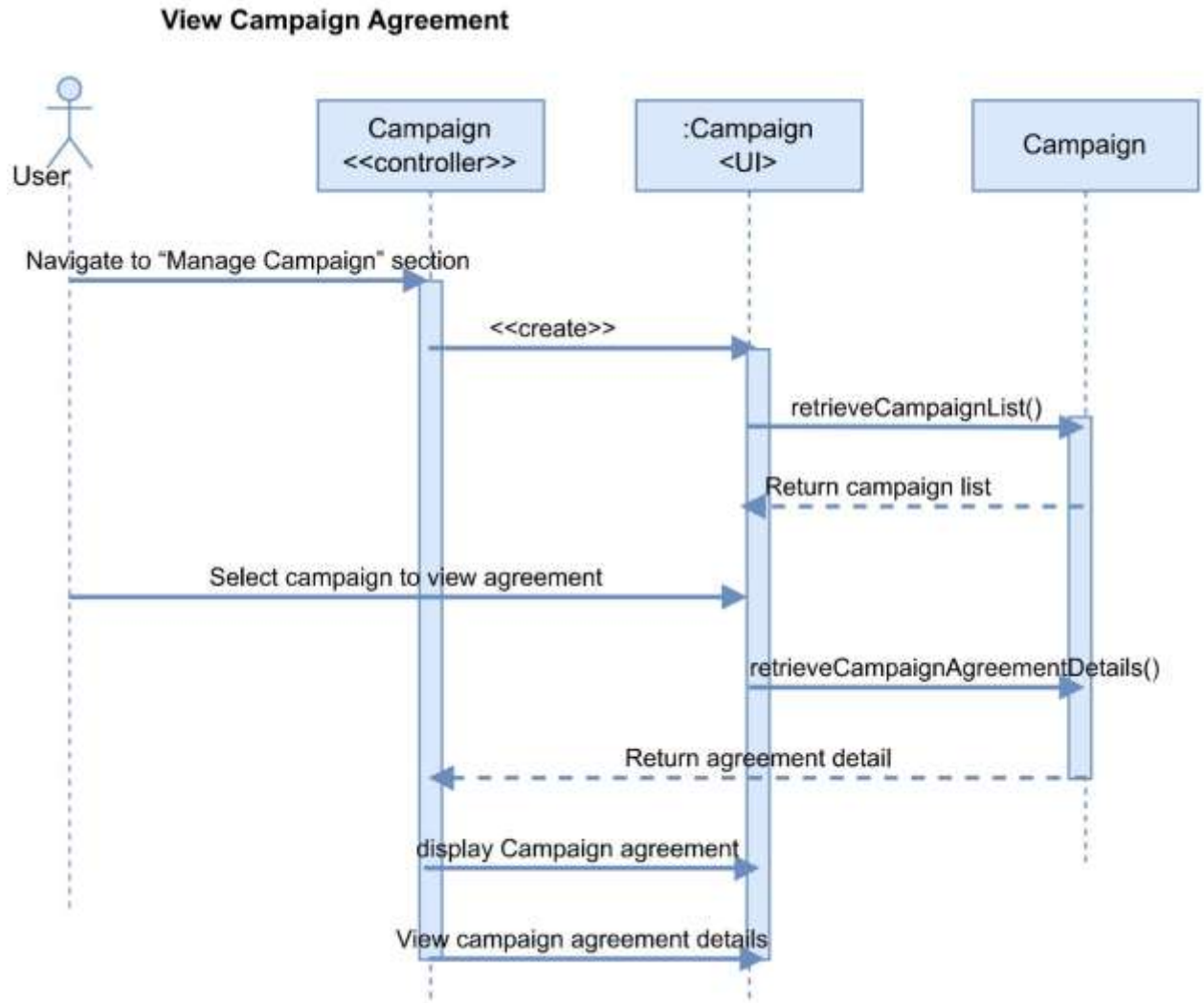


Figure 34 view campaign agreement

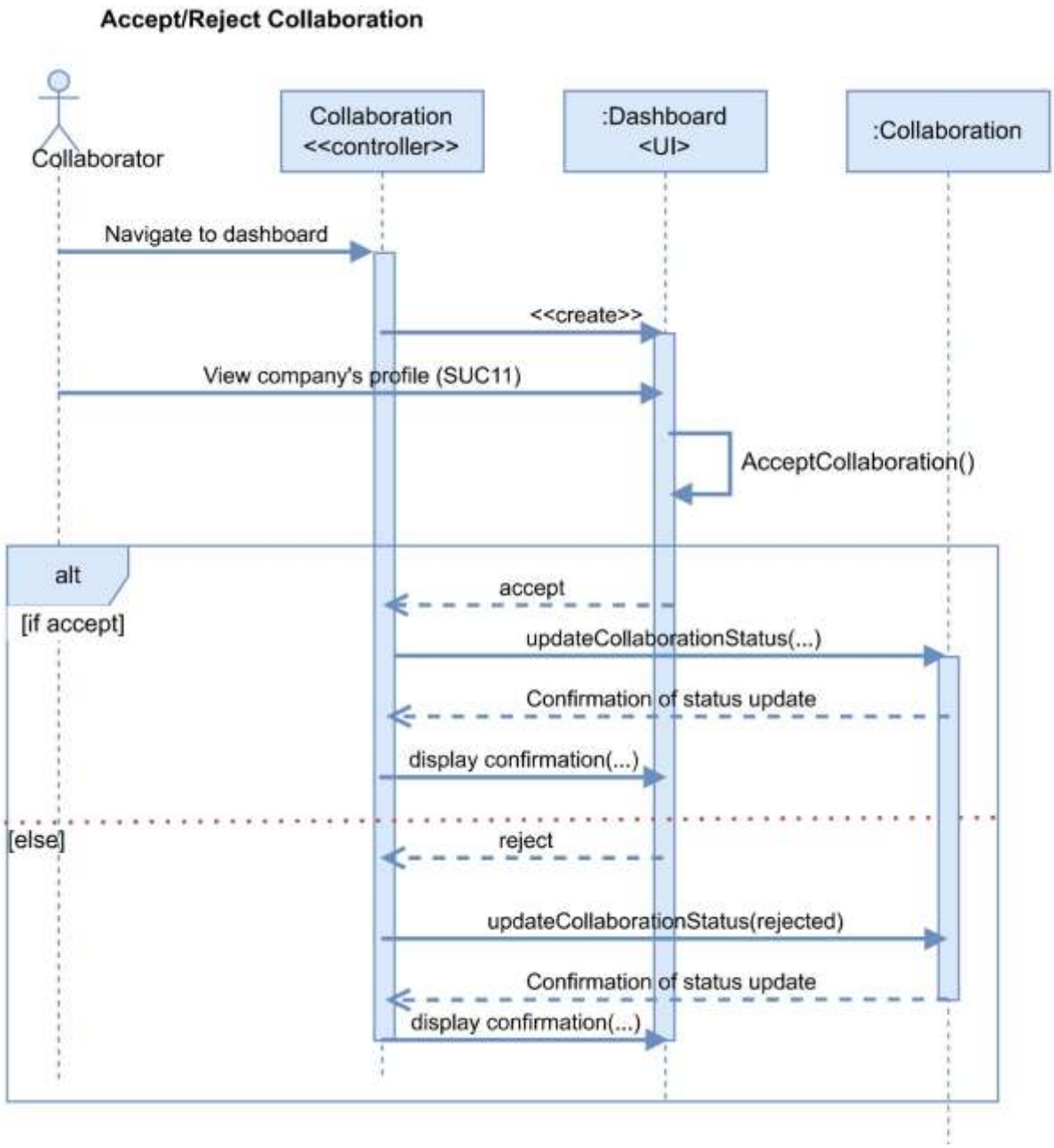


Figure 35 accept/reject collaboration

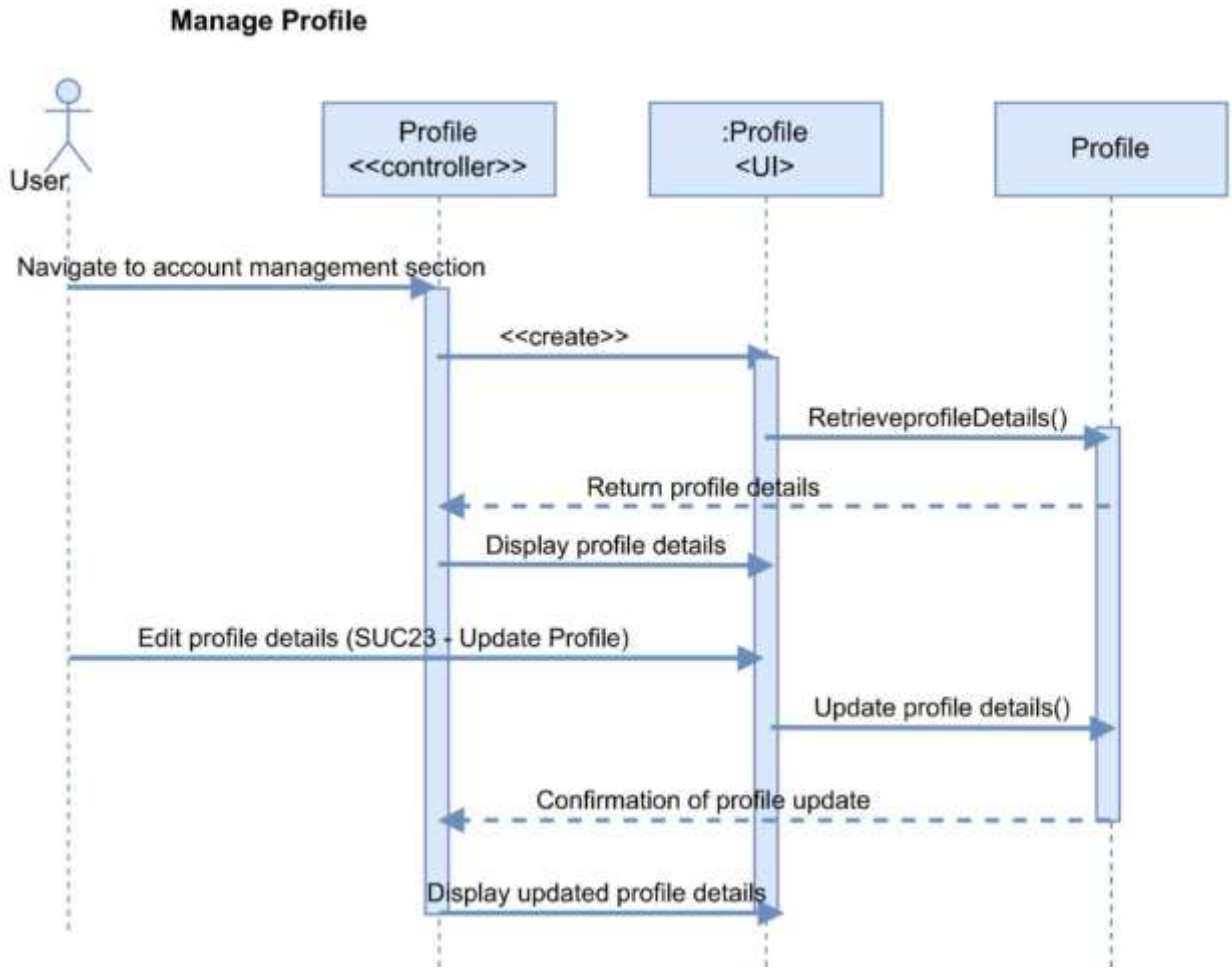


Figure 36 manage profile

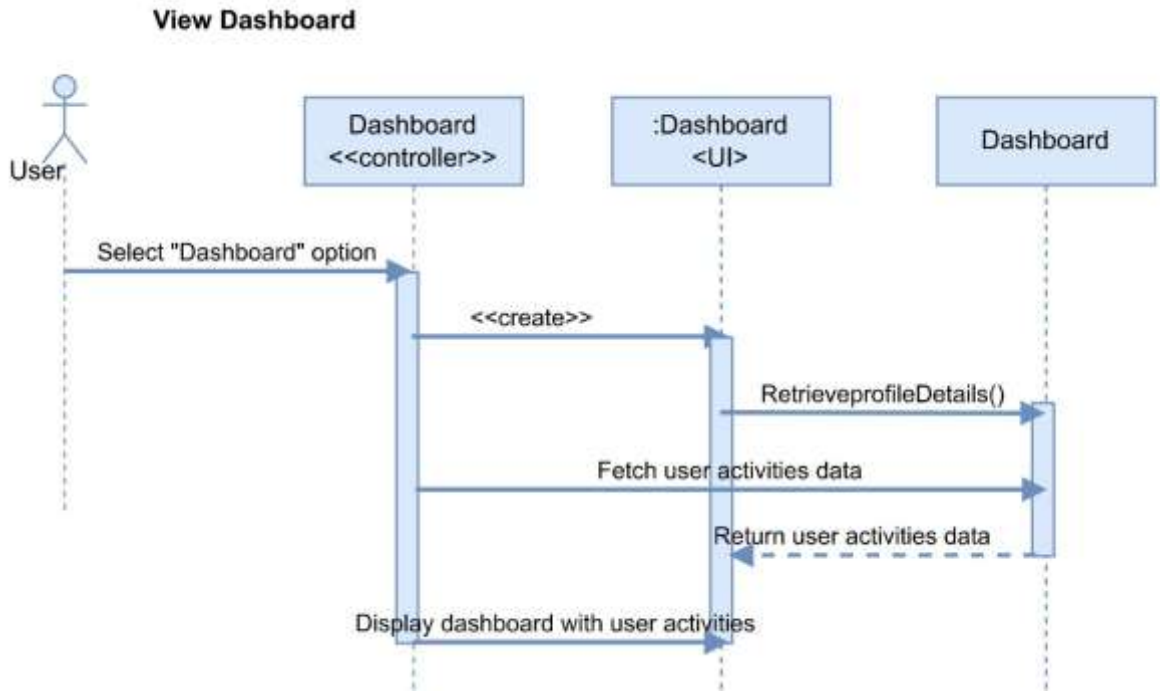


Figure 37 view dashboard

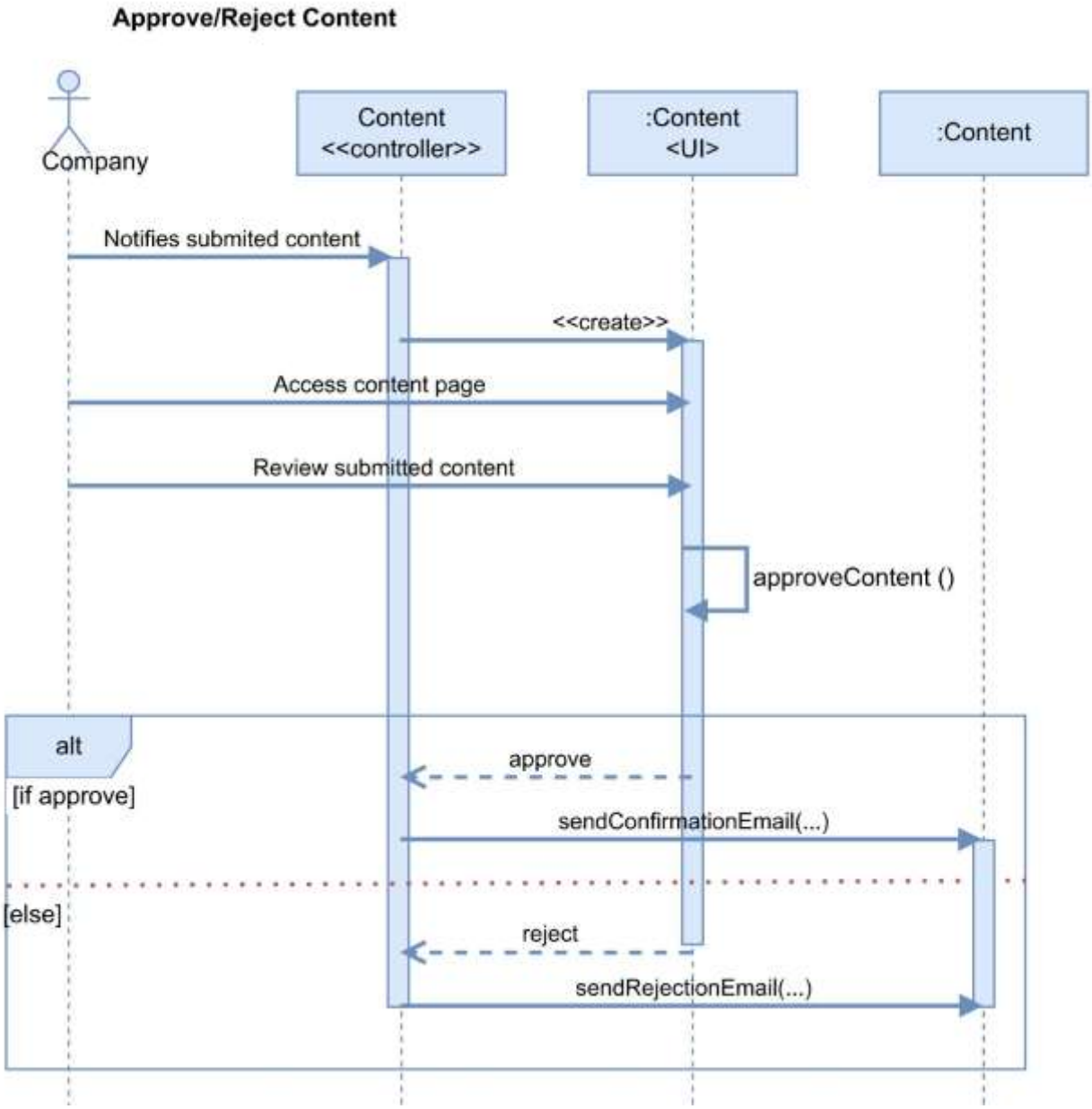


Figure 38 approve/reject content

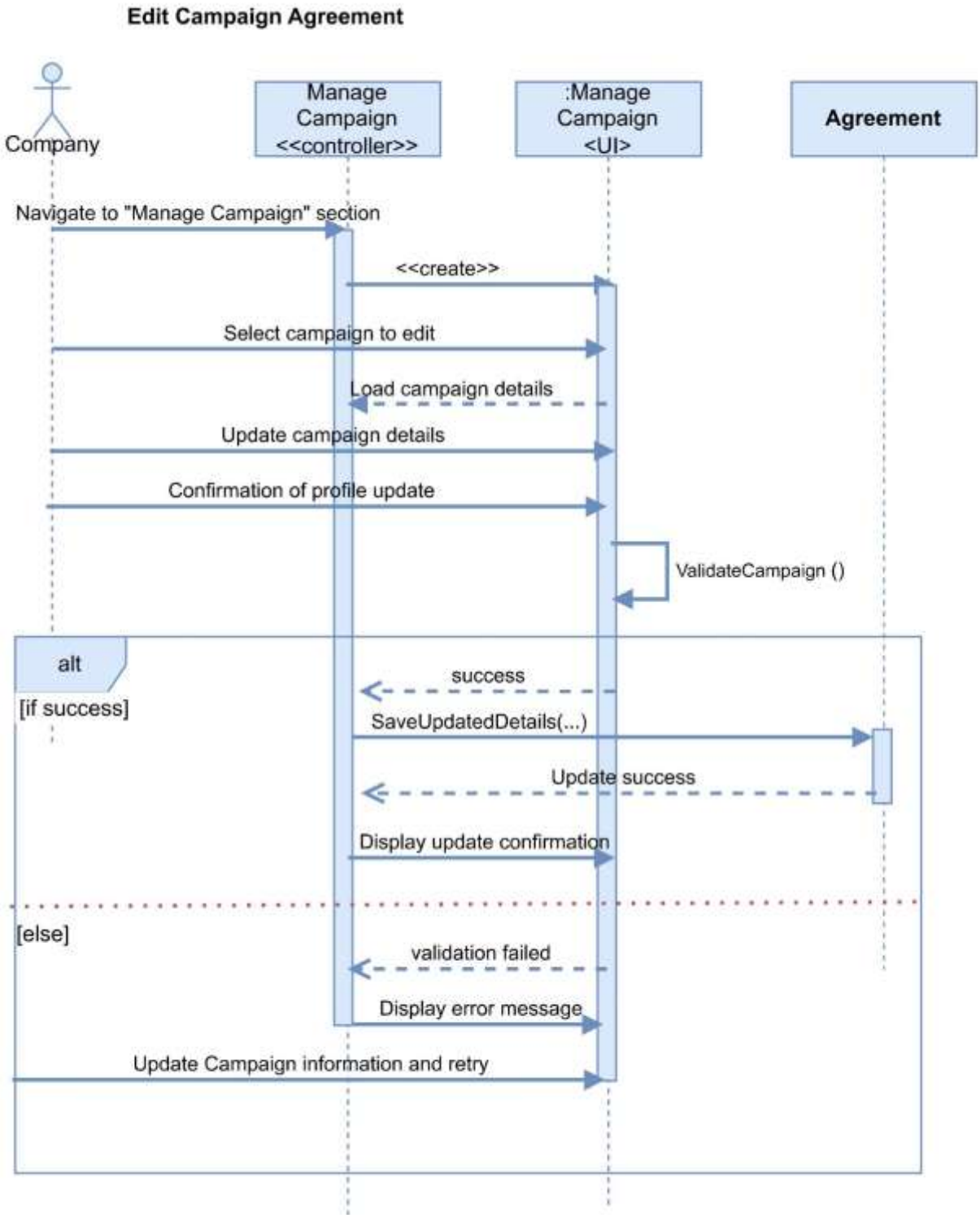


Figure 39 edit campaign agreement

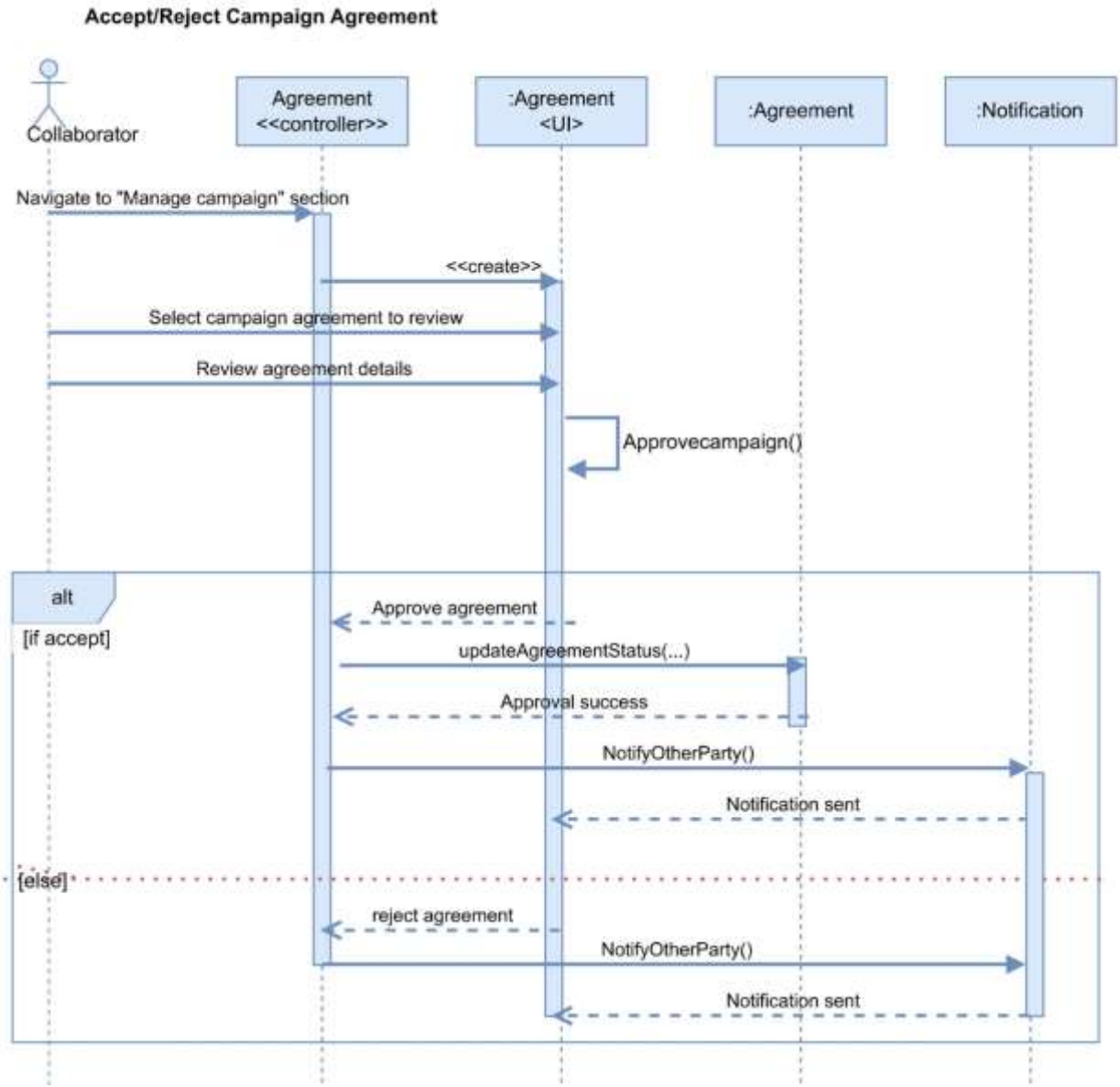


Figure 40 accept/reject campaign agreement

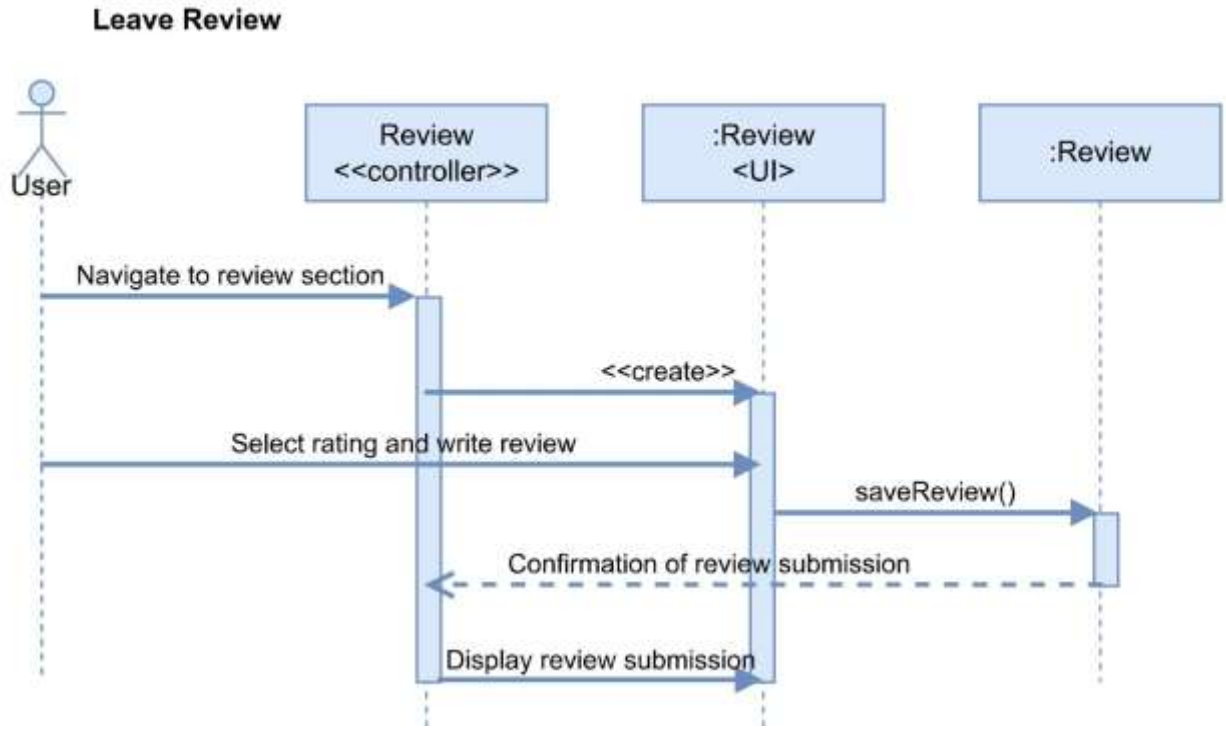


Figure 41 leave review

3.5.3 Activity Diagram

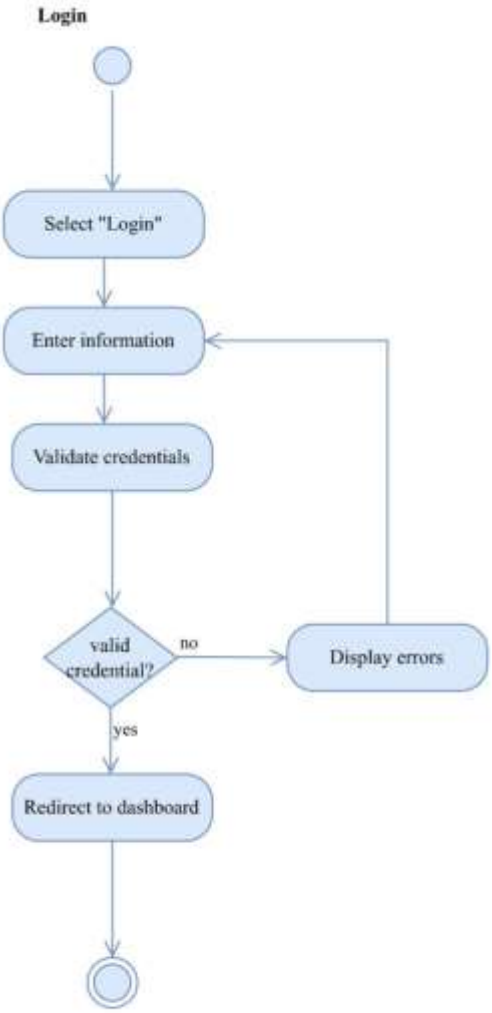


Figure 42 login

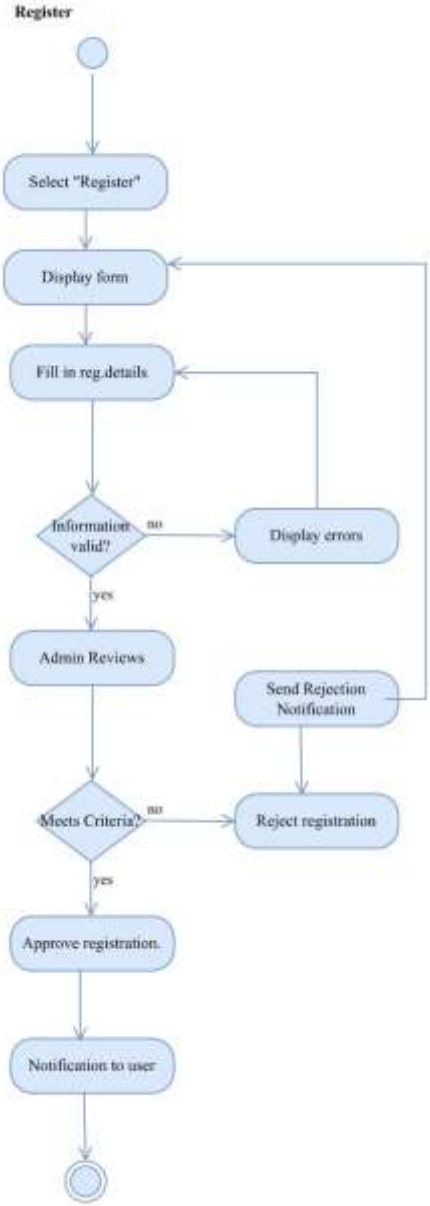


Figure 43 register

Figure 44 search for influencer

Figure 45 submit content

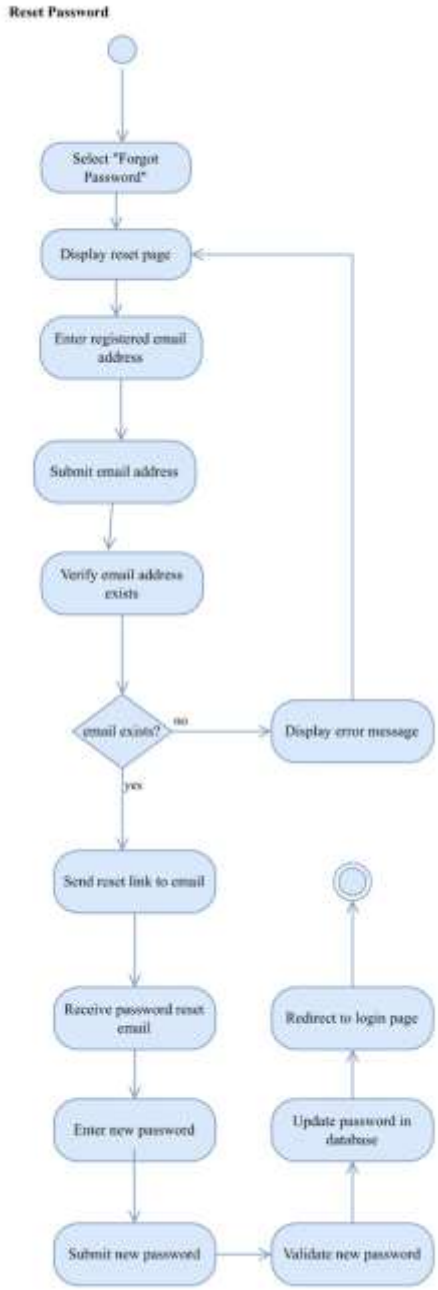


Figure 46 reset password

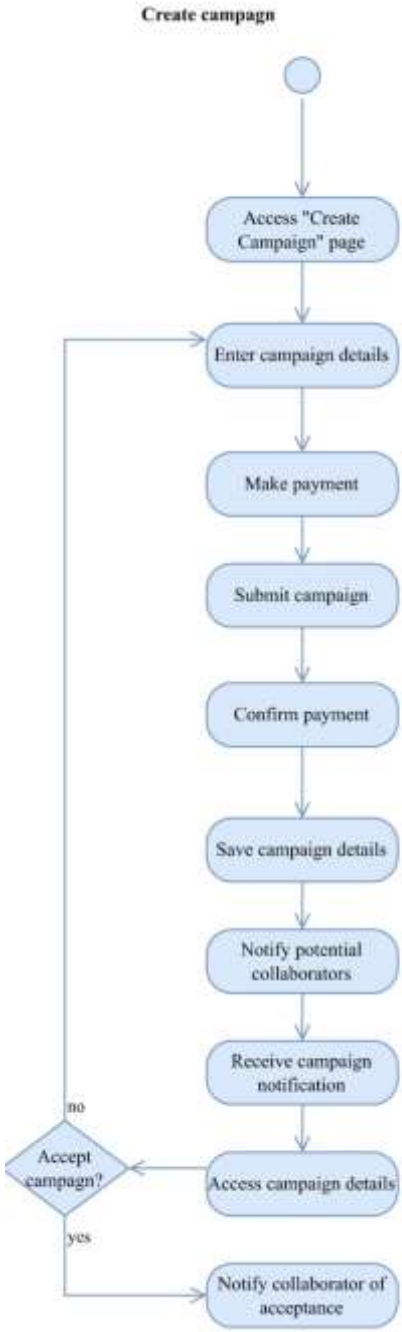


Figure 47 create campaign

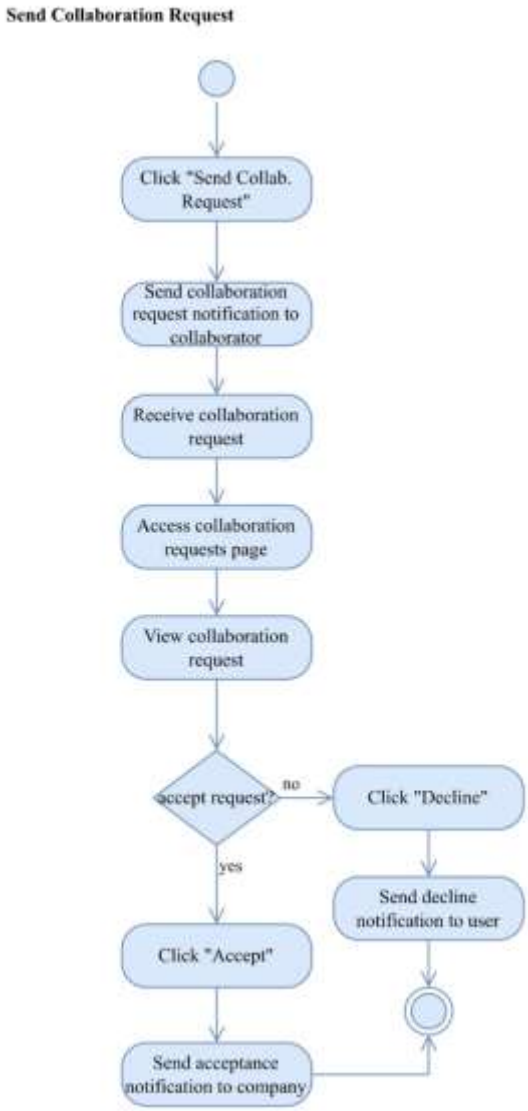


Figure 48 send/collaborate request

Chapter Four - System Design

4.1 Introduction

System design is the process of transforming an analysis model into a system design model. During this process, developers define the design goals of the project and break down the system into smaller subsystems that can be developed by individual teams (Bruegge & Dutoit, 2015, p. 223). They also select strategies for building the system, such as the hardware/software strategy, data management strategy, global control flow, access control policy, and handling of boundary conditions. The end result of system design is a model that includes a subsystem decomposition anda clear description of these strategies.

System design is not a purely algorithmic process. Developers must make trade-offs between often conflicting design goals. Additionally, they cannot anticipate all design issues because they do not yet have a complete understanding of the solution domain (Bruegge & Dutoit, 2015, p. 223).

System design is typically broken down into several activities:

- **Identify design goals**: Developers identify and prioritize the qualities of the system that they should optimize.
- **Design the initial subsystem decomposition:** Developers break down the system into smaller parts based on the use case and analysis models. They use standard architectural styles as a starting point during this activity (Bruegge & Dutoit, 2015, p. 223).
- **Refine the subsystem decomposition to address the design goals:** The initial decomposition often does not satisfy all design goals. Developers refine it until all goals are met.

4.2 Design Goals

The design goals are derived from the nonfunctional requirements. Design goals guide the decisions to be made by the developers when trade-offs are needed. The subsystem decomposition constitutes the bulk of system design. Developers divide the system into manageable pieces to deal with complexity: each subsystem is assigned to a team and realized independently (Bruegge & Dutoit, 2015, p. 227).

Here are some key design goals for Influencer Hub:

1. **Efficiency**: The system aims to make influencer marketing easier by automating tasks and speeding up collaboration between companies and influencers.

2. **Security**: Protecting user data is crucial, so the system ensures secure communication and encryption.
3. **Scalability**: The architecture is flexible to handle growth without sacrificing performance.
4. **Usability**: The platform is user-friendly and with a clean interface both companies and influencers.
5. **Performance**: Quick response times and efficient processing enhance the user experience.

4.3 Design Trade-offs

In the design process, there will be situations were fulfilling one requirement might come at the expense of another. These are called design trade-offs. Here are some potential trade-offs to consider for the Influencer Hub system:

- **Usability vs Security:** We prioritize a user experience vs stringent security measure to ensure user-friendliness, even if it means slightly compromising on security protocols such as complex passwords and multi-factor authentication.

For each trade-off, the design decisions will consider the target audience, the current influencer marketing landscape in Ethiopia, and the long-term goals for the Influencer Hub platform. By carefully evaluating these trade-offs, the system can be designed to be both effective and user-friendly.

4.4 Subsystem Decomposition

A subsystem is a replaceable part of the system with well-defined interfaces that encapsulates the state and behavior of its contained classes. A subsystem typically corresponds to the amount of work that a single developer or a single development team can tackle. By decomposing the system into relatively independent subsystems, concurrent teams can work on individual subsystems with minimal communication overhead (Bruegge & Dutoit, 2015, p. 228).

Here's a potential subsystem decomposition for the Influencer Hub website, considering its focus on simplicity:

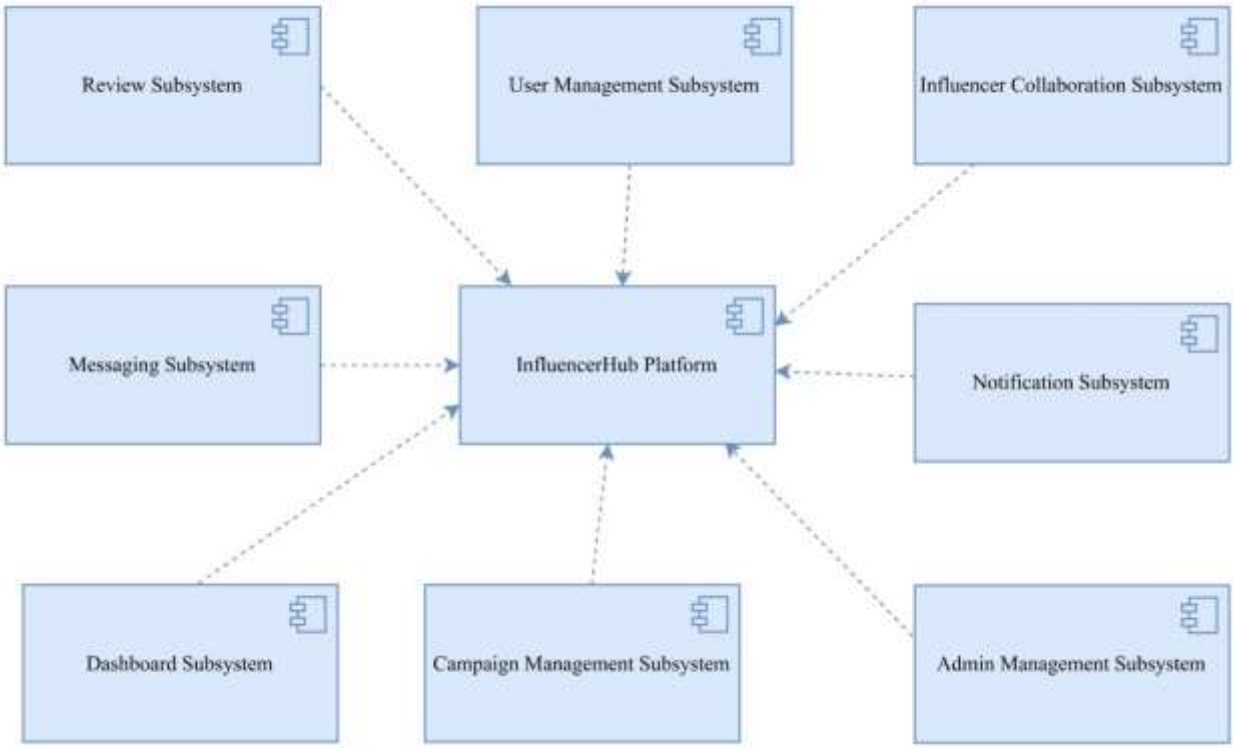


Figure 49 subsystem decomposition

4.5 Design Phase Models

"The design phase decides how the system will operate, in terms of the hardware, software, and network infrastructure; the user interface, forms, and reports; and the specific programs, databases, and files that will be needed. Although most of the strategic decisions about the system were made in the development of the system concept during the analysis phase, the steps in the design phase determine exactly how the system will operate. The design phase has four steps:

1. The design strategy is first developed. It clarifies whether the system will be developed by the company's own programmers, whether the system will be outsourced to another firm (usually a consulting firm), or whether the company will buy an existing software package.
2. This leads to the development of the basic architecture design for the system, which describes the hardware, software, and network infrastructure to be used. In most cases, the system will add or change the infrastructure that already exists in the organization. The interface design specifies how the users will move through the system (e.g., navigation methods such as menus and on-screen buttons) and the forms and reports that the system will use.
3. The database and file specifications are developed. These define exactly what data will be stored and where they will be stored.

4. The analyst team develops the program design, which defines the programs that need to be written and exactly what each program will do." (Dennis et al., 2024, p. 4)

Here, we'll explore two crucial design models: Class Modelling and Persistent Model.

4.5.1 Class Modelling

Class modelling is a fundamental concept in object-oriented programming. It involves defining classes that represent real-world entities within the system and the relationships between them. Class diagrams are used to describe the structure of the system. Classes are abstractions that specify the common structure and behaviour of a set of objects. Objects are instances of classes that are created, modified, and destroyed during the execution of the system. An object has state that includes the values of its attributes and its links with other objects (Bruegge & Dutoit, 2015, p. 32).

Here's how class modelling can be applied to the Influencer Hub:

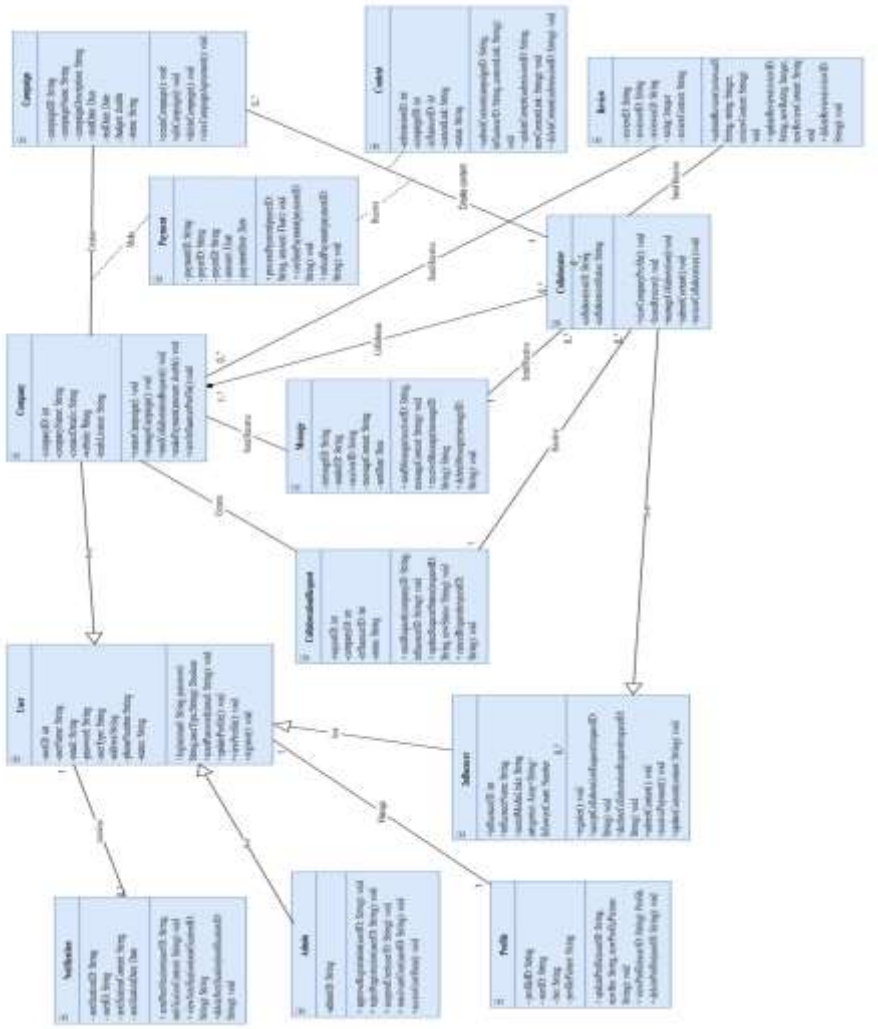


Figure 50 class modelling

4.5.2 Persistent Model

A persistent model refers to a system or approach that is enduring and remains in effect over a long period. It's a concept that can be applied to various aspects of project management to ensure consistency and long-term effectiveness.

4.5.3 Mapping Class Diagram to Collections

Since we are using a MERN stack, our persistence model will involve mapping the Influencer Hub class diagram into MongoDB collections. However, according to the outline, we should be working on mapping the Class Diagram to a relational database.

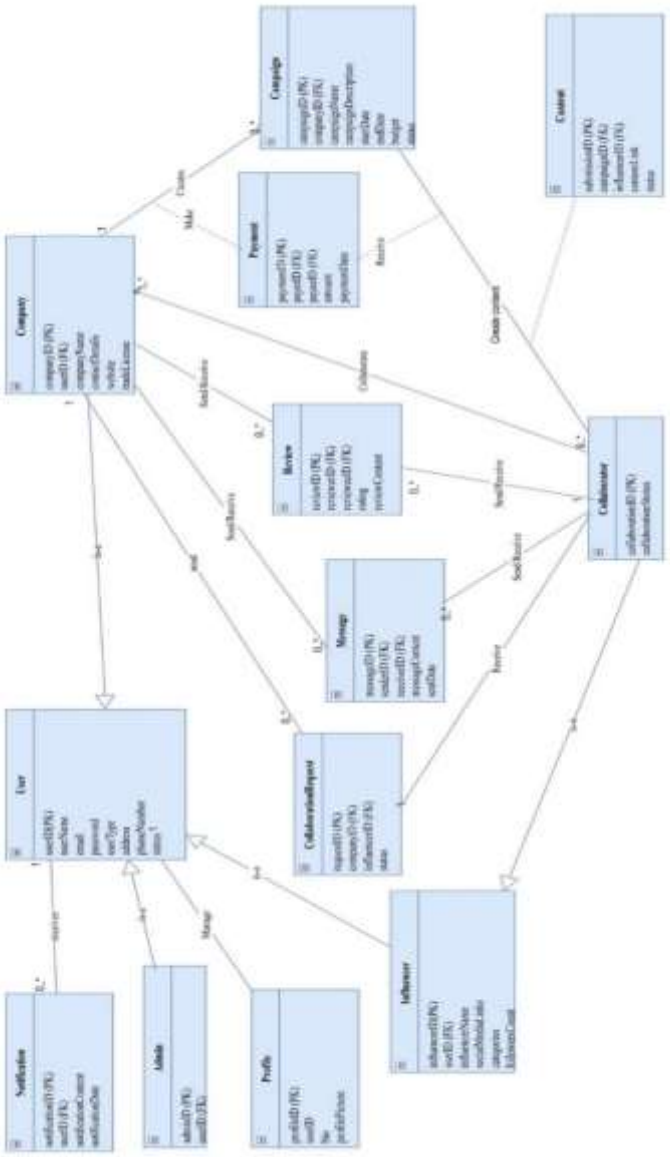


Figure 51 persistent model

4.5.3.1 Normalization

Normalization is a process whereby a series of rules are applied to the RDBMS tables to assess the efficiency of the tables (see Figure 9-12). Th ese rules help analysts identify tables that are not represented correctly (Dennis et al., 2024, p. 348).

Normalization is a way to organize data in databases so that it's less repetitive and more consistent. While NoSQL databases like MongoDB are more flexible, we still need to think about normalization for Influencer Hub because it helps keep our data clean and avoids problems:

- **Flexibility doesn't mean no rules:** Mongoose, the tool we use to work with MongoDB, lets us set up rules for how our data should look. These rules help keep our data structured and accurate.
- **Performance matters, but not at the cost of data quality:** Sometimes storing redundant data can make our system faster. But this shouldn't come at the cost of having inaccurate or inconsistent data.

Overall, normalization helps us make sure that the data in Influencer Hub is organized properly and reliable, even though we're using a NoSQL database.

However, according to the project outline, normalization must be applied. This means that we need to ensure that our data is efficiently organized and structured to avoid redundancy and maintain data integrity. We will need to carefully consider how to best organize our data while keeping performance in mind.

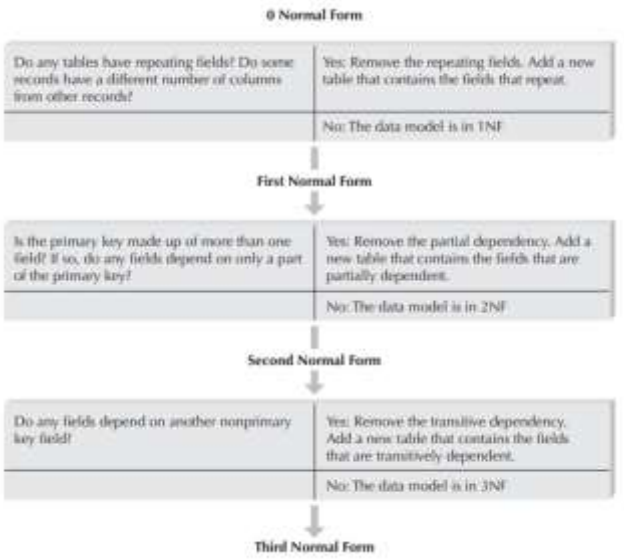


Figure 52 normalization

The steps of normalization are outlined in Figure 9-12 (Dennis et al., 2000, p. 349).

Normal form

Table 23 User

Attribute	Data Type	Primary Key	Foreign Key
userID	int(11)	Yes	
username	varchar(30)	No	
password	varchar(30)	No	
email	varchar(30)	No	
phoneNumber	number	No	
address	varchar(30)	No	

Table 24 Admin

Attribute	Data Type	Primary Key	Foreign Key
adminID	int(11)	Yes	
userID	int(11)	No	Yes

Table 25 Profile

Attribute	Data Type	Primary Key	Foreign Key
profileID	int(11)	Yes	
userID	int(11)	No	Yes
profilePicture	IMAGE	No	
bio	varchar(30)	No	

Table 26 Campaign

Attribute	Data Type	Primary Key	Foreign Key
campaignID	int(11)	Yes	
companyID	int(11)	No	Yes
campaignName	varchar(30)	No	
startDate	DATE	No	
endDate	DATE	No	
status	varchar(30)	No	

Table 27 Company

Attribute	Data Type	Primary Key	Foreign Key
companyID	int(11)	Yes	
companyName	varchar(30)	No	
address	varchar(30)	No	
phoneNumber	NUMBER	No	
email	varchar(30)	No	
license	varchar(30)	No	

Table 28 Collaborator

Attribute	Data Type	Primary Key	Foreign Key
collaboratorID	int(11)	Yes	
userID	int(11)	No	Yes
companyID	int(11)	No	Yes
collaborationType	varchar(30)	No	

Table 29 Influencer

Attribute	Data Type	Primary Key	Foreign Key
influencerID	int(11)	Yes	
userID	int(11)	No	Yes
followerCount	varchar(30)	No	

Table 30 Content

Attribute	Data Type	Primary Key	Foreign Key
submissionID	int(11)	Yes	
campaignID	int(11)	No	Yes
influencerID	int(11)	No	Yes
submissionDate	DATE	No	
status	varchar(30)	No	

Table 31 Payment

Attribute	Data Type	Primary Key	Foreign Key
paymentID	int(11)	Yes	
userID	int(11)	No	Yes
amount	varchar(30)	No	
paymentDate	DATE	No	

Table 32 Message

Attribute	Data Type	Primary Key	Foreign Key
messageID	int(11)	Yes	
senderID	int(11)	No	Yes

receiverID	int(11)	No	Yes
content	IMAGE	No	
sentDate	DATE	No	

Table 33 Review

Attribute	Data Type	Primary Key	Foreign Key
reviewID	int(11)	Yes	
reviewerID	int(11)	No	Yes
revieweeID	int(11)	No	Yes
content	varchar(30)	No	
rating	int	No	

Table 34 Collaboration Request

Attribute	Data Type	Primary Key	Foreign Key
requestID	int(11)	Yes	
companyID	int(11)	No	Yes
collaboratorID	int(11)	No	Yes
requestDate	DATE	No	
status	varchar(30)	No	

Table 35 Notification

Attribute	Data Type	Primary Key	Foreign Key
notificationID	int(11)	Yes	
userID	int(11)	No	Yes
content	varchar(30)	No	
notificationDate	DATE	No	

First Normal Form (1NF):

A table is in 1NF if:

- It does not contain composite or multi-valued attributes.
- All entries in each column contain atomic (indivisible) values.

Our schema is in 1NF because:

- Each table has a single value for each attribute.
- There are no repeating groups or arrays of values.
- Each attribute contains atomic data types (e.g., int, varchar, DATE).

Second Normal Form (2NF):

A table is in 2NF if:

- It is in 1NF.
- All non-key attributes are fully functional dependent on the primary key (no partial dependency).

Our schema is in 2NF because:

- Each non-key attribute is dependent on the entire primary key of its respective table.
- There are no partial dependencies where an attribute depends only on part of the primary key.

Third Normal Form (3NF):

A table is in 3NF if:

- It is in 2NF.

- There are no transitive dependencies, meaning no non-key attribute depends on another non-key attribute.

Our schema is generally in 3NF because:

- There are no transitive dependencies evident from the provided schema.
- Each non-key attribute directly depends on the primary key of its table.

4.5.4 User interface design

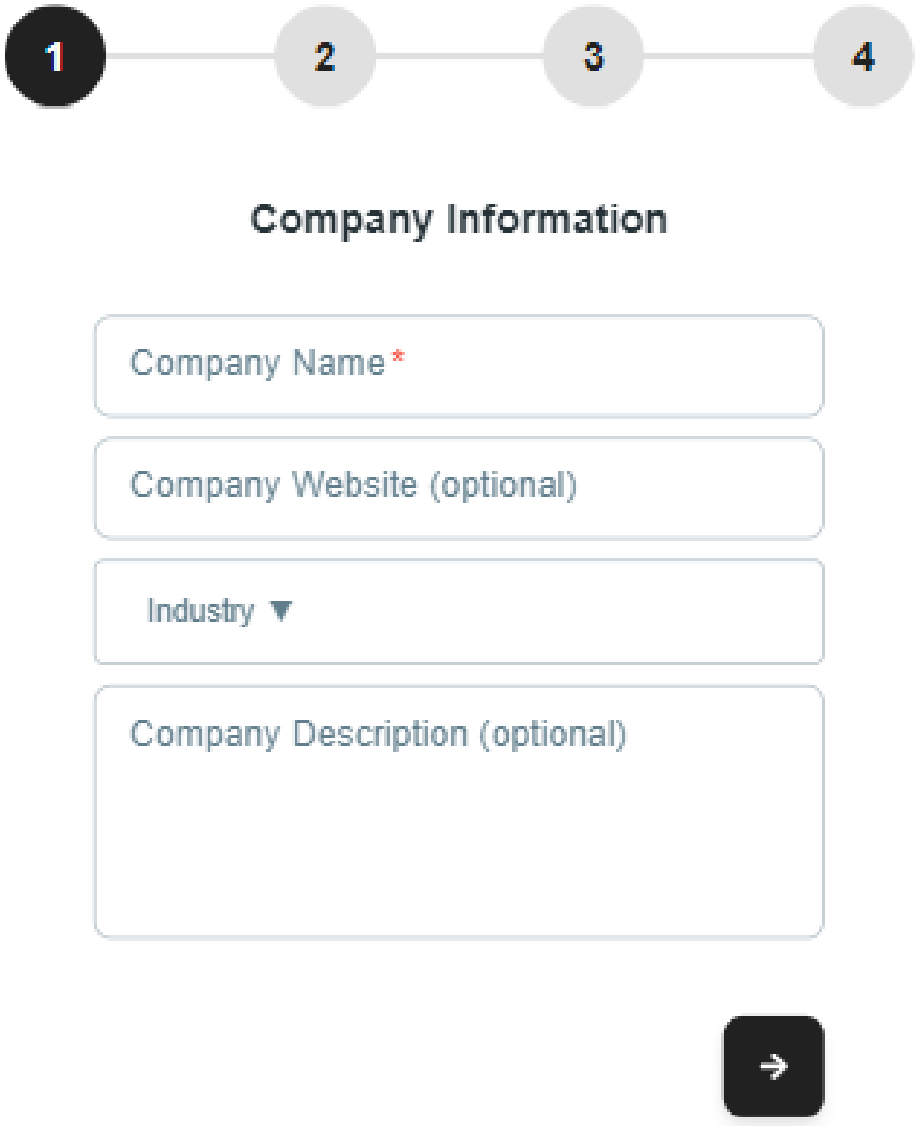


Figure 53 company information page

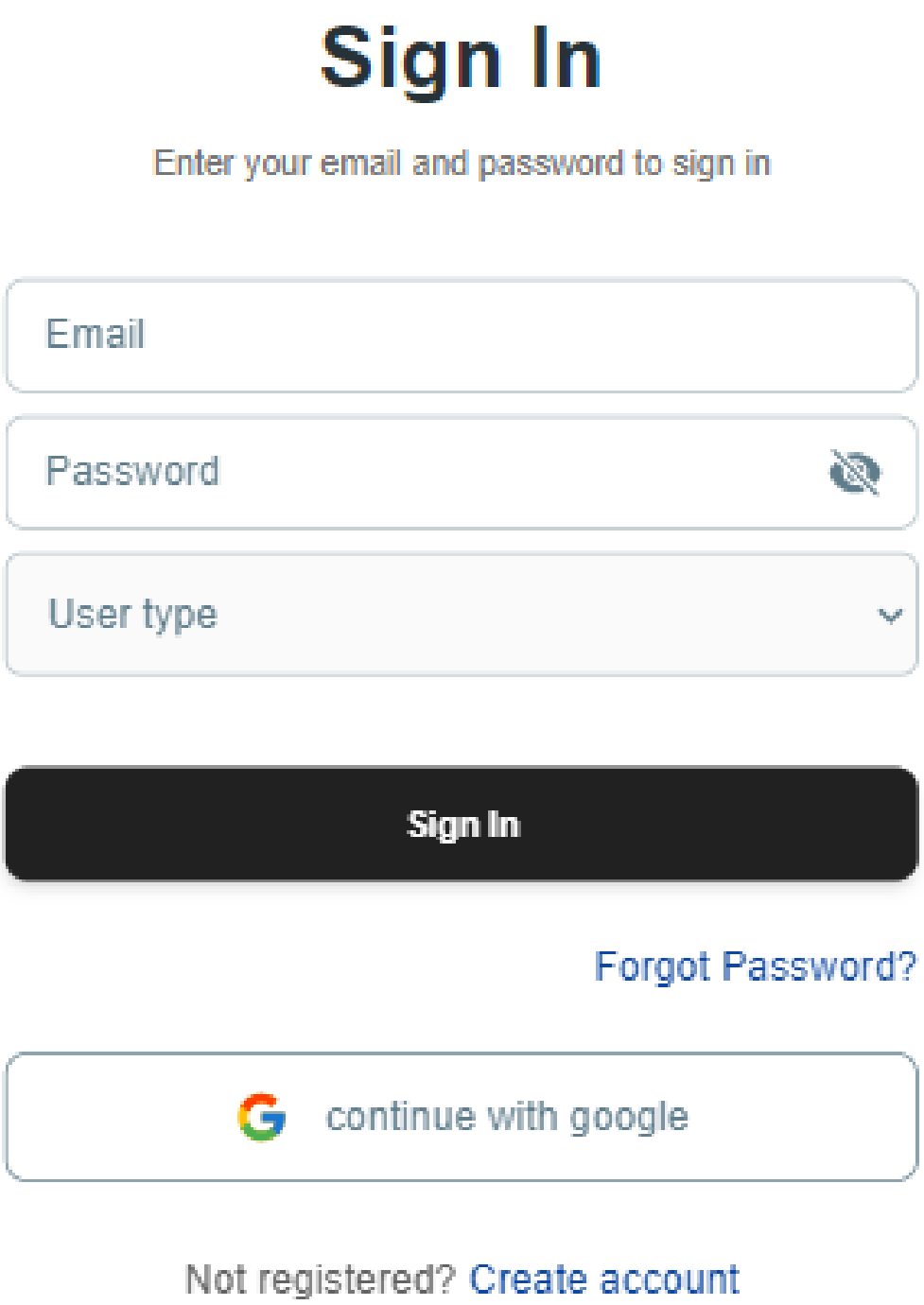


Figure 54 sign in page

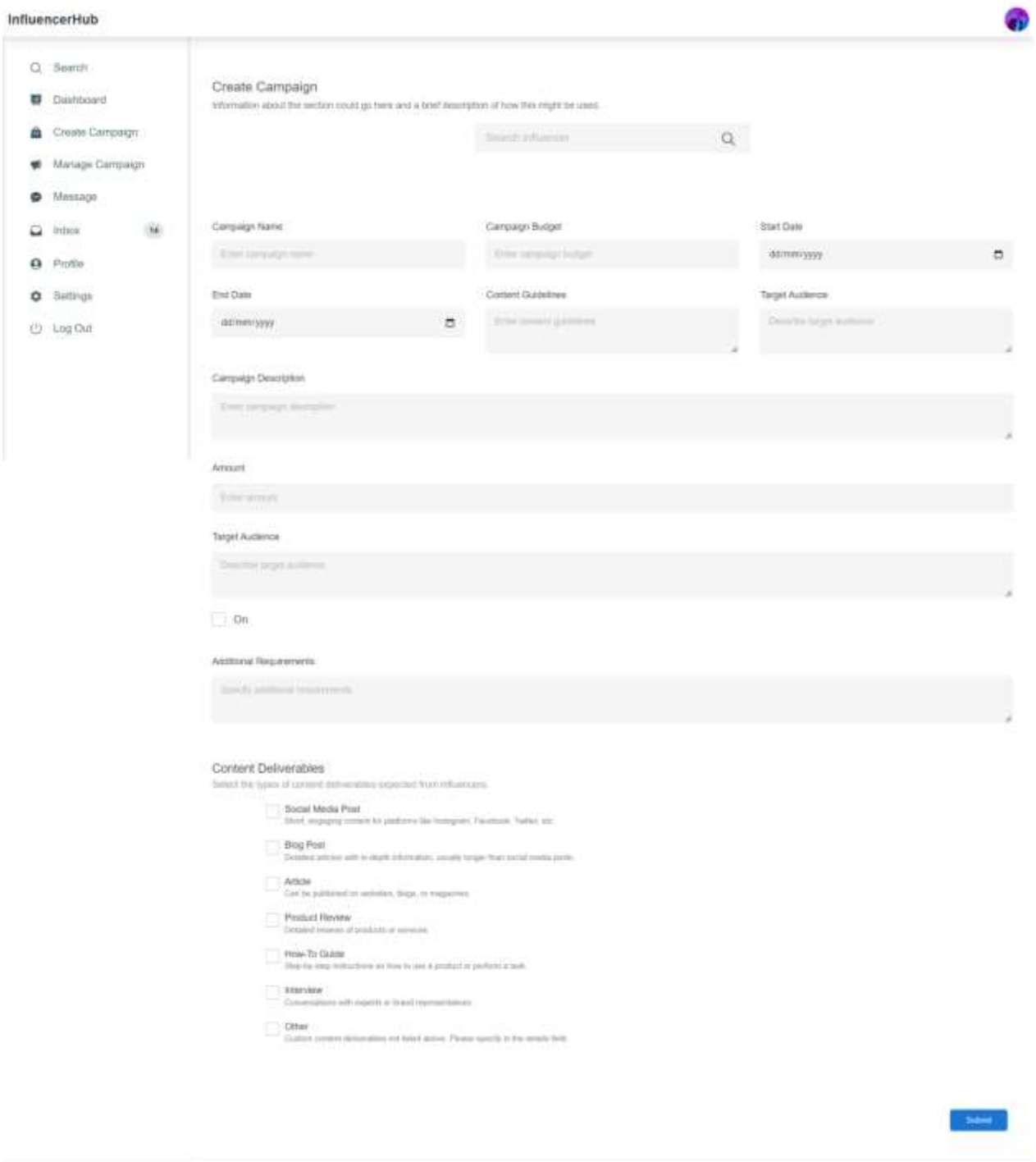


Figure 55 create campaign page

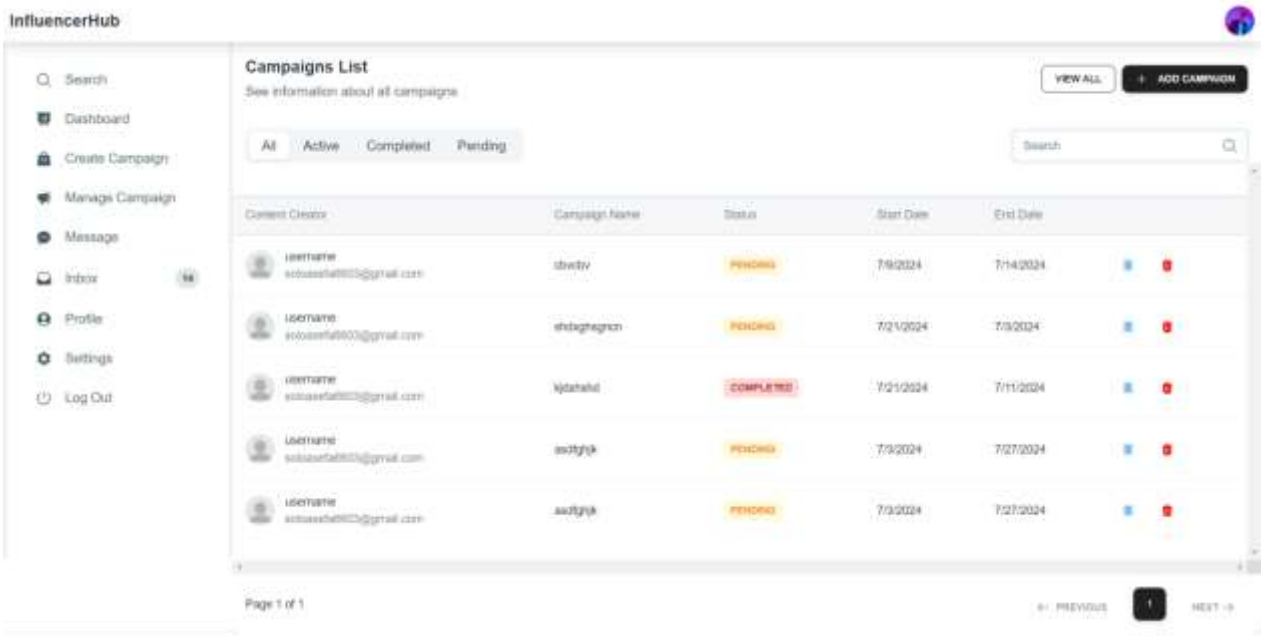


Figure 56 campaign list page

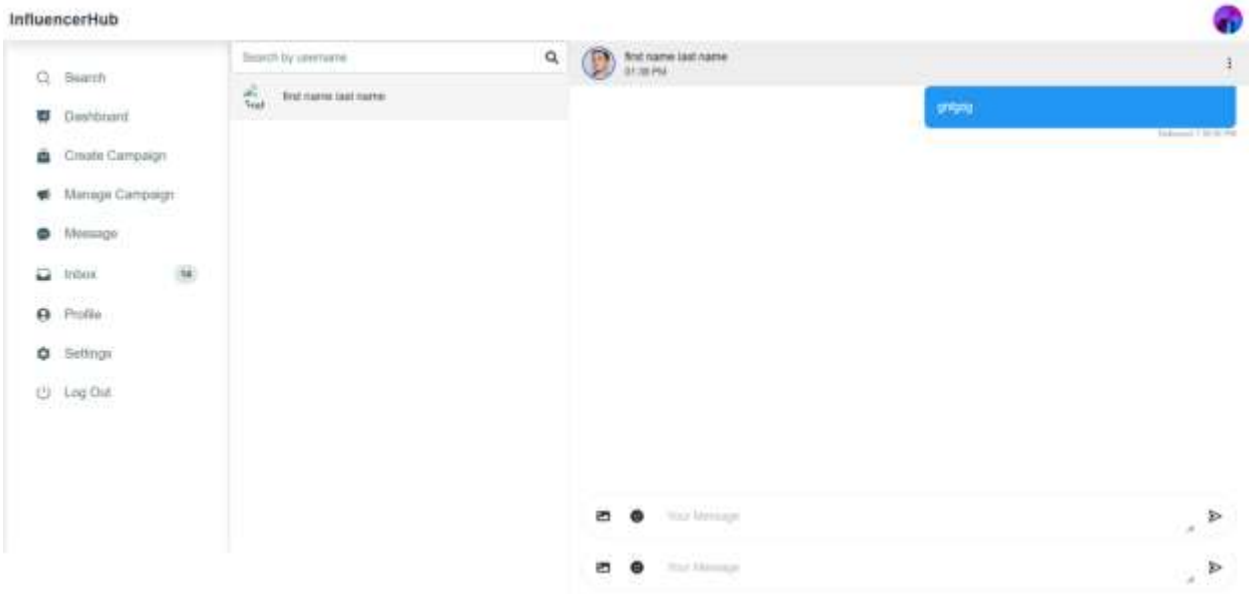


Figure 57 message page

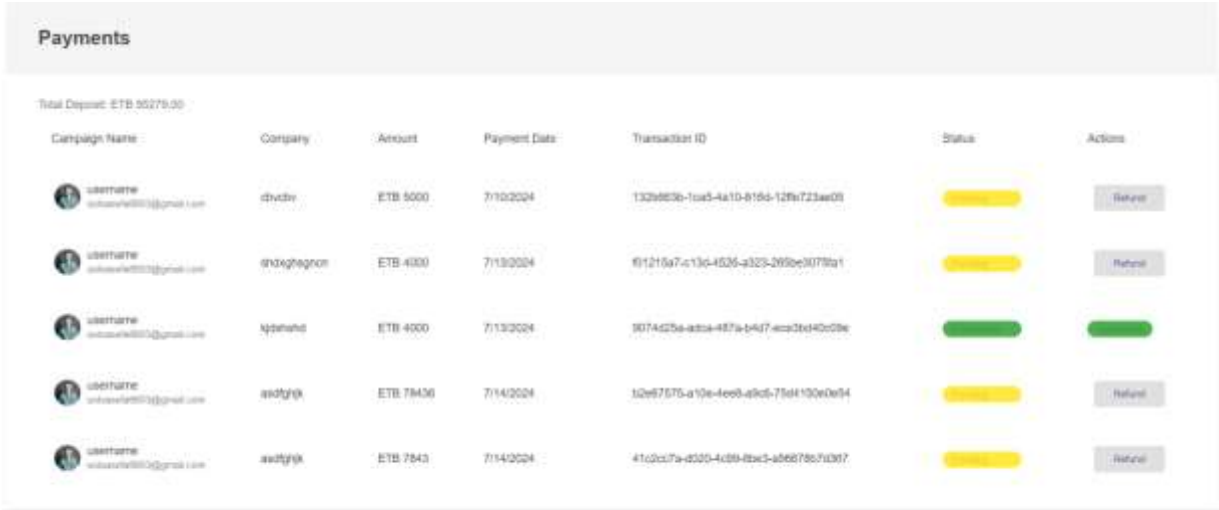


Figure 58 payment page

Figure 59 campaign agreement page

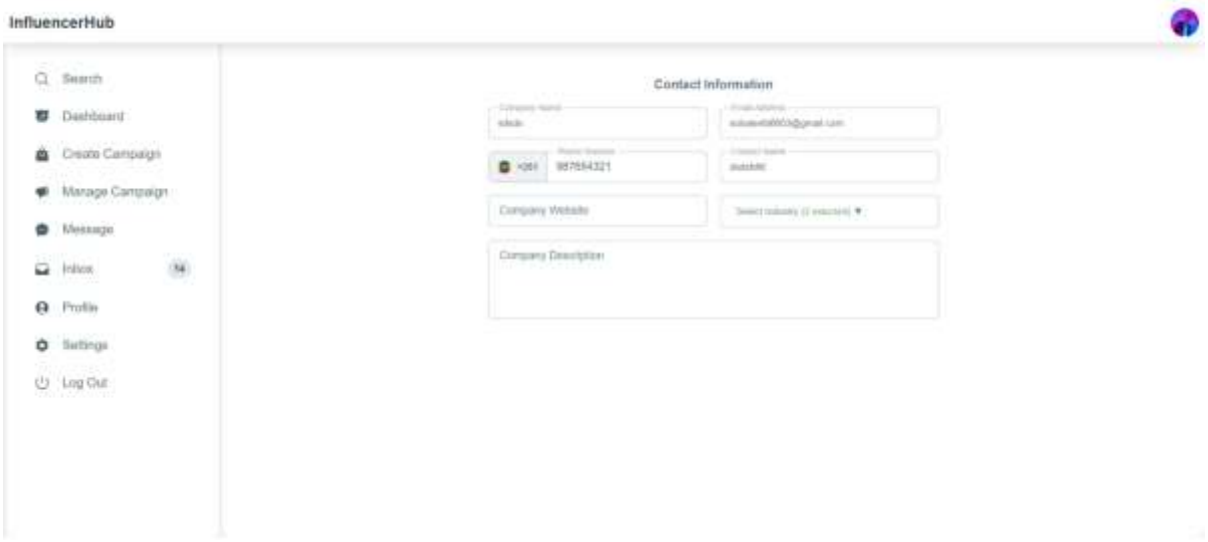


Figure 60 Profile Update

Figure 61 influencer detail page

Figure 62 transaction page

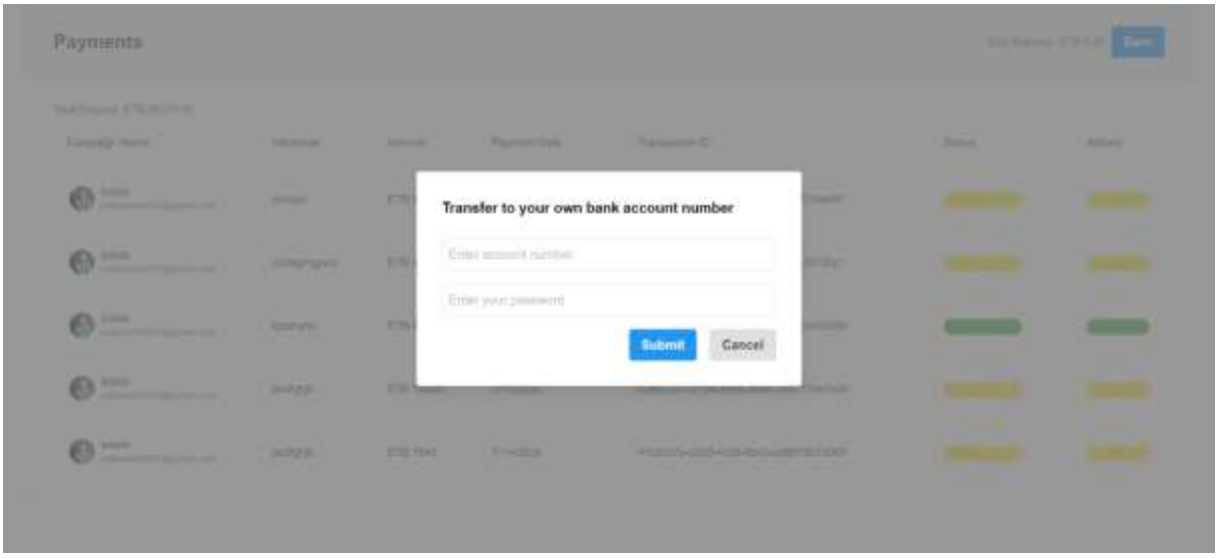


Figure 63 bank transfer page

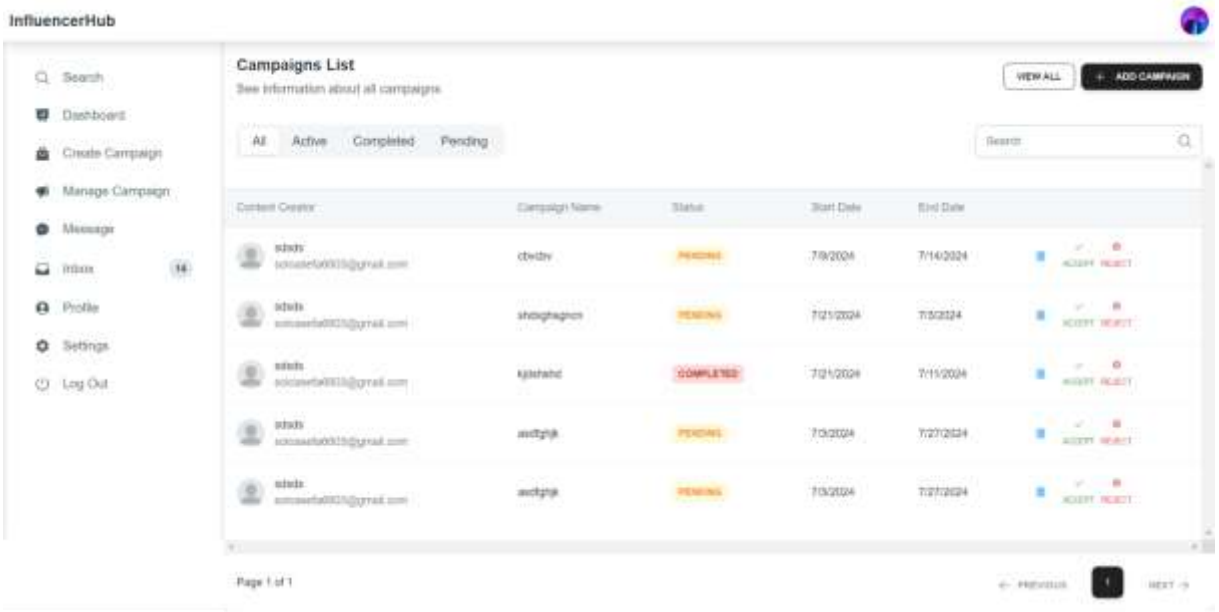


Figure 64 campaign page

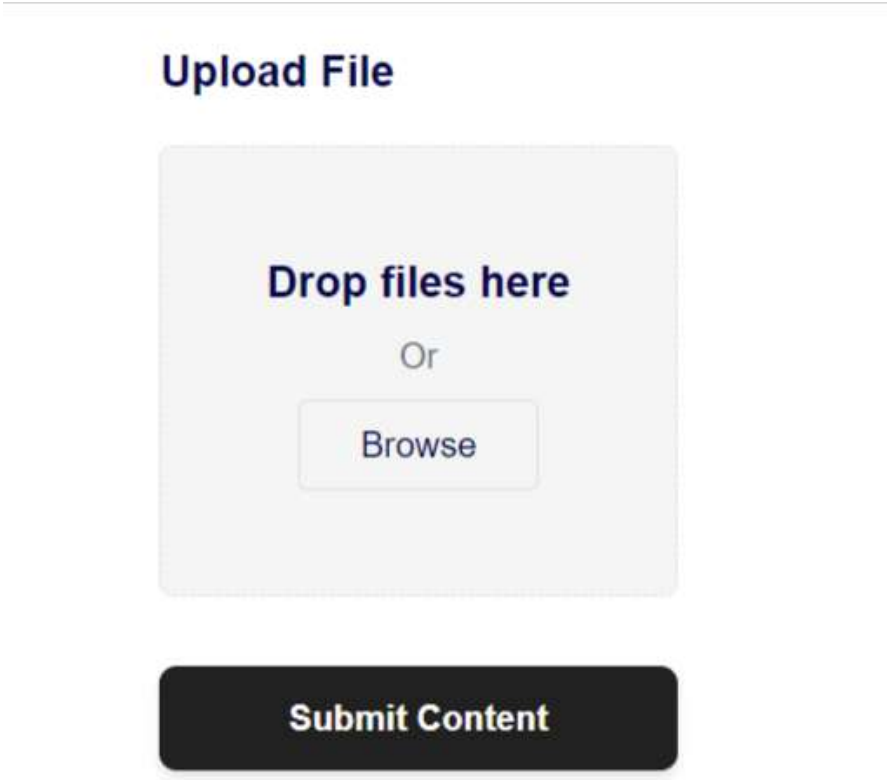


Figure 65 upload file page

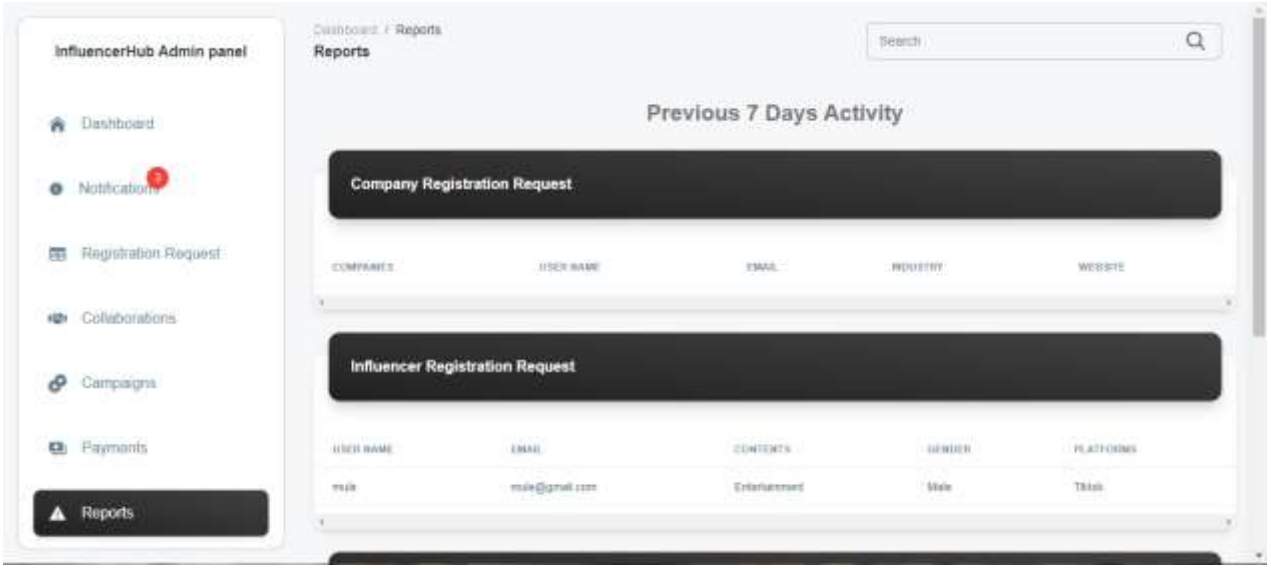


Figure 66 upload file page

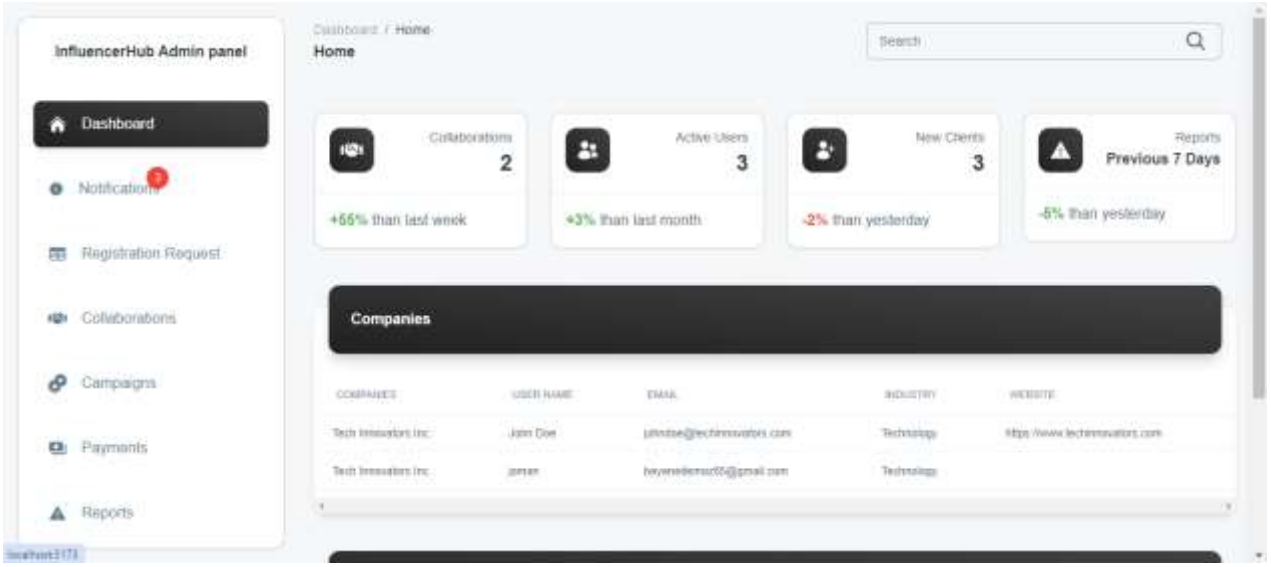


Figure 67 Admin home

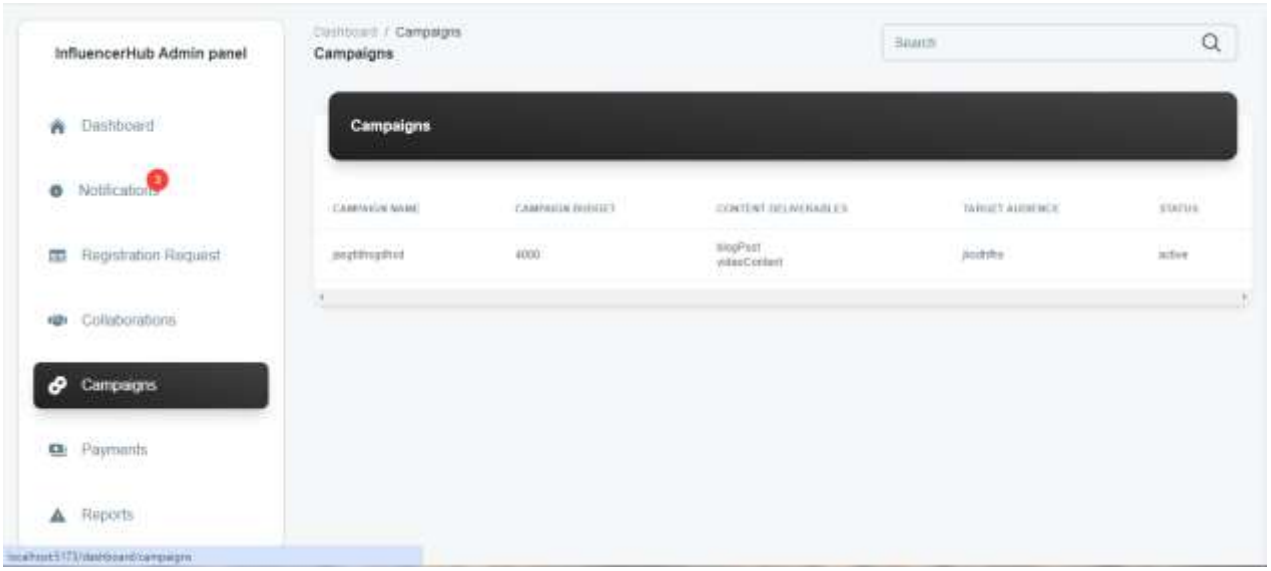


Figure 68 admin campaigns

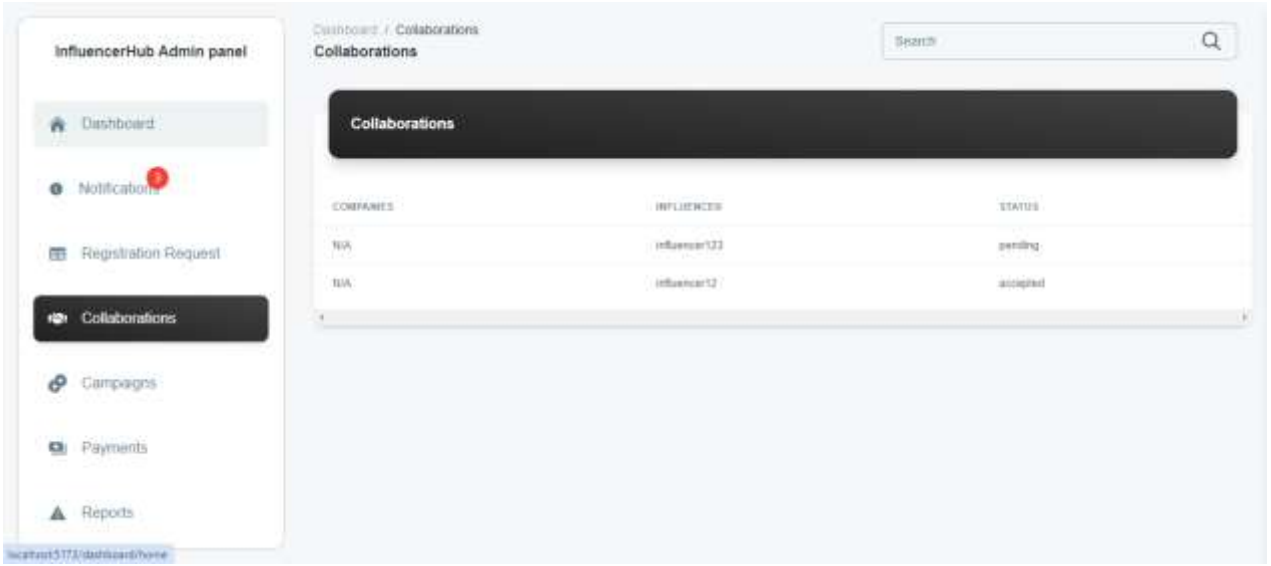


Figure 69 admin collaborations

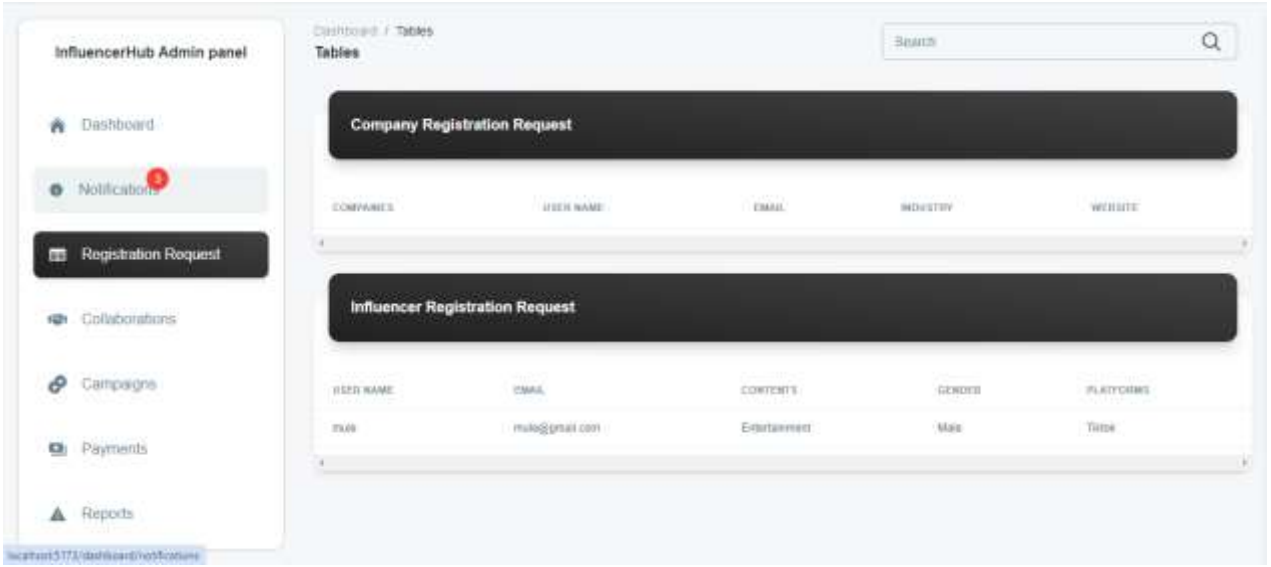


Figure 70 admin registration request

Figure 71 Report page

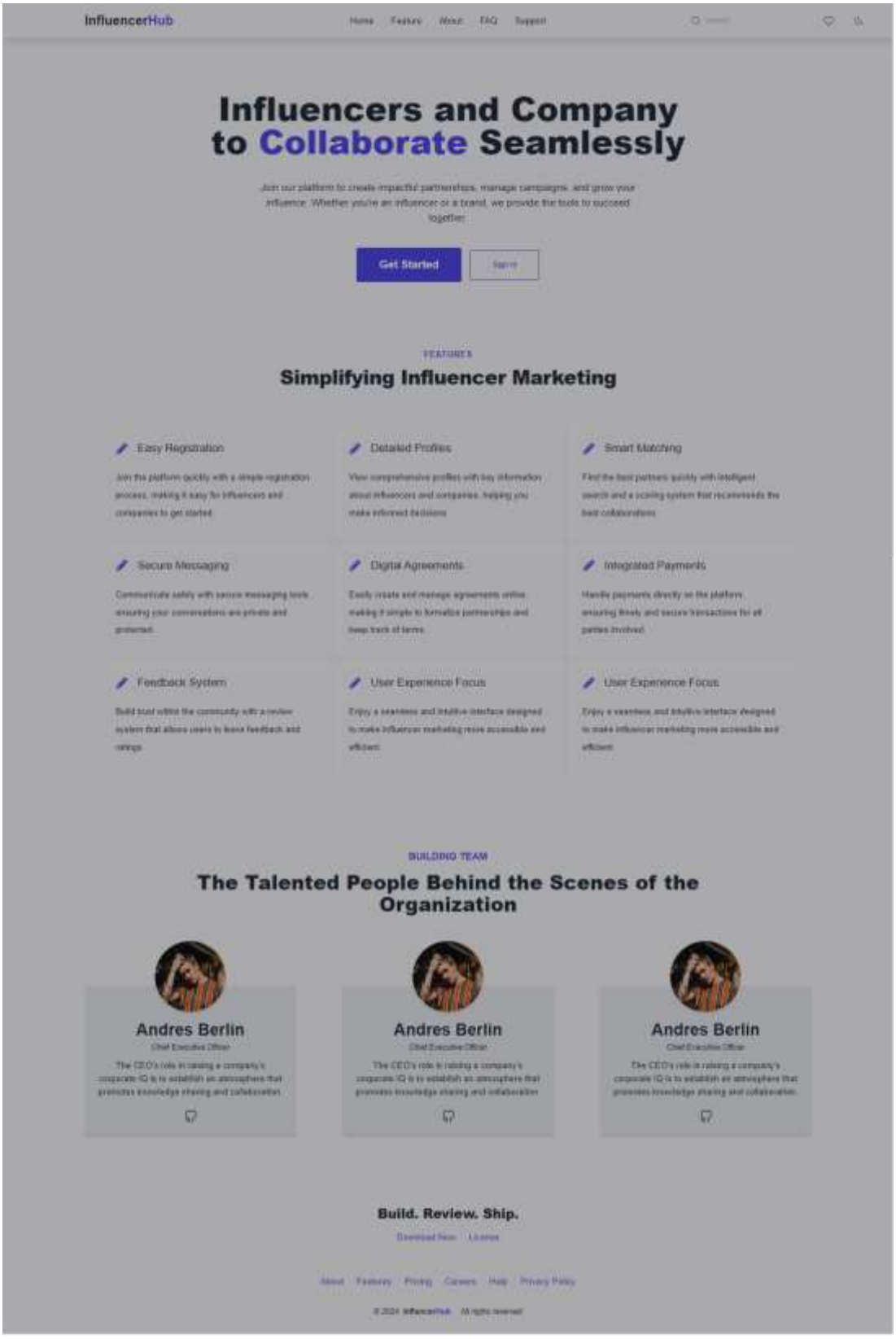


Figure 72 Home Page

4.5.4 Deployment Diagram

Deployment diagrams are used to represent the relationships between the hardware components used in the physical infrastructure of an information system. For example, when designing a distributed information system that will use a wide area network, a deployment diagram can be used to show the communication relationships among the different nodes in the network. They also can be used to represent the software components and how they are deployed over the physical architecture or infrastructure of an information system. In this case, a deployment diagram represents the environment for the execution of the software (Dennis et al., 2024, p. 432).

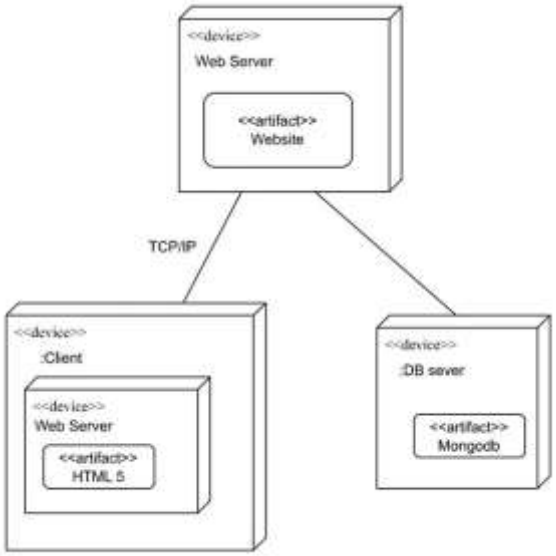


Figure 73 deployment diagram page

4.5.5 Network Diagram

A network diagram is a visual representation of your computer or telecommunications networks. These diagrams are also referred to as computer network diagrams. The diagram focuses on components and connections within a network. These connections form between linked devices, data, and interaction points called nodes.

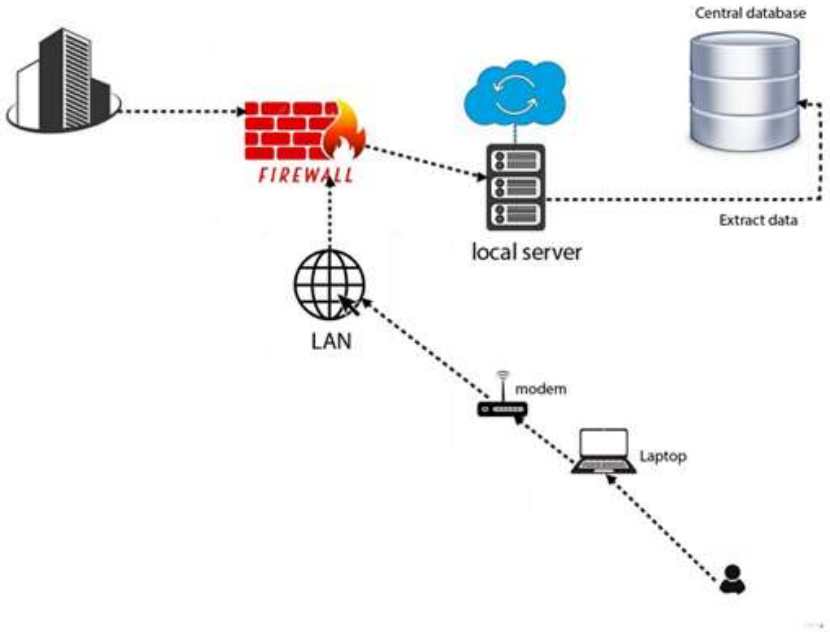


Figure 74 network diagram

Chapter Five - Implementation

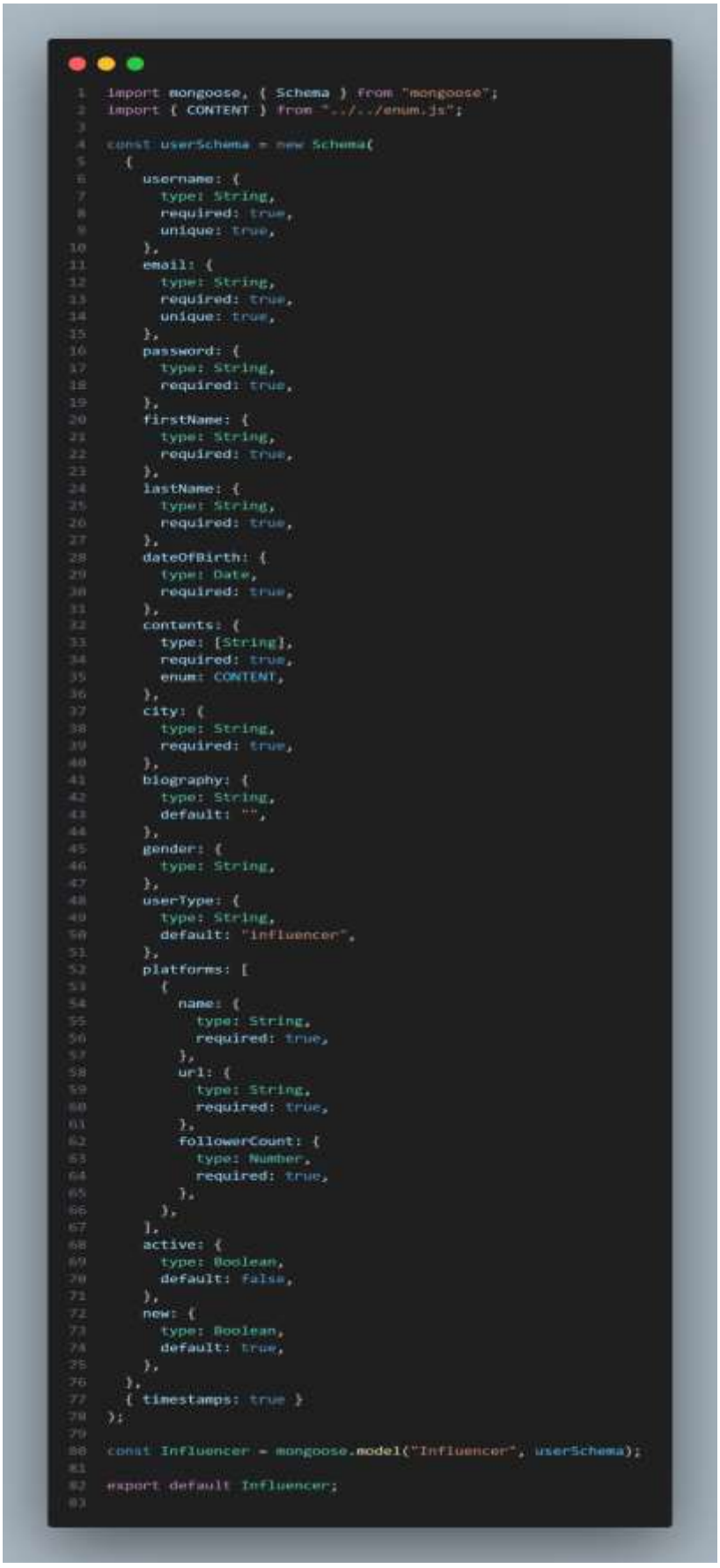
5.1 Introduction

During implementation, developers translate the solution domain model into source code. This includes implementing the attributes and methods of each object and integrating all the objects such that they function as a single system. The implementation activity spans the gap between the detailed object design model and a complete set of source code files that can be compiled.

5.2 Sample Code

```
import express from "express";

import mongoose from "mongoose";
import cookieParser from "cookie-parser";
import "dotenv/config";
import authRouter from "./routes/auth.route.js";
import userRouter from "./routes/user.route.js";
import searchRouter from "./routes/search.route.js";
import collaborationRouter from "./routes/collaboration.route.js";
import messageRouter from "./routes/message.route.js";
import conversationRouter from "./routes/conversation.route.js";
import paymentRouter from "./routes/payment.route.js";
import campaignRouter from "./routes/campaign.route.js";
import agreementRouter from "./routes/agreement.route.js";
import contentRouter from "./routes/content.route.js";
import transferRouter from "./routes/transfer.route.js";

import cors from "cors";
import { app, server } from "./socket/socket.js";

const PORT = process.env.PORT || 5000;

// Connect to MongoDB
mongoose
  .connect(process.env.MONGO_DB_URL)
  .then(() => console.log("Connected to MongoDB"))
  .catch((err) => console.error("Could not connect to MongoDB", err));

// Middleware
app.use(cors());
app.use(express.json());
app.use(cookieParser());

// API Routes
app.get("/", (req, res) => {
  res.send("Hello World!");
});

app.use("/api/auth", authRouter);
app.use("/api/user", userRouter);
app.use("/api/influencers", searchRouter);
app.use("/api/collaborations", collaborationRouter);
app.use("/api/messages", messageRouter);
app.use("/api/conversations", conversationRouter);
app.use("/api/payments", paymentRouter);
app.use("/api/campaigns", campaignRouter);
app.use("/api/agreements", agreementRouter);
app.use("/api/contents", contentRouter);
app.use("/api/transfers", transferRouter);

// Error handling middleware
app.use((error, req, res, next) => {
  const statusCode = error.statusCode || 500;
  res.status(statusCode).json({
    success: false,
    statusCode,
    message: error.message || "Server error",
  });
});

// Start the server
server.listen(PORT, () => {
  console.log(`Server running on port ${PORT}`);
});
```

```
import jwt from "jsonwebtoken";
import { errorHandler } from "./error.js";
import Influencer from "../models/user/influencer.model.js";
import Company from "../models/user/company.model.js";

export const verifyToken = (req, res, next) => {
  const token = req.cookies.access_token;

  if (!token) return next(errorHandler(401, "Unauthorized"));

  jwt.verify(token, process.env.JWT_SECRET, async (err, decoded) => {
    if (err) return next(errorHandler(401, "Unauthorized"));

    // Assuming the decoded token includes userId
    const userId = decoded.userId;

    // Retrieve user model (Influencer or Company)
    let userModel;
    const influencer = await Influencer.findById(userId);
    if (influencer) {
      userModel = "Influencer";
    } else {
      const company = await Company.findById(userId);
      if (company) {
        userModel = "Company";
      } else {
        return next(errorHandler(404, "User not found"));
      }
    }

    req.user = { userId, model: userModel };
    next();
  });
};

```



```
import mongoose, { Schema } from "mongoose";
import { CONTENT } from "../../enum.js";

const userSchema = new Schema(
  {
    username: {
      type: String,
      required: true,
      unique: true,
    },
    email: {
      type: String,
      required: true,
      unique: true,
    },
    password: {
      type: String,
      required: true,
    },
    firstName: {
      type: String,
      required: true,
    },
    lastName: {
      type: String,
      required: true,
    },
    dateOfBirth: {
      type: Date,
      required: true,
    },
    contents: {
      type: [String],
      required: true,
      enum: CONTENT,
    },
    city: {
      type: String,
      required: true,
    },
    biography: {
      type: String,
      default: "",
    },
    gender: {
      type: String,
    },
    userType: {
      type: String,
      default: "influencer",
    },
    platforms: [
      {
        name: {
          type: String,
          required: true,
        },
        url: {
          type: String,
          required: true,
        },
        followerCount: {
          type: Number,
          required: true,
        },
      },
    ],
    active: {
      type: Boolean,
      default: false,
    },
    new: {
      type: Boolean,
      default: true,
    },
  },
  { timestamps: true }
);

const Influencer = mongoose.model("Influencer", userSchema);

export default Influencer;
```

Figure 75 sample code

Chapter Six - Conclusion and Recommendation

6.1 Conclusion

In conclusion, our project is complete as of July 16, 2024. We've made a platform that helps companies and influencers work together for marketing. We focused on making it easy to use and useful for both influencers and companies. The platform has real-time messaging and notifications to keep users engaged. Companies can find the right influencers easily.

We faced challenges with integrating the payment system due to specific requirements, like needing a TIN number.

6.2 Recommendations

For future projects like this, we suggest:

- Do thorough research and planning, especially for complex things like payment systems, to make the process smoother.
- Have dedicated resources to the project for better results.
- Get advice from experts in the industry to make new ideas work well.
- Start talking to payment service providers early to understand what's needed, like getting a TIN number, to avoid delays.

Future project research could look at how influencer marketing affects companies over time. Also, making the platform more secure and private will help users trust it.

Improving the platform with better analytics, AI-driven influencer suggestions, and better collaboration tools will help it meet changing market needs.

By following these suggestions, future projects can build on our work and make the Influencer Hub platform even better.

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