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**Design and Implementation of a Creative
and Intelligent Content Generation
Platform - Genie**

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Dedication

From the bottom of my heart, I dedicate this work to all the people who are dear and have played an essential role in my journey.

To my dear father

I thank you from the depths of my being for everything you have done for me. Your wise advice, your constant support and your unconditional love have been a source of strength and motivation. I am glad to have a father as wonderful as you are.

To my dear mother

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To all my cherished friends and relatives

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LIST OF ABBREVIATIONS

CSS Cascading Style Sheets

E2E End To End

HTML HyperText Markup Language

HTTP Hypertext Transfer Protocol

IDM Internet Download Manager

JS JavaScript

ORM Object Relation Mapping

PDF Portable Document Format

SEO Search Engine Optimization

UML Unified Modeling Language

VIPER View Interactor Presenter Entity Router

GENERAL INTRODUCTION

In today's ever-evolving digital world, **content creation** has become a fundamental pillar for individuals and businesses seeking to communicate, share ideas, and engage their audience. However, creating various types of content such as images, videos, music, and websites can be a complex and time-consuming process for many users.

It is within this context that our project, named "Genie" emerges.

Genie represents an innovative solution to this challenge by offering a comprehensive content generation platform. Our primary objective is to provide users with a seamless and intuitive experience, while giving them the ability to create and share various types of content without the usual technical constraints.

This report will detail the different components and features of Genie, as well as the technologies used for its design and development. We will also examine the methodologies adopted throughout the process, highlighting our approach to ensuring quality, security, and reliability of the platform.

Through this project, we aim to create a versatile and accessible solution that meets the diverse needs of users, whether they are individuals looking to express their creativity or professionals seeking to streamline their content creation process. By combining technological innovation and user-friendliness, Genie aspires to become an indispensable tool in the modern digital landscape.

In the following sections, we will delve deep into the various facets of our project, showcasing its potential contributions to enhancing user experience and facilitating online content creation.

This report will be divided into three chapters, each focusing on a specific phase of the development process:

- **Chapter 1 : "Project Overview And Requirements Analysis"** In this chapter, we will start by providing the preliminary study presenting the general context of our project, describing the hosting organization, the initial constraints, and the methodology adopted to successfully carry out our solution. We will later provide

a detailed analysis and requirements specifications, along with sprint planning for each release. Additionally, we will describe the technologies chosen for the implementation of our application, as well as the hardware and software environment required.

- **Chapter 2 : "Release 1: Genie Tools"** This chapter will be dedicated to the first phase of development of our solution. We will detail the content of each sprint in the first release, covering all stages from the initial analysis to the concrete implementation of the planned features. Each release will consist of three sprints, and each sprint will encompass key development activities such as planning, design, implementation, and review.
- **Chapter 3 : "Release 2: Genie Developer"** This chapter will be focused on the second phase of our solution's development. We will outline the content of each sprint within this release, detailing the ongoing development and enhancement of features. Each release will consist of three sprints, and each sprint will include comprehensive activities such as planning, design, implementation, and review.

Finally, we will conclude by summarizing the overall progress and achievements of our project, reflecting on the challenges faced, and discussing potential future improvements and developments.

CHAPTER 1

PROJECT OVERVIEW AND REQUIREMENTS ANALYSIS

Introduction

Before diving into the detailed examination of our project, this introductory chapter seeks to offer a succinct overview of the organization hosting our internship. Following this, we will critically analyze the current existing solutions to reveal our proposed solution. Finally, we will allocate the last section to present the methodology adopted for managing this work. This chapter will delve into the technical and functional dimensions of our project. Its aim is to outline the functional and non-functional requirements, identify the stakeholders, and populate our product backlog to organize our project into sprints. Additionally, we will define the architectures to be adopted during the development of our application.

1.1 Presentation Of The Hosting Organization

The project took place within the company HAFCOM [1], a Tunisian-based company specializing in offshore software development across various industries. HAFCOM focuses on delivering personalized software solutions tailored to each organization's specific needs. Their services include consultancy, analysis, offshore custom software development, support, and maintenance. Leveraging cutting-edge technologies, HAFCOM provides adaptable solutions that seamlessly integrate into any environment, meeting the evolving demands of modern businesses.

1.2 Project Presentation

1.2.1 Project Context

This project is part of the final study program aiming to obtain the Bachelor's Degree in Computer Science from the Higher Institute of Computer Science and Mathematics of Monastir. The project is carried out within the company HAFCOM.



Figure 1.1: Logo HAFCOM

1.2.2 Problem Statement

In the realm of content creation, users often encounter challenges in generating diverse and engaging content across various mediums, including images, videos, music, and websites. The manual creation process can be time-consuming and complex, requiring users to gather information from multiple sources and navigate through technical complexities to produce high-quality content.

Moreover, businesses and content creators struggle to effectively engage with their audience and capture leads for their products or services. Traditional lead generation methods may be ineffective or lack personalization, resulting in lower conversion rates and missed opportunities.

Furthermore, the need for an online presence through websites has become increasingly crucial for individuals and businesses alike. However, the process of website creation often involves technical barriers and requires expertise in coding, design, and resource allocation, making it inaccessible for many users. Additionally, traditional website development processes can be costly in terms of both time and financial resources, further limiting accessibility for individuals and small businesses with limited budgets.

In addition to these challenges, there is a growing demand for intelligent assistance and guidance in content creation and lead generation. Users require a platform that not only streamlines the content creation process but also offers intelligent features such as chatbots trained to provide relevant information and engage with users in real-time.

1.2.3 Project Purpose

The Genie platform aims to revolutionize and redefine content creation by providing users with a comprehensive suite of tools tailored to their creative needs and requirements. Built around several key features, the platform is designed to empower users to effortlessly generate engaging content across various mediums.

The platform offers a seamless solution for creating diverse content, including images, videos, music, catering to the unique preferences and requirements of each user. By integrating intelligent algorithms and advanced technologies, Genie enables users to streamline the content creation process, saving time and effort.

In addition to content creation capabilities, Genie provides innovative conversation features, including interactions and discussions based on PDF inputs, allowing users to engage in meaningful conversations and explore content in depth.

Furthermore, Genie enhances user experience with the inclusion of a dedicated chatbot for guidance and assistance, ensuring users have access to instant support whenever needed.

However, the standout feature of Genie is its groundbreaking web generation capability, allowing users to easily create and customize websites tailored to their specific needs. This feature sets Genie apart from other platforms, enabling users to establish a professional online presence quickly and efficiently.

In summary, the primary goal of Genie is to empower users with intuitive tools for content creation, engaging conversations, lead magnet generation, and revolutionary web generation capabilities, ultimately transforming the way users interact with digital content and establish their online presence.

1.2.4 Market Analysis

Before embarking on a solution, it is essential to conduct a study of the existing landscape, followed by a critical assessment to identify constraints to adhere to and detect weaknesses in existing applications.

1.2.4.1 Existing Solutions

Numerous solutions exist globally for conversational platforms and PDF-based discussions, catering to various industries and user needs. However, before the inception of our idea, website generation tools were not prevalent in the market. Interestingly, as we began developing this feature, we observed the emergence of innovative solutions tailored to web generation, indicating a growing demand and trend in the market.

Code Generation And Conversational Platforms:

- **ChatGPT Of Open IA:** ChatGPT [3] is an online platform that provides conversational artificial intelligence capabilities, allowing users to interact with virtual assistants or chatbots. These assistants are capable of understanding and generating natural language, thereby facilitating human-like interactions.



Figure 1.2: Logo Open IA

- **Claude IA** : Claude IA [4] is an AI-powered conversational platform, providing natural and personalized interactions.

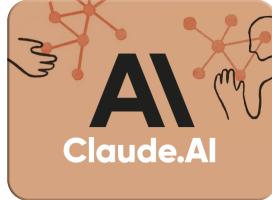


Figure 1.3: Logo Claude.IA

- **Gemini**: Gemini[5] is an AI-powered conversational and code generation platform. It enables natural interactions with virtual assistants while offering automated code generation capabilities.



Figure 1.4: Logo Google Gemini

- **POE** : POE [3] is a robust online platform offering conversational artificial intelligence features. It utilizes multiple bots like GPT, Claude, Gemini, among others, to enable users to engage with virtual assistants or chatbots.



Figure 1.5: POE

- **Perplexity IA** : Perplexity IA [6] is a versatile conversational platform powered by artificial intelligence, designed to facilitate seamless interactions between users and virtual assistants or chatbots.



Figure 1.6: Logo Perplexity IA

Image Generation Platforms:

- **Copilot** : Copilot [7] is an innovative platform specializing in image generation. Through advanced algorithms and intuitive interfaces, Copilot empowers users to create stunning visuals effortlessly.



Figure 1.7: Logo Copilot

- **Midjourney** : Midjourney [8] is a cutting-edge image generation platform designed to empower users in creating captivating visuals effortlessly. With its intuitive interface and advanced algorithms, MidJourney streamlines the image creation process, catering to both individuals and businesses.



Figure 1.8: Logo Midjourney IA

- **Leonardo** : Leonardo[9] is an image generation platform utilizes state-of-the-art AI algorithms to facilitate seamless and dynamic visual content creation.



Figure 1.9: Logo Leonardo IA

Video Generation Platforms:

- **Sora** : Sora [10] Open AI is an innovative video generation platform that harnesses the power of artificial intelligence to facilitate the creation of dynamic and engaging video content.



Figure 1.10: Logo Sora IA

- **VEED IO** : VEED IO [11] is a versatile online video editing platform that offers a wide range of features for editing and enhancing video content.



Figure 1.11: Logo VEED IO

Music Generation Platforms:

- **Replicate AI** : Replicate AI [12] is an innovative platform that utilizes artificial intelligence to assist users in generating videos and audio. It offers advanced algorithms that can replicate the style and tone of existing content or create entirely new content based on user input.



Figure 1.12: Logo Replicate IA

PDF Conversation Platforms :

- **PDF IA** : PDF IA [13] is a specialized AI-driven platform dedicated to PDF document management and conversion tasks.



Figure 1.13: Logo PDF IA

- **ChatPDF** : ChatPDF [14] is an innovative platform that combines the convenience of chat-based communication with PDF document management functionalities.



Figure 1.14: Logo ChatPDF

Lead Magnet Platforms :

- **CoachVox IA**: CoachVox IA [15] is an innovative platform that offers lead magnet generation capabilities to help businesses attract and engage potential customers effectively.



Figure 1.15: Logo CoachVox IA

Website Platforms :

- **Shopify** : Shopify [16] is an e-commerce platform that enables businesses to create and manage online stores. It provides a set of tools for building and customizing websites.



Figure 1.16: Logo Shopify

- **10Web.io** : With 10Web.io[17] users can create professional-looking websites using customizable templates and intuitive drag-and-drop editors.



Figure 1.17: Logo 10Web.io

- **Hostinger.fr**: Hostinger.fr[18] offers a user-friendly website builder alongside its hosting services.



Figure 1.18: Logo Hostinger.fr

- **Web.com:** Web.com [19] is a comprehensive website building platform that caters to businesses of all sizes, offering easy-to-use tools and templates to create professional websites.



Figure 1.19: Logo Web.com

In summary, While all these tools operate separately and often come with high costs, Genie revolutionizes the game by offering an all-in-one solution at a fraction of the price, free trials, and a comprehensive feature set.

1.2.4.2 Critique Of Existing Solutions

We have identified four (4) criteria to consider when comparing and evaluating applications. Each criterion will be explained, and the method for calculating performance using metrics will be detailed:

- **Metrics:** Metrics are measurements used to evaluate various aspects of the criteria, providing objective data for evaluation and comparison.
- **Scoring System:** Each metric undergoes tests and then evaluated by a score which is divided between tests equally. If the test is passed it adds a $1/n$ point to the score of the metric, with n being the number of tests.

• **Website Design :** Website design plays a crucial role in the success of the platform. It encompasses various aspects such as user interface (UI), user experience (UX), and visual appeal, all of which contribute to the overall usability and effectiveness of the website.

- **Metrics:** There are nine (9) metrics under website design, encompassing various aspects.

1. Usability:

- **Intuitiveness:** Evaluates how easily users can navigate through the site and find the information they need.
- **Clarity:** Assesses the clarity and organization of the layout to ensure effective guidance for users.
- **Consistency:** Determines whether design elements maintain consistency across different pages for a cohesive user experience.

2. Visual Design:

- **Aesthetics:** Evaluates whether the design is visually appealing and resonates with the target audience.
- **Typography:** Assesses the legibility and appropriateness of text styles for readability.

- **Color Scheme:** Determines if the chosen color palette is appropriate and evokes the intended emotions or associations.

3. Accessibility:

- **Disability Access:** Evaluates whether the website is accessible to users with disabilities, including those who rely on screen readers or keyboard navigation.
- **Contrast Levels:** Assesses whether the contrast levels are adequate to ensure readability for all users, especially those with visual impairments.

4. Responsiveness:

- **Device Adaptability:** Assesses how well the website adjusts to various devices and screen sizes, particularly evaluating its mobile-friendliness.
- **Loading Speed:** Evaluates the website's loading speed, especially on slower internet connections, to ensure optimal user experience.

5. Content Quality:

- **Relevance, Accuracy, And Timeliness:** Evaluates whether the content is pertinent, precise, and current.
- **Effective Use Of Visuals:** Assesses how well visuals such as images and videos are employed to enrich the content.

6. Interactivity:

- **Engagement:** Assesses whether the website effectively engages users through interactive elements like forms, quizzes, or animations.
- **Responsiveness And Intuitiveness:** Evaluates the responsiveness and intuitiveness of interactive elements, ensuring they are user-friendly and easy to navigate.

7. Brand Consistency:

- **Reflecting Brand Identity:** Assesses whether the design elements reflect the brand's identity, including its values, tone, and visual style.
- **Consistency In Branding:** Evaluates the consistency of logos, colors, and other branding elements throughout the website.

8. Conversion Optimization:

- **Encouraging Desired Actions:** Measures how effectively the design encourages users to take desired actions, such as making a purchase or signing up for a newsletter.
- **Prominence Of CTAs:** Assesses the prominence and clarity of calls-to-action (CTAs) throughout the website.

9. Performance:

- **Speed And Reliability:** Evaluates the website's speed and reliability, checking for any broken links or errors.
- **SEO Performance:** Assesses how well the website performs in terms of search engine optimization (SEO), ensuring it ranks well on search engine results pages.

• **Availability:** The availability of a website is a crucial factor in its success. Regardless of the size of competitors, if a website is not accessible in our region, it cannot compete effectively.

– **Metrics:** There are two (2) metrics under availability, focusing on different aspects.

1. **Region Accessibility:** This metric evaluates whether the website is accessible in our region (Tunisia).

2. **Features Accessibility:** This metric assesses whether all website features, such as payments and products, are accessible in our region (Tunisia).

• **Functionalities & Performance:** Performance is a crucial aspect to ensure competitiveness.

– **Metrics:** There are six (6) metrics under this section, focusing on different aspects.

1. Conversation And Code Generation:

– **Article Creation:** Tests whether generated articles require modifications before publication.

– **Bio:** Focuses on generating accurate bios for individuals, particularly in disambiguation queries.

– **Commercial:** Assesses the quality and breadth of information provided for commercial queries.

– **Disambiguation:** Evaluates the ability to distinguish between individuals with similar names.

– **Informational:** Tests how well and accurate tools provide information.

– **Medical:** Evaluates the accuracy and guidance provided for medical queries.

– **Article Outlines:** Determines the suitability of generated article outlines for further refinement.

– **Local:** Assesses the ability to provide information on the closest store for transactional queries.

– **Content Gap Analysis:** Analyzes existing URLs and recommends improvements in content.

2. PDF Conversation:

– **Text Accuracy:** Verify if the converted text maintains accuracy from the original PDF.

– **Formatting Preservation:** Ensure the converted document retains the original formatting.

– **Speed And Efficiency:** Evaluate the speed and efficiency of the conversion process.

– **Multi-Language Support:** Ensure the model supports PDFs in multiple languages.

3. Image And Video Generation:

– **Image Creation:** Tests whether the generated images and videos require modifications before use, including quality, accuracy, and relevance.

- **Portrait:** Focuses on generating accurate and recognizable portraits of individuals, particularly in cases where the individual is a public figure or the image and video is intended for identification purposes.
- **Commercial Use:** Assesses the quality and versatility of generated images and videos for commercial purposes, such as advertisements, product images, and marketing materials.
- **Disambiguation:** Evaluates the ability to generate distinct images and videos for individuals or objects with similar names or descriptions, ensuring clarity and correct representation.
- **Appropriateness:** Tests how well the model avoids generating offensive or inappropriate content upon request, ensuring adherence to ethical guidelines.
- **Medical:** Evaluates the accuracy and utility of generated medical images and videos, such as anatomical diagrams or illustrations for educational purposes.
- **Local Scenes:** Assesses the ability to generate images of specific local scenes, such as landmarks, street views, or local stores, ensuring relevance and accuracy.

4. Music Generation:

- **Musical Quality:** Verify if the generated music meets quality standards and provides an enjoyable listening experience.
- **Creativity And Originality:** Assess the creativity and originality of the generated music.
- **Instrumental Realism:** Assess the realism of the generated music in terms of instrumental sounds.
- **Emotional Conveyance:** Evaluate the ability of the generated music to convey specific emotions or moods.

5. Lead Magnet Generation:

- **Lead Magnet Creation:** Tests whether the generated lead magnet does and shows exactly what it was made for.
- **Design and Format:** Ensure the generated lead magnets are visually appealing and well-formatted.
- **Disambiguation:** Evaluates the ability to generate distinct images and videos for individuals or objects with similar names or descriptions, ensuring clarity and correct representation.
- **Call to Action (CTA):** Assess the effectiveness of the call-to-action elements in the lead magnets.

6. Website Generation:

- **Agency Creation:** Tests whether the user can create a functional agency within the website generation.
- **E-Commerce Website Creation:** Tests whether the user can create an E-Commerce website within the website generation.
- **Portfolio:** Tests whether the user can create a Portfolio within the website generation.

- **Functionality & Cost:** This criterion evaluates the capabilities of the website's services to their cost. It could be a determining factor for customers decisions.

–**Metrics:** There are two (7) metrics under this section one for each feature, focusing on different aspects:

1. Conversation & Code Generation
2. PDF Conversion
3. Image Generation
4. Video Generation
5. Music Generation
6. Lead Magnet Generation
7. Website Generation

1.2.4.3 Comparing Solutions

In this comparative analysis, we will evaluate various solutions in the context of critical criteria, with Genie serving as the benchmark for comparison. Each criterion, will be systematically assessed against Genie's performance. This approach aims to provide a comprehensive understanding of how alternative solutions measure up against Genie across the board.

1. Website Design:

We'll assign a numerical value to assess the design quality.

Platform	Usability			score
	Intuitiveness	Clarity	Consistency	
Genie	✓	✓	✓	1
ChatGPT	✓	✓	✓	1
Claude AI	✓	✓	✓	1
Gemini	✓	✓	✓	1
Poe	✓	✓	✓	1
Perplexity	✓	✓	✓	1
Copilot	✓	✓	✓	1
Midjourney	✓	✓	✓	1
Leonardo	✓	✓	✓	1
Sora		✓	✓	0.66
Replicate		✓	✓	0.66
Veed.io	✓	✓	✓	1
PDF.ai	✓	✓	✓	1
ChatPDF	✓	✓	✓	1
CoachVox		✓	✓	0.66
Shopify	✓	✓	✓	1
10Web	✓	✓	✓	1
Hostinger	✓	✓	✓	1
Web.com	✓	✓	✓	1

Table 1.1: Competitor Comparison By Website Usability

Platform	Visual Design			score
	Aesthetics	Typography	Color Scheme	
Genie	✓	✓	✓	1
ChatGPT	✓	✓	✓	1
Claude AI	✓	✓	✓	1
Gemini	✓	✓	✓	1
Poe	✓	✓	✓	1
Perplexity	✓	✓	✓	1
Copilot	✓	✓	✓	1
Midjourney	✓	✓	✓	1
Leonardo	✓	✓	✓	1
Sora	✓	✓	✓	1
Replicate	✓	✓	✓	1
Veed.io	✓	✓	✓	1
PDF.ai	✓	✓	✓	1
ChatPDF		✓	✓	0.66
CoachVox	✓	✓	✓	1
Shopify	✓	✓	✓	1
10Web	✓	✓	✓	1
Hostinger	✓	✓	✓	1
Web.com		✓		0.33

Table 1.2: Competitor Comparison By Website Visual Design

Platform	Accessibility		Responsiveness		score
	Disability Access	Contrast Levels	Device Adaptability	Loading Speed	
Genie		✓	✓	✓	1.5
ChatGPT		✓	✓	✓	1.5
Claude AI		✓	✓	✓	1.5
Gemini		✓	✓	✓	1.5
Poe		✓	✓	✓	1.5
Perplexity		✓	✓	✓	1.5
Copilot		✓	✓	✓	1.5
Midjourney		✓	✓		1
Leonardo		✓	✓	✓	1.5
Sora		✓	✓	✓	1.5
Replicate		✓	✓	✓	1.5
Veed.io		✓	✓		1
PDF.IA		✓	✓	✓	1.5

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ChatPDF		✓	✓	✓	1.5
CoachVox		✓			0.5
Shopify		✓	✓	✓	1.5
10Web		✓	✓	✓	1.5
Hostinger		✓	✓	✓	1.5
Web.com		✓	✓	✓	1.5

Table 1.3: Competitor Comparison By Website Accessibility And Responsiveness

Platform	Content Quality		Interactivity		score
	Accuracy	Effective Use of Visuals	Engagement	R&I	
Genie	✓	✓	✓	✓	2
ChatGPT	✓	✓	✓	✓	2
Claude AI	✓				0.5
Gemini	✓	✓	✓	✓	2
Poe	✓	✓			1
Perplexity	✓				0.5
Copilot	✓	✓			1
Midjourney	✓	✓	✓	✓	2
Leonardo	✓	✓	✓	✓	2
Sora	✓	✓	✓	✓	2
Replicate	✓	✓	✓	✓	2
Veed.io	✓	✓	✓		1.5
PDF.IA	✓	✓	✓	✓	2
ChatPDF	✓	✓			1
CoachVox	✓	✓	✓	✓	2
Shopify	✓	✓	✓	✓	2
10Web	✓	✓	✓	✓	2
Hostinger	✓	✓	✓	✓	2
Web.com	✓	✓	✓	✓	2

Table 1.4: Competitor Comparison By Website Content Quality And Interactivity

Platform	Brand Consistency		Conversion Optimization		score
	Reflecting Brand Identity	Consistency in Branding	Encouraging Desired Actions	Prominence of CTAs	
Genie	✓	✓	✓	✓	2
ChatGPT	✓	✓	✓	✓	2
Claude AI	✓	✓	✓	✓	2
Gemini	✓	✓	✓	✓	2
Poe	✓	✓	✓	✓	2
Perplexity	✓	✓	✓	✓	2

Copilot	✓	✓	✓	✓	2
Midjourney	✓	✓	✓	✓	2
Leonardo	✓	✓	✓	✓	2
Sora.IA	✓	✓	✓	✓	2
Replicate	✓	✓	✓	✓	2
Veed.io	✓	✓	✓		1.5
PDF.ai	✓	✓	✓	✓	2
ChatPDF			✓	✓	1
CoachVox	✓	✓	✓	✓	2
Shopify	✓	✓	✓	✓	2
10Web	✓	✓	✓	✓	2
Hostinger	✓	✓	✓	✓	2
Web.com	✓	✓	✓	✓	2

Table 1.5: Competitor Comparison By Website Brand Consistency And Conversion Optimization

Platform	Performance and SEO		score
	Speed and Reliability	SEO Performance	
Genie	✓		0.5
ChatGPT	✓	✓	1
Claude AI	✓	✓	1
Gemini	✓	✓	1
Poe	✓	✓	1
Perplexity	✓	✓	1
Copilot	✓	✓	1
Midjourney	✓	✓	1
Leonardo	✓	✓	1
Sora.IA	✓	✓	1
Replicate	✓	✓	1
Veed.io	✓	✓	1
PDF.ai	✓	✓	1
ChatPDF	✓	✓	1
CoachVox	✓	✓	1
Shopify	✓	✓	1
10Web	✓	✓	1
Hostinger	✓	✓	1
Web.com	✓	✓	1

Table 1.6: Competitor Comparison By Website Performance And SEO

Abbreviations:

- **Use:** Usability

- **VD:** Visual Design
- **Ac:** Accessibility
- **Rs:** Responsiveness
- **CQ :** Content Quality
- **Inter :** Interactivity
- **BC:** Brand Consistency
- **CO:** Conversion Optimization
- **Pr:** Performance

Platform	Metrics									score
	Use	VD	Ac	Rs	CQ	Inter	BC	CO	Pr	
Genie	1	1	0.5	1	1	1	1	1	0.5	8
ChatGPT	1	1	0.5	1	1	1	1	1	1	8.5
Claude AI	1	1	0.5	1	0.5	0	1	1	1	7
Gemini	1	1	0.5	1	1	1	1	1	1	8.5
Poe	1	1	0.5	1	1	0	1	1	1	7.5
Perplexity	1	1	0.5	1	0.5	0	1	1	1	7
Copilot	1	1	0.5	1	1	0	1	1	1	7.5
Midjourney	1	1	0.5	0.5	1	1	1	1	1	8
Leonardo	1	1	0.5	1	1	1	1	1	1	8.5
Sora	0.66	1	0.5	1	1	1	1	1	1	8.16
Replicate	0.66	1	0.5	1	1	1	1	1	1	8.16
Veed.io	1	1	0.5	0.5	1	0.5	1	0.5	1	7
PDF.ai	1	1	0.5	1	1	1	1	1	1	8.5
ChatPDF	1	0.66	0.5	1	1	0	0	1	1	6.16
CoachVox	0.66	1	0.5	0	1	1	0	1	1	6.16
Shopify	1	1	0.5	1	1	1	1	1	1	8.5
10Web	1	1	0.5	1	1	1	1	1	1	8.5
Hostinger	1	1	0.5	1	1	1	1	1	1	8.5
Web.com	1	0.33	0.5	1	1	1	1	1	1	7.83

Table 1.7: Competitor Comparison By Metrics : Website Design

2. Availability:

This criterion evaluates the accessibility of the solutions.

Platform	Region Accessibility	Features Accessibility	score
Genie	✓	✓	1
ChatGPT	✓	✓	1
Claude AI		✓	0.5
Gemini	✓	✓	1
Poe	✓	✓	1
Perplexity	✓	✓	1

Copilot	✓	✓	1
Midjourney	✓	✓	1
Leonardo	✓	✓	1
Sora	✓		0.5
Replicate	✓		0.5
Veed.io	✓	✓	1
PDF.ai	✓	✓	1
ChatPDF	✓	✓	1
CoachVox	✓	✓	1
Shopify	✓	✓	1
10Web	✓	✓	1
Hostinger	✓	✓	1
Web.com	✓	✓	1

Table 1.8: Competitor Comparison By Metrics : Availability

3. Functionalities & Performance:

This criterion is aimed at evaluating the performance level of each solution across various metrics.

(a) Conversation and Code Generation:

Abbreviations:

- **AC:** Article Creation
- **Com:** Commercial
- **Dis:** Disambiguation
- **Info:** Informational
- **Med:** Medical
- **AO:** Article Outlines
- **CGA:** Content Gap Analysis

Platform	Tests									score
	AC	Bio	Com	Dis	Info	Med	AO	Local	CGA	
Genie	0.776	0.800	0.494	0.765	0.471	0.671	0.765	0.212	0.000	0.55
ChatGPT	0.776	0.800	0.494	0.765	0.471	0.671	0.765	0.212	0.000	0.55
Claude AI	0.422	0.072	0.398	0.277	0.325	0.361	0.747	0.120	0.000	0.30
Gemini	0.619	0.000	0.683	0.587	0.698	0.714	0.651	0.841	0.571	0.59
Poe	0.422	0.072	0.398	0.277	0.325	0.361	0.747	0.120	0.000	0.30
Perplexity	0.747	0.345	0.333	0.483	0.540	0.678	0.609	0.120	0.000	0.42
Copilot	0.747	0.345	0.333	0.483	0.540	0.678	0.609	0.000	0.517	0.47

Table 1.9: Functionalities & Performance Comparison By Metrics: Conversation & Code Generation [20]

(b) PDF Conversation:

Platform	Tests				score
	Text Accuracy	Formatting Preservation	Speed and Efficiency	Multi-Language Support	
Genie	1	1	0.7	1	0.92
ChatGPT	1	1	0.8	1	0.95
Claude AI	1	1	0.8	1	0.95
Poe	1	1	0.7	1	0.92
Perplexity	1	1	0.8	1	0.95
Copilot	1	1	0.8	1	0.95
PDF.ai	1	1	0.8	1	0.95
ChatPDF	1	1	0.8	1	0.95

Table 1.10: Functionalities & Performance Comparison By Metrics: PDF Conversation

(c) **Image And Video Generation:** The Table below shows tests under the image & video generation metric, the table is devided as follows:

- Generate Images and Videos: Genie, Replicate
- Generate Images only: Chatgpt, Gemini, Poe, Perplexity, Copilot, Midjourney, Leonardo
- Generate Video only: Sora, Veed

Abbreviations:

- **IC:** Image Creation
- **Por:** Portrait
- **Com:** Commercial Use
- **Dis:** Disambiguation
- **Appro:** Appropriateness
- **Med:** Medical
- **LS:** Local Scenes

Platform	Tests							score
	IC	Por	Com	Dis	Appro	Med	Ls	
Genie	0.7	0.5	0.6	0.4	0.7	0.7	0.2	0.54
Replicate	0.4	0.3	0.3	0.4	0.1	0.4	0.2	0.30
ChatGPT	0.7	0.5	0.6	0.4	0.7	0.7	0.2	0.54
Gemini	0.6	0.6	0.6	0.5	0.8	0.8	0.5	0.62
Poe	0.5	0.4	0.5	0.4	0.7	0.5	0.2	0.45
Perplexity	0.6	0.4	0.5	0.4	0.7	0.6	0.3	0.5
Copilot	0.5	0.3	0.4	0.3	0.7	0.5	0.3	0.42
Midjourney	0.8	0.7	0.8	0.6	0.5	0.8	0.3	0.64
Leonardo	0.7	0.5	0.6	0.4	0.5	0.5	0.2	0.48

Sora	0.8	0.6	0.7	-	-	-	-	0.70
Veed.io	0.6	0.6	0.6	0.5	0.7	0.4	0.2	0.51

Table 1.11: Functionalities & Performance Comparison By Metrics: Image And Video Generation

(d) Music Generation:

Platform	Tests				score
	Musical Quality	Creativity & Originality	Instrumental Realism	Emotional Conveyance	
Genie	0.4	0.3	0.4	0.2	0.32
Replicate	0.4	0.3	0.4	0.2	0.32

Table 1.12: Functionalities & Performance Comparison By Metrics: Music Generation

(e) Lead Magnet Generation:

Platform	Tests				score
	Lead Magnet Creation	Design & Format	Disambiguation	Call to Action	
Genie	1	0.8	0.5	0.9	0.8
CoachVox	1	0.8	0.7	0.7	0.8
10Web	1	0.7	0.6	0.7	0.75
Hostinger	1	0.7	0.6	0.7	0.75
Web.com	1	0.6	0.6	0.7	0.72

Table 1.13: Functionalities & Performance Comparison By Metrics: Lead Magnet Generation

(f) Website Generation:

Platform	Tests			score
	Agency	Portfolio	E-commerce	
Genie	✓	✓	✓	1
Shopify		✓	✓	0.66
10Web	✓	✓	✓	1
Hostinger	✓	✓	✓	1
Web.com		✓	✓	0.66

Table 1.14: Functionalities & Performance Comparison By Metrics: Website Generation

4. Functionality & Cost:

This criterion evaluates the functional capabilities of each solution to their value. In Tunisia, where accessibility is paramount, Genie stands out by offering easy payment methods that cater to the local population, ensuring that its benefits are accessible to everyone.

(a) Conversation & Code Generation:

Platform	Subscription Cost
Genie	20\$/month
ChatGPT	20\$/month+
Claude AI	20\$/month
Gemini	20\$/month
Poe	20\$/month
Perplexity	20\$/month
Copilot	20\$/month

Table 1.15: Functionality & Cost Comparison By Metrics: Conversation & Code Generation

(b) PDF Conversion:

Platform	Subscription Cost
Genie	20\$/month
ChatGPT	20\$/month+
Claude AI	20\$/month
Gemini	20\$/month
Poe	20\$/month
Perplexity	20\$/month
Copilot	20\$/month
PDF.ai	10\$/month+
ChatPDF	5\$/month

Table 1.16: Functionality & Cost Comparison By Metrics: PDF Conversion

(c) **Image Generation:**

Platform	Subscription Cost
Genie	20\$/month
ChatGPT	20\$/month+
Claude AI	20\$/month
Gemini	20\$/month
Poe	20\$/month
Perplexity	20\$/month
Copilot	20\$/month
Midjourney	10\$/month+
Leonardo	10\$/month+
Replicate	pay-as-you-go

Table 1.17: Functionality & Cost Comparison By Metrics: Image Generation

(d) **Video Generation:**

Platform	Subscription Cost
Genie	20\$/month
Veed.io	20\$/month
Replicate	pay-as-you-go

Table 1.18: Functionality & Cost Comparison By Metrics: Video Generation

(e) **Music Generation:**

Platform	Subscription Cost
Genie	20\$/month
Replicate	pay-as-you-go

Table 1.19: Functionality & Cost Comparison By Metrics: Music Generation

(f) Lead Magnet Generation:

Platform	Subscription Cost
Genie	25\$/month
CoachVox	99\$/month

Table 1.20: Functionality & Cost Comparison By Metrics: Lead Magnet Generation

(g) Website Generation:

Platform	Subscription Cost
Genie	45\$/month+
Shopify	32\$/month+
10Web	20\$/month+
Hostinger	3\$/month+
Web.com	20\$/month+

Table 1.21: Functionality & Cost Comparison By Metrics: Lead Magnet Generation

Conclusion :

After a comprehensive analysis of various criteria against competitors, Genie emerges as the preferred choice. Its superior performance across metrics such as website design, functionality, accessibility, and cost-effectiveness sets it apart.

1.3 Methodological Approach

Methodology serves as a planning tool essential for project implementation. It offers a structured framework and clear directives to efficiently manage our team and ensure smooth progression through the project's different phases.

To successfully navigate the development process and ultimately achieve favorable outcomes, it is crucial to adhere to an appropriate methodology.

Among the various existing methodologies, we can mention the waterfall model (en cascade), typically utilized for simple projects with clear and well-defined requirements from the outset, as well as the V-model, Unified Process, and Agile methodologies (such as Scrum and Extreme Programming), known for their flexibility and suitability for more substantial projects.

The project management discipline encompasses two major methodological branches: agile and traditional.

The Figure 1.20 illustrates a comparative study between these two methodologies.

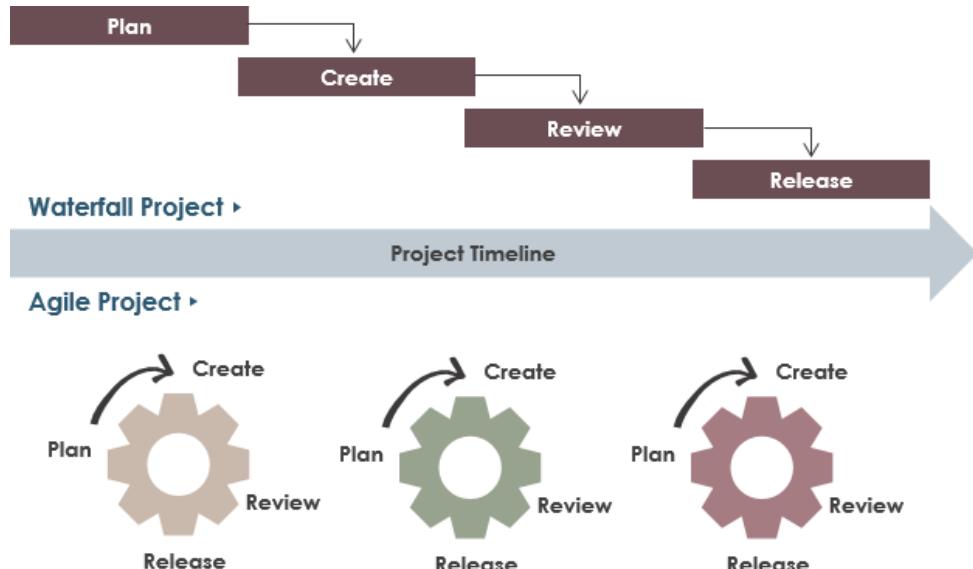


Figure 1.20: Agil Vs Traditional (Waterfall) [21]

Aspect	Agile	Traditional
Process	Iterative and incremental	Sequential and linear
Flexibility	High, welcomes changes	Low, changes are difficult
Customer Involvement	Continuous throughout the project	Limited, mostly at the beginning and end
Documentation	Minimal, just enough to support development	Comprehensive and detailed
Planning	Continuous, adaptive planning	Extensive, upfront planning
Team Structure	Cross-functional, self-organizing	Hierarchical, specialized roles
Risk Management	Ongoing, through iterative feedback	Typically handled in specific phases
Delivery	Frequent, small increments	Single, final product delivery
Change Handling	Built into the process	Formal change control processes
Project Control	Through regular stand-ups and reviews	Through detailed plans and milestones
Quality Control	Integrated into the development process	At the end of the development phase
Cost and Time Estimation	More challenging, flexible	More predictable, but less flexible

Table 1.22: Comparison Of Agile And Traditional Approaches [22]

For the development of Genie, choosing an appropriate methodology is crucial given the project's complexity and ever-evolving nature. We have opted for an incremental and iterative approach over a traditional method, considering the unpredictable nature of our platform's development process and the need for ongoing communication with stakeholders. Among iterative methods emphasizing collaboration and client communication, we have favored the Agile methodology, widely recognized as the most popular and suitable for our context. Agile promotes collaborative development, enabling smooth adaptation to changing end-user needs. By embracing Agile, particularly Scrum, we aim to ensure the quality of the final product while remaining responsive to market changes and user feedback.

Key Benefits of Agile Approach for Genie

- 1. Iterative Improvement:** Since Genie involves complex functionality and user interactions, Agile's iterative and incremental approach allows for continuous im-

provement based on user feedback. This ensures that the final product closely aligns with user needs and expectations.

- Collaboration:** Agile emphasizes collaboration between Scrum Team members. This collaborative environment fosters creativity and innovation, enabling the team to explore new ideas and solutions for Genie.

1.3.1 Scrum Methodology

Scrum is a part of the agile methodology group and is considered a project management framework. It is the most widely used method among other existing agile methodologies. Scrum provides a precise and flexible framework, ideal for innovative or complex projects. The goal of this method is to enhance team productivity and promote dialogue between the client and the service provider to optimize project success.

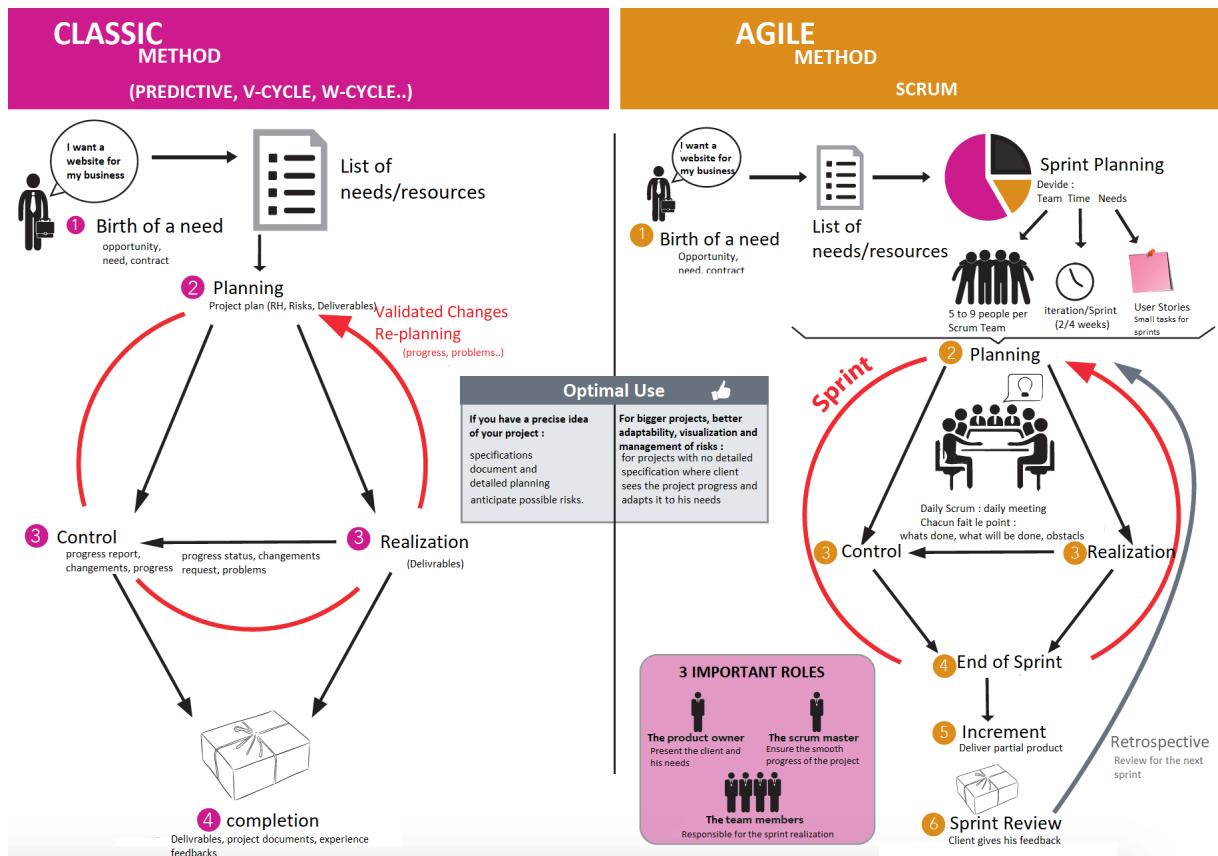


Figure 1.21: Scrum Vs Traditional [23]

The principle of Scrum is to develop software incrementally while maintaining a completely transparent list of features to develop, enhancement requests, or corrections to implement (backlog). With frequent deliveries, the client receives software with new features each time, and in perfect working order.

1.3.2 Scrum Team

The Scrum methodology emphasizes collaboration and fosters better team cohesion, involving three main roles:

The Figure 1.22 provides an overview of a Scrum team's global view.

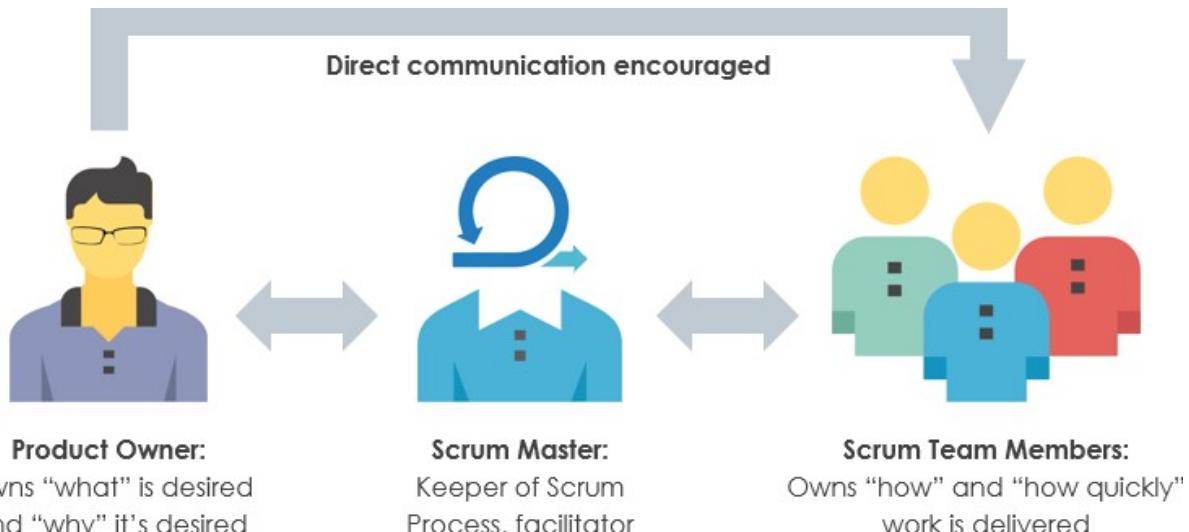


Figure 1.22: Scrum Team [24]

Below are the specific roles within the Genie project:

- **Product Owner:** The Product Owner is the client project team leader responsible for making project orientation decisions. They are the key figure who defines the product requirements. This role is filled by Mr.Chokri Youssef.
- **Scrum Master:** The Scrum Master acts as a coach for both the Product Owner and the development team. They are responsible for ensuring overall coherence and ensuring that Scrum operates effectively. This role is filled by Mr.Taoufik Sakka Rouis, Mr.Chokri Youssef, and Mr.Khalil Youssef.
- **Development Team:** These are the individuals dedicated to carrying out the sprints. A Scrum team is self-organizing. This role is filled by Mr.Taha Yassine Belhaj Ammar.

1.3.3 Scrum Artifacts

- **Product Backlog:** The backlog contains a list that encompasses the requirements imposed by the client and the features implemented in the product.
- **Sprint Backlog:** It comprises a subset of the product backlog containing the features to be implemented during the sprint.
- **Product Increment:** The sum of all features completed during a sprint.

- **Burndown Chart:** It is a graph that visualizes the progress of sprints and the project as a whole.

The Figure 1.23 provides an overview of a Scrum Process.

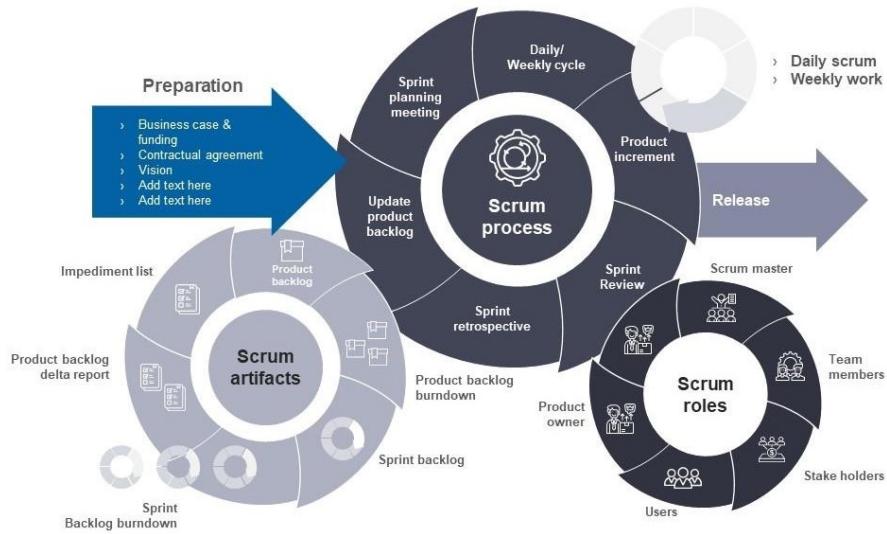


Figure 1.23: Scrum Process

The followings are some key words for the scrum methodology:

1. **Sprints:** Short, focused iterations for delivering increments of the product, typically lasting 1-4 weeks. For Genie a sprint lasts for 3 weeks.
2. **Daily Stand-ups:** Brief meetings to discuss progress, plans, and obstacles.
3. **Sprint Review:** Demonstration of completed work to stakeholders for feedback.
4. **Sprint Retrospective:** Reflection on the sprint to identify improvements.
5. **Releases:** Delivery of potentially shippable increments of the product. For Genie a Release is delivered after 3 sprints.
6. **Incremental Delivery:** Regular delivery of new features and improvements.
7. **Feedback and Adaptation:** Continuous adjustment based on user and stakeholder feedback.

1.3.4 ClickUp In Scrum Methodology

ClickUp is a versatile project management tool that integrates seamlessly with the Scrum methodology. It provides a comprehensive suite of features to support the various aspects of Scrum, including backlog management, sprint planning, task assignment, and progress tracking.

The Figure 1.24 shows the Clickup interface.

Name	Due date	Time estim...	Sprints	Product Feature	Initiative	MoSCoW	Item Type
Authentication	3h	Sprint 1 (01/02...)	Core Product	Security and Management	Must Have	Theme	
Website Navigation	1h	Sprint 1 (01/02...)	Navigation	-	Must Have	-	
Theme	2h	Sprint 1 (01/02...)	Core Product	Increase CSAT	Should Have	-	
Notification	1h	Sprint 1 (01/02...)	Core Product	Increase CSAT	Must Have	-	
Conversation Generation	6h	Sprint 1 (01/02...)	Core Product	-	Must Have	Epic	
Image Generation	3h	Sprint 1 (01/02...)	Core Product	-	Must Have	Epic	
Code Generation	5h	Sprint 1 (01/02...)	Core Product	-	Must Have	Epic	
Video Generation	4h	Sprint 1 (01/02...)	Core Product	-	Must Have	-	
Music Generation	4h	Sprint 1 (01/02...)	Core Product	-	Must Have	-	
PDF Conversation	112h	Sprint 2 (23/02...)	Core Product	-	Must Have	-	
Payment	24h	Sprint 2 (23/02...)	Payment Proce...	-	Must Have	-	
Subscribe	24h	Sprint 2 (23/02...)	-	-	-	-	
Create LandingPage	24h	Sprint 3 (16/03...)	Guest View	-	Must Have	-	
Create FeaturesPage	8h	Sprint 3 (16/03...)	Guest View	-	Should Have	-	
Create PricingPage	8h	Sprint 3 (16/03...)	Guest View	-	Should Have	-	
Create a blog	8h	Sprint 3 (16/03...)	Guest View	Increase SEO	Should Have	-	
Assistance and Support	3h	Sprint 3 (16/03...)	-	-	-	-	
Lead Magnets Generation	168h	Sprint 4 (07/04...)	Core Product	-	Must Have	-	
Agency Creation	168h	Sprint 5 (29/04...)	Guest View	-	Must Have	-	
Agency Automation	56h	Sprint 6 (21/05...)	-	-	Must Have	-	

Figure 1.24: Clickup Interface

Key Features of ClickUp:

- Task Management:** Organize and prioritize tasks using customizable statuses and fields.
- Sprint Planning:** Create sprint backlogs and track sprint progress with burn-down charts and velocity reports.
- Collaboration:** Facilitate team communication and collaboration through comments, attachments, and real-time updates.
- Reporting:** Generate detailed reports on project progress, team performance, and upcoming deadlines.

Using ClickUp helps ensure that all team members are aligned and that project milestones are met efficiently.

1.3.5 Testing In Scrum

Testing is a critical component of the Scrum methodology, aimed at ensuring the quality and functionality of the product. It is integrated into each sprint to provide continuous feedback and identify issues early in the development process.

Types Of Testing In Scrum:

- **Unit Testing:** involves testing individual units (or blocks of code) in isolation. In React, a unit can be a single function, hook, or component.
- **Integration Testing:** involves testing how multiple units work together. This can be a combination of components, hooks, and functions.
- **System Testing:** Validates the complete and integrated software product to evaluate its compliance with the specified requirements.
- **End-to-End (E2E) Testing:** Verifies the entire application workflow from start to finish, ensuring all integrated components work together in a production-like environment.
- **Acceptance Testing:** Conducted by the Product Owner to confirm that the product meets the acceptance criteria and is ready for release.

In our project, we have implemented various types of Scrum tests to maintain high standards of quality and reliability. While unit, integration, and system tests have been essential in identifying and resolving issues at different stages of development, our primary focus has been on End-to-End (E2E) testing.

E2E testing allows us to validate the complete user journey and ensure that all parts of the application interact seamlessly, providing a comprehensive assessment of the application's performance in real-world scenarios.

To achieve this, we have utilized Cypress, a powerful E2E testing framework. It enables us to write and execute robust, reliable tests that simulate real user interactions, ensuring the final product not only meets technical specifications but also delivers a smooth and effective user experience.

1.4 Analysis And Requirement Specification

Throughout this section, we will identify and define the requirements representing the functionalities to be implemented in our application.

1.4.1 Users Identification

An actor is simply a role played by an external person, process, or entity that interacts with a system. For our application, we have identified nine major actors:

- **Guest:** Visitors who access the platform without logging in.
- **User:** Registered users who have basic access to the platform's features.
- **Tools Pro User:** Users with access to advanced tools and features.
- **Dev Pro User:** Users with access to lead magnet generation.
- **Dev Unlimited User:** Users with access to website generation functionalities.
- **Dev Ultimate User:** Users with access to website generation functionalities without limitations for the Genie Tools use.
- **Dev Entreprise User:** Users with access the same functionnalities as Dev Ultimate Users and grant that access to customized team members number.
- **Dev 24/7SupportTeam User:** Users will have access to Genie Support Developers for comprehensive project assistance.
- **Assistant:** Responsible for managing and overseeing the platform, including interactions with users.

1.4.2 Functional Requirements

A functional requirement is a need specifying an action that the system must be capable of performing. Our solution must provide a set of features that meet the needs of our different actors.

- **Guest:**
 - Browse the platform.
 - Consult details.
 - Sign-up to create an account.
- **User:**
 - Log in and log out.
 - Access all features with limitations.
 - Manage account.
 - Subscribe to a specific plan.

- **Tools Pro User:**

- Access all ToolsPro features without limitations.
- Track his use through the dashboard.

- **Dev Pro User:**

- Generate lead magnets with no limitations.
- Track his use through the dashboard.

- **Dev Unlimited User:**

- Access all features for Agency generation with unlimited number of SubAccounts, Funnels and Pipelines.

- **Dev Ultimate User:**

- Access all features available to Dev Unlimited Users.
- Unlimited access to Genie Tools that can be integrated into his Agency.

- **Dev Enterprise User:**

- Access all features available to Dev Ultimate Users.
- Grant the access to additional team members.

- **Dev 24/7 Support Team User:**

- Comprehensive project assistance and consultation from Genie Support Developers.
- Priority issue resolution and troubleshooting.

- **Assistant:**

- assist users and guests in overcoming any difficulties they encounter.

We use external services such as Crisp for managing customer support and Stripe for payment processing.

Now that we have detailed the various types of users and their respective functionalities, it is time to illustrate a global use case diagram. This diagram will provide a visual representation of how different users interact with the system, highlighting the key actions and features available to each user type.

The Figure 1.25 shows the overall use case diagram of our future application.

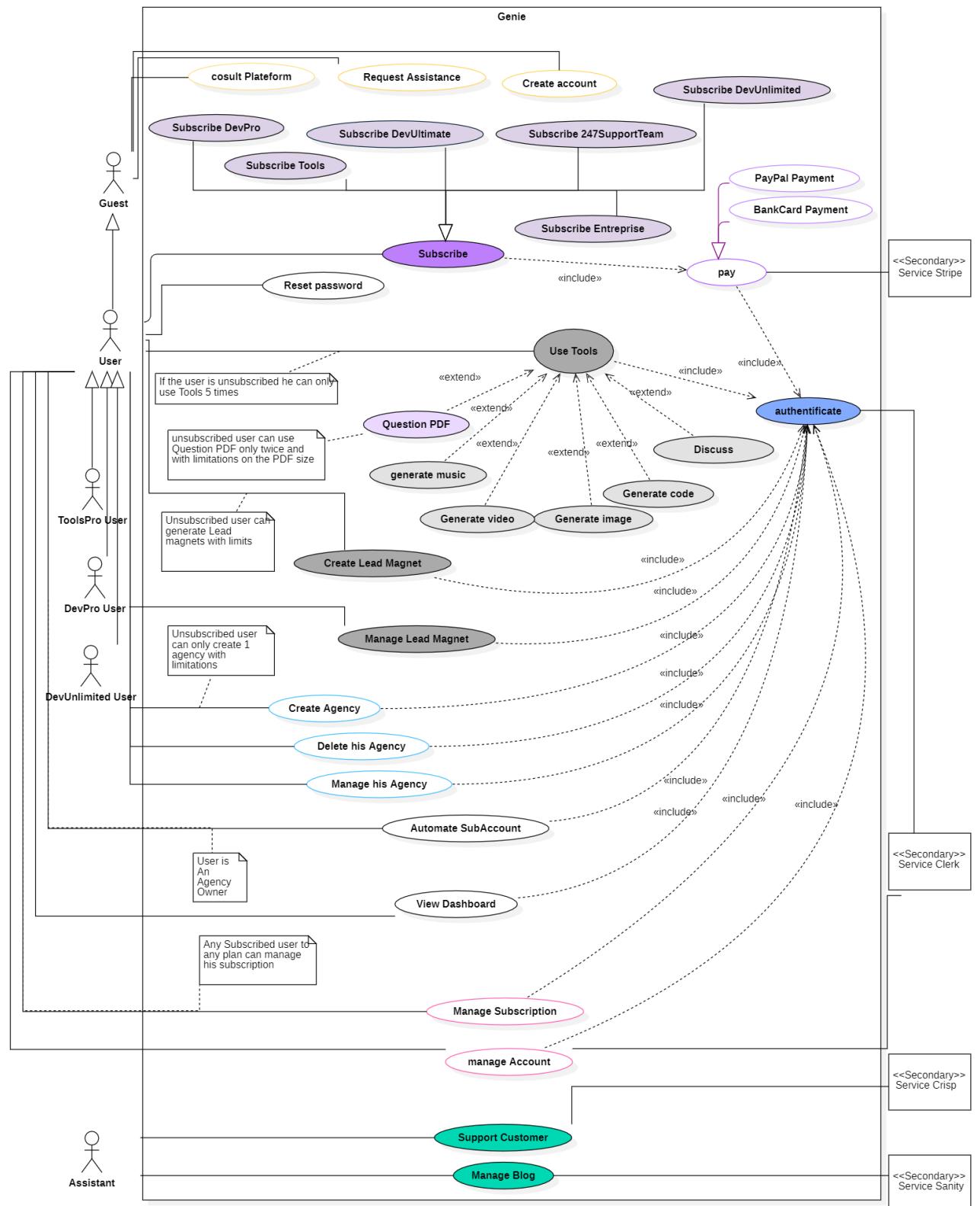


Figure 1.25: Global Use Case Diagram

1.4.3 Non-functional Requirements

Non-functional requirements define the quality criteria and constraints that the system must meet.

The main non-functional requirements addressed by our application are:

- **Performance:** Ensure quick response to user queries, with minimal page loading time.
- **Security:** Protect user data against unauthorized access by implementing security measures such as authentication and encryption.
- **Reliability:** Ensure continuous availability of the platform with minimal interruptions or downtime.
- **Scalability:** Allow the platform to adapt to an increase in the number of users or features without compromising its performance.
- **Usability:** Provide an intuitive and user-friendly interface to ensure a pleasant user experience.
- **Interoperability:** Ensure compatibility with other systems and technologies to facilitate integration and interaction with third-party services.

1.5 Product Backlog

The product backlog is a fundamental element of the Scrum methodology. It's the primary tool of the product owner, containing various features to be developed by the development team. Typically, it's presented in the form of user stories, prioritized based on the importance of the functionality.

- **ID:** Characterizes the user story with a unique identifier.
- **User Story:** Describes the functionality desired by the user.
- **MoSCoW:** MoSCoW prioritization, also known as the MoSCoW method or MoSCoW analysis, is a prioritization technique for managing requirements. .

Theme	ID	Description		MoSCoW
		As a	I want to	
Authentication	1.1	Guest	Create an account.	Must Have
	1.2	User	Login into my account.	
	1.3		Reset my password if I forget it.	

Payment	2	User	Pay in a clear and secure process.	Must Have
Conversation	3.1	User	Generate simulated dialogues with Genie.	Must Have
	3.2	ToolsPro User	Chat with Genie without limitation.	
PDF Conversation	4.1	User	Upload my PDF and converse with it.	Must Have
	4.2		View all my uploaded files.	
	4.3		See all my previous messages for each PDF.	
	4.4		Delete any PDF i don't want.	
	4.5		Zoom in/out in my PDFs, rotate it, view it in fullscreen, and navigate between pages.	
	4.6	ToolsPro User	Submit larger PDF to converse with.	
	4.6		Converse with unlimited number of PDFs.	
Image Generation	5.1	User	Generate images by describing them.	Must Have
	5.2		Pick between different modals, resolutions and number of images.	
	5.3	ToolsPro User	Generate higher quality images without limitation.	
Video Generation	6.1	User	Generate videos by describing them.	Must Have
	6.2		Pick between different modals.n.	
	6.2	ToolsPro User	Generate higher quality videos without limitation.	
Music Generation	7.1	User	Generate music from description.	Must Have
	7.2	ToolsPro User	Generate higher quality audio without limitation.	

Code Generation	8.1	User	Generate markdown code from description.	Must Have
	8.2	ToolsPro User	Generate higher quality code without limitation.	
Lead Magnet Creation	9.1	User	Create and manage my lead magnets.	Must Have
	9.2		Save, delete, publish and unpublish my Lead Magnets.	
	9.3		Edit and customize my Lead Magnet's layout, bot prompt and profile's information.	
	9.4		Preview my Lead Magnet before i publish it.	
	9.5		View the list of leads associated with each of my lead magnets.	Should Have
	9.6		Block users from using the bot if they didn't submit their contact information.	
	9.7		Offer a preview of my created Lead Magnet to my customers when i share a link.	
	9.8	DevPro User	Generate Lead Magnets without limitation.	Must Have
	9.9	Lead Customer	Converse with the Lead Magnet bot smoothly.	
Subscribe	10.1	Subscribed User	Manage my subscription.	Must Have
	10.2		Subscribe to my desired plan.	
	10.3		Track my usage and be alerted if i exceed it.	
Blog Creation	11.1	User	Consult the blog page and filter through it with Tags.	Must Have
	11.2	Admin	Add, delete and update blog posts.	

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Customer Support	12.1	User	Seek live assistance in case i needed to.	Should Have
	12.2	Admin	Reply assist and guide customers.	
	12.3		See the assistance requests in an organized way.	
Agency Management	13.1.1	SubAccount Guest	Download a mobile version for an easy access.	Should Have
	13.1.2		Edit my agency profile information.	
	13.1.3		Add, remove and copy content from my Media Bucket.	
	13.1.4		Generate images by description in my Media Bucket.	
	13.1.5		View my SubAccount statistics and planning.	
	13.1.6	SubAccount User	Add Contacts for my Sub-Accounts.	Must Have
	13.1.7		Create, delete and manage different Pipelines.	
	13.1.7		Add, delete and edit multiple Pipeline Lines.	
	13.1.8		Add, delete and edit multiple Line's Tickets.	
	13.1.9		Create, assign and remove Tags to/from Line's Tickets.	
	13.2.1		Assign and remove contacts to/from Line's Tickets.	Must Have
	13.2.2		Assign and remove SubAccount Users to/from Line's Tickets.	
	13.2.3	Agency Admin	Manage my agency.	
	13.2.4		Create, delete and manage my SubAccounts.	

CHAPTER 1. PROJECT OVERVIEW AND REQUIREMENTS ANALYSIS

Funnel Creation	13.2.5	Agency Owner	Send invitations for people to join my team.	Should Have
	13.2.6		Edit and assign my team members roles.	
	13.2.7		Grant my team members access for a specific SubAccount.	
	13.2.8		Create and delete my agency.	
	13.2.9		Link my Stripe account to my agency.	
	16.1.1	SubAccount User	Create, delete and manage my Funnels.	Must Have
	16.1.2		Create Funnel Steps to order my pages.	
	16.1.3		Remove products from my Funnel.	
	16.1.4		Publish, unpublish my Funnel's pages.	
	16.1.5		Drag and Drop pre-built components and layout elements form my build.	
	16.1.6		Delete components and layout elements form my build.	
	16.1.7		Customize my components.	
	16.1.8		Use my Media Bucket files in the editor.	
	16.1.9		Add products from my Stripe account to my Funnel.	Should Have
	16.2.1		Duplicate my Funnel's pages.	
	16.2.2		Preview my Funnel's pages in the editor in mobile, Tablet and Desktop format.	

CHAPTER 1. PROJECT OVERVIEW AND REQUIREMENTS ANALYSIS

	16.2.3		Preview my Funnel's pages in the editor in light and dark mode.	
	16.2.4		Undo and Re-do my actions in the editor.	
SubAccount Automation	18.1	Agency Admin	Link my SubAccount with my external services.	Should Have
	18.2		Link my services by Drag and Drop on the canvas.	
	18.3		Send messages and instructions from my SubAccount to all linked Services and view the responses.	
	18.4		Retrieve files from the linked Google Drive.	
	18.5		Create templates for future references.	
	18.6		Create and Manage my workflows.	Must Have

Table 1.23: Product Backlog

1.6 Sprint Planning

Following the analysis of user needs and backlog discussion, we now proceed to the Sprint planning phase.

We identified the necessity for two releases, each comprising three sprints.

The figure 1.26 will provide a visual representation of this structure.

SPRINT PLANNING			
	SPRINT 1	SPRINT 2	SPRINT 3
Release 1	Authentication	Pdf conversion	Create Features page
	Website navigation	Payment	Create blog page
	Theme	ToolsPro Subscription	Create pricing page
	Notification	Notification	Landing page
	Conversation generation		Customer Support
	Image generation		Notification
	Video generation		Deployment
	Music generation		
	Code generation		
Release 2	Lead magnet	Agency creation	Dev Ultimate Subscription
	Subscribe DevPro		Dev unlimited Subscription
			Enterprise Subscription
			Dashboard
			Automation
			24/7SupportTeam Subscription

Figure 1.26: Sprint Planning

1.7 Gantt Chart For Project Timeline

The Gantt chart depicted in Figure 1.27 provides a visual representation of the project timeline, outlining the planned releases as discussed in the Sprint planning phase.

The chart illustrates the sequential organization of the project into releases, with each release divided into three sprints.

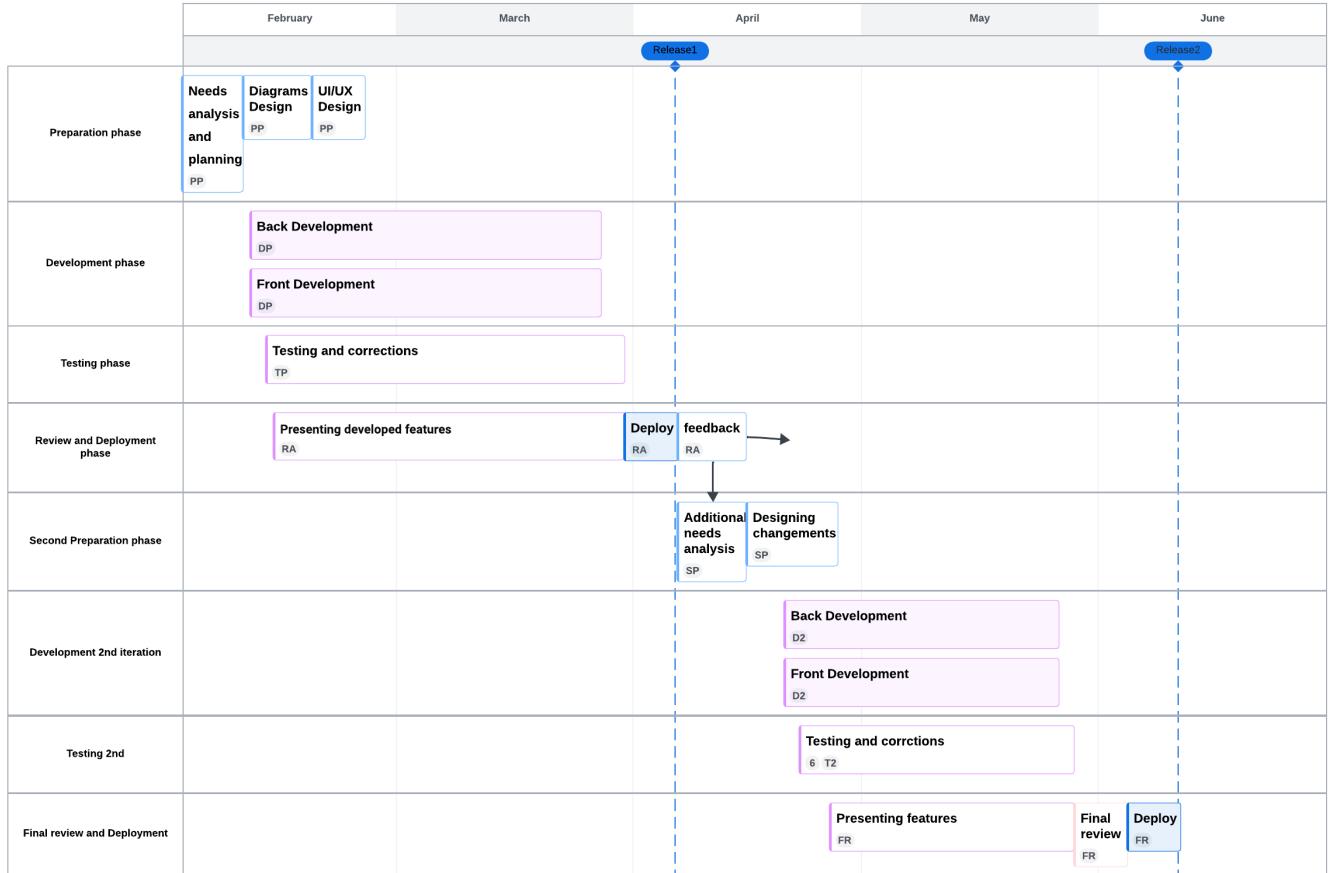


Figure 1.27: Gantt Chart

1.8 Project Environment

1.8.1 Hardware Environment

We will be using a laptop, the specifications of which are presented in the following Table.

Component	Specification
PC	MSI
Processor	Core i5 11th Gen
RAM	24GB
Disk	512GB SSD
Operating System	Windows 10
GPU	NVIDIA GeForce RTX 3050

Table 1.24: Hardware Specifications

1.8.2 Software Environment

We will use the following software environment for our project.

Environment	Description	Logo
Visual Studio	It is an extensible code editor developed by Microsoft for Windows, Linux, and macOS.	
Postman	It is a tool for constructing and testing HTTP requests.	
GitHub	It is a web-based platform that offers version control and collaboration features for software development projects.	
UploadThing	It is the easiest way to add file uploads to your full stack TypeScript application.	
Vercel	It is a cloud that provides managed infrastructure for developers so they can build faster.	

Cypress	Cypress is an advanced front-end testing tool built for the modern web. It is specifically designed to automate testing for anything that runs in a browser.	
ClickUp	It is an all-in-one productivity platform that works as an ideal place for teams to come together, brainstorm, plan, and collaborate on everything from process docs to product designs.	
Latex	Overleaf is a collaborative online writing and publishing tool for LaTeX and Rich Text, streamlining the entire process of writing, editing, and publishing scientific documents, making it faster and easier.	
Clerk	It is a complete suite of embeddable UIs, flexible APIs, and admin dashboards to authenticate and manage your users	
Crisp	It is a business messaging platform for Startups & SMBs.	
Sanity	Sanity is a modern headless CMS (Content Management System).	

Table 1.25: Software Environment

Technologies	Description	Logo
HTML	It is a markup language used for creating and structuring content for the web.	
CSS	It is a style language used for the visual presentation of web pages.	
TypeScript	It is a free and open-source high-level programming language developed by Microsoft that adds static typing with optional type annotations to JavaScript.	
Zod	It is a TypeScript-first schema declaration and validation library.	

Next.js	It is a React framework that enables efficient server-side rendering, routing, and other features to build modern web applications.	
Prisma	It is an open-source database toolkit that simplifies database access and management.	
Tailwind CSS	It is a utility-first CSS framework that allows developers to rapidly build custom user interfaces. It provides a set of pre-defined utility classes that can be used to style HTML elements.	
Tremor UI	It is a user interface (UI) library designed to streamline the process of building web applications. It offers a range of customizable components and styling options.	
Aeternity UI	It is a user interface (UI) library that offers a collection of pre-designed components and styles to facilitate the development of web applications.	
Shadcn UI	It is a user interface (UI) library designed to provide developers with pre-styled components and design patterns for building modern web applications.	
Framer Motion	It is a React library for creating fluid animations and transitions in web applications..	
Langchain	It is a blockchain-based platform designed for managing language-related projects, such as translation, localization, and linguistic data analysis.	
Pinecone	It is a software library or toolkit designed to help users perform fast and efficient similarity search and nearest neighbor search operations on large-scale datasets.	

Table 1.26: Technologies And Languages Used

1.9 Architecture

With the functional requirements of our system defined, it is now time to establish our logical and physical architecture.

1.9.1 Logical Architecture

The logical architecture defines the structure and behavior of the system in an abstract manner, without detailing the implementation specifics. It outlines the key components and their interactions to ensure that the system fulfills the required functionalities.

The Figure 1.28 provides a clear view of the different modules, their interactions, and data flows, thereby facilitating a comprehensive understanding of the system's overall functionality.

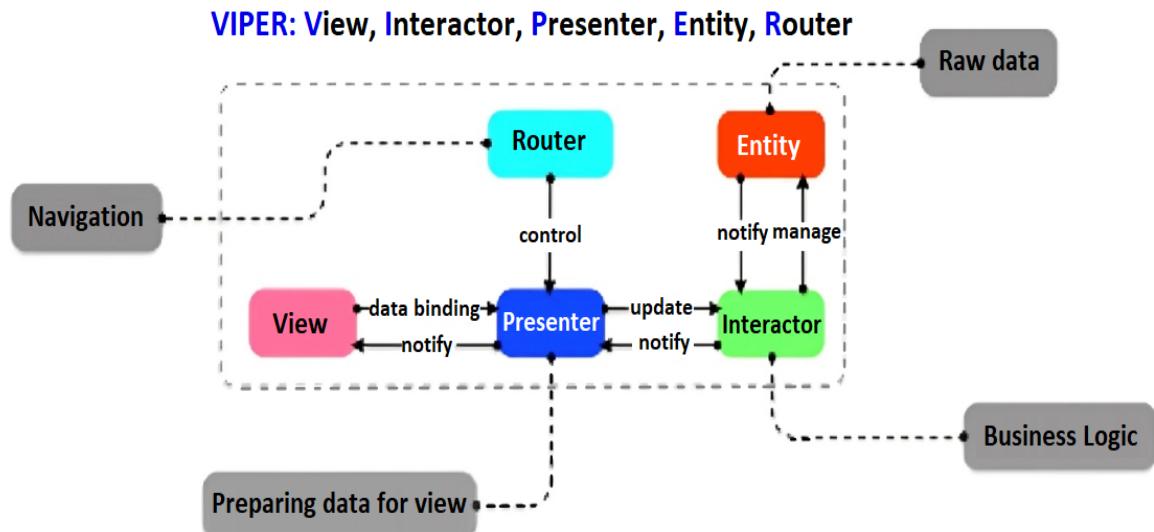


Figure 1.28: VIPER Architecture [28]

VIPER is an architectural pattern used development to improve the modularity, testability, and maintainability of code. VIPER stands for View, Interactor, Presenter, Entity, and Router. It divides the application logic into distinct components with well-defined responsibilities.

- **View:** The View component displays information to the user and handles user interactions. It is passive, meaning it only sends user actions to the Presenter and updates itself according to the instructions it receives from the Presenter.
- **Interactor:** The Interactor contains the business logic of the application. It performs actions related to the processing of data (e.g., fetching data from a database or web service) and communicates with the Presenter to send results back.

- **Presenter:** The Presenter acts as an intermediary between the View and the Interactor. It receives input from the View, processes it (often by interacting with the Interactor), and then updates the View with the results. The Presenter also handles navigation and routing.
- **Entity:** The Entity component comprises the data models used by the Interactor. These models define the structure of the data that the application manipulates.
- **Router:** The Router is responsible for the navigation logic of the application. It handles the transition between different modules or screens within the app, ensuring that the appropriate modules are initialized and presented.

Why VIPER Architecture?

Choosing the VIPER architecture for our application is driven by the need for a robust and maintainable code structure. VIPER enhances modularity by enforcing a clear separation of concerns, where each component has a well-defined responsibility.

This separation facilitates easier management and understanding of the codebase. VIPER's architecture promotes testability by isolating the business logic (Interactor) and presentation logic (Presenter) from the view, enabling comprehensive unit testing, E2E testing and reducing the likelihood of bugs.

Additionally, the Router component simplifies navigation and routing, making it easier to manage complex workflows within the app. The structured approach of VIPER ensures that our application can scale efficiently, maintain high performance, and adapt to future requirements, providing a sustainable framework for long-term development and maintenance. This architectural choice is particularly beneficial for large-scale applications, where maintainability, scalability, and clear structure are crucial for success.

1.9.2 Physical Architecture

The architecture of a system is a conceptual model that defines its elements, their relationships, and describes their properties. It outlines the components that make up the web application. In this context, our application primarily consists of:

1. **Next.js:** Handling both client-side and server-side rendering, ensuring a seamless and efficient user experience.
2. **MongoDB:** Serving as the database to store application data, offering flexibility and scalability.
3. **Prisma:** An ORM tool that simplifies database interactions and improves productivity.

We will detail the physical architecture of our web application in Figure 1.29. This figure will illustrate the various components and their interactions, providing a clear understanding of the system's structure and data flow.

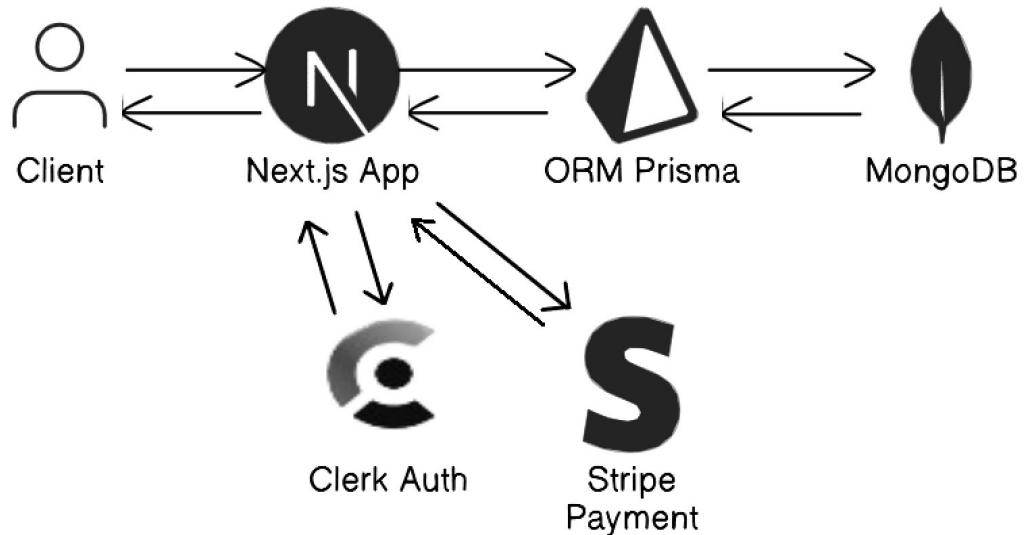


Figure 1.29: Physical Architecture

Conclusion

Throughout this chapter, we have explored the general aspects of the project to gain an overview of the topic, the involved actors, and our functional and non-functional requirements. This study has allowed us to organize the system's backlog, break it down into sprints, and define the architectures we will adopt. Through this approach, we are able to better plan and structure our project, aligning our objectives with the available resources and constraints. In the next chapter, we will specify the functional and non-functional requirements, develop the product backlog, and plan the sprint breakdown for our application. Additionally, we will present the architecture chosen for our application.

CHAPTER 2

RELEASE 1: GENIE TOOLS

2.1 Introduction

In this chapter, we will delve into the analysis of the various components of our first release using the Scrum methodology. We will elaborate on the backlogs for the three sprints included in this first release, detailing the user stories and associated tasks.

Each sprint will be thoroughly analyzed, with a detailed design of the necessary development steps. We will also present screenshots illustrating the system's outcomes, providing a concrete and precise vision of our project's implementation. This Scrum approach will guide us in the realization of functionalities, and ensure a structured progression towards our second release, which will also consist of three sprints.

2.2 Sprint 1 Development

In our first sprint, we focused on establishing the foundational elements of our platform to ensure a robust and user-friendly interface. The tasks for this sprint included Authentication, Website Navigation, Theme, Notification, Conversation Generation, Image Generation, Video Generation, Code Generation, and Music Generation.

Each of these epics was broken down into specific user stories and tasks, allowing us to approach the development process in a focused and manageable way. Throughout this sprint, we carefully developed and tested each component, setting a strong foundation for the subsequent sprints and the overall success of our project.

2.2.1 Sprint Backlog For Sprint 1

The Sprint Backlog is a tool that simplifies task allocation and refines the workflow. Our Sprint Backlog for the first sprint is as follows:

Epic	ID	User Story	Estimation
Authentication & Access management	1.1	As a Guest, I want to be able to register for an account by providing my email, password, and necessary details.	3h
	1.2	As a user, I want to securely log in using my email and password, to access my account.	
	1.3	As a user who has forgotten my password, I want to reset it securely.	
	1.4	As a user, I want to receive an error message if my login credentials are incorrect so that I know I need to try again.	
Website Navigation	2	As a user, i want to be able to navigate between the different website functionalities easily and clearly.	1h
Theme	3	As a user, i want to have the ability to change between dark and light mode.	2h
Notification	4.1	As a user, I want to receive email notifications for important updates and events.	1h
	4.2	As a user, I want to receive in-app notifications to stay informed about real-time activities and messages.	
Conversation	5	As a user, I want to generate simulated dialogues with AI to enhance interactive experiences.	6h
Image Generation	6.1	As a user, I want to generate images by describing them.	3h
	6.2	As a user, i want to be able to view and download my generated images.	
Video Generation	7.1	As a user, I want to produce videos with customizable elements and editing functionalities.	4h
	7.2	As a user, i want to be able to view and download my generated videos.	
Code Generation	8	As a user, I want to generate code snippets quickly and accurately based on specified parameters.	5h

Music Generation	9.1	As a user, I want to compose music tracks using virtual instruments and editing features.	4h
	9.2	As a user, i want to have the audio displayed in a good format with the ability to listen and download.	

Table 2.1: Sprint Backlog For Sprint 1

2.2.2 Use Case Diagram For Sprint 1

Following the completion of the sprint backlog definition stage, we will now present the use case diagram for the first sprint along with the textual description of each use case.

The Figure 2.1 represents the use case diagram for the first sprint.

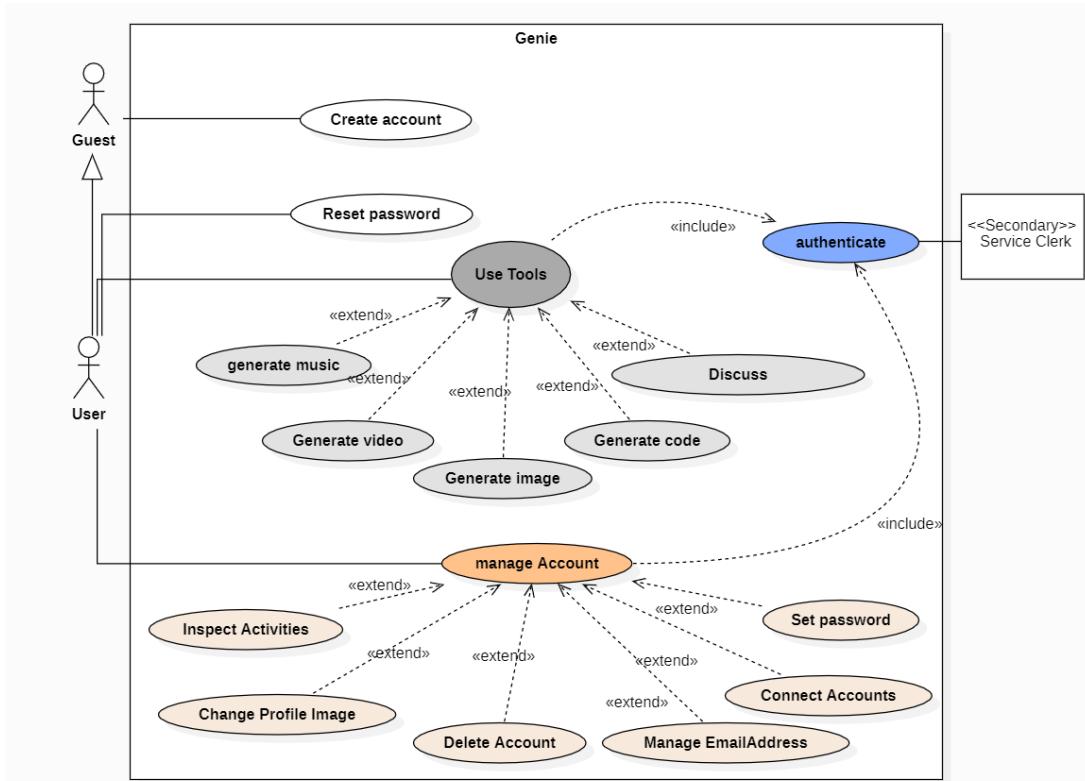


Figure 2.1: Use Case Diagram For Sprint 1

2.2.3 Textual Description Of The Use Cases for Sprint 1

This section will present the textual description of some of the use cases for the first sprint.

1. Authenticate:

The Table below presents the textual description for the sign up use case .

Actor	User
Purpose	The User must be able to create and access his account or perform additional features.
Pre-condition	User has no access to his account or to specific features.
Post-condition	User has access to his account or to specific features.
Nominal Scenario	<ol style="list-style-type: none">1. The User navigates to the desired page.2. The User tries to perform an action.3. The User submits.4. The system checks the credentials to validate the action.5. The data is valid, the submission is done and the action is performed.6. The User is redirected to the needed page.
Alternative Scenario	- The entered data is invalid or conflicts with existing accounts, an error message is displayed, and the process is halted.

Table 2.2: Description Of The Use Case « Authenticate »

2. Use Tools:

The Table below presents the textual description for the Use Case "Tools", encompassing various content generation functionalities such as conversation, image, code, video, and music generation.

Actor	User
Purpose	The user must be able to utilize various tools provided by the platform for generating content, including conversation, images, code snippets, videos, and music tracks.
Pre-condition	User has access to the tools section of the platform.
Post-condition	User successfully generates the desired content using the selected tool.
Nominal Scenario	<ol style="list-style-type: none">1 - The user navigates to the tools section of the platform.

	<p>2 - The user selects the desired tool for content generation (conversation, image, code, video, or music).</p> <p>3 - For Conversation:</p> <p>3.1 - The user inputs the desired parameters or prompts for the conversation generation tool.</p> <p>3.2 - The system processes the input and generates a simulated dialogue based on the provided parameters.</p> <p>4 - For Image Generation:</p> <p>4.1 - The user selects the image parameters or uploads custom elements.</p> <p>4.2 - The system processes the user's selections and generates a custom image accordingly.</p> <p>5 - For Code Generation:</p> <p>5.1 - The user selects the programming language and specifies the code parameters.</p> <p>5.2 - The system generates code snippets based on the user's specifications.</p> <p>6 - For Video Generation:</p> <p>6.1 - The user uploads media files, selects visual effects, and adds text overlays.</p> <p>6.2 - The system compiles the user's inputs into a customized video.</p> <p>7 - For Music Generation:</p> <p>7.1 - The user selects virtual instruments, adjusts settings, and composes musical tracks.</p> <p>7.2 - The system renders the user's selections into a final audio output.</p>
Alternative Scenario	- The user encounters errors or inconsistencies during tool usage, appropriate error messages are displayed, and the user is prompted to adjust their inputs accordingly.

Table 2.3: Description Of The Use Case « Use Tools »

2.2.4 Diagrams Design For Sprint 1

In this detailed design phase, we will prepare sequence diagrams for the main use cases: Authentication, Notification, and Content Generation. Each diagram will precisely illustrate the interactions between actors and the system. We will also create a class diagram representing the classes, and relationships within our system, helping us visualize the overall structure of the application.

2.2.4.1 Class Diagram For Sprint 1

The Figure 2.2 represents the class diagram for the first sprint.

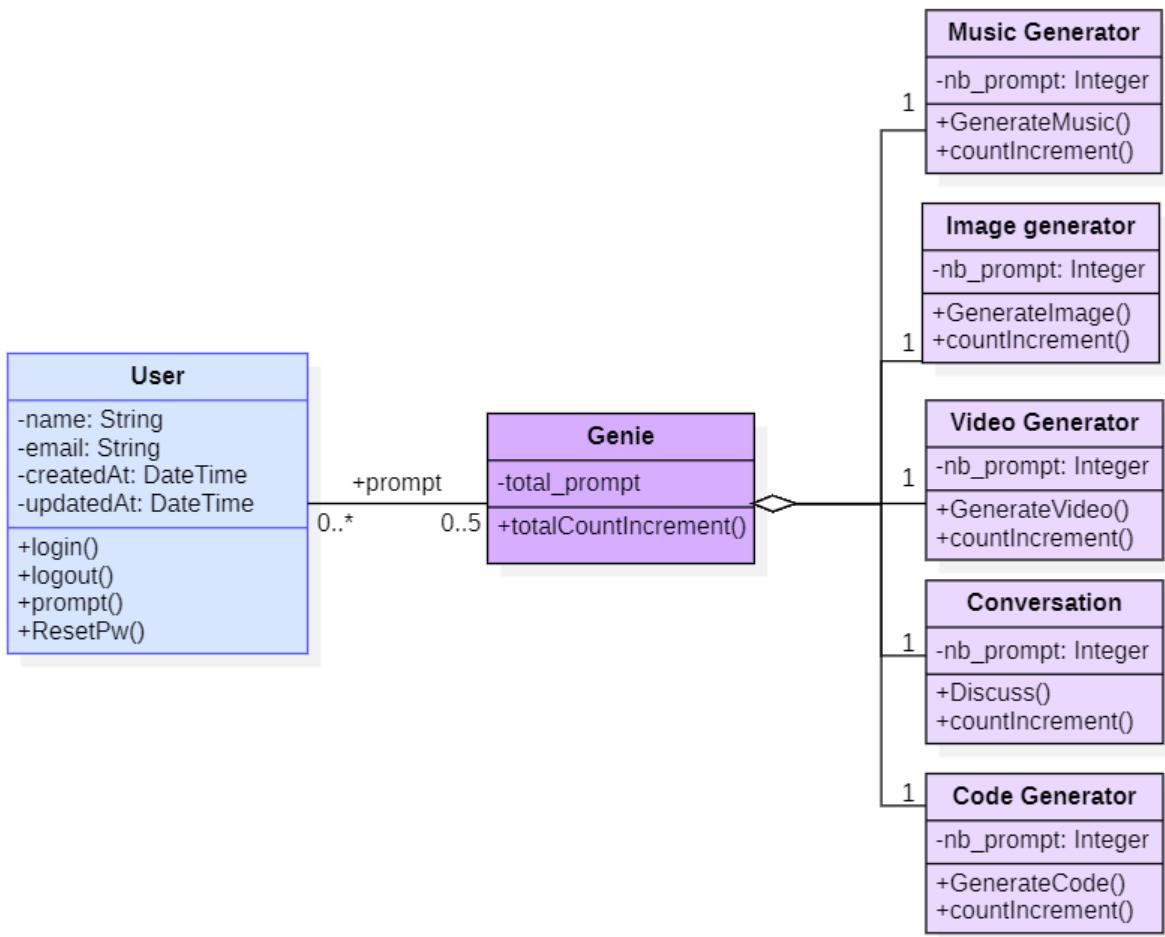


Figure 2.2: Class Diagram For Sprint 1

2.2.4.2 Detailed Sequence Diagram For The « Authenticate » Use Case

The Figure 2.3 presents the sequence diagram for the "Login" use case. The authentication service utilized is Clerk.

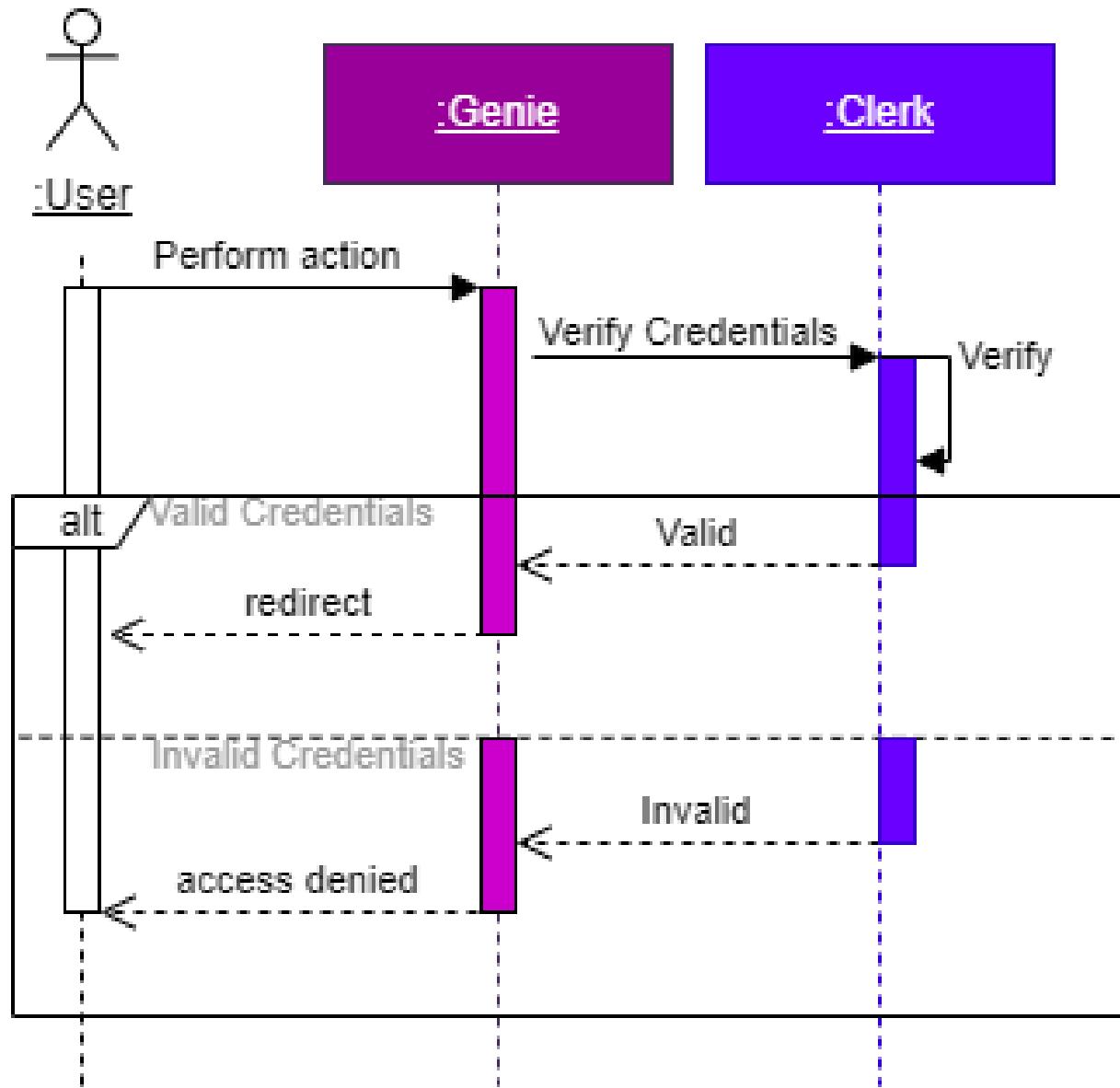


Figure 2.3: Sequence Diagram For The « Authenticate » Use Case

2.2.4.3 Detailed Sequence Diagram For The « Notification » Theme

The Figure 2.4 presents the sequence diagram for the "Notification" Theme.

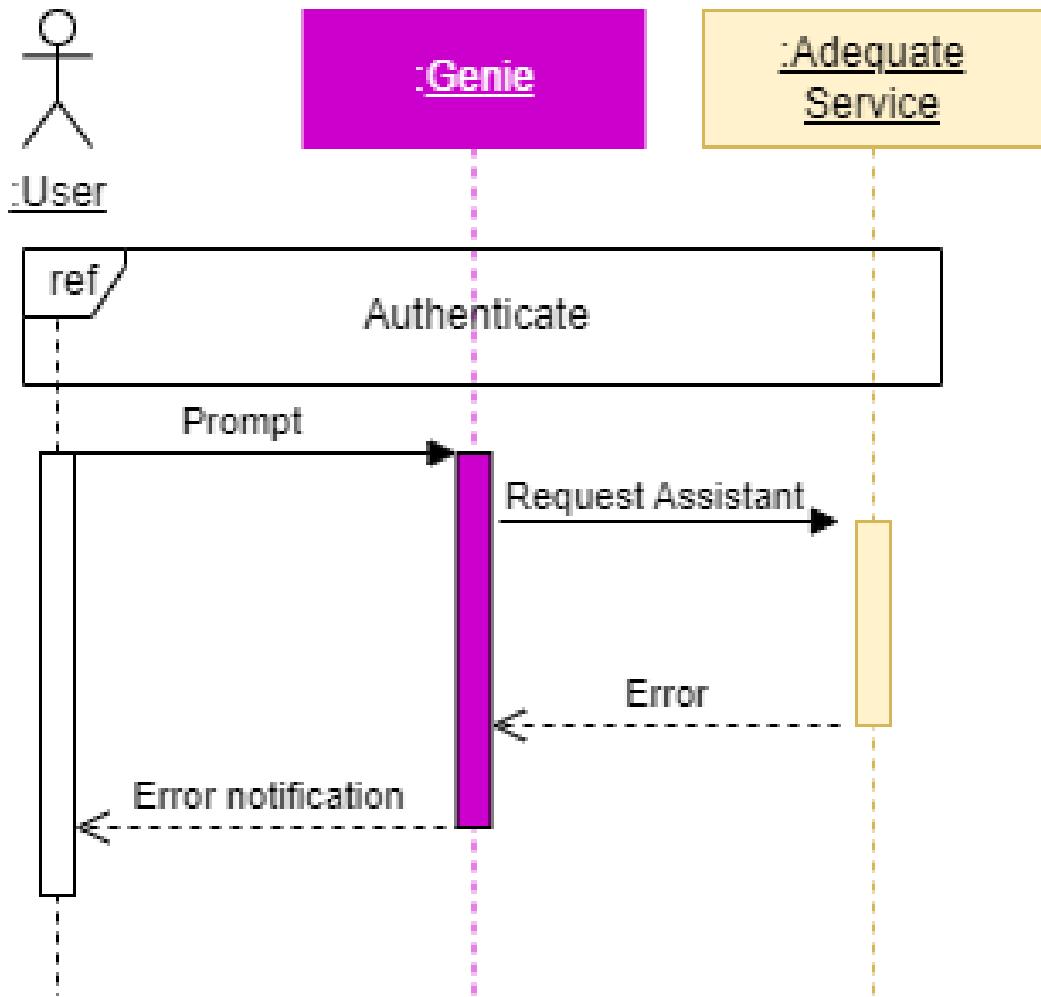


Figure 2.4: Sequence Diagram For The « Notification » Theme

2.2.4.4 Detailed Sequence Diagram For The « Content Generation » Theme

The Figure 2.5 presents the sequence diagram for the « Content Generation » Theme.

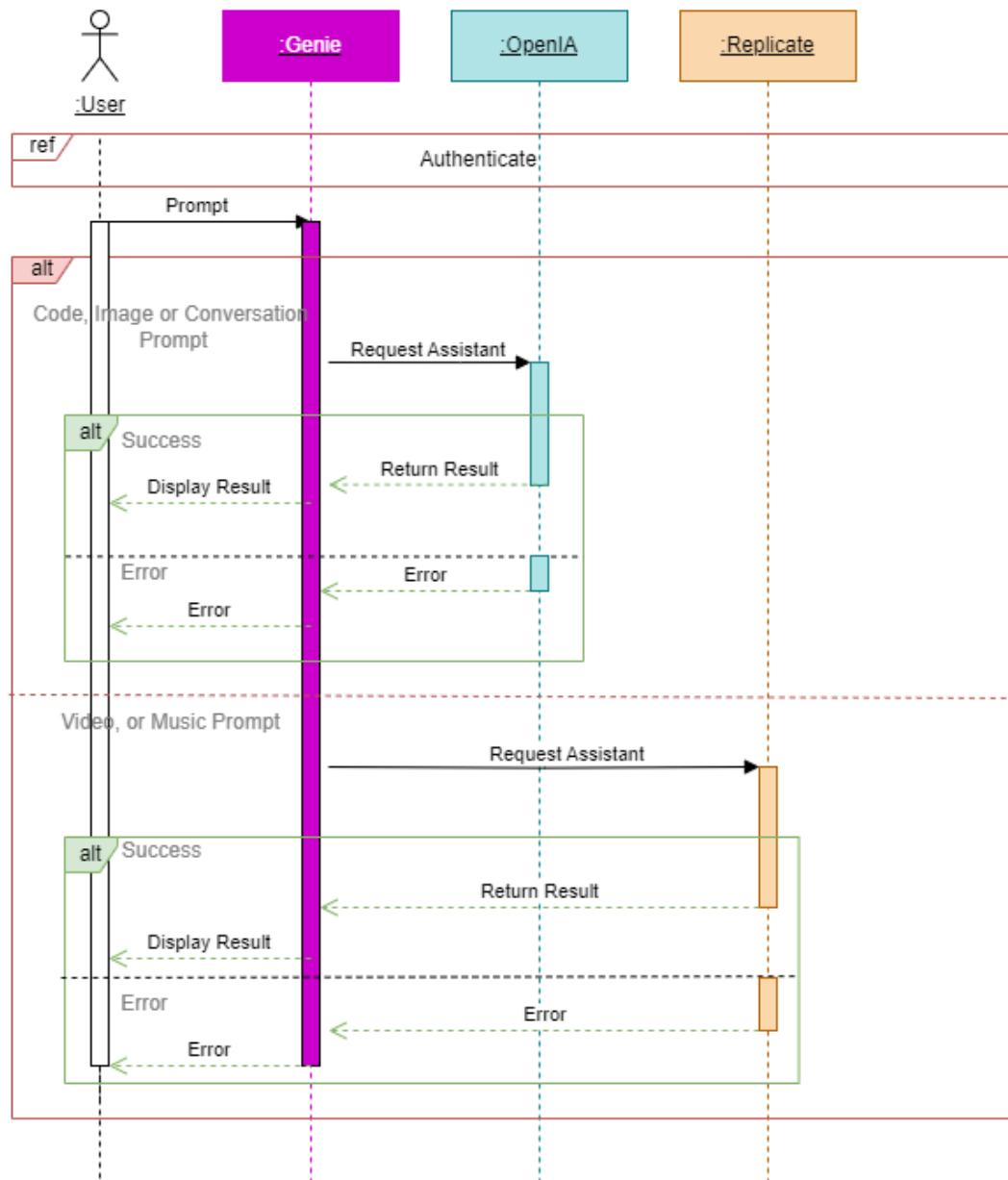


Figure 2.5: Sequence Diagram For The « Content Generation » Theme

2.2.5 Implementation Of Sprint 1

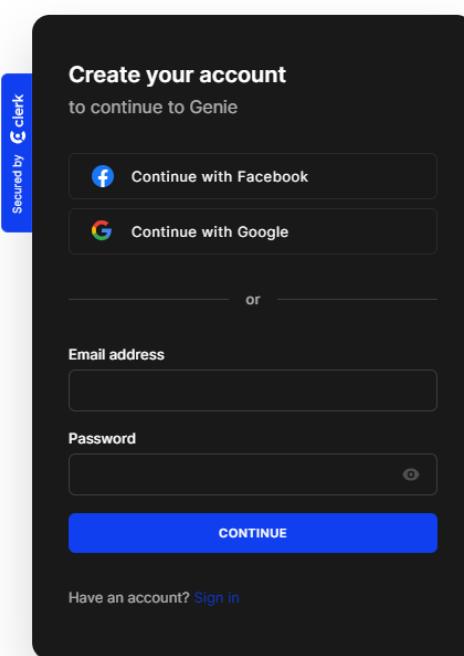
Following the completion of the design phases, we will showcase the user interfaces for these specific use cases, offering visual representations through screenshots. This presentation aims to provide a tangible insight into the user experience, validating our design decisions.

Subsequently, we will present screenshots of various modules aligned with the use cases identified in the initial sprint, offering a visual representation of our work.

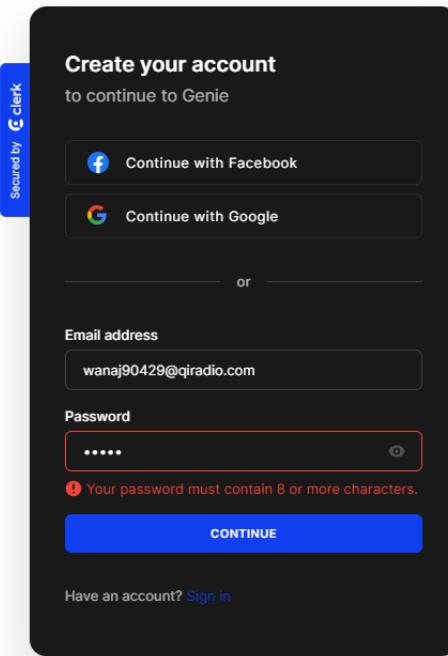
2.2.5.1 Authentication Interface

The Figures below showcase the Sign-up, Login and Password Reset interfaces. To Sign-up certain security measures have to be met.

- **Password Length:** Passwords should contain at least 8 or more characters.
- **Password Strength:** Passwords should contain at least one special character such as : ("*! " /" "#" "%" "&" "@").
- **Password Breach Protection:** Passwords will be checked for vulnerabilities and availability on the internet.
- **Email Verification:** Users will need to put in the verification code sent to their emails.

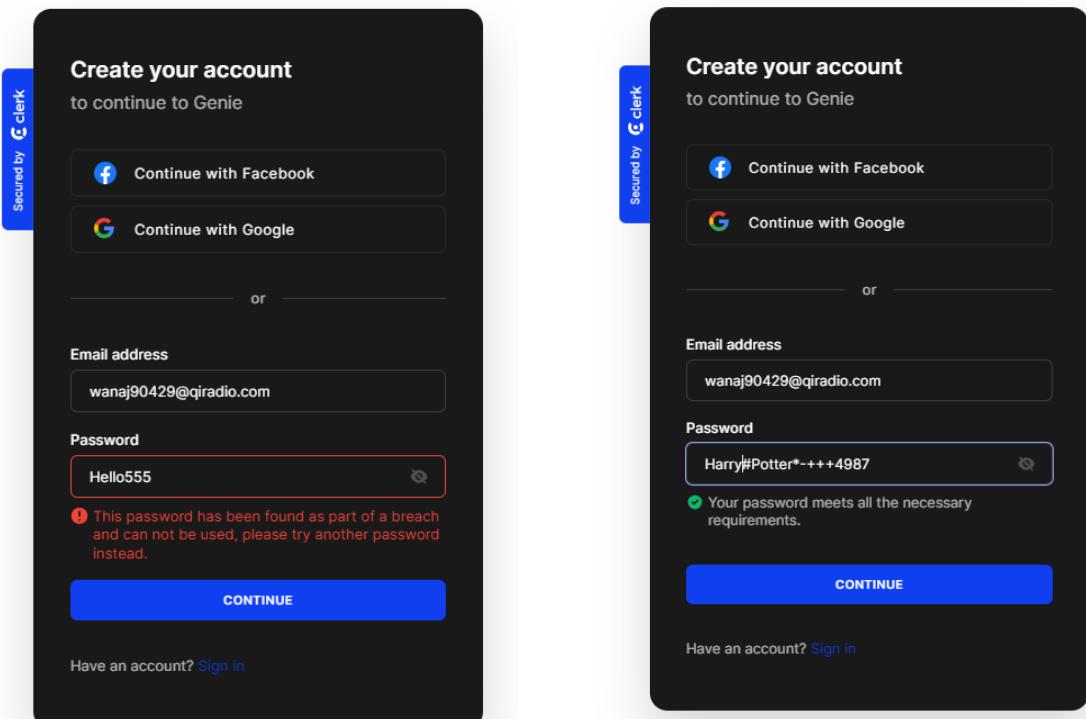


(a) Interface Preview



(b) Password Length Check

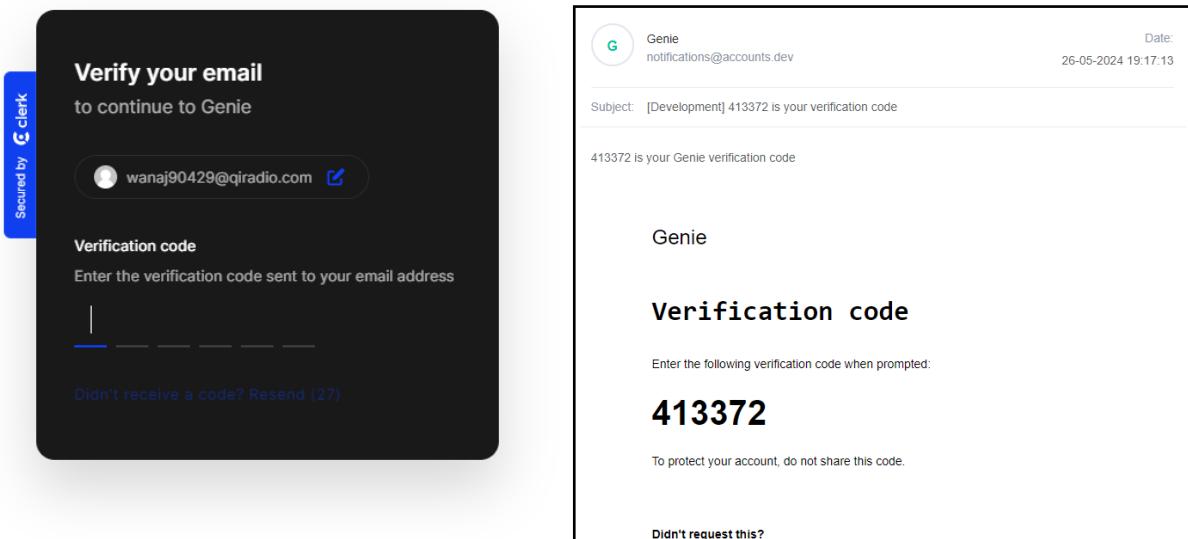
Figure 2.6: Sign Up



(a) Password Breach Protection

(b) Password Secured

Figure 2.7: Sign Up Process



(a) Email Verification

(b) Verification Email

Figure 2.8: Sign Up Final Steps

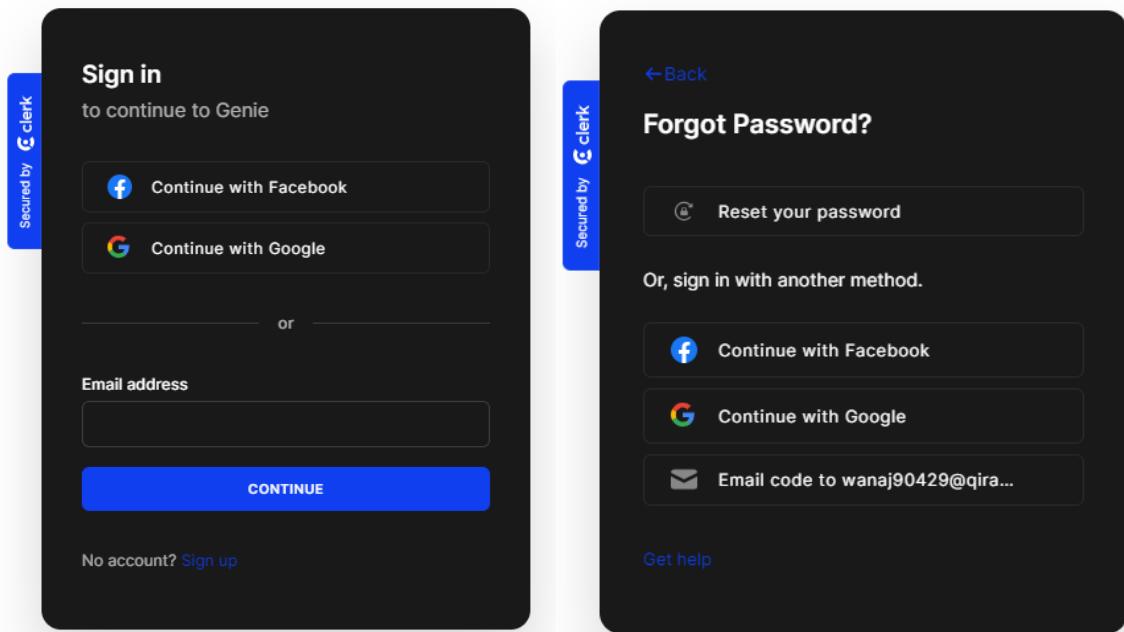


Figure 2.9: Login And Password Reset

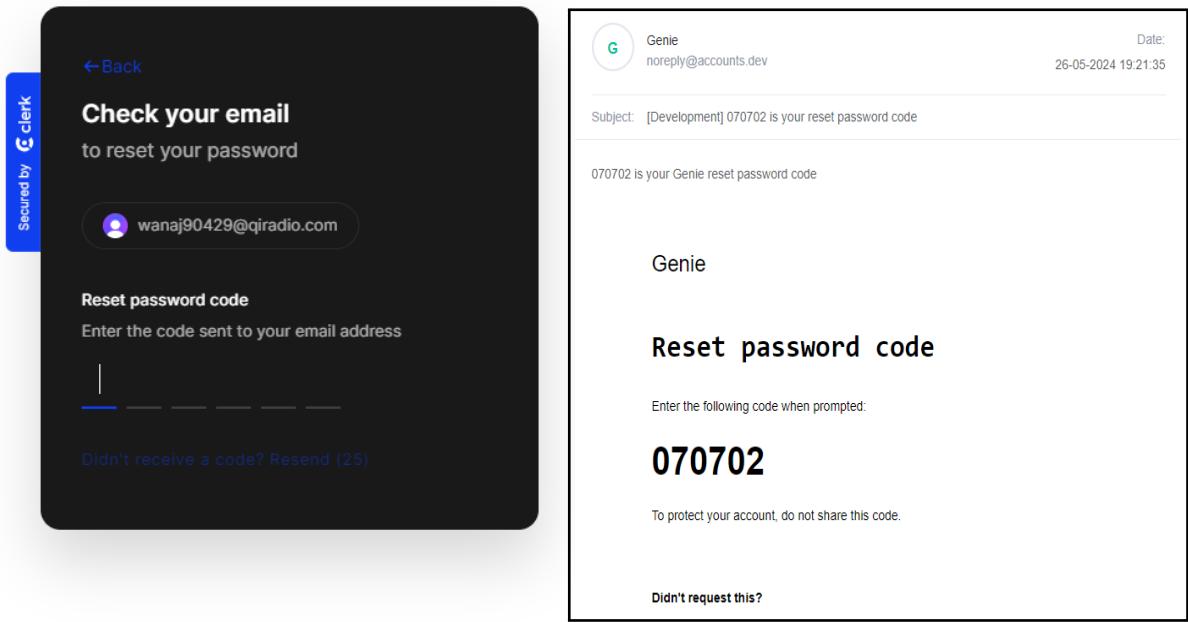


Figure 2.10: Password Rest Process

2.2.5.2 Account Management Interface

The Figure 2.11 illustrates the interface in which users can manage their accounts.

A user can :

- Edit their profile image.
- Manage their email addresses.
- Connect accounts.
- Set or change password.
- Inspect account activities.
- Delete account.

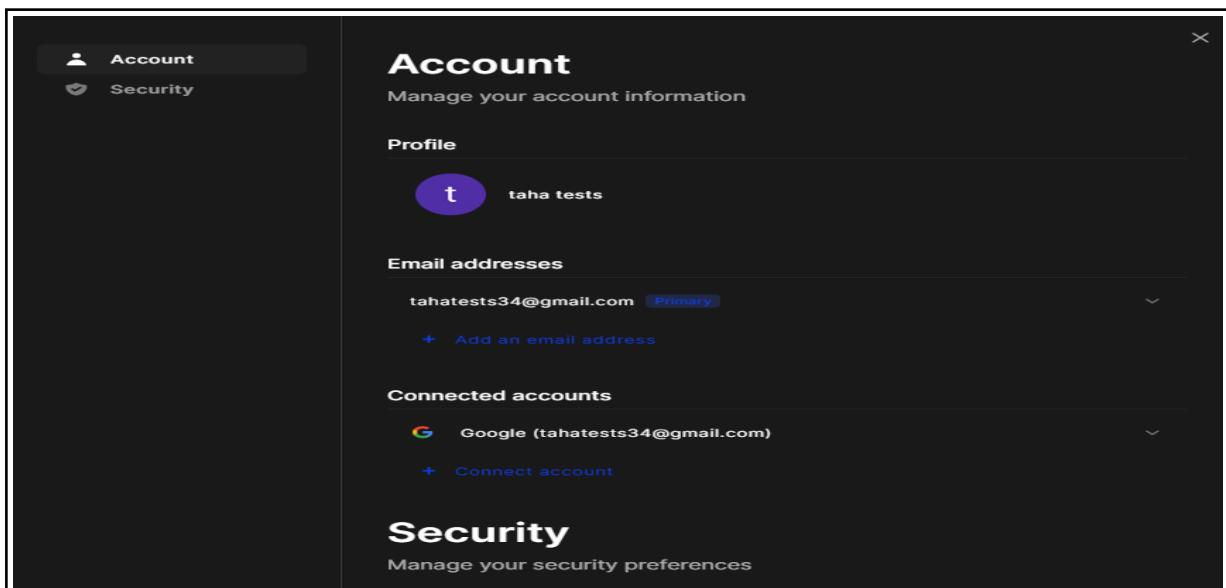


Figure 2.11: Account Management Interface

The Figures 2.12 and 2.13 illustrates the interfaces for which users can manage their accounts security and profile information.

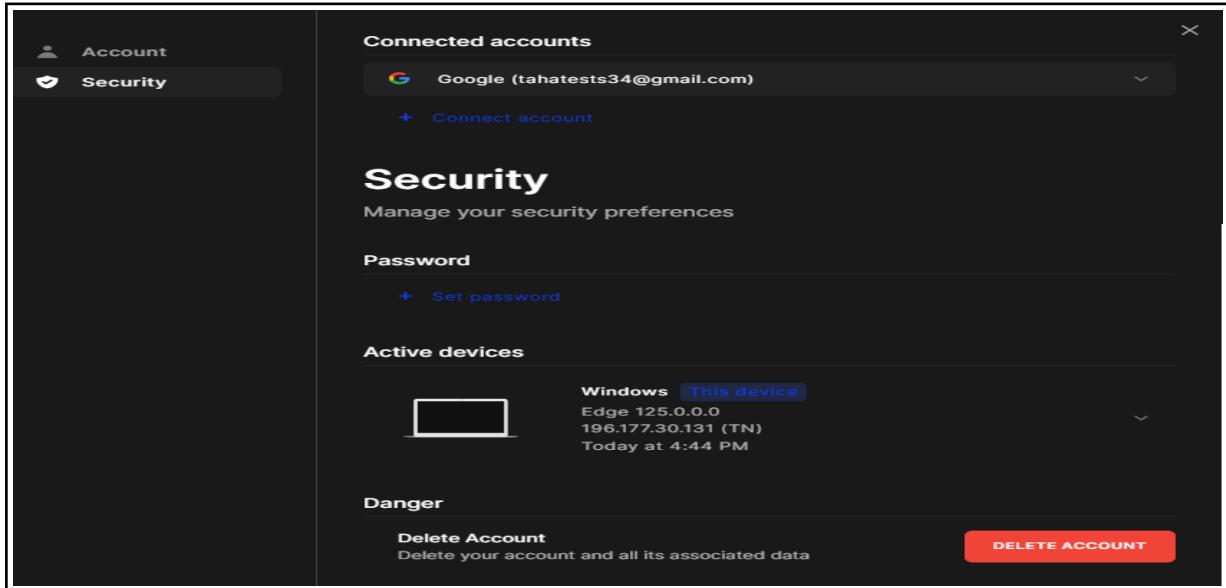


Figure 2.12: Account Management: Security Section

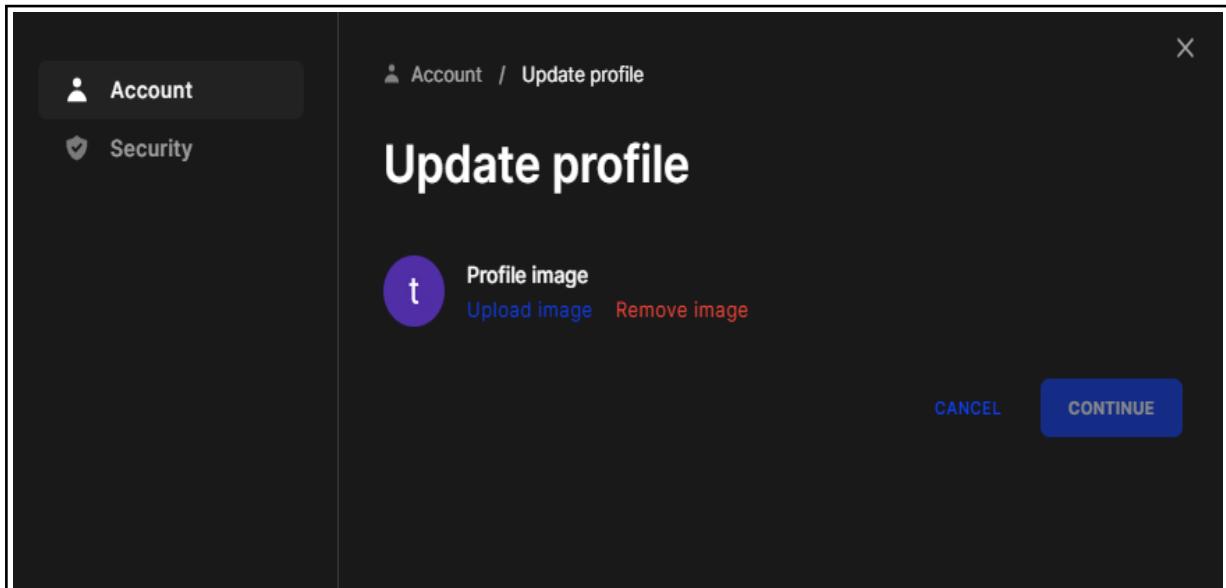


Figure 2.13: Account Management: Profile Section

2.2.5.3 Conversation Bot Interface

The Figure 2.14 illustrates the interface for interacting with the Conversation Bot. Users can engage in conversations and receive responses from the bot, enhancing their experience on our platform.

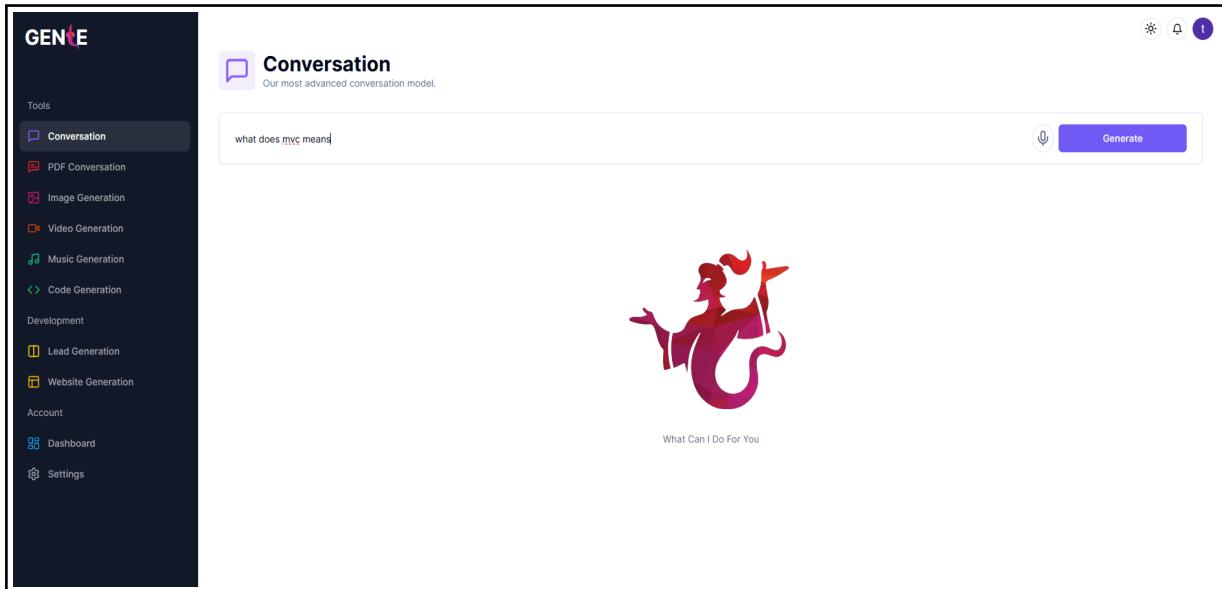


Figure 2.14: Conversation Bot Interface: User Prompting

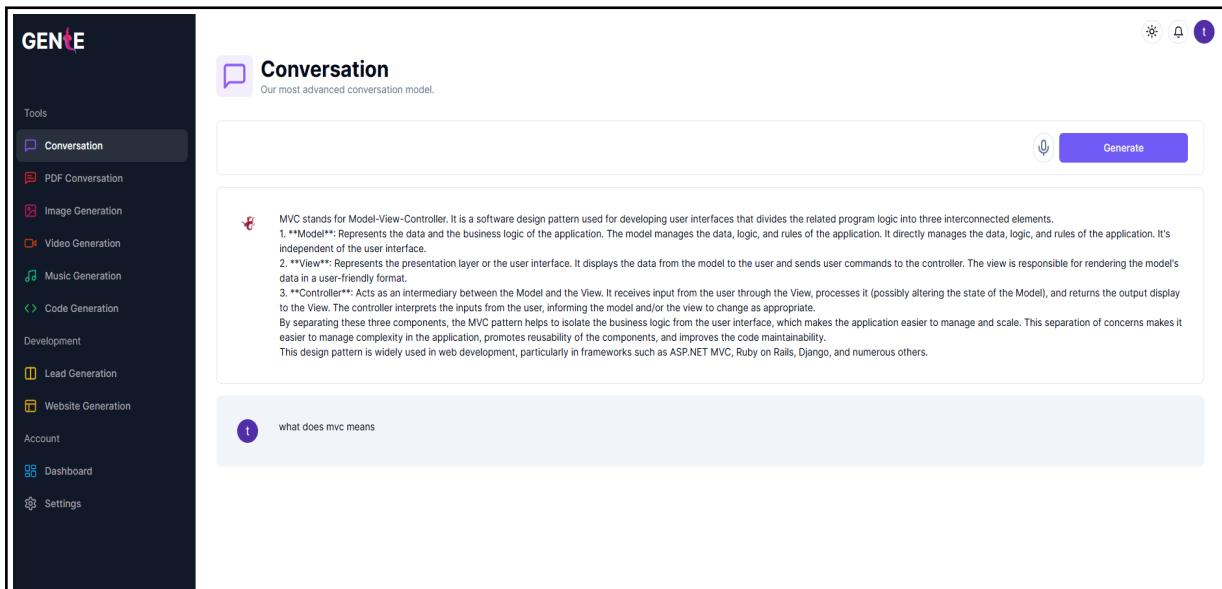


Figure 2.15: Conversation Bot Interface: Prompt Result

2.2.5.4 Image Generator Interface

Displayed below is the interface for the Image Generator. Users can prompt the generator to create images according to their specifications, providing them with customized visual content.

- Available Options:

- Novice :
 - * Number of Images: 1-3
 - * Resolution: 256x256, 516x516 or 1024x1024 pixels
- Expert:
 - * Number of Images: 1-5
 - * Resolution: 256x256, 516x516 or 1024x1024 pixels
- Master:
 - * Number of Images: 1
 - * Resolution: 1024x1024, 1024x1792 or 1792x1024 pixels

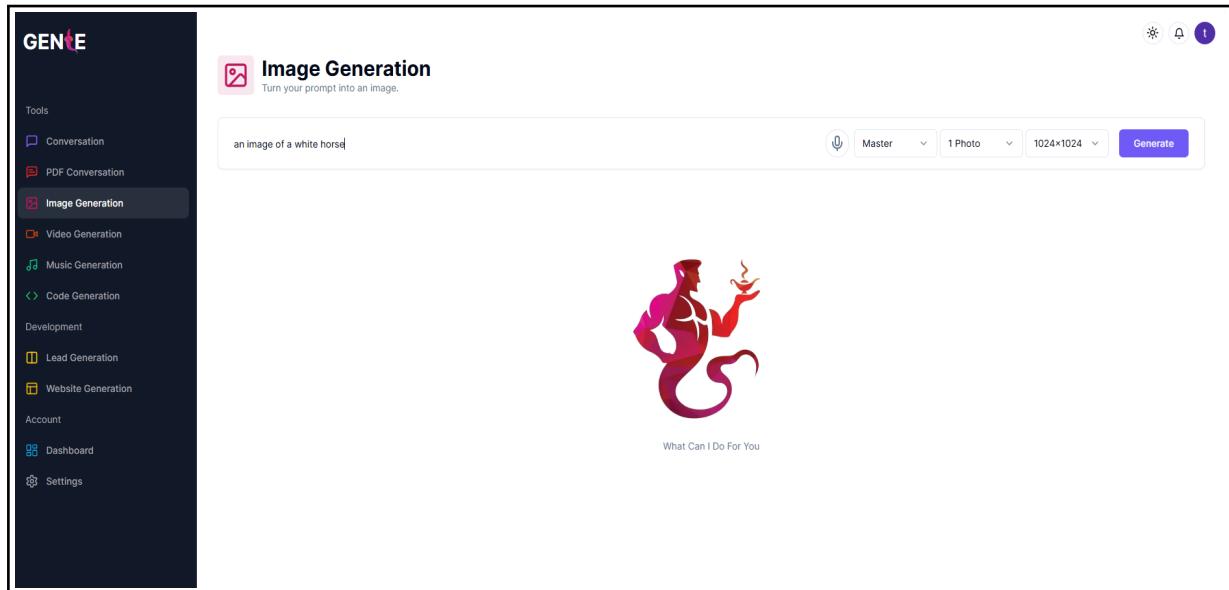


Figure 2.16: Image Generator Interface: User Prompting

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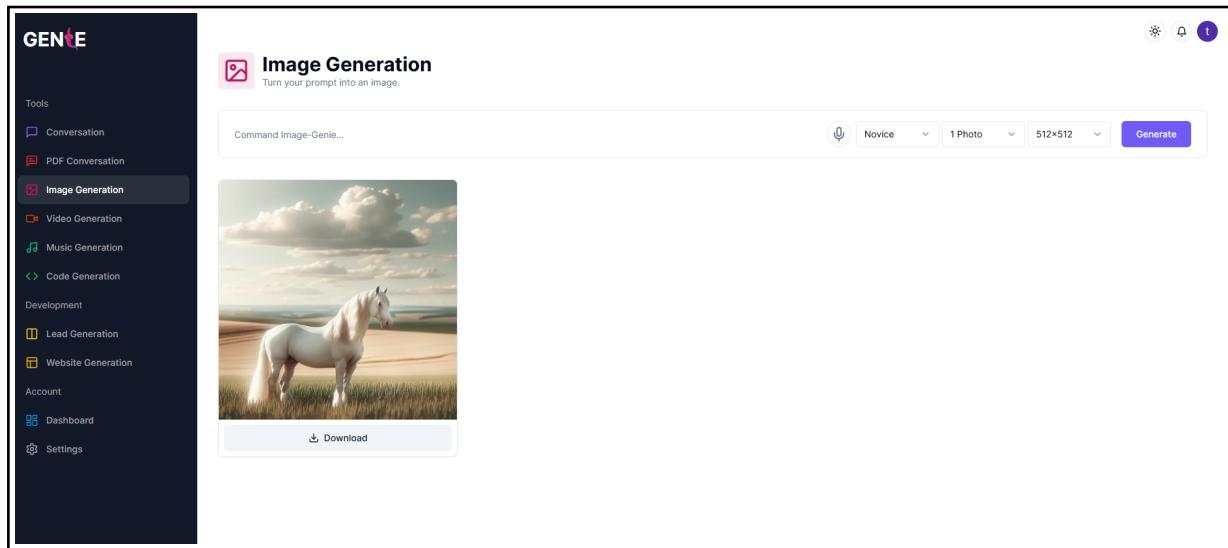


Figure 2.17: Image Generator Interface: Prompt Result

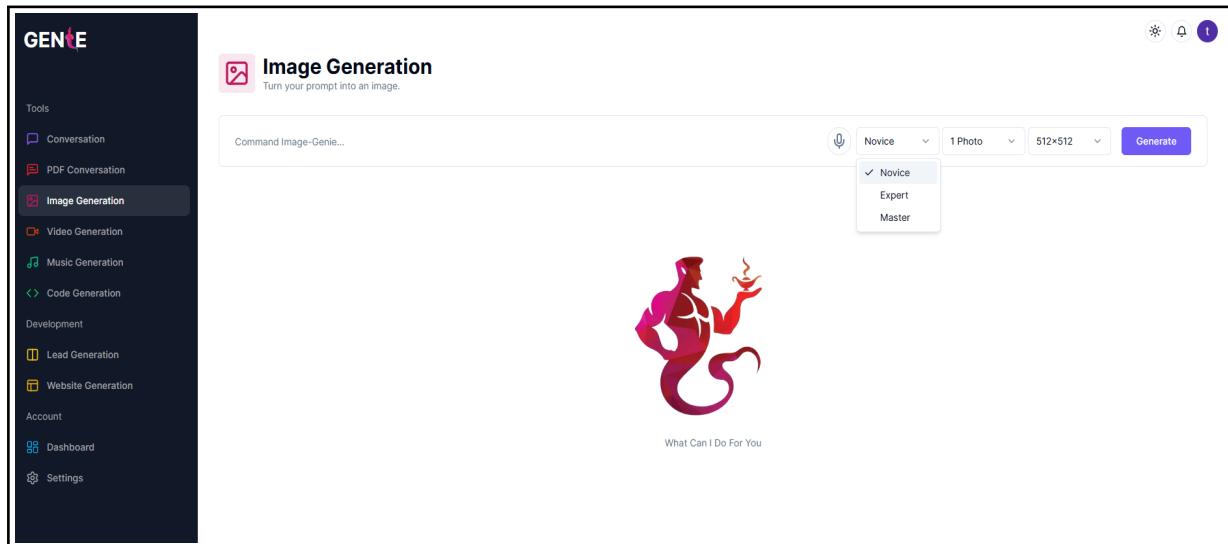
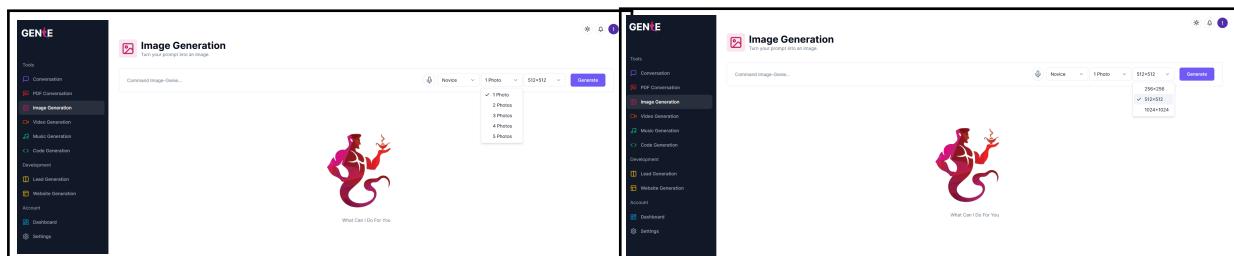


Figure 2.18: Image Generator: Picking Modal



(a) Picking Number Of Images

(b) Picking Resolution

Figure 2.19: Image Generator

2.2.5.5 Video Generator Interface

The following screenshots depict the Video Generator interface. Here, users can request the generation of videos tailored to their needs, adding dynamic visual elements to their content.

- Available Options:

- Novice | Expert | Master

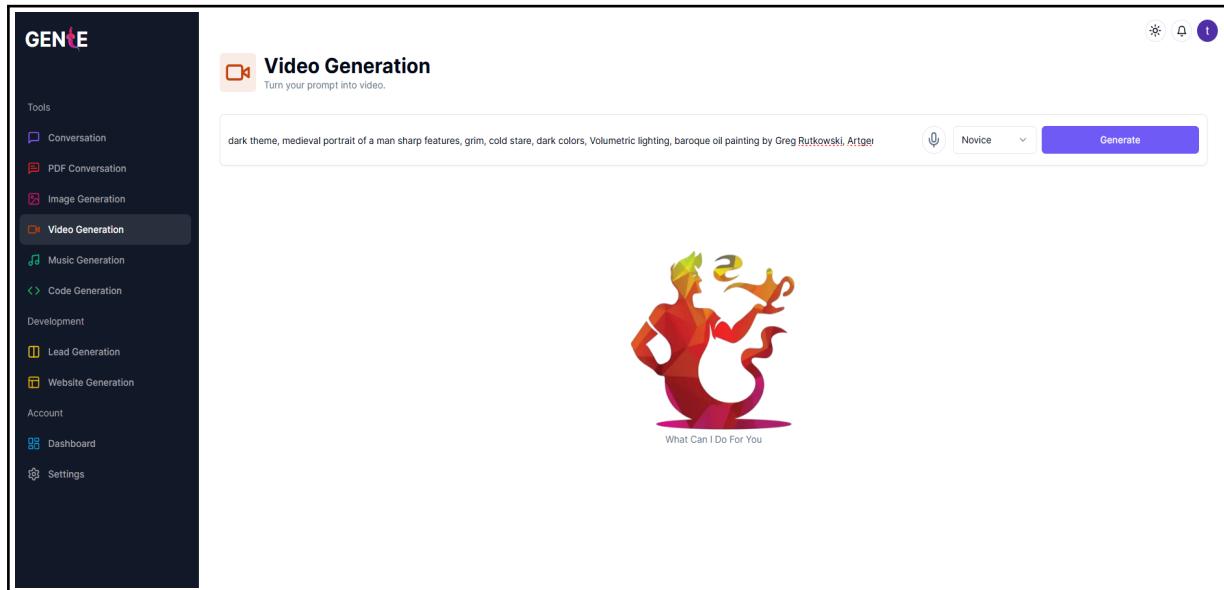


Figure 2.20: Video Generator Interface: User Prompting

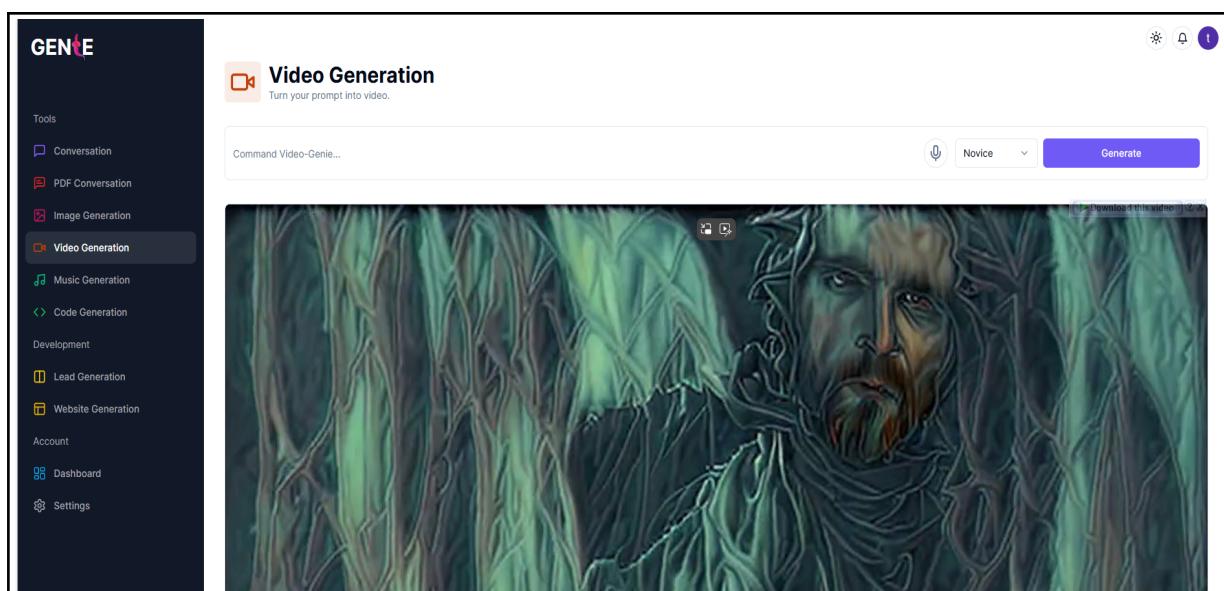


Figure 2.21: Video Generator Interface: Prompt Result

2.2.5.6 Music Generator Interface

Highlighted below the Figures 2.22 and 2.23 showing the interface for the Music Generator. Users can prompt the generator to produce music tracks, offering them personalized audio content for their projects or presentations.

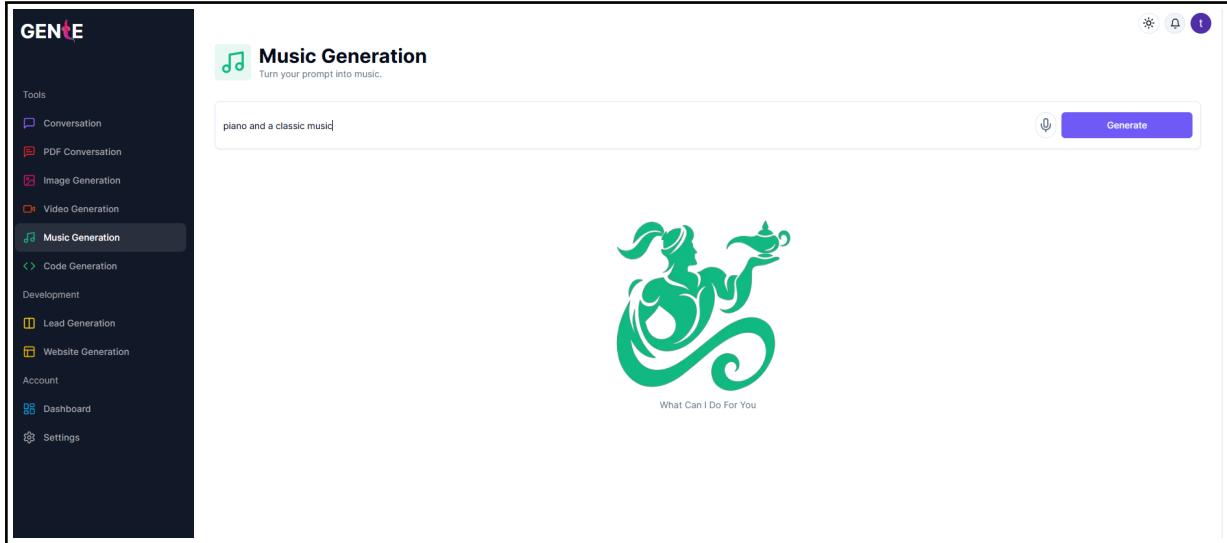


Figure 2.22: Music Generation Interface: User Prompting

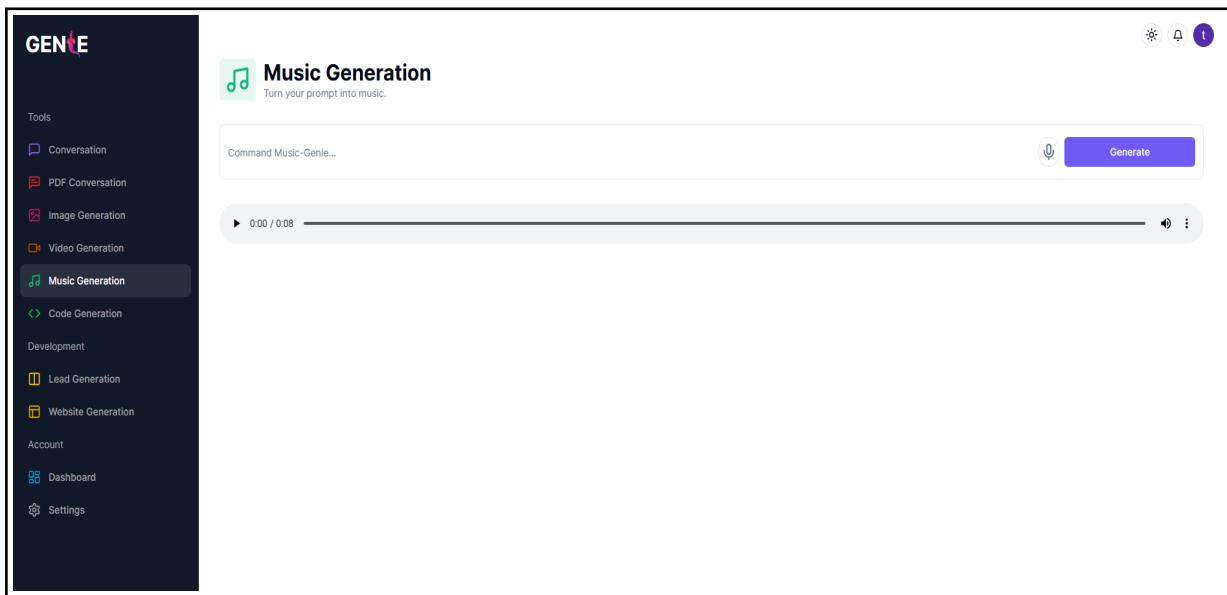


Figure 2.23: Music Generation Interface: Prompt Result

2.2.5.7 Code Generator Interface

Highlighted below the Figures 2.24 and 2.25 showing the interface for the Code Generator module. Users can input prompts to generate code snippets, facilitating their programming tasks and enhancing their productivity.

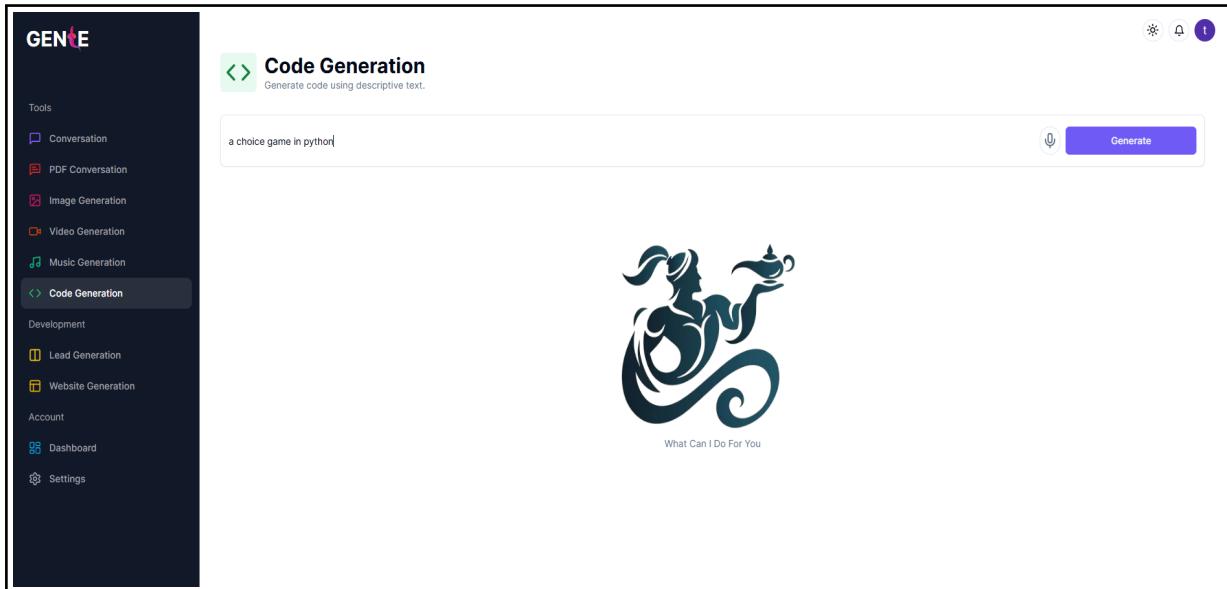


Figure 2.24: Code Generation Interface: User Prompting

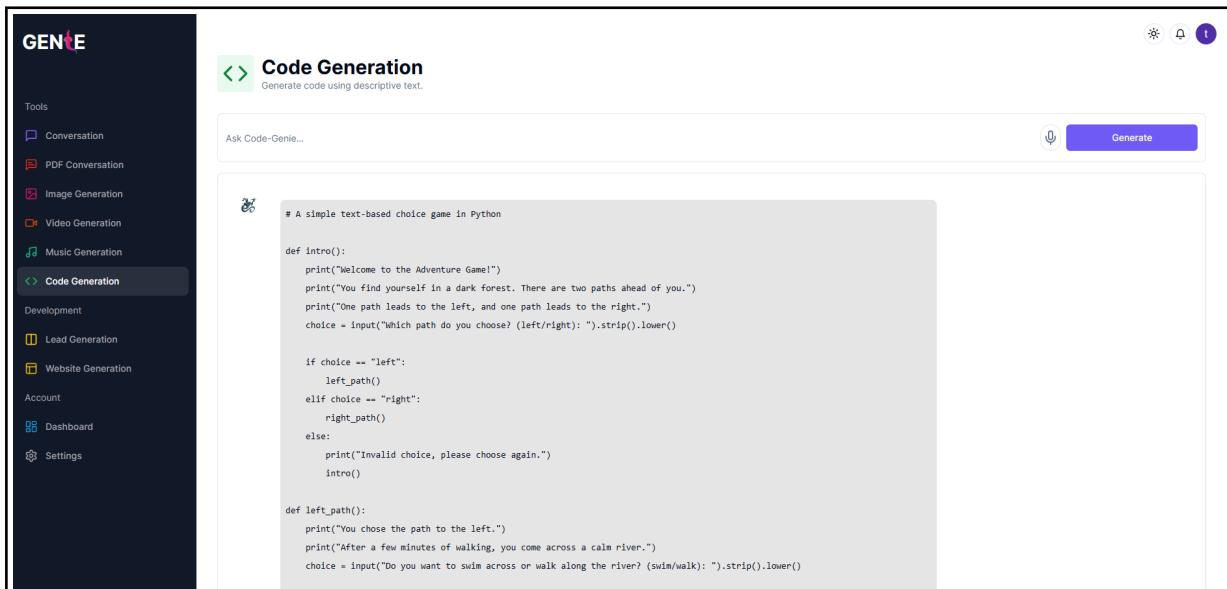


Figure 2.25: Code Generation Interface: Prompt Result

2.3 Sprint 2 Development

In the second sprint, we continue to expand the platform's capabilities by introducing new features:

- **PDF Conversation:** With this feature, users can now convert their conversations into PDF format, making it easier to save and share discussions for future reference.
- **Payment Integration:** We have integrated a payment system into the platform, allowing users to make secure transactions within the application for premium services or purchases.
- **Subscription "ToolsPro" Plan:** We have introduced a "ToolsPro" subscription plan that offers users enhanced capabilities within the platform. Subscribers to "ToolsPro" will not have limitations on the number of requests they can make to any of the content generation tools. Additionally, they will have no restrictions on the size of the PDFs they can upload and interact with. This plan is designed to provide a more seamless and unrestricted user experience, ensuring that users can fully leverage the platform's functionalities without encountering usage barriers.
- **Notification System:** Notifications primarily alert users about errors, ensuring a smoother and more seamless interaction with the platform.

2.3.1 Sprint Backlog For Sprint 2

The Table below describes the sprint 2 backlog

Epic	ID	User Story	Estimation
PDF Conversation	1.1	As a User, I want to be able to attach a PDF document and initiate a conversation based on its content.	112h
	1.2	As a User, I want the ability to delete the attached PDF document if needed.	
	1.3	As a User, I want to be able to zoom in/out, rotate, view in full screen mode, and navigate between pages within the attached PDF document.	
	1.4	As a User, I expect to see a response from the system immediately after pressing the Enter key while typing in the conversation interface.	
Payment	2	As a User, I want to pay in a clear and secure process.	8h

Subscribe "ToolsPro" Plan	3.1	As a ToolsPro User, I want to track my usage and receive alerts if I exceed predefined limits.	8h
	3.2	As a ToolsPro User, i want to be able to cancel my subscription.	
Notification	4	As a User, I want to receive notifications about any errors or issues encountered within the platform.	1h

Table 2.4: Sprint Backlog For Sprint 2

2.3.2 Use Case Diagram For Sprint 2

In this section, we will delve into the refinements of the use cases and provide a textual description for each sub-case.

The following Figure 2.26 illustrates the use case diagram for the second sprint.

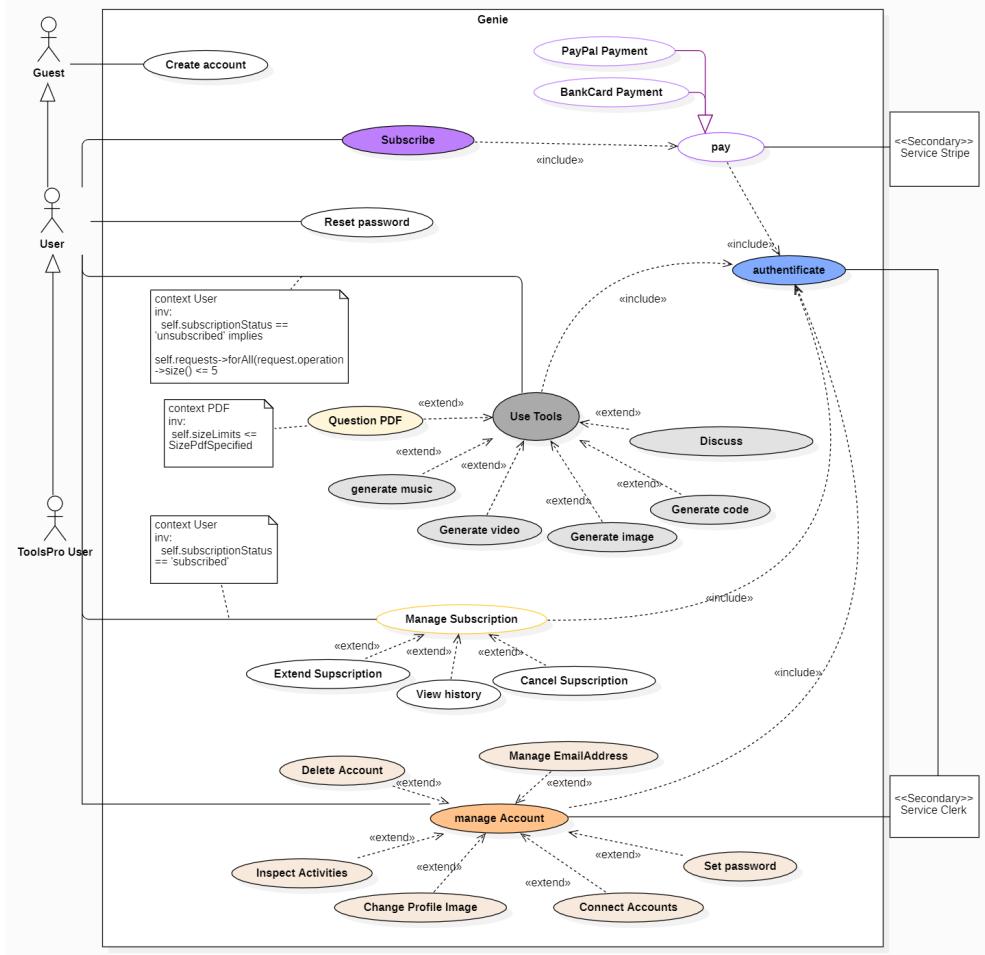


Figure 2.26: Use Case Diagram for Sprint 2

2.3.3 Textual Description Of The Use Cases for Sprint 2

This section will present the textual description of some of the use cases for the second sprint.

1. Question PDF:

The Table below presents the textual description for the "Question PDF" use case.

Actor	User
Purpose	The user should be able to upload a PDF document and engage in a conversation related to its content.
Pre-condition	User is logged into the platform.
Post-condition	PDF document uploaded successfully, and the user can initiate a conversation based on its content.
Nominal Scenario	<ol style="list-style-type: none">1. The user navigates to the "Upload PDF" section.2. The user selects the PDF file to upload.3. The user uploads the selected PDF document.4. The PDF is valid, the user can proceed to engage in a conversation based on its content.
Alternative Scenario	- The uploaded PDF is invalid or cannot be processed, an error message is displayed, and the process is halted.

Table 2.5: Description Of The Use Case «Question PDF»

2. Pay:

The Table below presents the textual description for the "Pay" use case.

Actor	User
Purpose	The user should be able to pay the choosed plan securely.
Pre-condition	User is logged into the platform and has no subscription.
Post-condition	Payment processed successfully, and the user's access to the chosen plan features or services is granted.
Nominal Scenario	<ol style="list-style-type: none">1. The user navigates to the "Payment" section.2. The user views the current usage and payment options.3. The user selects a payment method and enters the required details.4. The user confirms the payment.

	5. The system processes the payment and updates the user's subscription status.
Alternative Scenario	- The payment process fails due to insufficient funds or other issues, an error message is displayed, and the process is halted.

Table 2.6: Description Of The Use Case «Pay»

3. Subscribe To "ToolsPro" Plan

The Table below presents the textual description for the "Subscribe "ToolsPro" Plan" use case.

The user who subscribes to the "ToolsPro" plan will not be subject to limits, such as the maximum number of requests for any of the provided generation tools or the size of PDF files.

Actor	User
Purpose	The user should be able to Subscibe to the "ToolsPro" plan and track their usage and access additional features or services.
Pre-condition	User is logged into the platform and has no subscription for "ToolsPro" plan.
Post-condition	Supscription processed successfully, and the user's access to the "ToolsPro" plan features or services is granted.
Nominal Scenario	<ol style="list-style-type: none"> 1. The user navigates to the "Subscibe ToolsPro" section. 2. The user completes the payment for the ToolsPro plan. 3. The system processes the payment and updates the user's subscription status accordingly.
Alternative Scenario	<p>(a) The payment fails due to insufficient funds or an invalid payment method: -> The system displays an error message.</p> <p>(b) The user cancels the payment process before completion: -> The system aborts the transaction and the user's subscription status remains unchanged.</p>

Table 2.7: Description Of The Use Case «Subscribe to "ToolsPro" Plan»

4. Manage Subscription

The Table below presents the textual description for the "Manage Subscription" use case.

Actor	Premuim User
Purpose	The user should be able to manage their subscription, including viewing their current plan, upgrading or downgrading their plan, and canceling their subscription if needed.
Pre-condition	The user is logged into the platform and has an active subscription.
Post-condition	The user's subscription is successfully modified or canceled as per their request.
Nominal Scenario	<ol style="list-style-type: none">1. The user navigates to the "Manage Subscription" section.2. The user views their current subscription plan and options for modification.3. The user selects to upgrade, downgrade, or cancel their subscription.4. If upgrading or downgrading, the user selects the desired plan and confirms the change.5. If canceling, the user confirms the cancellation request.6. The system processes the user's request and updates their subscription status accordingly.
Alternative Scenario	- The user's subscription cannot be modified or canceled due to certain restrictions or errors, and an appropriate message is displayed.

Table 2.8: Description Of The Use Case «Manage Subscription»

2.3.4 Design Diagrams For Sprint 2

During this phase, we will develop sequence diagrams for the key use cases identified in the second sprint: PDF Conversation, Payment, Subscribe to "ToolsPro" plan. These diagrams will detail the specific interactions between users and the system components. Additionally, we will enhance our class diagram to reflect the new entities, classes, and relationships introduced in this iteration, providing a clear representation of the application's updated architecture.

2.3.4.1 Class Diagram For Sprint 2

The Figure 2.27 represents the class diagram for the second sprint.

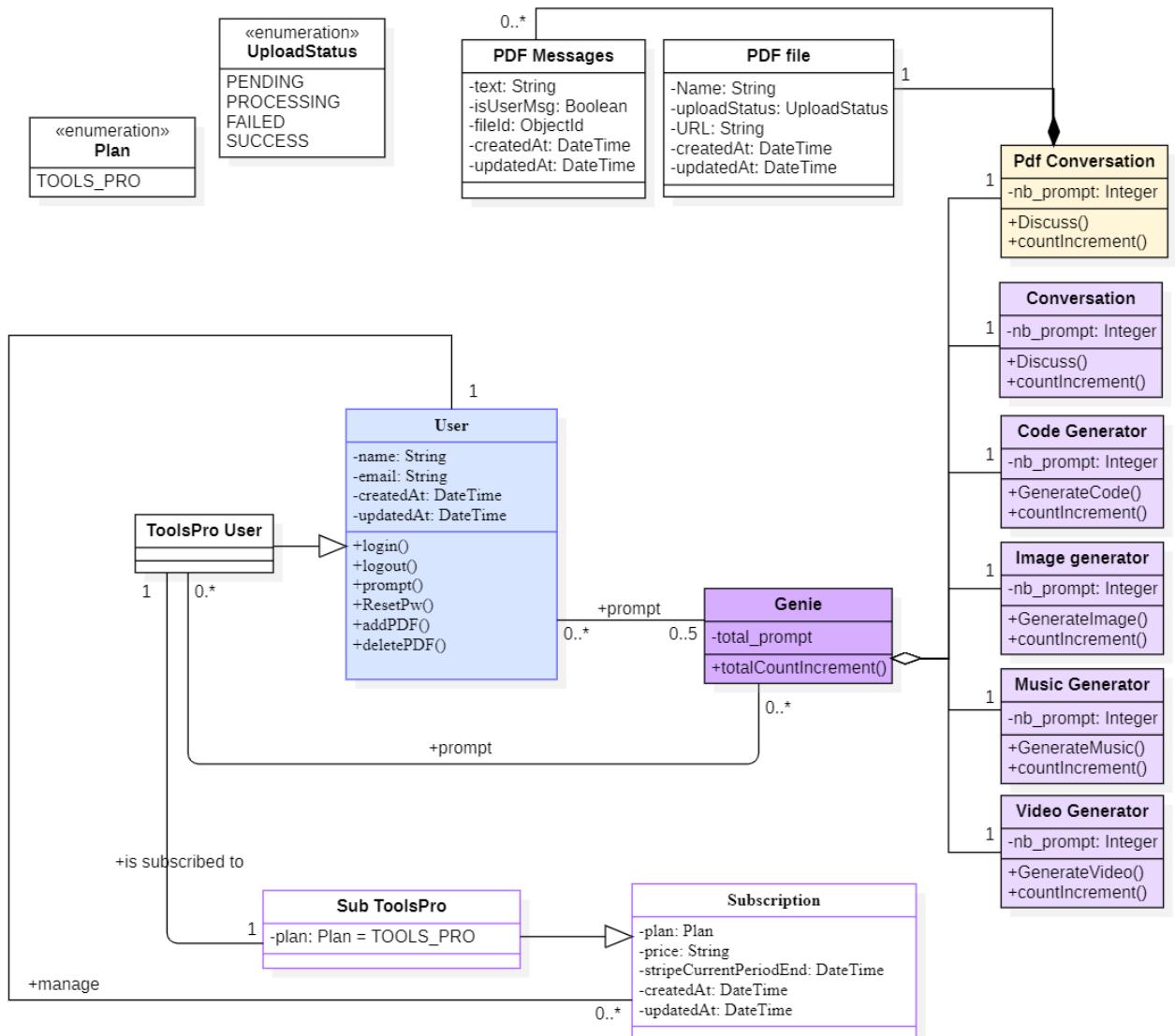


Figure 2.27: Class Diagram For Sprint 2

2.3.4.2 Detailed Sequence Diagram For The « QuestionPDF » Use Case

The Figure 2.28 presents the sequence diagram for the "QuestionPDF" use case.

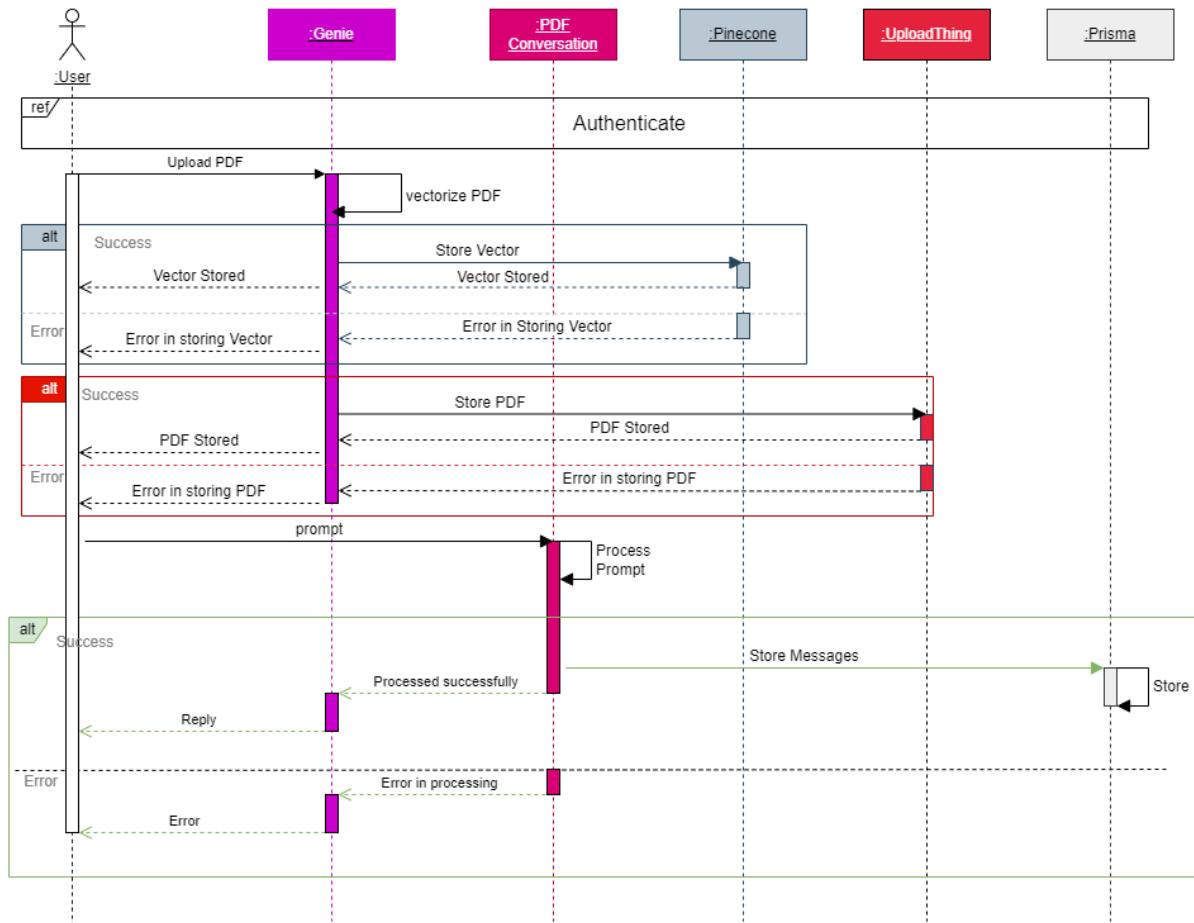


Figure 2.28: Sequence Diagram For «QuestionPDF» Use Case

2.3.4.3 Detailed Sequence Diagram For The « ToolsPro Subscription » Use Case

The diagram in Figure 2.29 illustrates the sequence of actions for the "ToolsPro Subscription" use case, including the payment process.

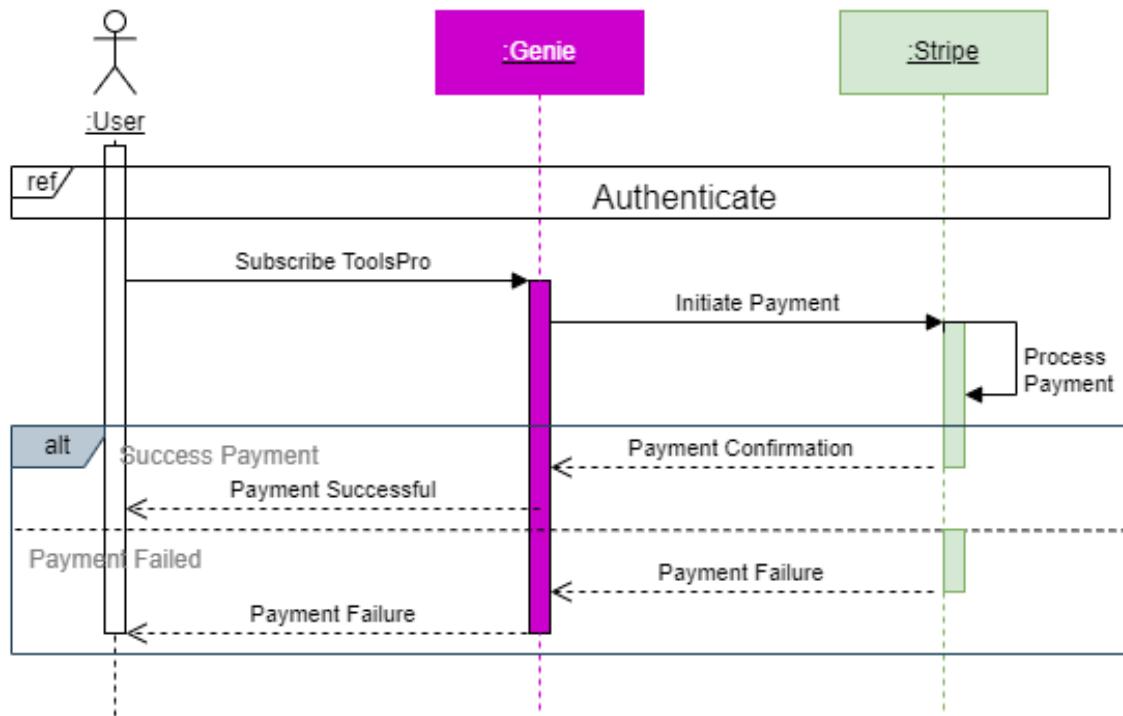


Figure 2.29: Sequence Diagram For « ToolsPro Subscription » Use Case

2.3.5 Implementation Of Sprint 2

After finalizing the design phases for the second sprint, we'll exhibit the user interfaces tailored for these particular use cases, offering visual insights through a series of screenshots.

2.3.5.1 Question PDF Interface

The following Figures illustrate the Question PDF interface along with the non subscribed user case scenario. Through these interface, users can effectively interact with the platform, enabling them to upload and engage with PDF documents, facilitating seamless communication and collaboration within the platform.

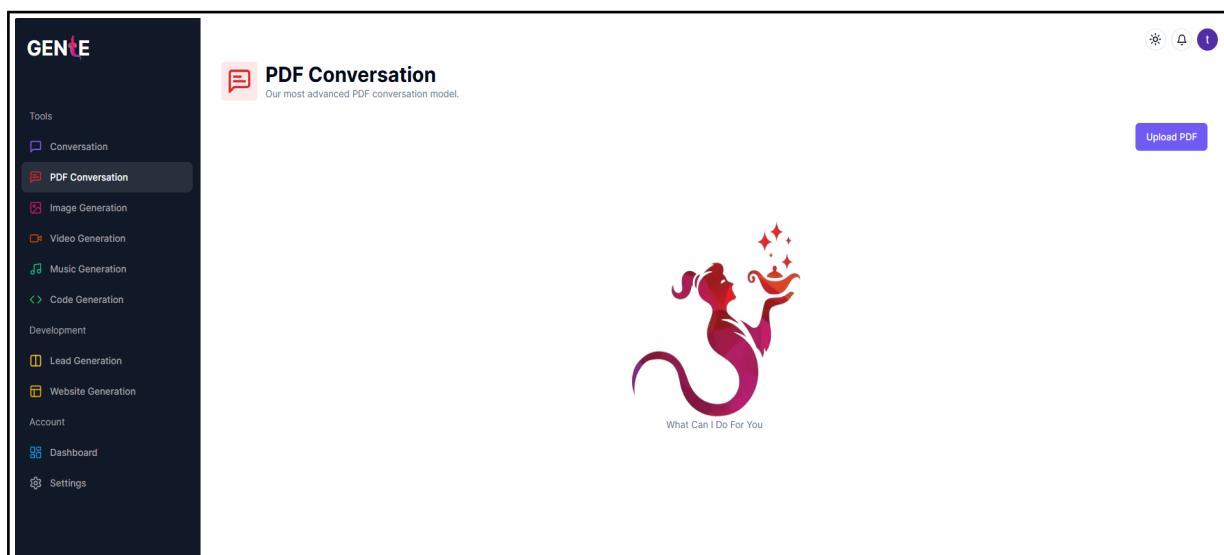


Figure 2.30: Question PDF Interface

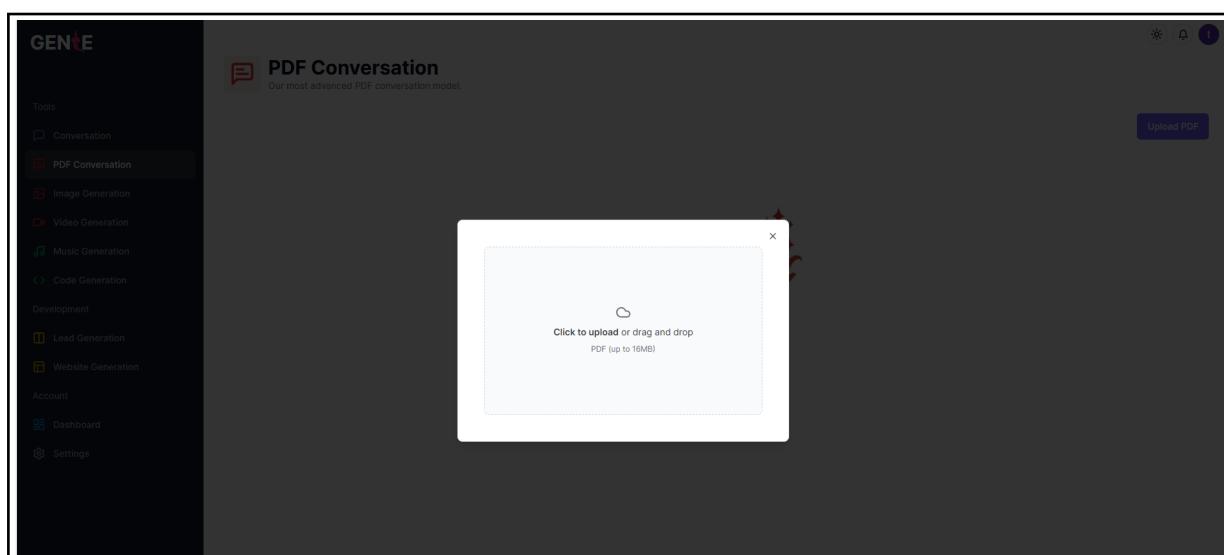


Figure 2.31: Question PDF: File Upload

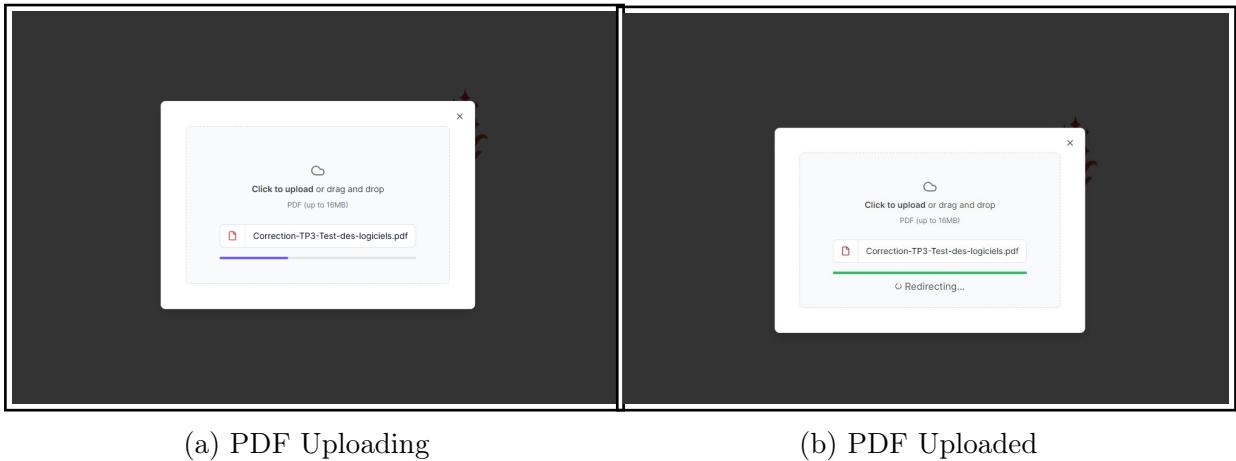


Figure 2.32: PDF Upload Process

In the case in which the PDF was successfully uploaded, the user gets redirected to the chat interface. Here the user is able to converse with his uploaded document.



Figure 2.33: Question PDF: File Upload

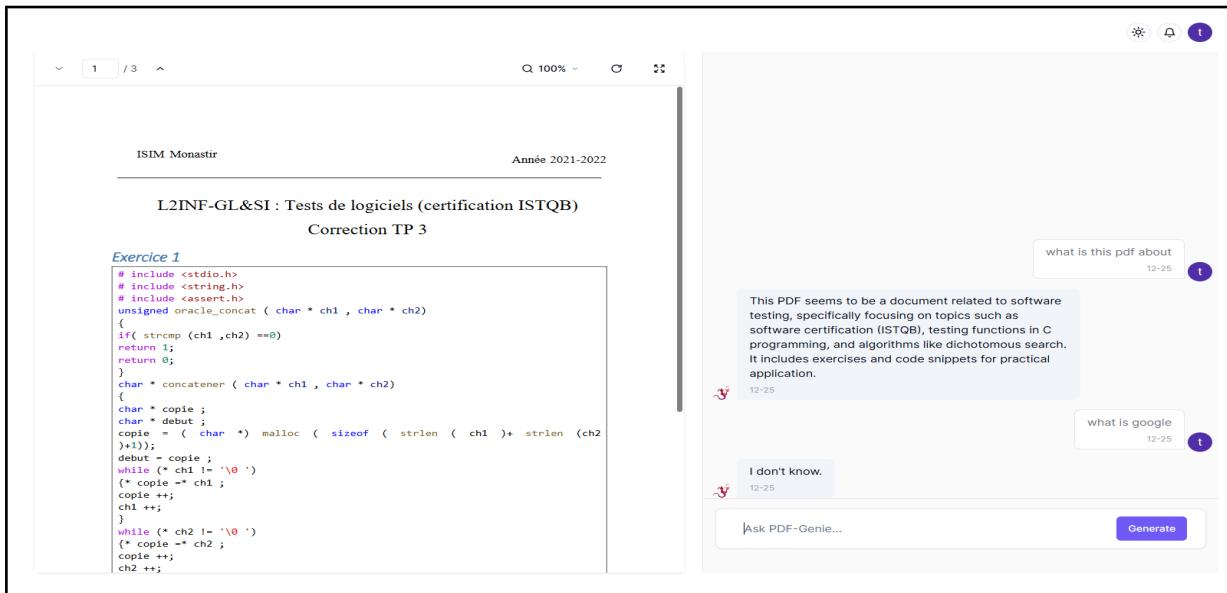


Figure 2.34: Question PDF: Chat Interface

In the case where the user is not subscribed, additional restrictions on the PDF size and number of pages are enforced.

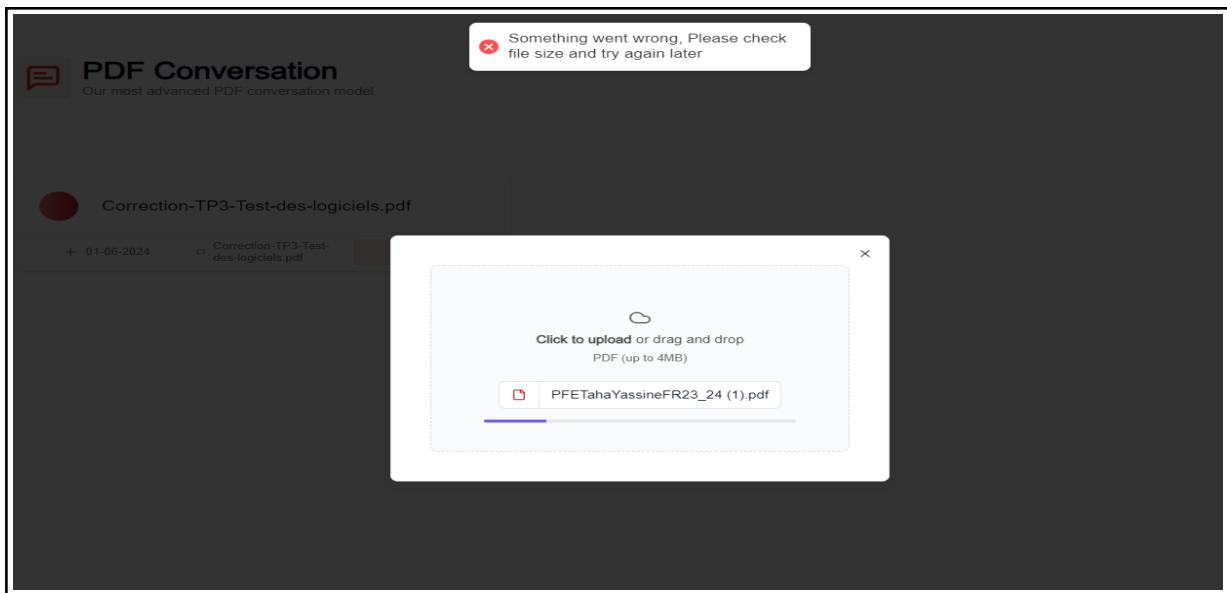


Figure 2.35: Question PDF: PDF Size Limit

CHAPTER 2. RELEASE 1: GENIE TOOLS

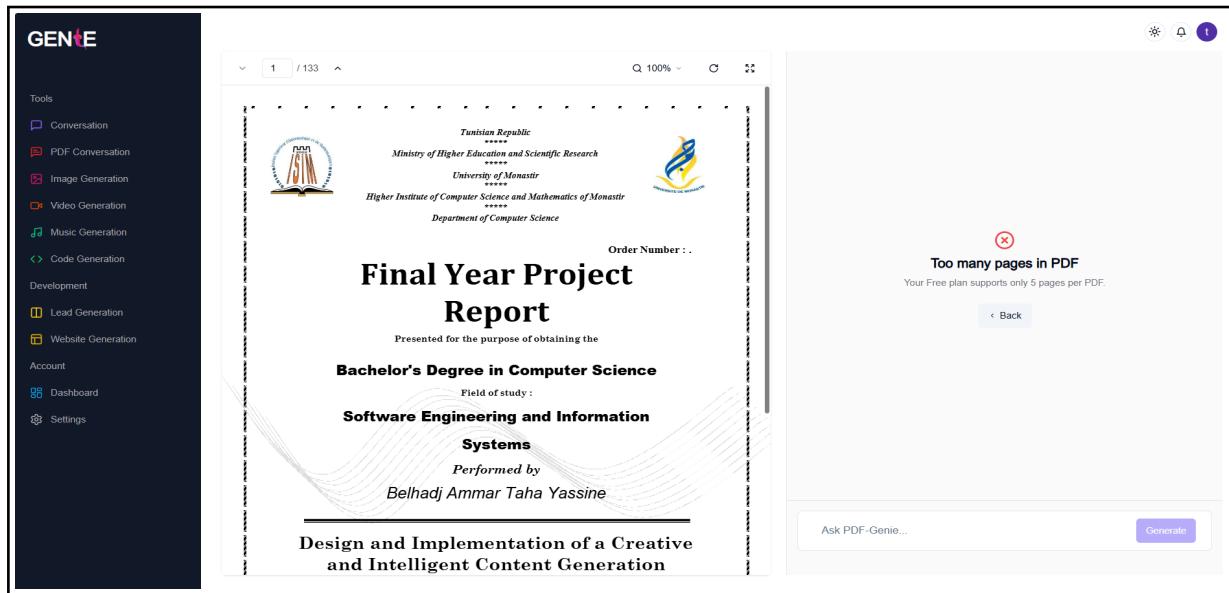


Figure 2.36: Question PDF: Number Of Pages Limit

In the event that the user has the IDM extension enabled, an error occurs and the system prompts them to disable the extension in order to preview the PDF.

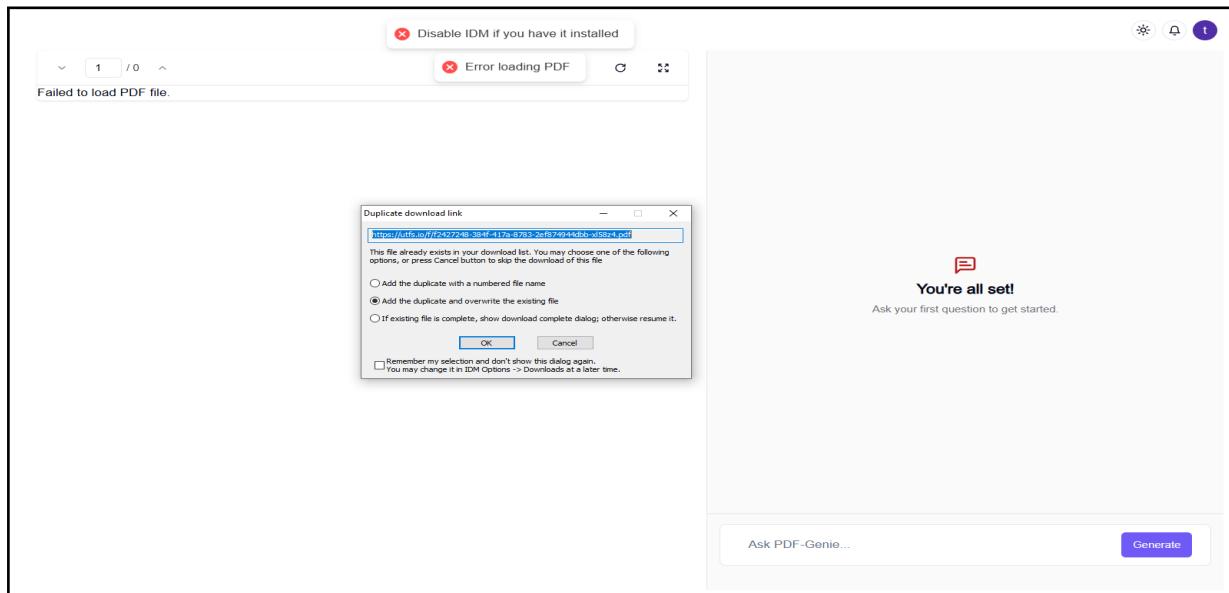


Figure 2.37: Question PDF: The IDM Extension Error

2.3.5.2 Subscription Interface

When unsubscribed users exceed their 5 use limit, a modal pops up asking them to subscribe to use the tools features.

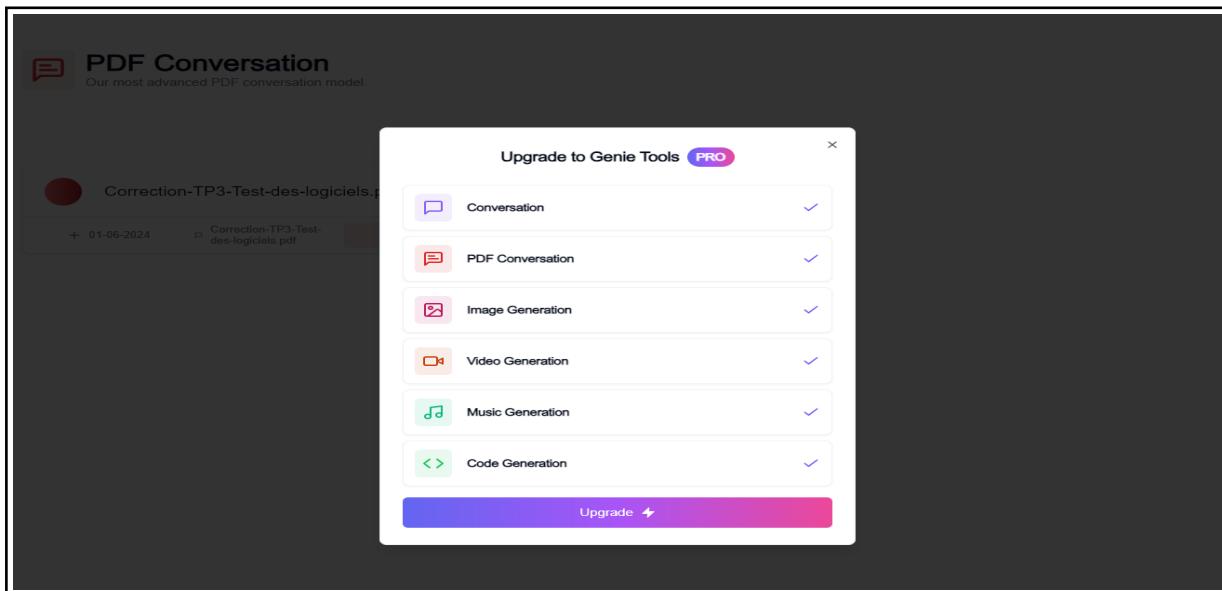


Figure 2.38: Tools Pro Subscription Modal Pop-up

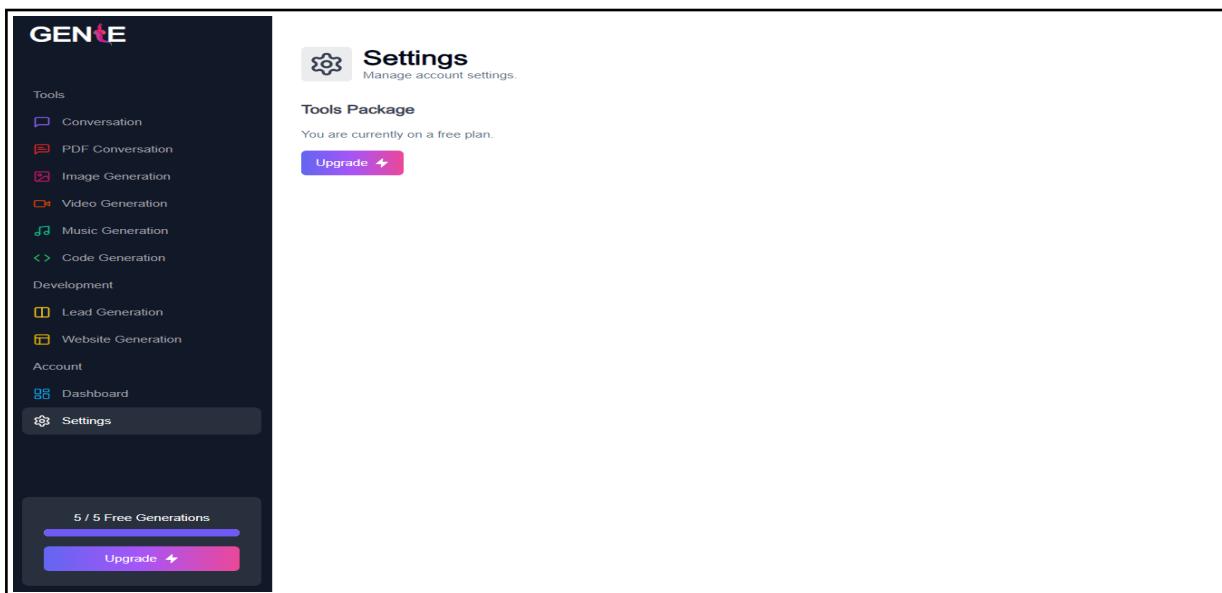


Figure 2.39: Tools Pro Subscription Limit Exceeded

2.3.5.3 Payment Interface

The Figure 2.40 illustrates the Payment interface. This interface provides users with a seamless experience to complete their transactions and manage their subscription plans efficiently.

The payment process, security is ensured through the integration of the Stripe service, providing users with a secure and reliable payment gateway.

Figure 2.40: Payment Interface

Figure 2.41: Payment Successful

2.3.5.4 Subscription Management Interface

Users can manage their subscriptions from the Settings page. The Figures 2.42 and 2.43 showcase the process of managing the ToolsPro subscription.

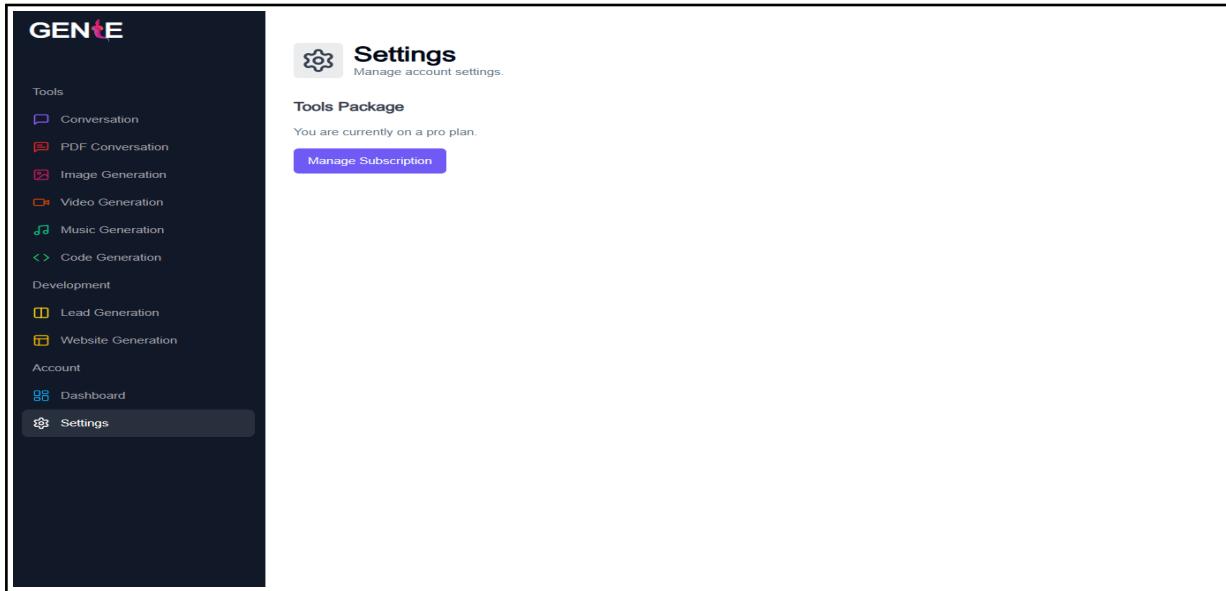


Figure 2.42: Settings Page

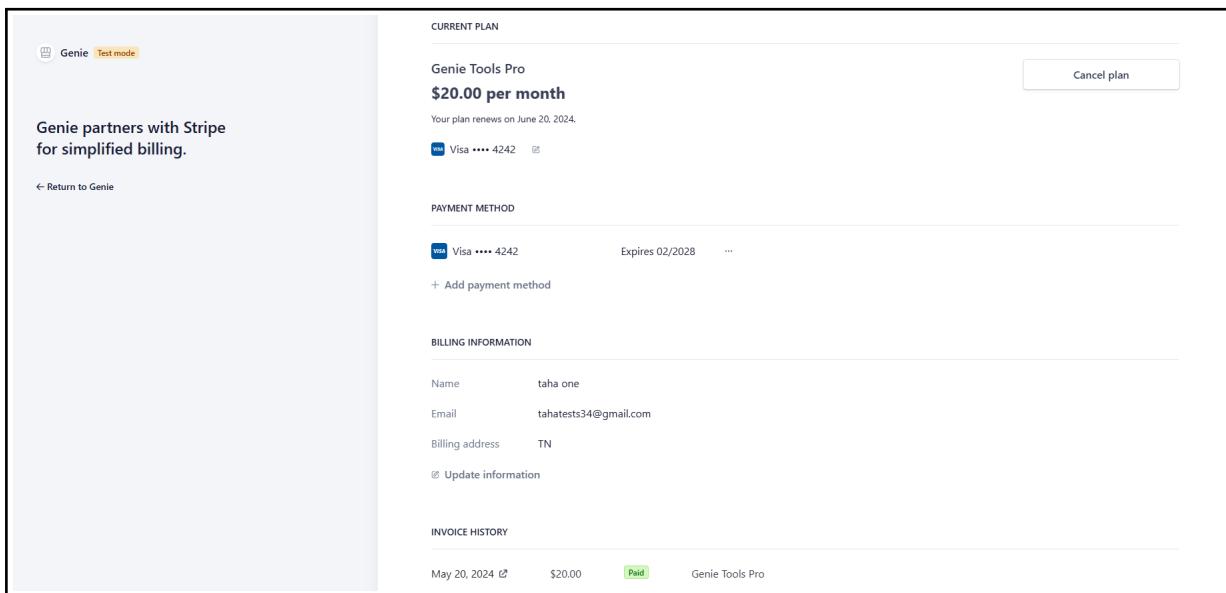


Figure 2.43: Subscription Management Interface

2.4 Sprint 3 Development

In our third sprint, we're going enhance the user experience by introducing some crucial features that will enrich our platform. We'll be rolling out important features like the Features Page, Blog Page, Pricing Page, and Landing Page. Plus, we're stepping up user engagement with Notification and Assistance and Support systems.

Additionally we'll design and test each component to ensure a seamless experience. This sprint marks the final phase of our initial release, encompassing testing and deployment. It's a significant milestone as we prepare to introduce our platform and lay the foundation for future updates and improvements.

2.4.1 Sprint Backlog For Sprint 3

Our Sprint Backlog for the third sprint is as follows:

Epic	ID	User Story	Estimation
Customer Support	1.1	As a Guest, I want to submit a question.	3h
	1.2	As an Assistant, I want to answer guest questions.	
	1.3	As a Guest, I want to view answers to my questions.	
	1.4	As a Guest, I want to see a history of my previous questions and answers, so I can refer back to past support interactions.	
Notification	2	As a User, I want to receive in-app notifications to stay informed about realtime activities and messages.	1h
Blog	3.1	As a User, I want to read blog posts, so I can stay informed about updates and news related to the platform.	8h
	3.2	As an Assistant, I want to create and publish blog posts, so I can share updates and news with users.	
Landing Page Creation	4.1	As a User, I want to interact with an engaging landing page, showcasing compelling testimonials and prominent features to captivate visitors and encourage exploration.	24h
	4.2	As a Guest, I want to understand the main value proposition of the platform, so I can decide if it's worth exploring further.	

Pricing Page Creation	5	As a User, I want to view different subscription plans, so I can choose the one that fits my budget and needs.	8h
Features Page Creation	6.1	As a User, I want to view a detailed list of features, so I can understand what the platform offers.	8h
	6.2	As a User, I want to see images and descriptions of features, so I can visualize how they work.	
	6.3	As a Guest, I want to explore the features offered by the application.	
Testing	7.1	As a developer, I want to run unit tests for each module to identify and fix any bugs.	Continuous
	7.2	As a product owner, I want to perform user acceptance testing to ensure the final product meets the user's expectations.	
Deployment	8	As a product owner, I want to verify the deployed application to ensure it functions as expected in the production environment.	3h

Table 2.9: Sprint Backlog For Sprint 3

2.4.2 Use Case Diagram For Sprint 3

We are now incorporating a use case diagram to visually represent the interactions between users. This diagram will outline the various actions that users can perform within our platform, providing a comprehensive overview of the functionality and features available.

By mapping out these use cases, we can better understand the requirements and expectations of our users, facilitating more effective design and development decisions.

The Figure 2.44 represents the use case diagram for the third sprint.

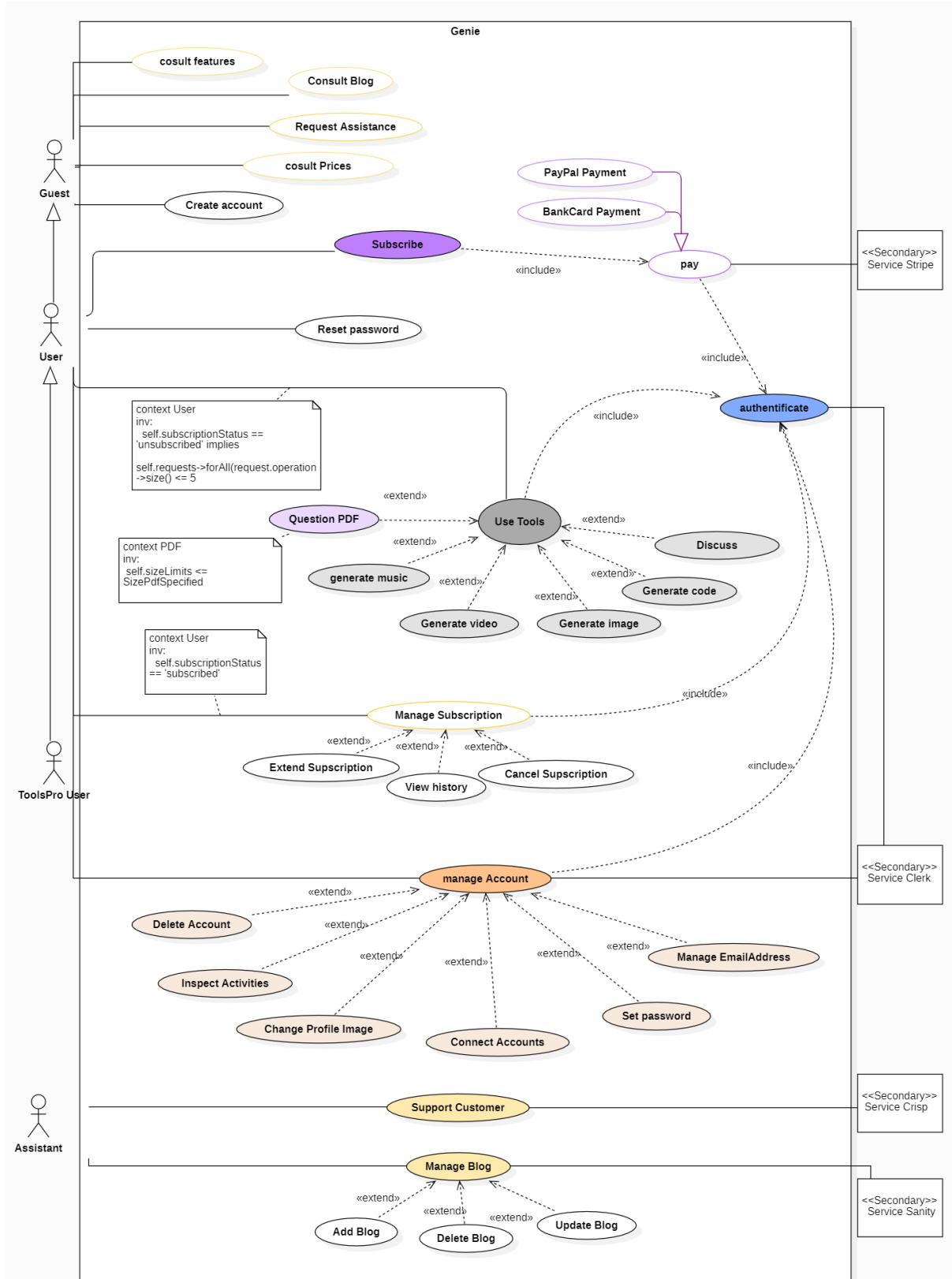


Figure 2.44: Use Case Diagram For Sprint 3

2.4.3 Textual Description Of The Use Cases For Sprint 3

This section will present the textual description of some of the use cases for the third sprint.

1. Customer Support:

Starting with the 'Customer Support' Epic.

User request management and assistance are seamlessly handled through Stripe service.

The Table below presents the textual description for the "Support Customer" use case.

Actor	Assistant
Purpose	Assistant assists users with any inquiries or questions they may have.
Pre-condition	User or Guest requires assistance or has a question.
Post-condition	User or Guest inquiry or question is addressed or resolved.
Nominal Scenario	<ol style="list-style-type: none">1. The assistant receives the inquiry or the question.2. The assistant evaluates the inquiry or the question.3. The assistant provides a response or solution.
Alternative Scenario	- The assistant is unable to address the inquiry or question immediately, they may escalate it to a higher level of support or follow up with the user or guest after obtaining additional information.

Table 2.10: Description Of The Use Case « Support Customer »

The Table below presents the textual description for the "Request Assistance" use case.

Actor	Guest
Purpose	Guest requests assistance or support for any inquiries or issues they encounter.
Pre-condition	Guest requires assistance or encounters an issue while using the platform.
Post-condition	Guest inquiry or issue is addressed or resolved by the support team.
Nominal Scenario	<ol style="list-style-type: none">1. The guest encounters an issue or has a question.

	<ol style="list-style-type: none"> 2. The guest navigates to the support or assistance section of the platform. 3. The guest submits a request for assistance, providing details about the issue or inquiry. 4. The support team receives the guest's request for assistance. 5. The support team evaluates the request and provides a response or solution to the guest. 6. The guest receives the response to his requests.
Alternative Scenario	<ul style="list-style-type: none"> - The issue requires further investigation or cannot be immediately resolved, the support team may follow up with the guest for additional information or escalate the issue internally.

Table 2.11: Description Of The Use Case « Request Assistance »

2. Assistant

The Table below presents the textual description for the "Manage Blog" Use Case, designed to share updates, insights, and valuable content with our users.

Actor	Assistant
Purpose	Assistant can create and manage the content for the Blog.
Pre-condition	Assistant is logged into the platform and has not yet modified the blog content or created any new entries.
Post-condition	The Blog Page is created or updated successfully.
Nominal Scenario	<ol style="list-style-type: none"> 1. The assistant navigates to the Blog Creation section. 2. The assistant selects the Blog Page to create or update. 3. The assistant enters or edits the content for the Blog Page. 4. The assistant submits the changes. 5. The system validates and saves the changes. 6. The updated content is displayed on the Blog Page.
Alternative Scenario	<ul style="list-style-type: none"> - The entered content is invalid or fails to meet the system requirements, an error message is displayed, and the changes are not saved.

Table 2.12: Description Of The Use Case « Manage Blog »

2.4.4 Diagrams Design For Sprint 3

In this section, we will present the detailed design diagrams for Sprint 3, focusing on the new functionalities added in this iteration. These include sequence diagrams for key user interactions, such as creating and managing a Blog and requesting assistance. We will also provide class diagrams to illustrate the structure and relationships of the entities involved.

2.4.4.1 Class Diagram For Sprint 3

The Figure 2.45 represents the class diagram for the third sprint.

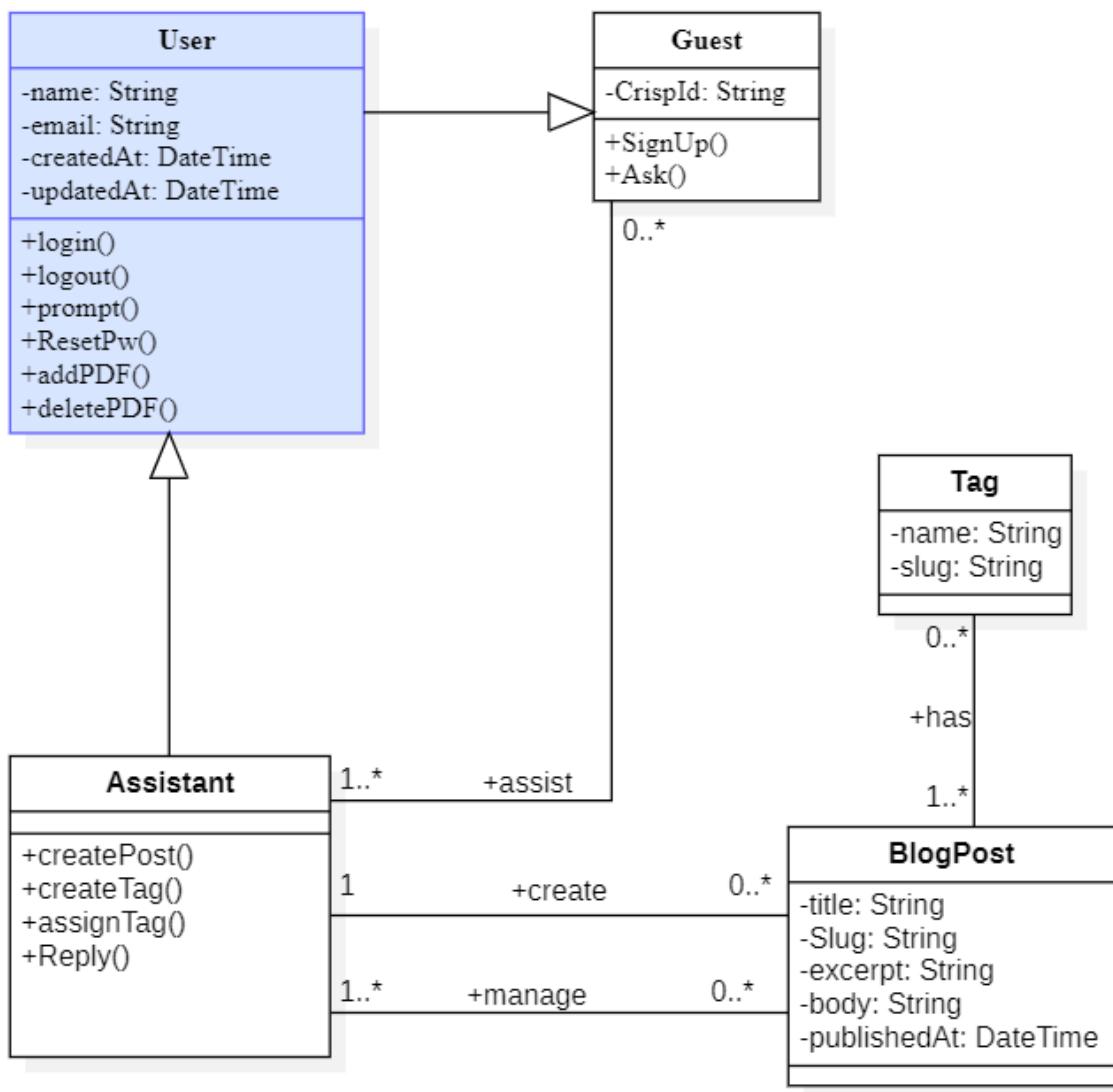


Figure 2.45: Class Diagram For Sprint 3

2.4.4.2 Detailed Sequence Diagram For The « Support Customer » And « Request Assistance » Use Cases

The Crisp service is responsible for facilitating communication between :

- Assistant - Assistant
- Assistant - User

The Figure 2.46 presents the sequence diagram for the « Support Customer » and « Request Assistance » Use Cases. It details the interactions between the user, the assistants and systems involved in these processes.

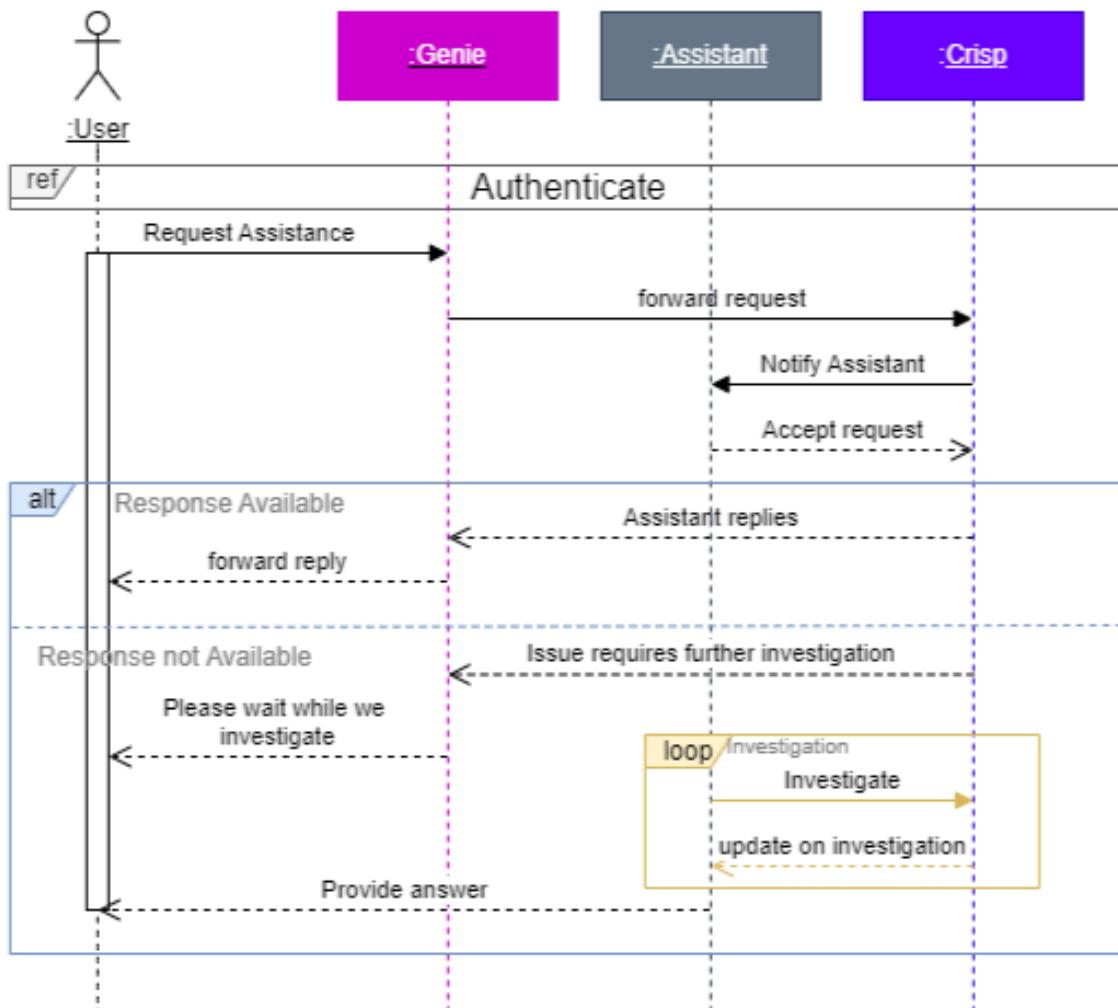


Figure 2.46: Sequence Diagram For « Support Customer » And « Request Assistance » Use Cases

2.4.4.3 Detailed Sequence Diagram For The « Manage Blog » Use Case

The Figure 2.47 presents the sequence diagram for the « Manage Blog » Use Case.

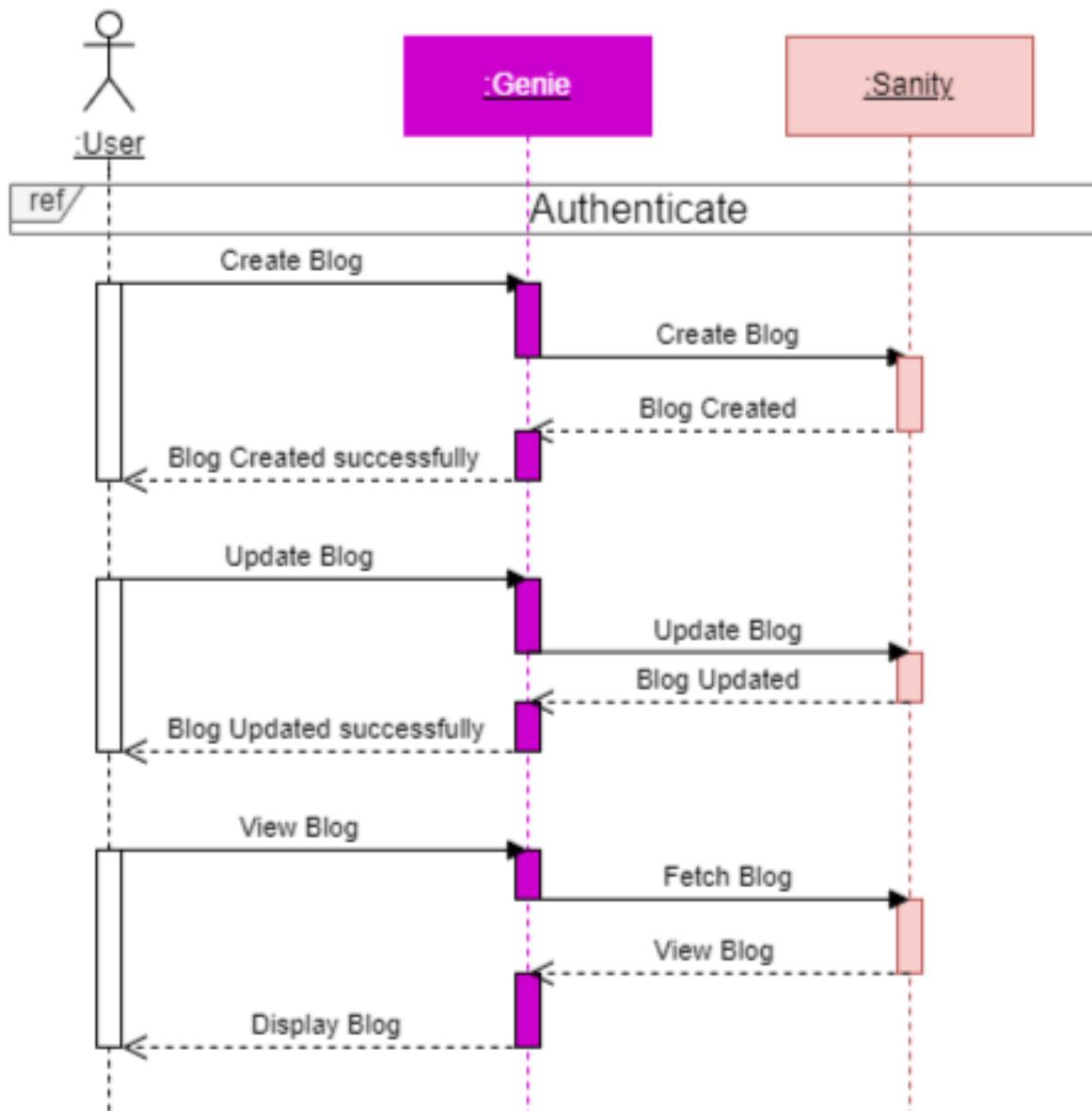


Figure 2.47: Sequence Diagram For « Manage Blog » Use Case

2.4.5 Implementation Of Sprint 3

In this section, we'll dive into the implementation details of Sprint 3, focusing on the final set of features and enhancements for our platform's first release. We will provide an overview of the tasks completed through a series of screenshots.

2.4.5.1 Landing Page Interface

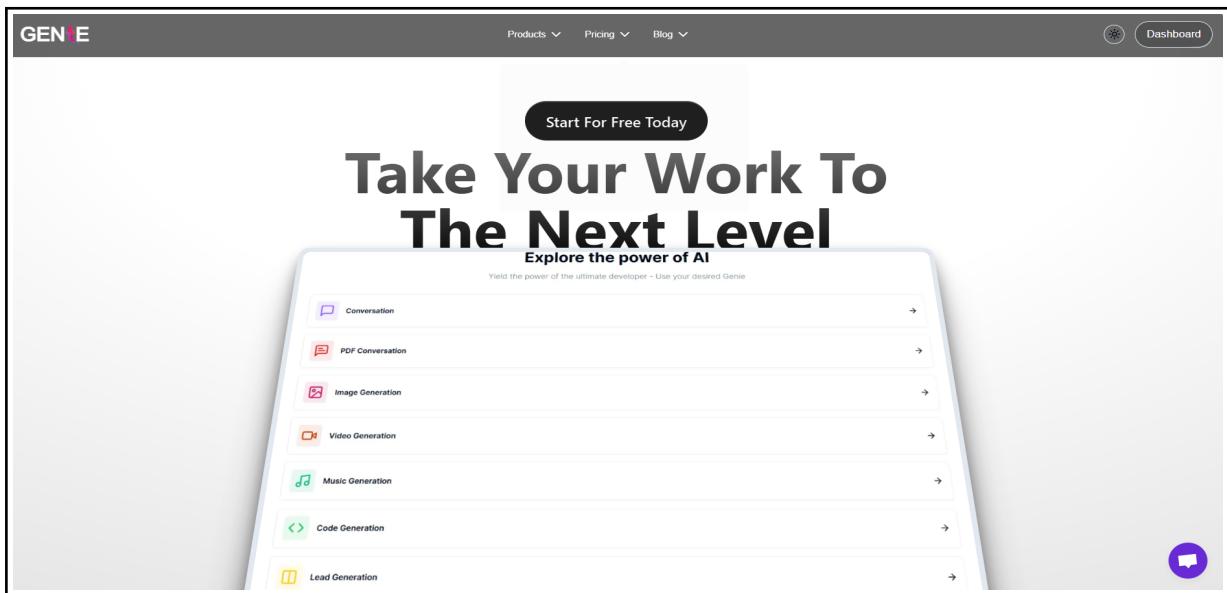


Figure 2.48: Landing Page Interface

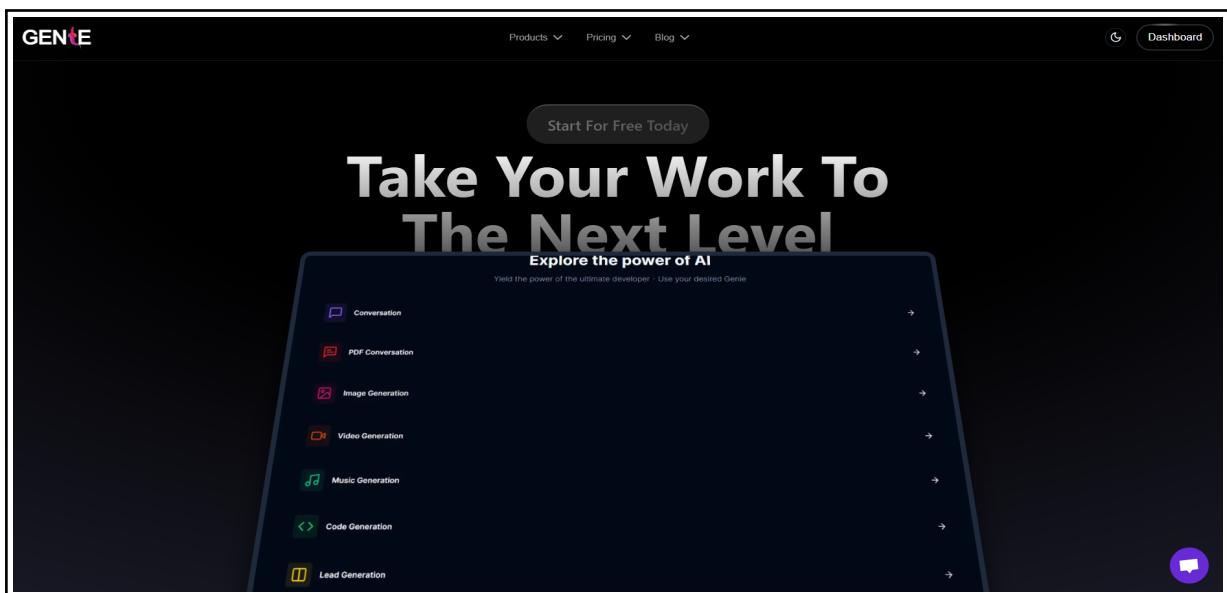
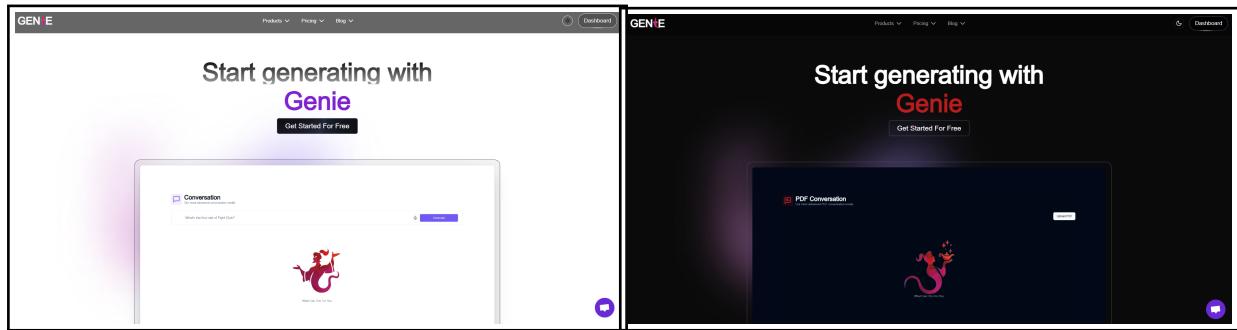


Figure 2.49: Landing Page Interface: Dark Theme

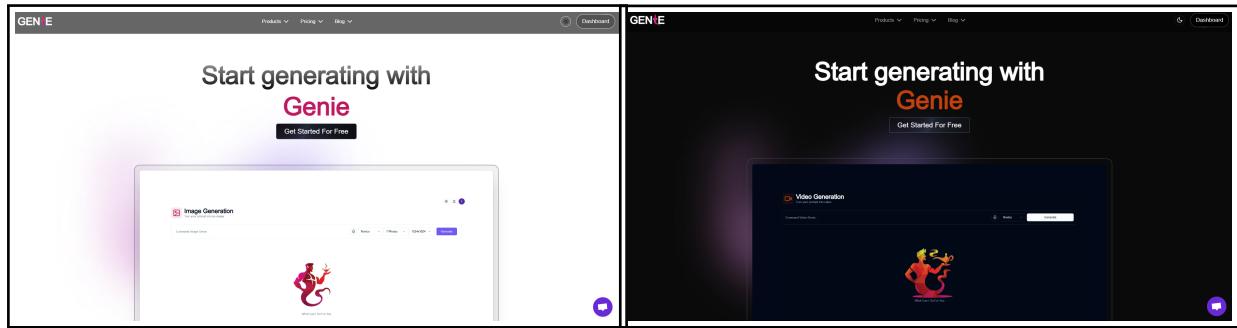
2.4.5.2 Features Page Interface

The feature pages provide a comprehensive preview of the Service interface, accompanied by a detailed guide on its usage. These pages are designed to offer a thorough understanding of the interface's functionality and to ensure users can effectively utilize the service.



(a) Conversation Feature Page : Light Theme (b) PDF Conversation : Dark Theme

Figure 2.50: Conversation & PDF Feature's Page



(a) Image Generation: Light Theme (b) Video Generation: Dark Theme

Figure 2.51: Image & Video Generation Feature's Page



(a) Music Generation: Light Theme (b) Code Generation: Dark Theme

Figure 2.52: Music & Code Generation Feature's Page

2.4.5.3 Pricing Page Interface

The Pricing page offers a clear and detailed overview of the subscription plans available for our platform. It is designed to help potential customers understand the value and features associated with each plan.

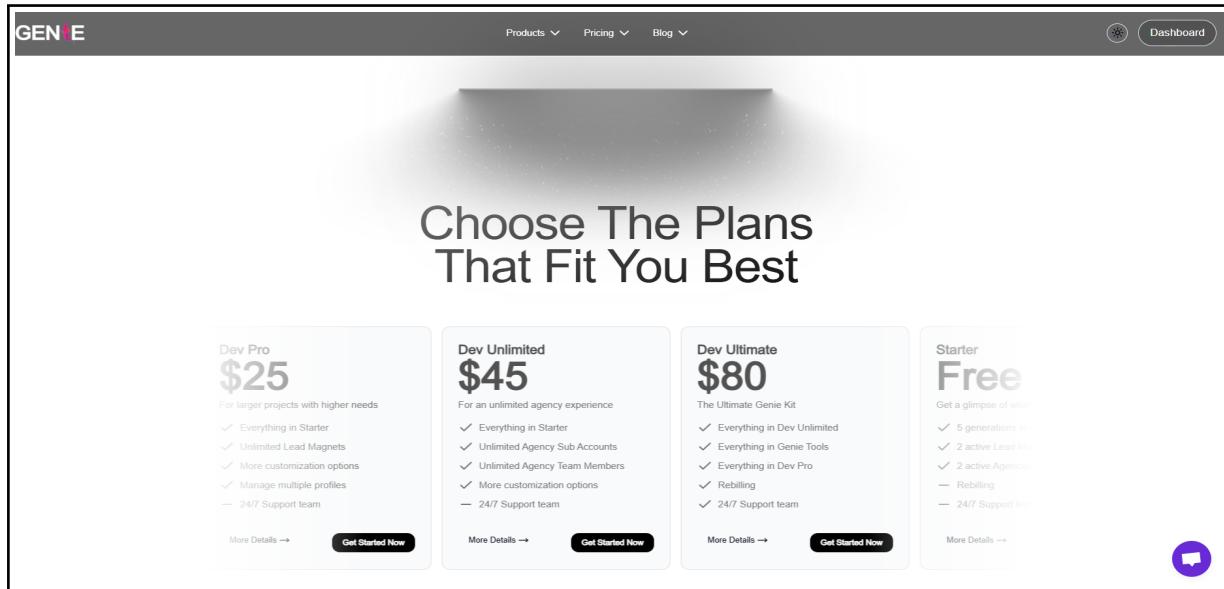


Figure 2.53: Pricing Page Interface

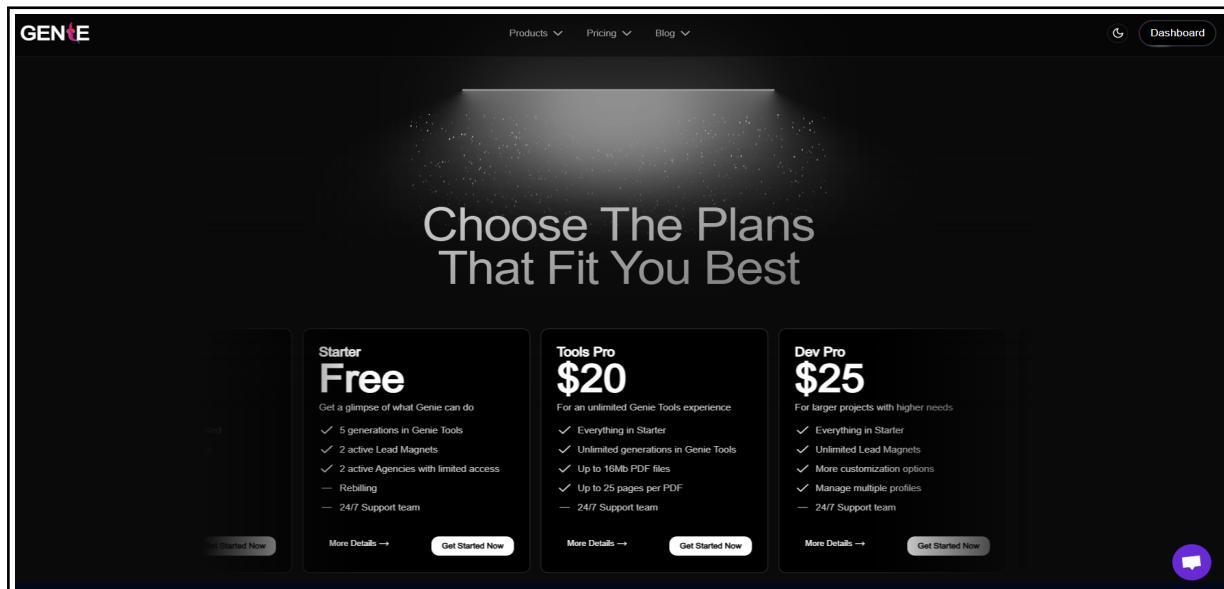


Figure 2.54: Pricing Page Interface: Dark Theme

2.4.5.4 Blog Page Interface

The Blog page serves as the central hub for all our latest articles, updates, and insights. It is designed to engage our audience with valuable content that informs, educates, and inspires. As well as boost the SEO of the website.

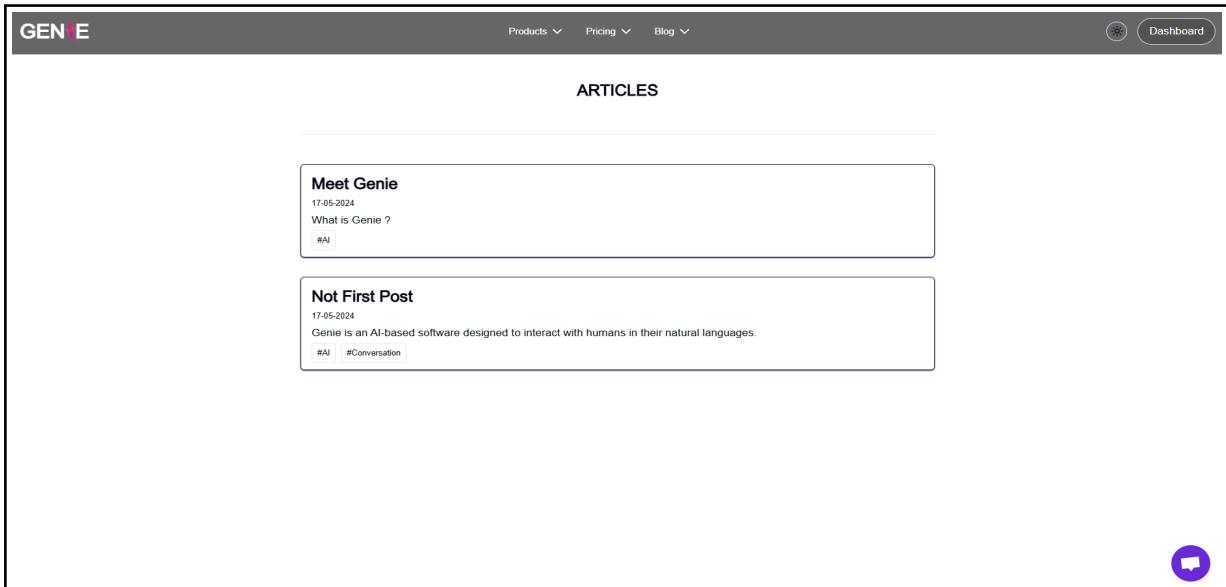


Figure 2.55: Blog Page Interface

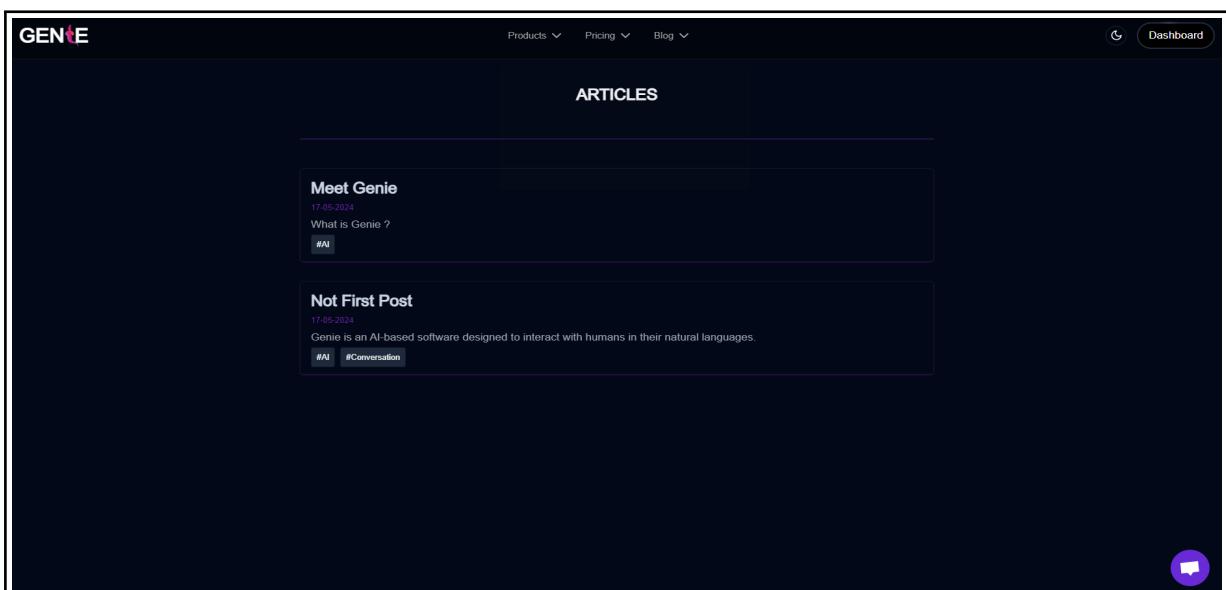


Figure 2.56: Blog Page Interface: Dark Theme

2.4.6 Testing

In this section, we discuss the testing strategies and methodologies employed to ensure the robustness and reliability of our platform.

We used ESLint to detect type and syntax errors early in the development process. Additionally, our primary focus has been on E2E testing [30] using Cypress [31]. By employing these testing strategies, we aim to deliver a high-quality, reliable product.

- 1. Lint Testing:** ESLint is a powerful linting tool [29], to detect type and syntax errors early in the development process. It helps maintain code quality by enforcing coding standards and identifying potential issues before they become problematic.

```
./components/custom-ui/3d-card.tsx
122:6 Warning: React Hook useEffect has a missing dependency: 'handleAnimations'. Either include it or remove the dependency array. react-hooks/exhaustive-deps

./components/custom-ui/hover-border-gradient-button.tsx
57:6 Warning: React Hook useEffect has missing dependencies: 'duration' and 'rotateDirection'. Either include them or remove the dependency array. react-hooks/exhaustive-deps

./components/custom-ui/infinite-moving-3d-cards.tsx
24:6 Warning: React Hook useEffect has a missing dependency: 'addAnimation'. Either include it or remove the dependency array. react-hooks/exhaustive-deps

./components/custom-ui/infinite-moving-cards.tsx
27:6 Warning: React Hook useEffect has a missing dependency: 'addAnimation'. Either include it or remove the dependency array. react-hooks/exhaustive-deps

./components/custom-ui/shifting-dropdown.tsx
12:3 Error: Missing "key" prop for element in array react/jsx-key
13:3 Error: Missing "key" prop for element in array react/jsx-key
14:3 Error: Missing "key" prop for element in array react/jsx-key
15:3 Error: Missing "key" prop for element in array react/jsx-key
16:3 Error: Missing "key" prop for element in array react/jsx-key
151:6 Warning: React Hook useEffect has a missing dependency: 'moveHub'. Either include it or remove the dependency array. react-hooks/exhaustive-deps

./components/global/tag-creator.tsx
34:6 Warning: React Hook useEffect has a missing dependency: 'getSelectedTags'. Either include it or remove the dependency array. If 'getSelectedTags' changes too often, find the parent component that defines it and wrap that hooks/exhaustive-deps

./components/landing-navbar.tsx
73:45 Error: Missing "key" prop for element in iterator react/jsx-key
```

Figure 2.57: ESLint Tests Examples

- 2. E2E Testing:** For our E2E [30] tests, we conducted the following:

- Landingpage tests scenarios:** Verified the presence and functionality of elements on the landing page, such as inspecting prices, features, and reviews.
- Navigation Tests Scenarios:** Ensured smooth navigation between pages throughout the app using the navbar and links.
- Genie Tools Tests Scenarios:** Accessed the bot, change parameters if needed, prompted it, and checked the results displayed.
- PDF Handling:** Uploaded files, interacted with the bot, viewed replies, and tested the size and number of pages limitations.
- Blog Tests Scenarios:** Verified the presence of blog posts and ensured the functionality of tags.
- Authorisation Check:** Checked auth scenarios, such as private pages, public pages, login, etc...

- **Subscribe Tests Scenarios:** Tested how the platform handles both subscribed and unsubscribed users when they try to subscribe.
- **Payment:** Ensured that the data is checked for validity.

The Following Figure and Figure shows some of the tests we ran in this release, as well as a test example:

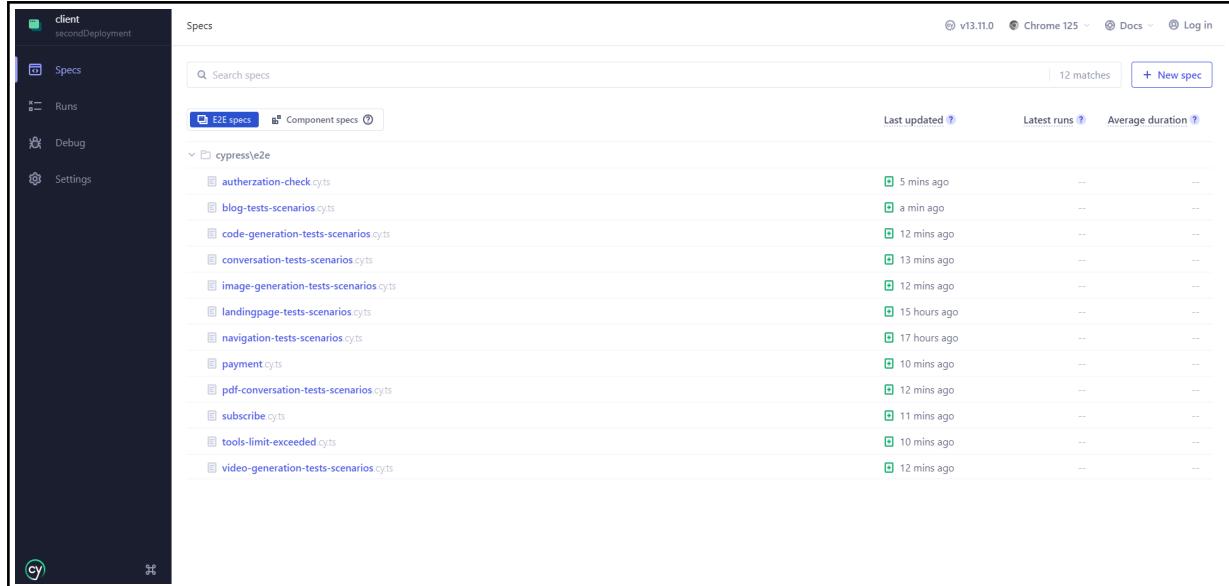


Figure 2.58: Cypress Specs

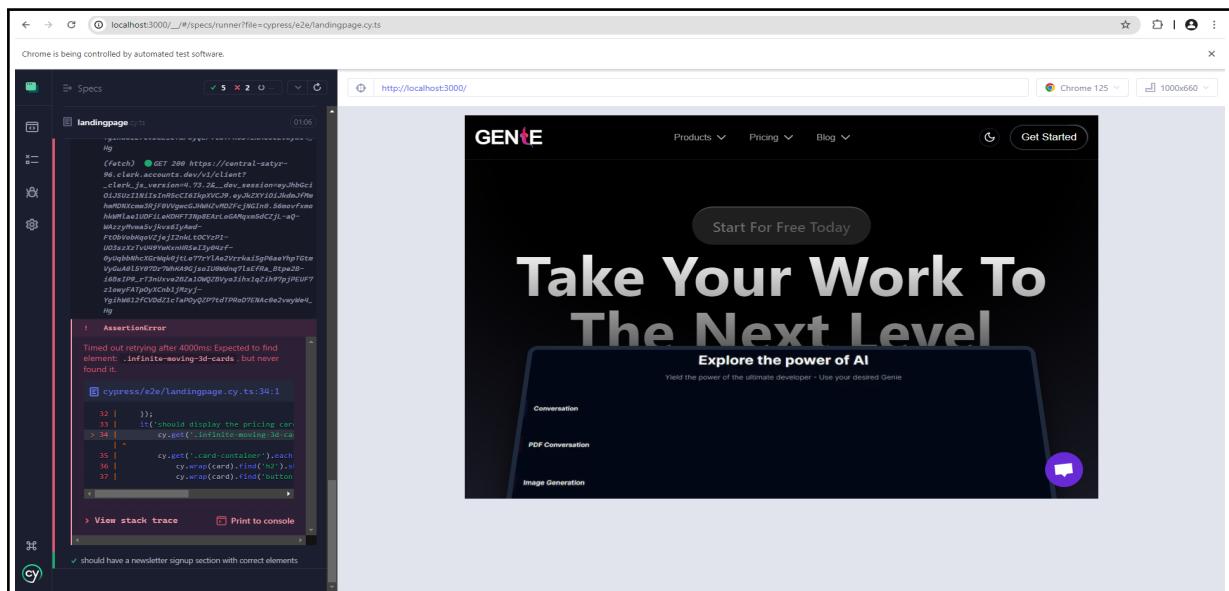


Figure 2.59: Cypress Test Example: Landingpage-Test-Scenarios

2.4.7 Deployment

This section outlines the deployment process for our platform's first release. We utilized Vercel [32] mainly for its seamless integration with NextJs. It supports features such as automatic scaling, global CDN, and serverless functions, which enhance performance and reliability. By leveraging Vercel's capabilities, we ensured rapid deployment and continuous delivery, allowing us to focus on development while Vercel handles the infrastructure.

The Figures 2.60 and 2.61 below show our platform status deployment status at Vercel, as well as a view of its functionality while being deployed.

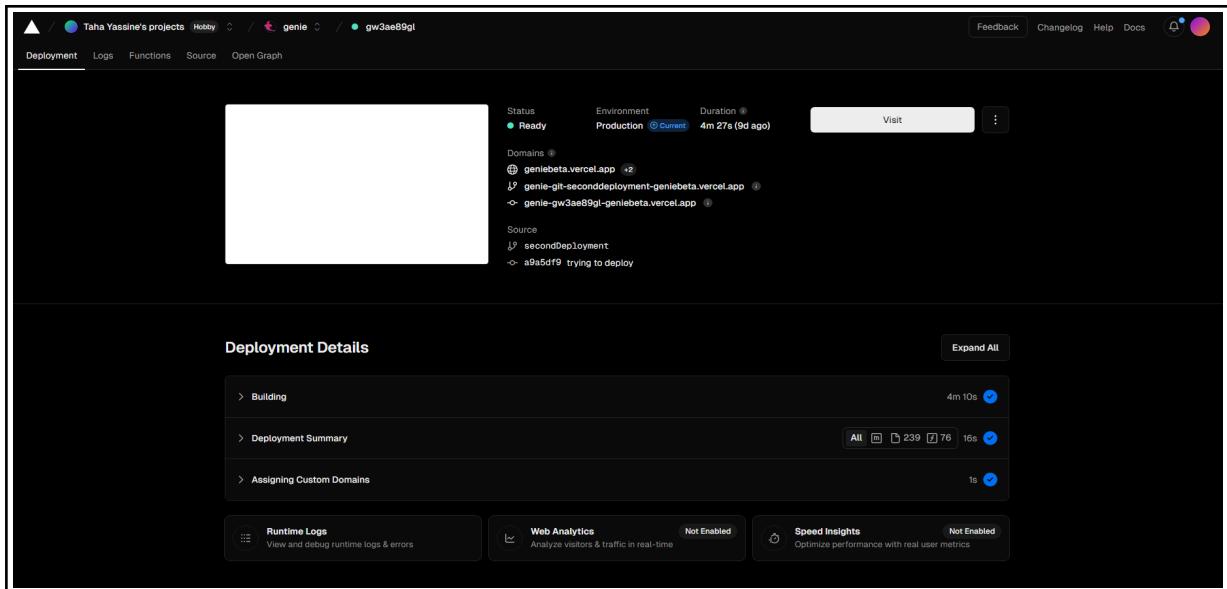


Figure 2.60: Vercel Deployment Interface: Genie Dashboard

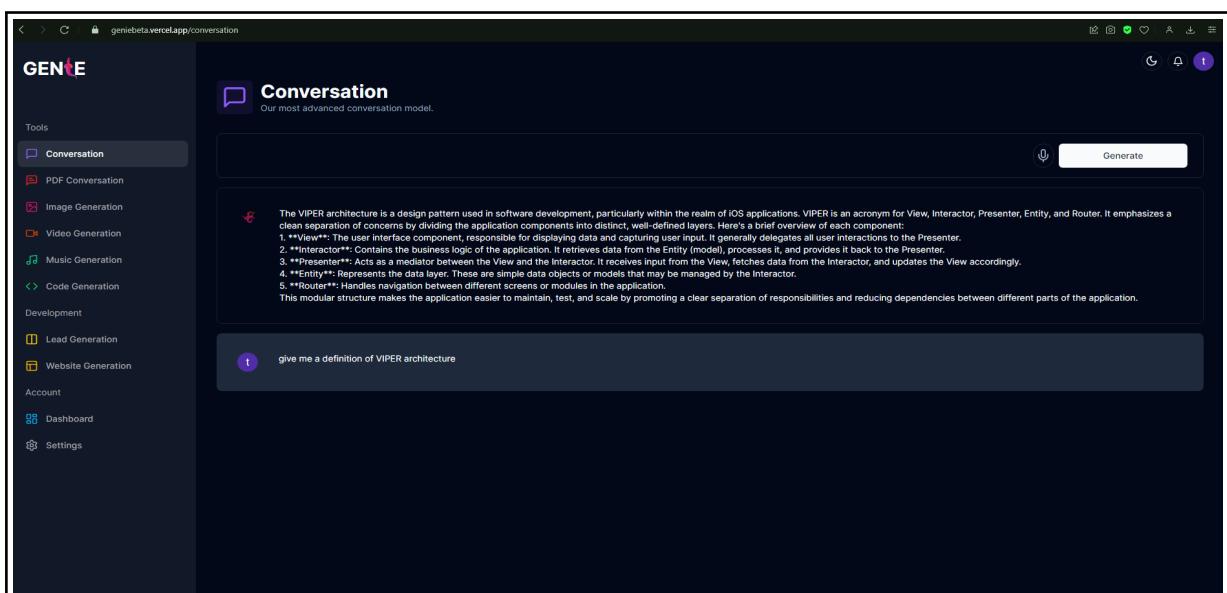


Figure 2.61: Platform Deployed: Conversation Example

2.4.8 Conclusion

In conclusion, the development of our platform through the three sprints has been a comprehensive journey of iterative design, testing, and refinement. Starting with the foundational elements in Sprint 1, we focused on creating a robust user interface and essential features such as authentication and content generation.

Sprint 2 built upon this foundation by integrating advanced functionalities like PDF interaction, payment processing, and notifications, ensuring a seamless user experience.

In Sprint 3, we concentrated on enhancing user engagement and support with the addition of the Features Page, Blog Page, Pricing Page, and Landing Page. The implementation of assistance and support systems, coupled with rigorous testing and feedback collection, ensured that our platform is both reliable and user-friendly. Each sprint's completion brought us closer to our goal, culminating in the final deployment of a fully functional and refined platform.

Throughout this project, our iterative approach allowed us to adapt to feedback and continuously improve the platform, ensuring it meets the needs and expectations of our users. The successful deployment marks a significant milestone, but it is just the beginning of our ongoing commitment to enhancing and expanding the platform.

CHAPTER 3

RELEASE 2: GENIE DEVELOPER

3.1 Introduction

This chapter focuses on the second and final release of our Genie project. We will begin by presenting the backlog for each sprint, followed by a detailed design of the steps to be completed. Then, we will implement the enhancements and new features planned for this release.

Across the remaining three sprints, we will introduce significant functionalities, including the DevPro Lead Magnet subscription, agency subscriptions such as Dev Ultimate, Dev Unlimited, and 24/7 Support Team. Additionally, we will create a Dashboard and implement Automation features.

These efforts will conclude with the launch of our project's ultimate version, embodying the culmination of our progress and improvements.

3.2 Sprint 4 Development

In this section, we outline the tasks and goals for Sprint 4. This sprint focuses on introducing critical functionalities aimed at enhancing user engagement and service offerings. The primary tasks for this sprint include:

- Lead Magnet: Creating compelling content or offers to capture user interest and generate leads for our subscription services.
- DevPro Subscription: We have introduced a "DevPro" subscription plan that offers users enhanced capabilities within the platform. Subscribers to "DevPro" will not have limitations on the number of active Lead "Magnets" they have.

3.2.1 Sprint Backlog For Sprint 4

The Table below describes the sprint 4 backlog.

Epic	ID	User Story	Estimation
Lead Magnet	1.1.1	As a User, i want to create and manage my lead magnets.	168h
	1.1.2	As a User, i want to save, delete, publish and unpublish my Lead Magnets.	
	1.1.3	As a User, I want to edit and customize my Lead Magnet's layout, bot prompt and profile's information.	
	1.1.4	As a User, I want to preview my Lead Magnet before i publish it.	
	1.1.5	As a User, I want to block users from using the bot if they didn't submit their contact information.	
	1.1.6	As a User, I want to offer a preview of my created Lead Magnet to my customers when i share a link.	
	1.1.7	As a User, I want to view my Lead Magnet's statistics.	
	1.1.8	As a User, I want to view the list of leads associated with each of my Lead Magnets.	
	1.1.9	As a DevPro User, I want to generate Lead Magnets without limitation.	
Subscribe "DevPro" Plan	1.2.1	As a Lead, I want to converse with the Lead Magnet bot smoothly.	4h
	2.1	As a DevPro User, I want to track my usage and receive alerts if I exceed predefined limits.	
	2.2	As a DevPro User, i want to be able to cancel my subscription.	

Table 3.1: Sprint Backlog For Sprint 4

3.2.2 Use Case Diagram For Sprint 4

In this subsection, we present the Use Case Diagram for Sprint 4, which visualizes the interactions between users and the new functionalities introduced in this sprint. The diagram includes the DevPro User and the general Lead Magnet functionalities.

The following Figure 3.1 illustrates the use case diagram for the fourth sprint.

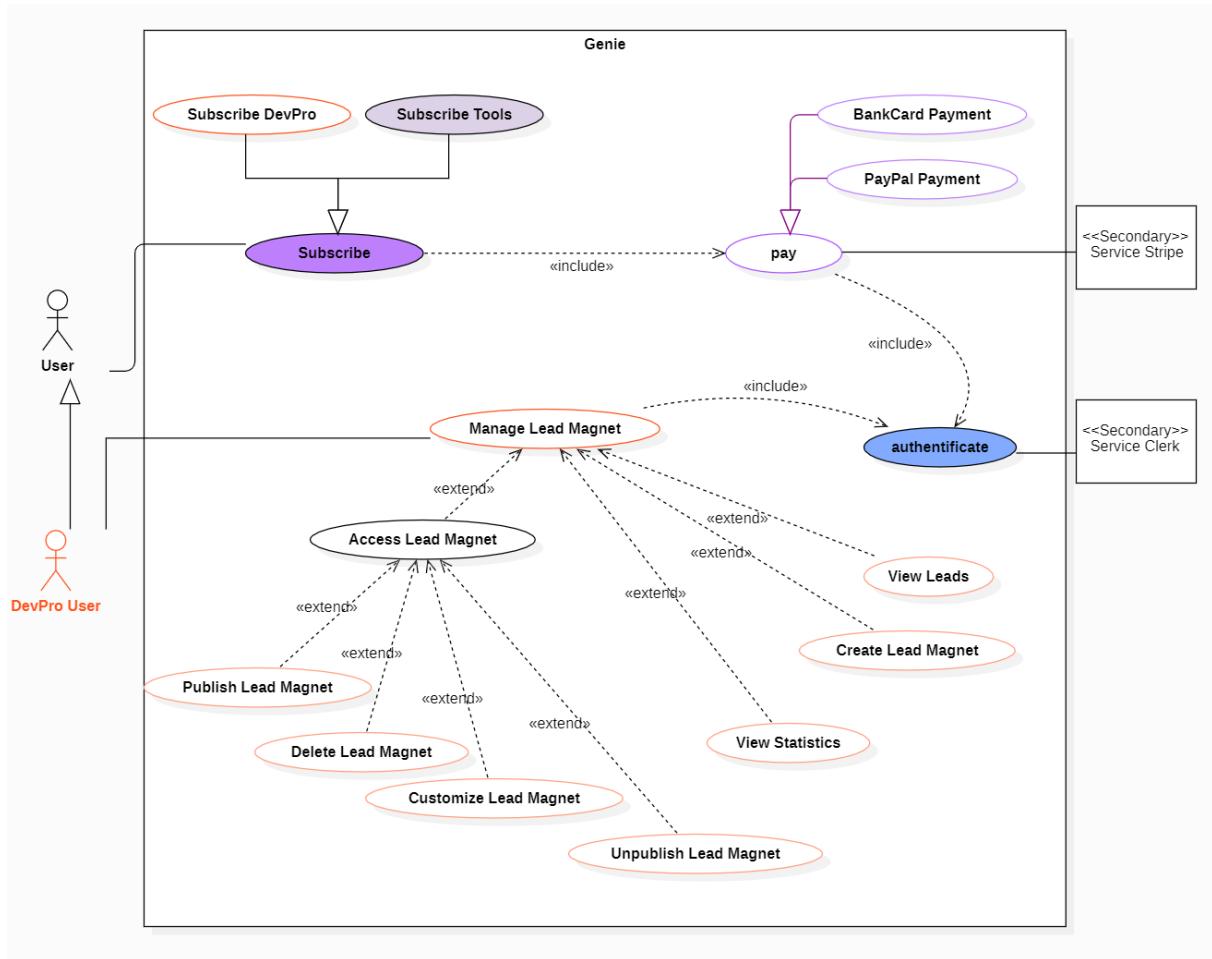


Figure 3.1: Use Case Diagram For Sprint 4

3.2.3 Textual Description Of The Use Cases for Sprint 2

This section will present the textual description of some of the use cases for the second sprint.

1. Manage Lead Magnet

The Table below presents the textual description for the « Manage Lead Magnet » use case.

Actor	User
Purpose	Allow users to create and manage lead magnets effectively.
Pre-condition	User is logged into the platform.
Post-condition	Lead magnet is created, saved, deleted, published, or unpublished as per user actions.
Nominal Scenario	<ol style="list-style-type: none">1. The user navigates to the lead magnet management section.2. The user creates a new lead magnet or selects an existing one to manage.3. The user customizes the layout, bot prompt, and profile information.4. The user saves, deletes, publishes, or unpublishes the lead magnet.5. The user previews the lead magnet before publishing.6. The Lead Magnet is available to customers.
Alternative Scenario	- The system displays error messages if the Lead Magnet cannot be saved, deleted, published, or unpublished due to invalid data or system errors.

Table 3.2: Description Of The Use Case « Manage Lead Magnet »

2. Subscribe DevPro

A DevPro User subscribed to the DevPro Plan has no limitations on the number of Lead Magnets they can generate.

The Table below presents the textual description for the « Subscribe DevPro » use case.

Actor	User
Purpose	The User should be able to subscribe to the DevPro plan to access premium features without limitations on the number of lead magnets.
Pre-condition	The User is logged into the platform and has a valid payment method.
Post-condition	The User is successfully subscribed to the DevPro plan and can generate unlimited lead magnets.
Nominal Scenario	<ol style="list-style-type: none">1. The user navigates to the "Subscribe DevPro" section.2. The user selects the DevPro plan.3. The user enters their payment details and confirms the subscription.4. The system processes the payment and updates the User's subscription status.5. The user receives a confirmation of their DevPro subscription.
Alternative Scenario	- The payment details entered by the user are invalid or the payment fails, an error message is displayed, and the subscription process is halted.

Table 3.3: Description Of The Use Case « Subscribe DevPro »

3.2.4 Design Diagrams For Sprint 4

In this section, we will delve into the design diagrams for Sprint 4, which focus on visual representations of the system architecture and interactions. These diagrams provide a detailed overview of the planned implementation, allowing for better communication among team members.

3.2.4.1 Class Diagram For Sprint 4

The Figure 3.2 represents the class diagram for the fourth sprint.

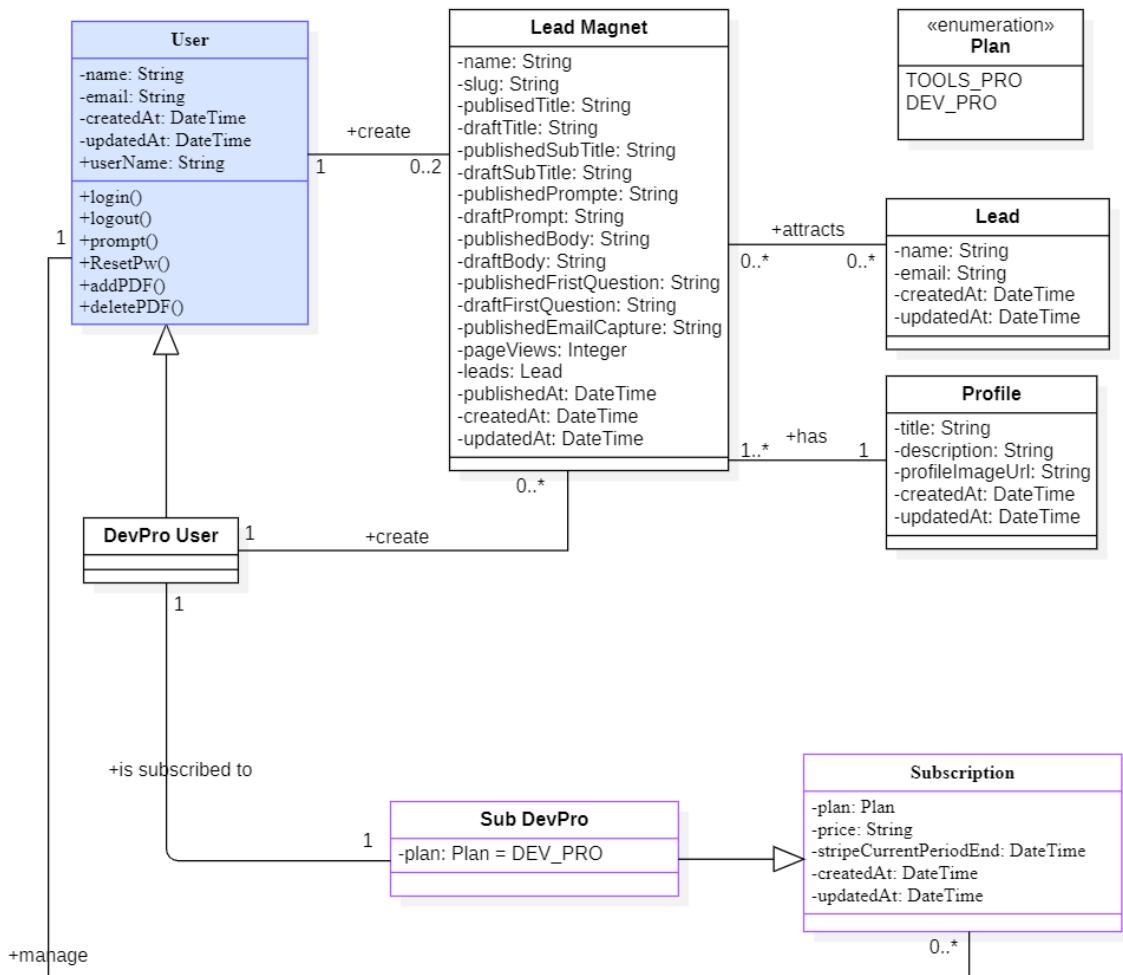


Figure 3.2: Class Diagram For Sprint 4

3.2.4.2 Detailed Sequence Diagram For The «Manage Lead Magnet» Use Case

The Figure 3.3 presents the sequence diagram for the « Manage Lead Magnet » use case.

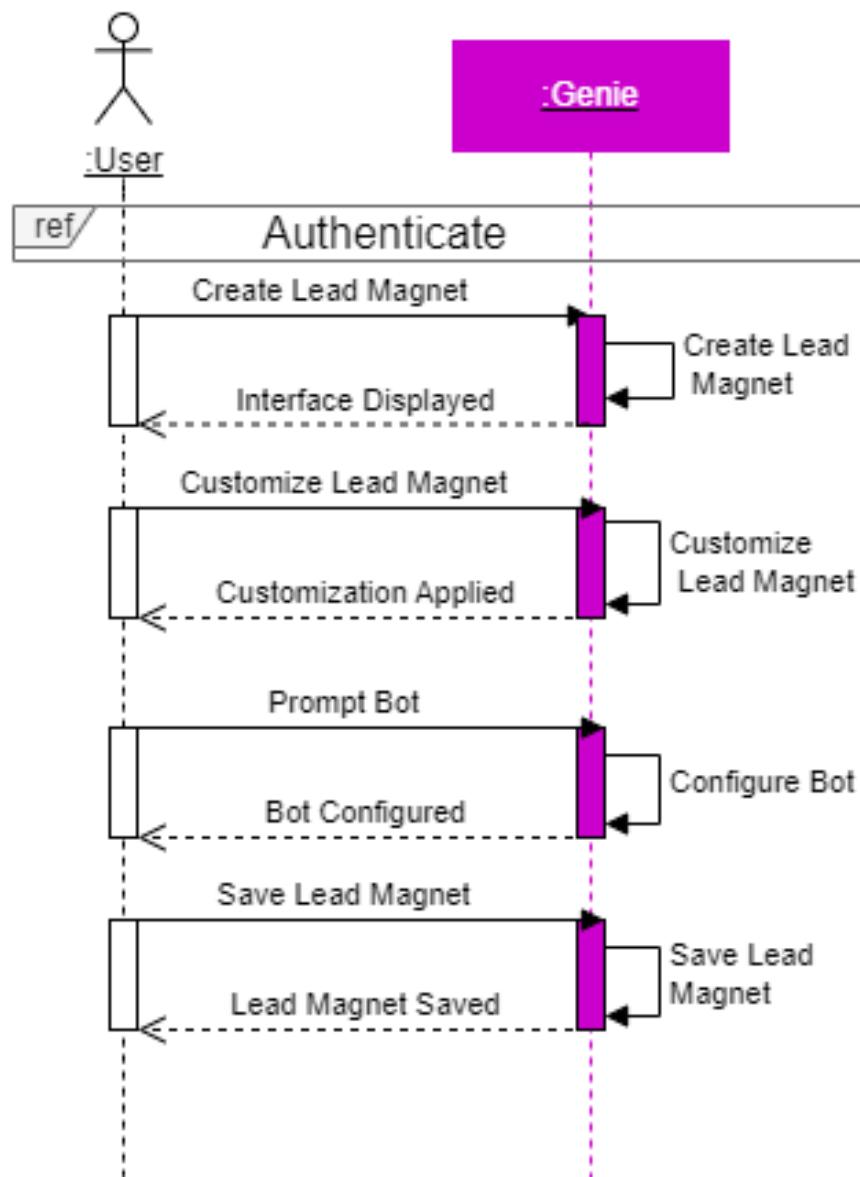


Figure 3.3: Sequence Diagram For « Manage Lead Magnet » Use Case

The Figure 3.4 presents the sequence diagram for the Optional use cases for Managing Lead Management.

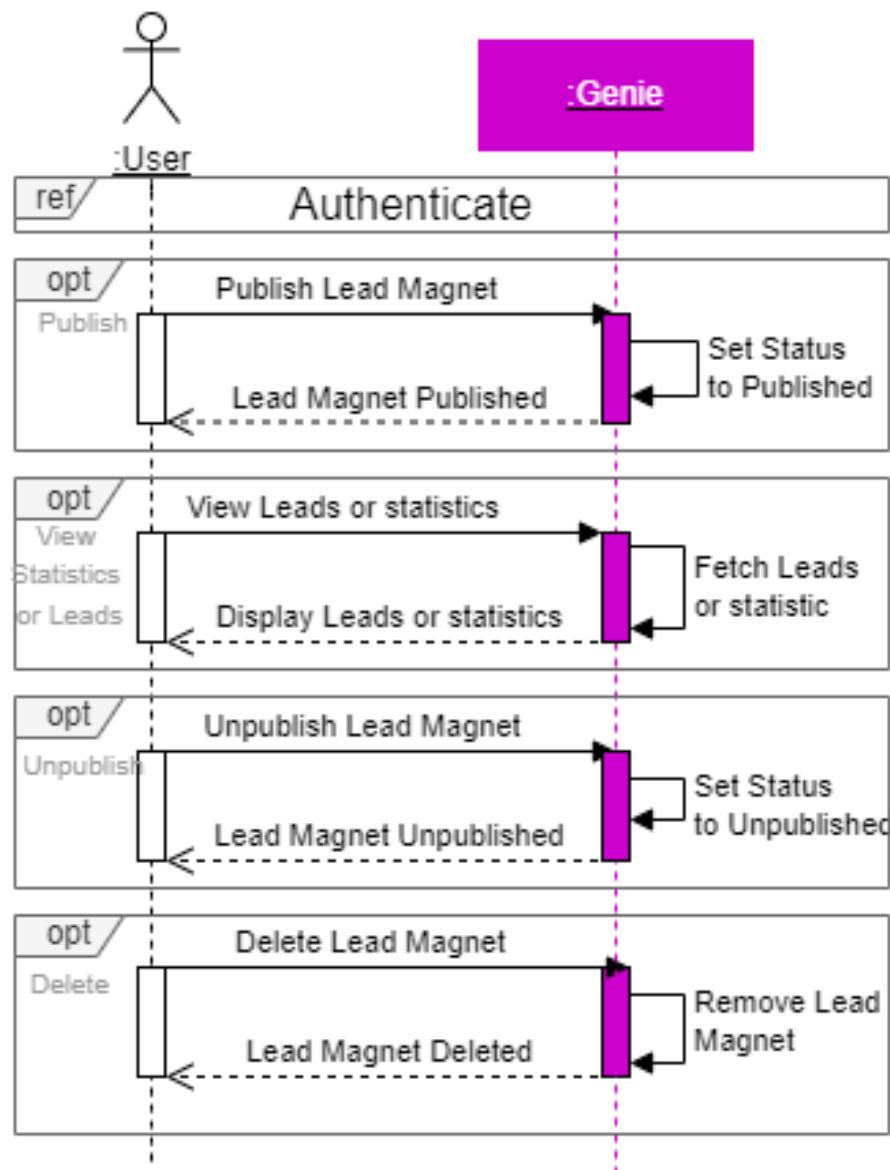


Figure 3.4: Sequence Diagram For Optional Use Cases For « Manage Lead Magnet »

The Figure 3.5 presents the sequence diagram for Lead interactions with Lead Magnet.

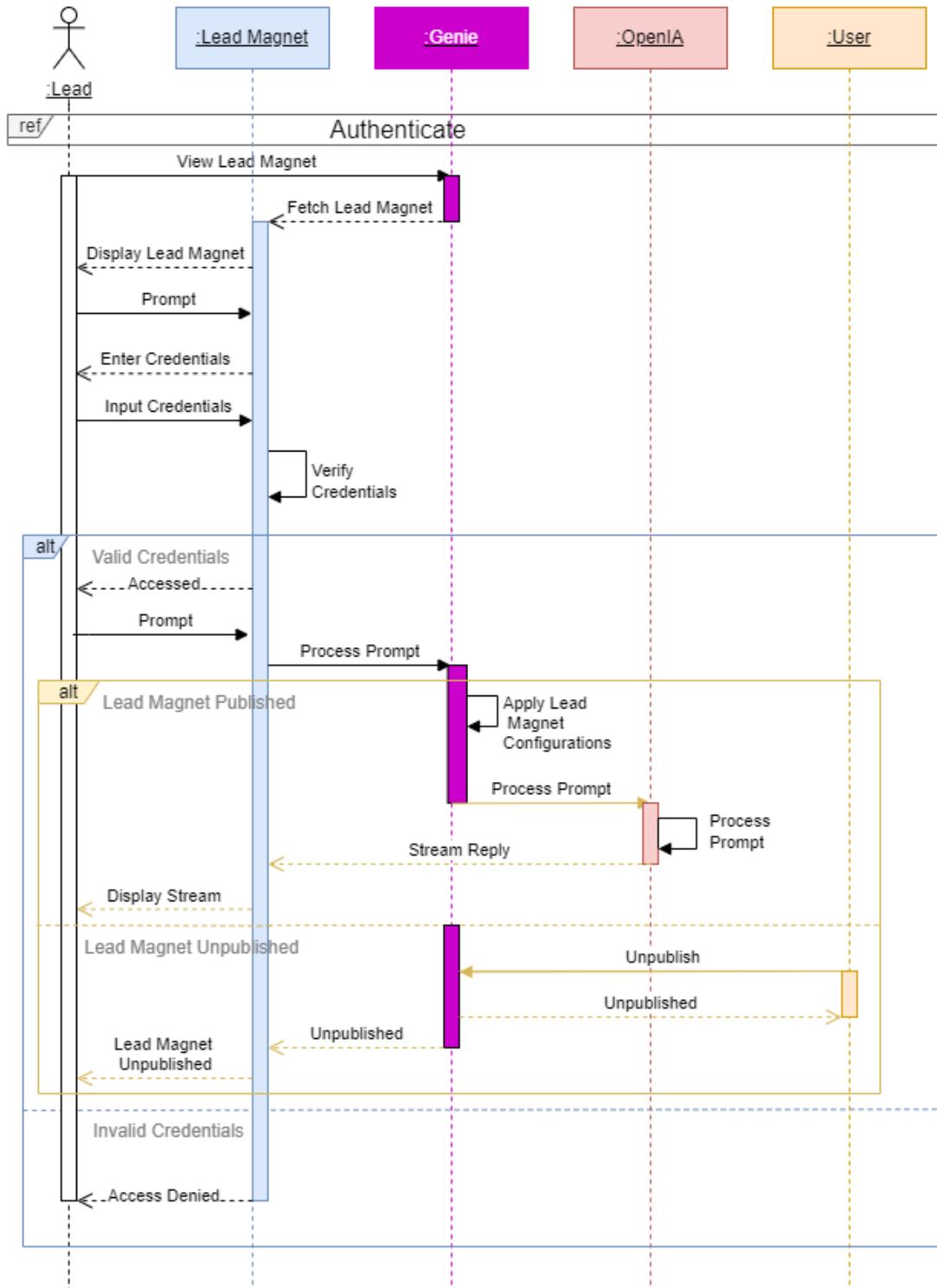


Figure 3.5: Sequence Diagram For Lead interaction

3.2.4.3 Detailed Sequence Diagram For The « Subscribe DevPro » Use Case

The Figure 3.6 presents the sequence diagram for the « Subscribe DevPro » use case.

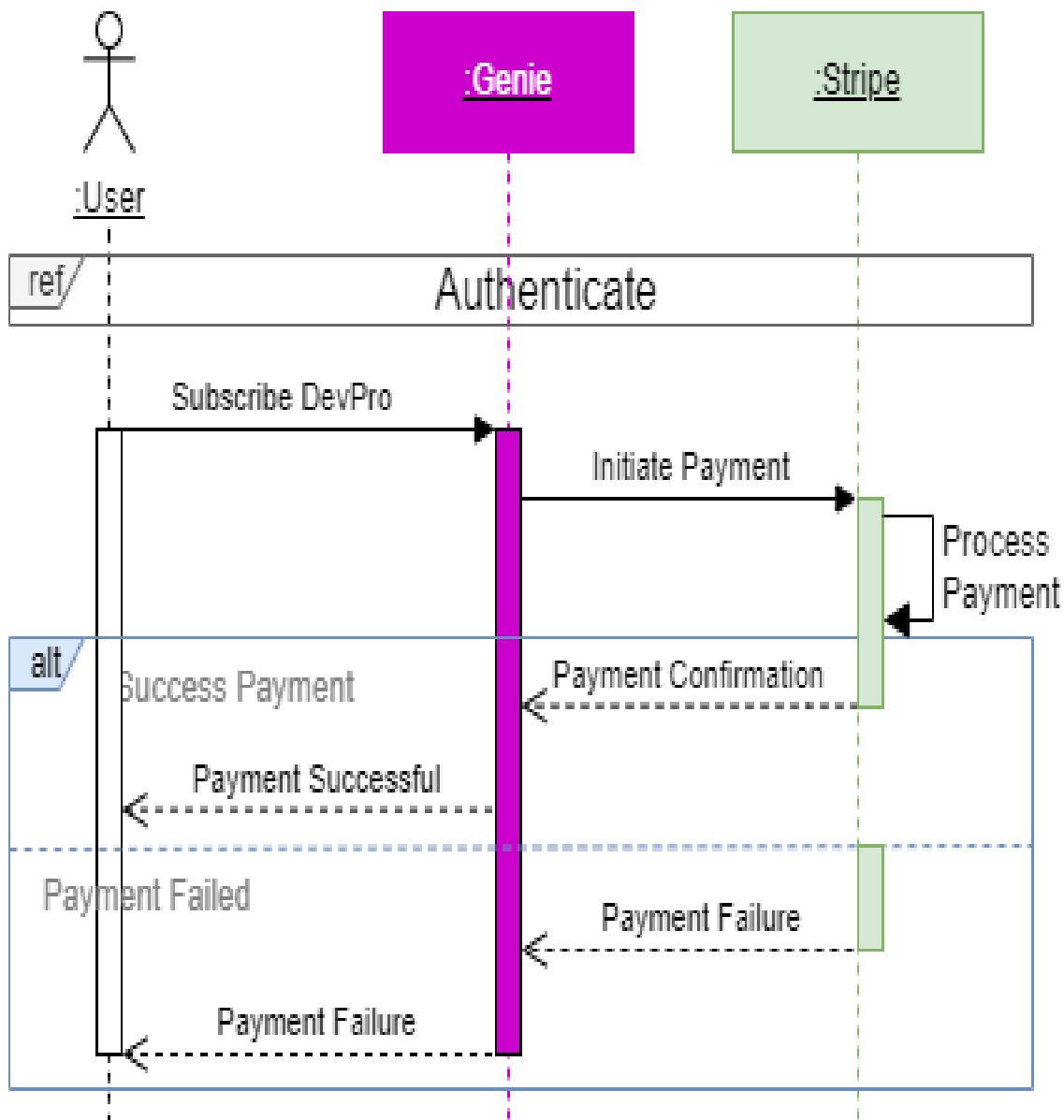


Figure 3.6: Sequence Diagram For « Subscribe DevPro » Use Case

3.2.5 Implementation Of Sprint 4

This section outlines the implementation plan for Sprint 4, detailing the steps required to develop and integrate the new functionalities.

3.2.5.1 Lead Magnet Interfaces

In this subsection, we will present the interfaces designed for the Lead Magnet feature. These interfaces will allow users to create, manage, and customize their lead magnets effectively. Screenshots and descriptions will illustrate the user experience, showcasing the steps involved in setting up a Lead Magnet, editing its content, and previewing the final result.

The screenshot shows the Lead Magnet Management interface in a light theme. The left sidebar contains a navigation menu with sections like Tools, Development, Account, and Settings. The Lead Generation section is currently selected. The main area displays a table titled "Lead Magnets" with three entries:

Name	Page Visits	Leads	Conversation Rate	Action
This is a name 2	0	0	0 %	View Leads
This is Taha Yassine	579	2	0.35 %	View Leads
This is a name	0	0	0 %	View Leads

A "Create" button is located in the top right corner of the main area.

Figure 3.7: Lead Magnet Management Interface

The screenshot shows the Lead Magnet Management interface in a dark theme. The layout and data are identical to Figure 3.7. The main difference is the dark background color, and a small purple message icon is visible in the bottom right corner of the main area.

Figure 3.8: Lead Magnet Management Interface: Dark Theme

Upon creation, the user will be redirected to the Lead Magnet Editor interface, where he can modify the lead magnet's content, including the title, subtitle, and body, to align with his objectives and audience.

The Figures 3.9 and 3.10 show the interface in both light and dark theme.

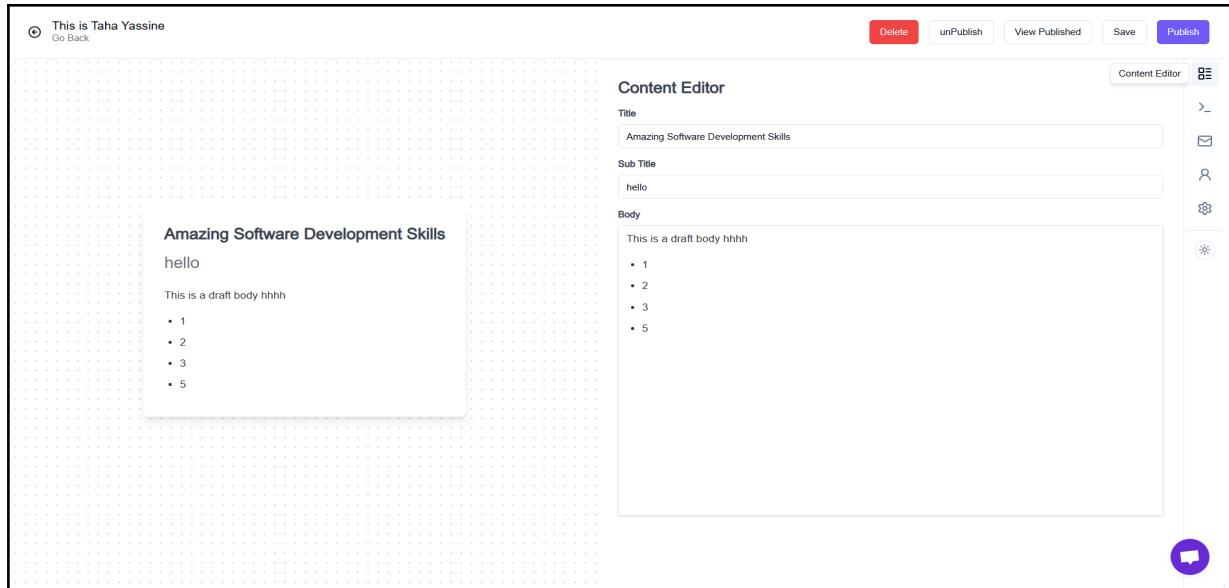


Figure 3.9: Lead Magnet Content Editor

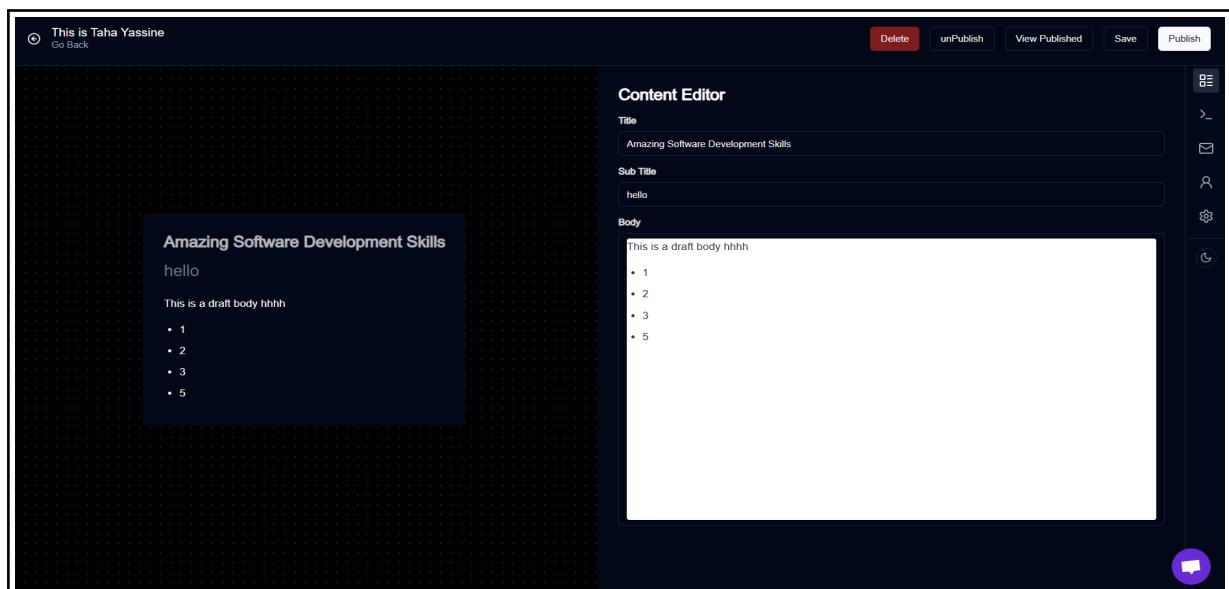


Figure 3.10: Lead Magnet Content Editor: Dark Theme

CHAPTER 3. RELEASE 2: GENIE DEVELOPER

The user can also enter a personalized prompt for the automated bot as well as a welcoming message to engage users effectively.

The Figures 3.11 and 3.12 show the interface in both light and dark theme.

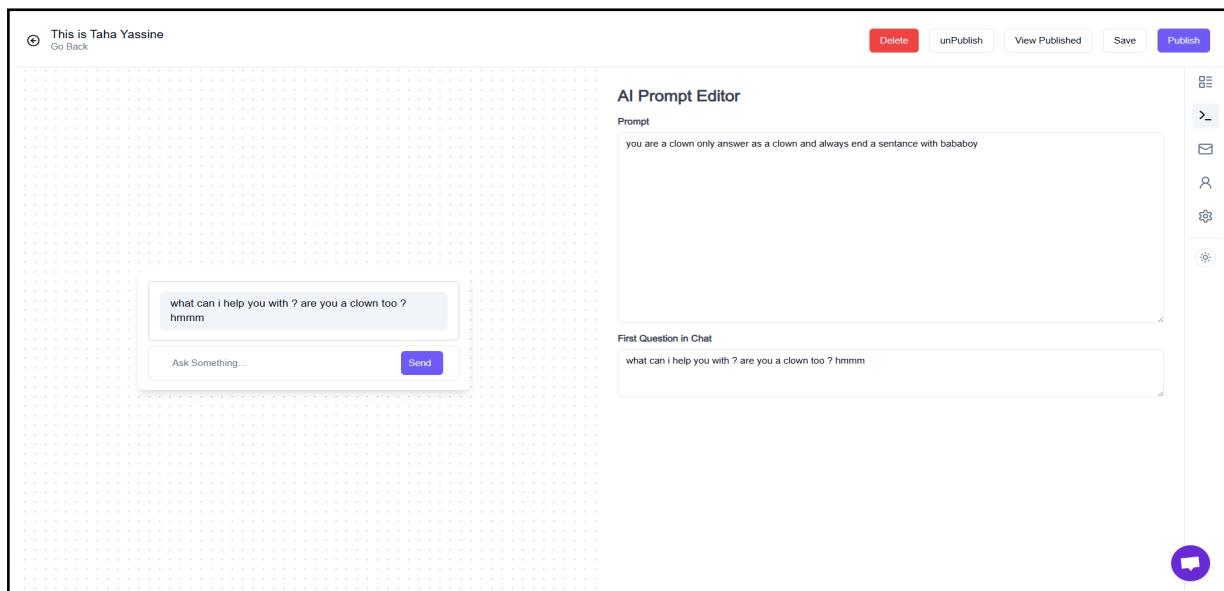


Figure 3.11: Lead Magnet AI Prompt Editor

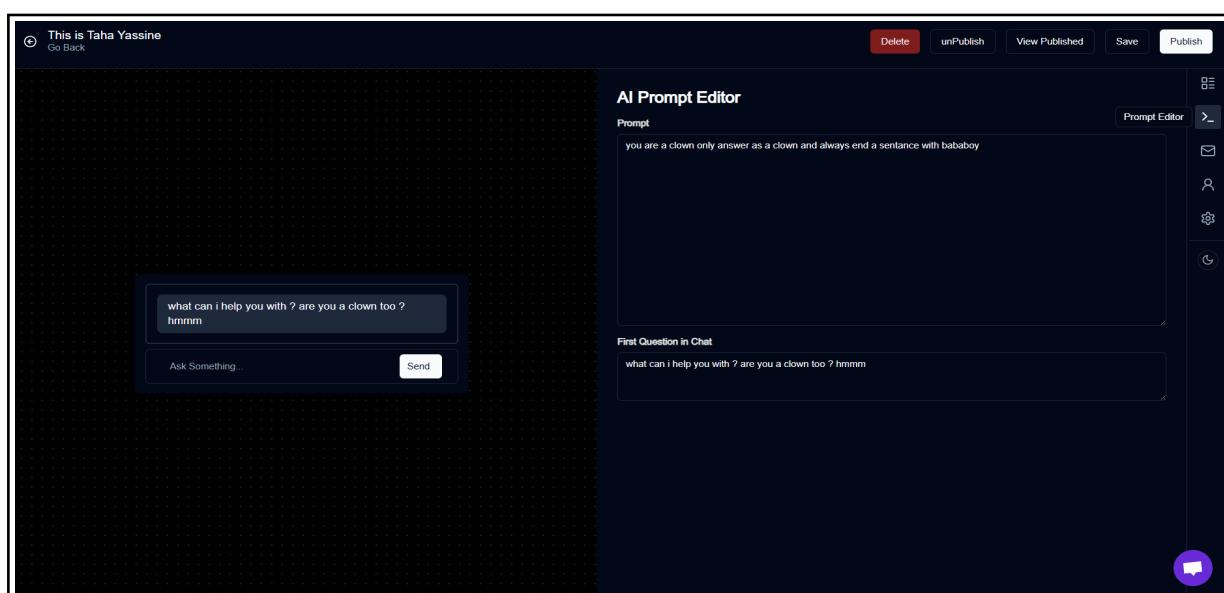


Figure 3.12: Lead Magnet AI Prompt Editor: Dark Theme

CHAPTER 3. RELEASE 2: GENIE DEVELOPER

In addition, the user can customize the email capture form to ensure it meets his requirements for collecting user information.

The Figures 3.13 and 3.14 show the interface in both light and dark theme.

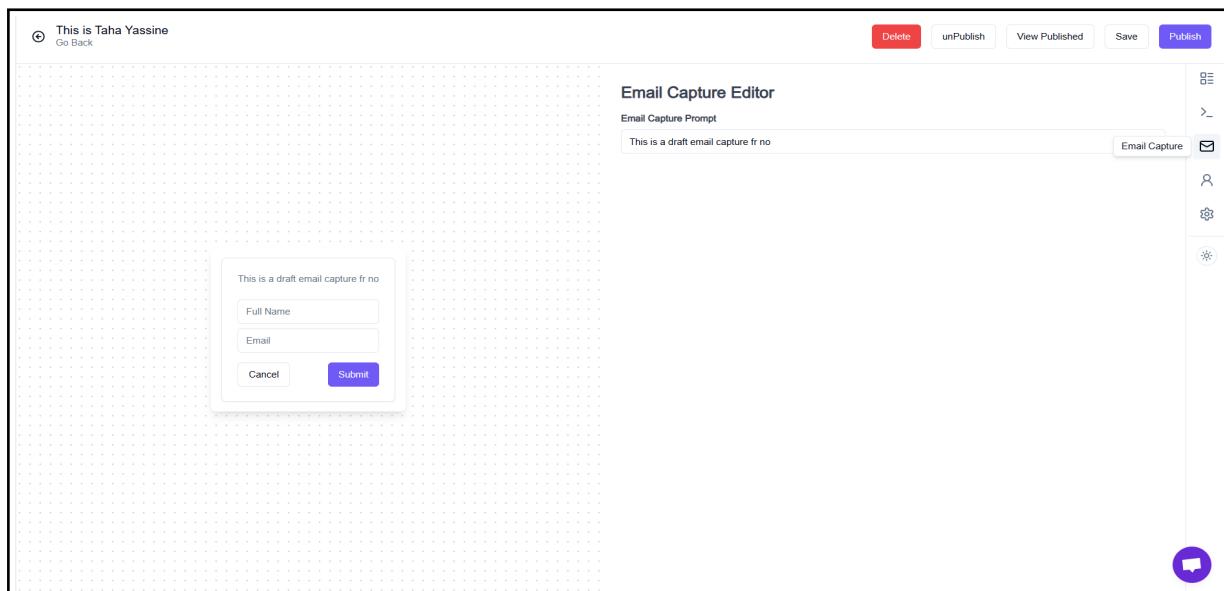


Figure 3.13: Lead Magnet Email Capture Editor

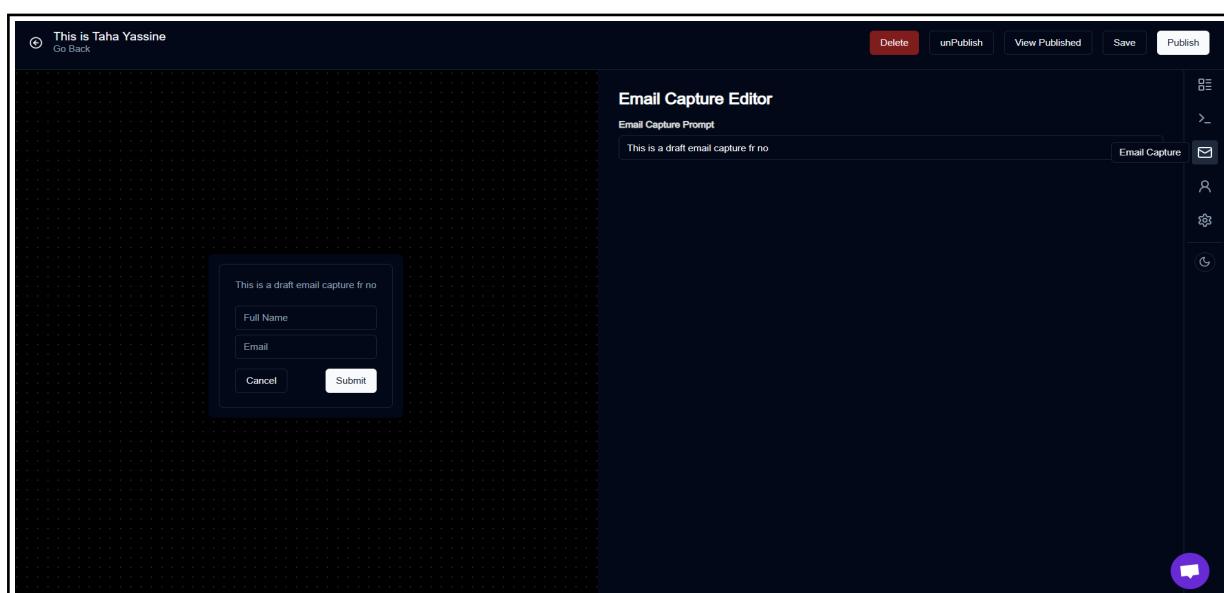


Figure 3.14: Lead Magnet Email Capture Editor: Dark Theme

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The user can create and manage his profile by adjusting the profile image, title, and bio to reflect his branding and personal information.

The Figures 3.15 and 3.16 show the interface in both light and dark theme.

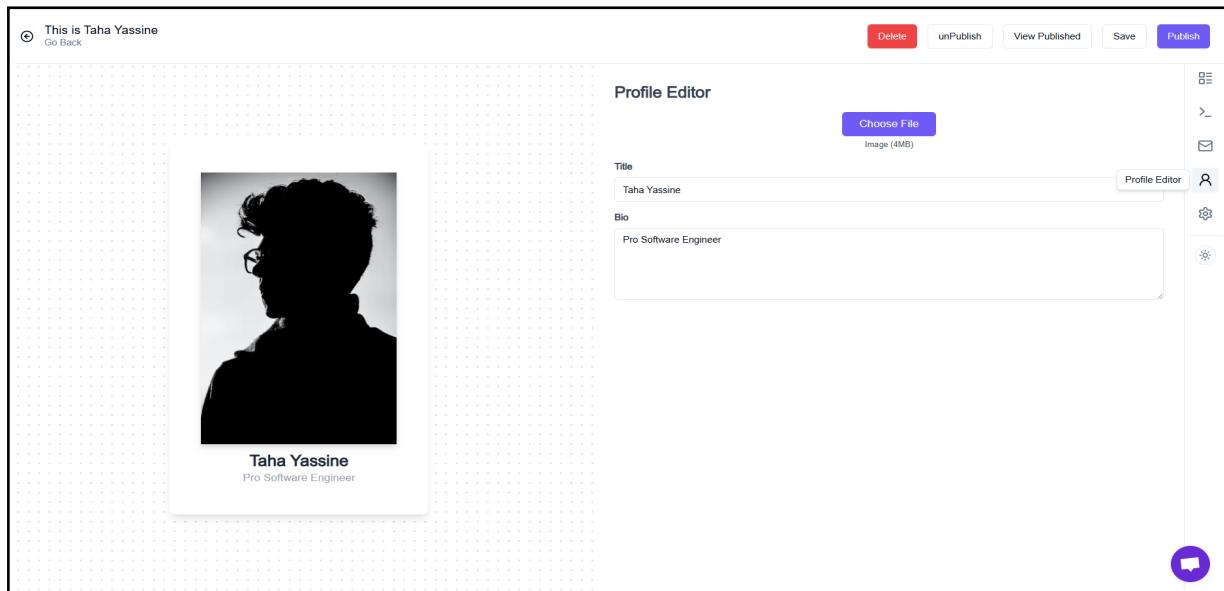


Figure 3.15: Lead Magnet Profile Editor

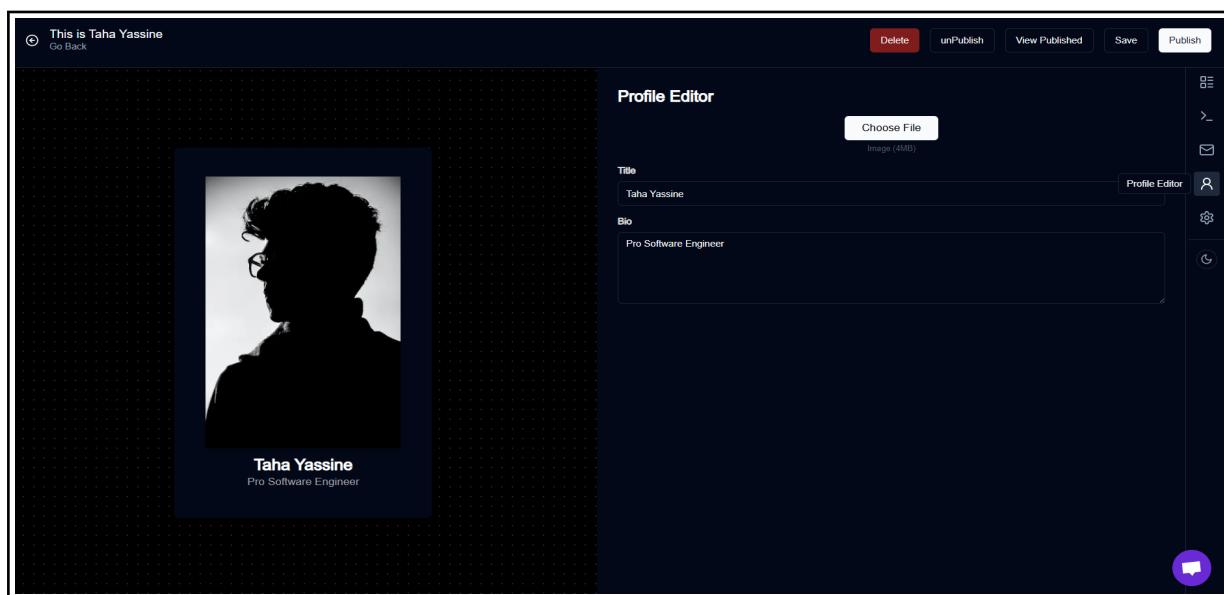


Figure 3.16: Lead Magnet Profile Editor: Dark Theme

The user has the option to save his lead magnet and keep it as a draft or publish it and make it accessible to potential leads. Once published, the leads will view the lead magnet as customized and the bot will greet them with the prompted welcome message. To access its features, the leads will be asked to enter their name and email to continue. The Figures 3.17 and 3.18 show the interface in both light and dark theme.

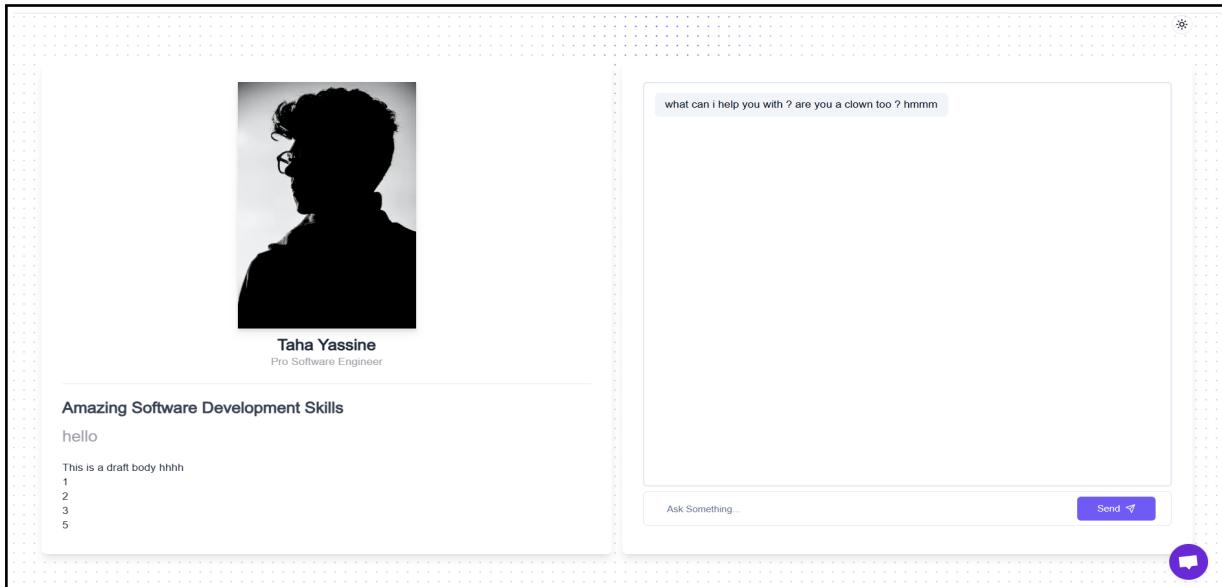


Figure 3.17: Lead Magnet Published

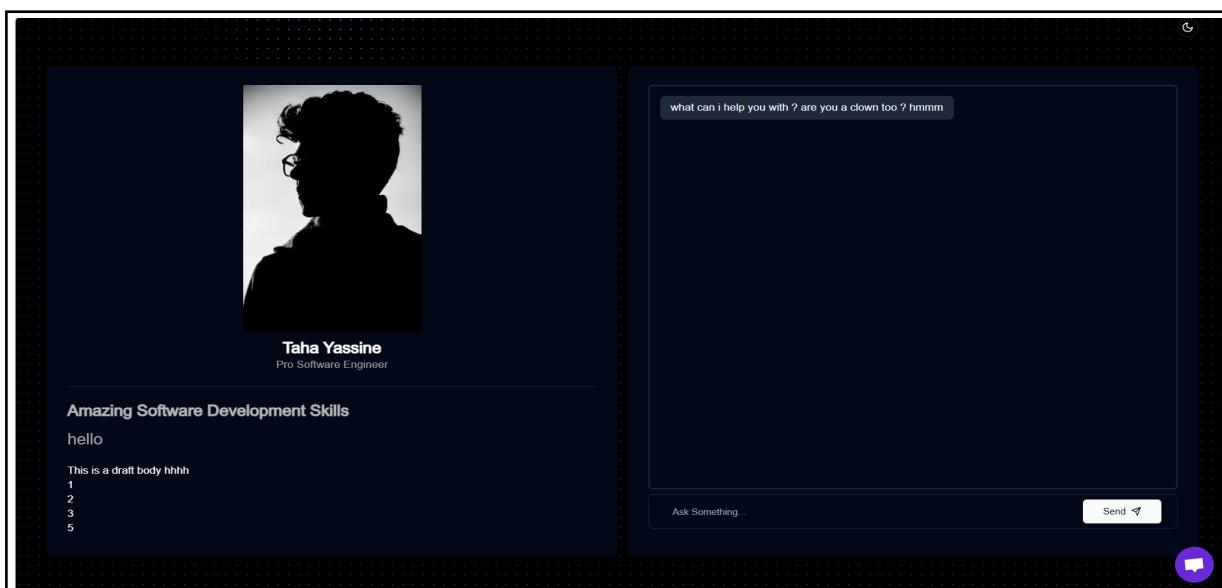


Figure 3.18: Lead Magnet Published: Dark Theme

3.2.5.2 DevPro Subscription

When unsubscribed users exceed their 2 active Lead Magnets, a modal pops up asking them to subscribe to use the dev features.

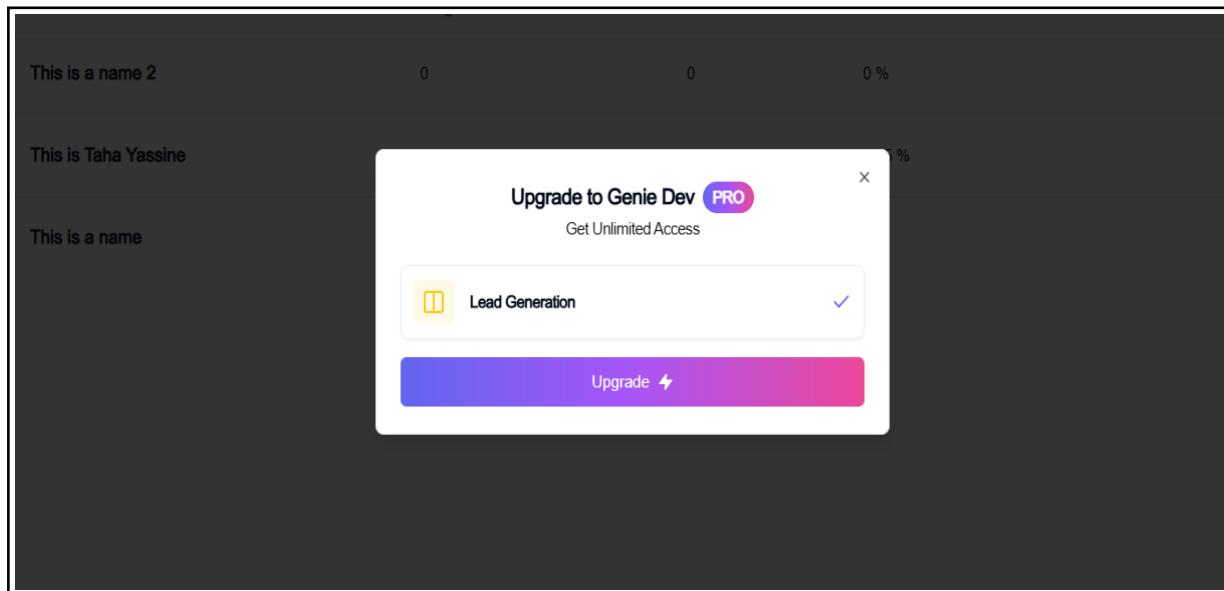


Figure 3.19: Dev Pro Subscription Modal Pop-up

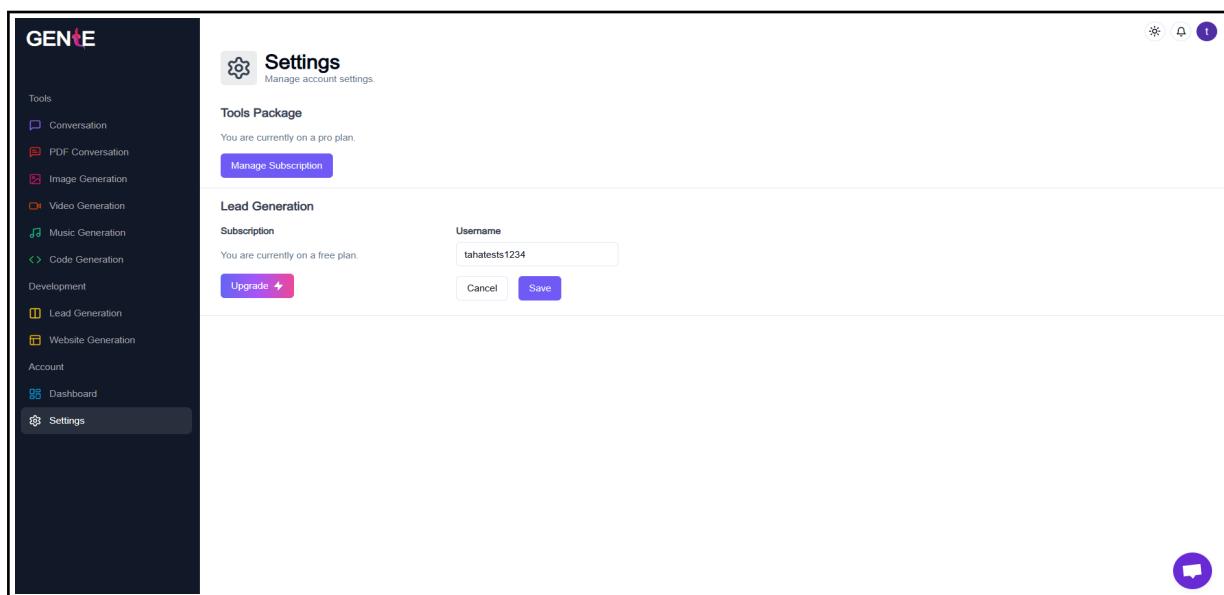


Figure 3.20: Dev Pro Subscription Management

3.3 Sprint 5 Development

In this sprint, our focus is on implementing and enhancing the Agency management features within the Genie platform.

Agencies will enable users to manage multiple Sub Accounts, incorporating various tools for efficient project management and development. In addition, we're introducing another subscription plan called Dev Unlimited.

- **MediaBuckets:** A feature dedicated to storing and organizing all images.
- **Funnels:** Tools designed for creating websites.
- **Pipelines :** Tools for overseeing and managing Sub Account projects.

Key features :

1. **Agency Creation:** Any user can create an Agency with the following initial limitations:

- 1 Sub Account.
- 1 funnel per Sub Account.
- 1 team member per Agency.

2. **Agency Roles:** The roles within an Agency will include:

- **Agency Owner :** The creator of the agency who holds the highest level of permissions. He can invite members and assign roles within the agency. Any other member of the Agency cannot create another agency unless they leave the current one.
- **Agency Admin :** Assigned by the Agency Owner with nearly full permissions. He can manage all aspects of the agency except for deleting it.
- **Sub Account User :** A developer responsible for building and managing funnels (websites). His tasks can be assigned to them in the pipeline (management part of the sub-account).
- **Sub Account Guest :** Typically a client with limited permissions. He can interact with the funnel (website) as the final end-user.

3. **Subscription Option Provided:**

Dev Unlimited: Removes all initial limitations for the Agency, allowing the Agency Owner to invite more team members and to created more subAccounts.

This sprint is pivotal for extending the Genie platform's capabilities, allowing for comprehensive Agency management.

We will delve into the details of these functionalities, exploring their capabilities and how they can streamline the management of multiple Sub Accounts within the Genie platform.

3.3.1 Sprint Backlog For Sprint 5

The Table below describes the sprint 5 backlog.

Epic	ID	User Story	Estimation
Agency Management	1.1.1	As an Agency Owner, I want to create or delete my Agency.	114h
	1.1.2	As an Agency Owner, I want to link my Stripe Account to my Agency.	
	1.1.3	As an Agency Admin, I want to manage my Agency.	
	1.1.4	As an Agency Admin, I want to create or delete my Sub Accounts.	
	1.1.5	As an Agency Admin, I want to invite team members.	
	1.1.6	As an Agency Admin, I want to edit and assign team members' roles.	
	1.1.7	As an Agency Admin, I want to grant team member's access to a specific Sub Account.	
	1.1.8	As a Sub Account User, I want to create delete and manage Pipelines .	
	1.1.9	As a Sub Account User, I want to add delete and adjust Pipelines' lines.	
	1.2.1	As a Sub Account User, I want to add delete and adjust Pipelines' tickets.	
	1.2.2	As a Sub Account User, I want to create assign and remove Tags to/from line's tickets.	
	1.2.3	As a Sub Account User, I want to assign and remove Sub Account Users to/from Line's Tickets.	
	1.2.4	As a Sub Account Guest, I want to edit my agency profile information.	

	1.2.5	As a Sub Account Guest, I want to add, remove and copy content from my Media Bucket.	
	1.2.6	As a Sub Account Guest, I want to generate images by description in my Media Bucket.	
	1.2.7	As a Sub Account Guest, I want to view my Sub Account statistics and planning.	
Funnel Creation	2.1.1	As a Sub Account user, I want to create, delete and manage my Funnels.	50h
	2.1.2	As a Sub Account user, I want to create Funnel Steps to order my pages.	
	2.1.3	As a Sub Account user, I want to remove products from my Funnel.	
	2.1.4	As a Sub Account user, I want to publish, unpublish my Funnel's pages.	
	2.1.5	As a Sub Account user, I want to drag and Drop pre-built components and layout elements form my build.	
	2.1.6	As a Sub Account user, I want to delete components and layout elements form my build.	
	2.1.7	As a Sub Account user, I want to customize my components.	
	2.1.8	As a Sub Account user, I want to use my Media Bucket files in the editor.	
	2.1.9	As a Sub Account user, I want to add products from my Stripe account to my Funnel.	
	2.2.1	As a Sub Account user, I want to duplicate my Funnel's pages.	

	2.2.2	As a Sub Account user, I want to preview my Funnel's pages in the editor in light and dark mode.	
	2.2.3	As a Sub Account user, I want to undo and Re-do my actions in the editor.	
Dev Unlimited Subscription	3.1	As an Agency Owner, I want to invite unlimited number of team members.	4h
	3.2	As an Agency Owner, I want to have no limitations on the number of Sub Accounts I can create to maximize my agency's capabilities.	
	3.3	As an Agency Owner, I want to create multiple Funnels per Sub Account without restrictions to support various projects simultaneously.	

Table 3.4: Sprint Backlog For Sprint 5

3.3.2 Use Case Diagram For Sprint 5

In this section, we will present the Use Case Diagram for Sprint 5, highlighting the key functionalities and interactions for managing agencies within the Genie platform. This diagram will include use cases for creating agencies, managing sub-accounts. It provides a visual representation of the roles and actions involved, ensuring a clear understanding of the features being implemented in this sprint.

The following Figure 3.21 illustrates the use case diagram for the fifth sprint, detailing various roles and their associated use cases.

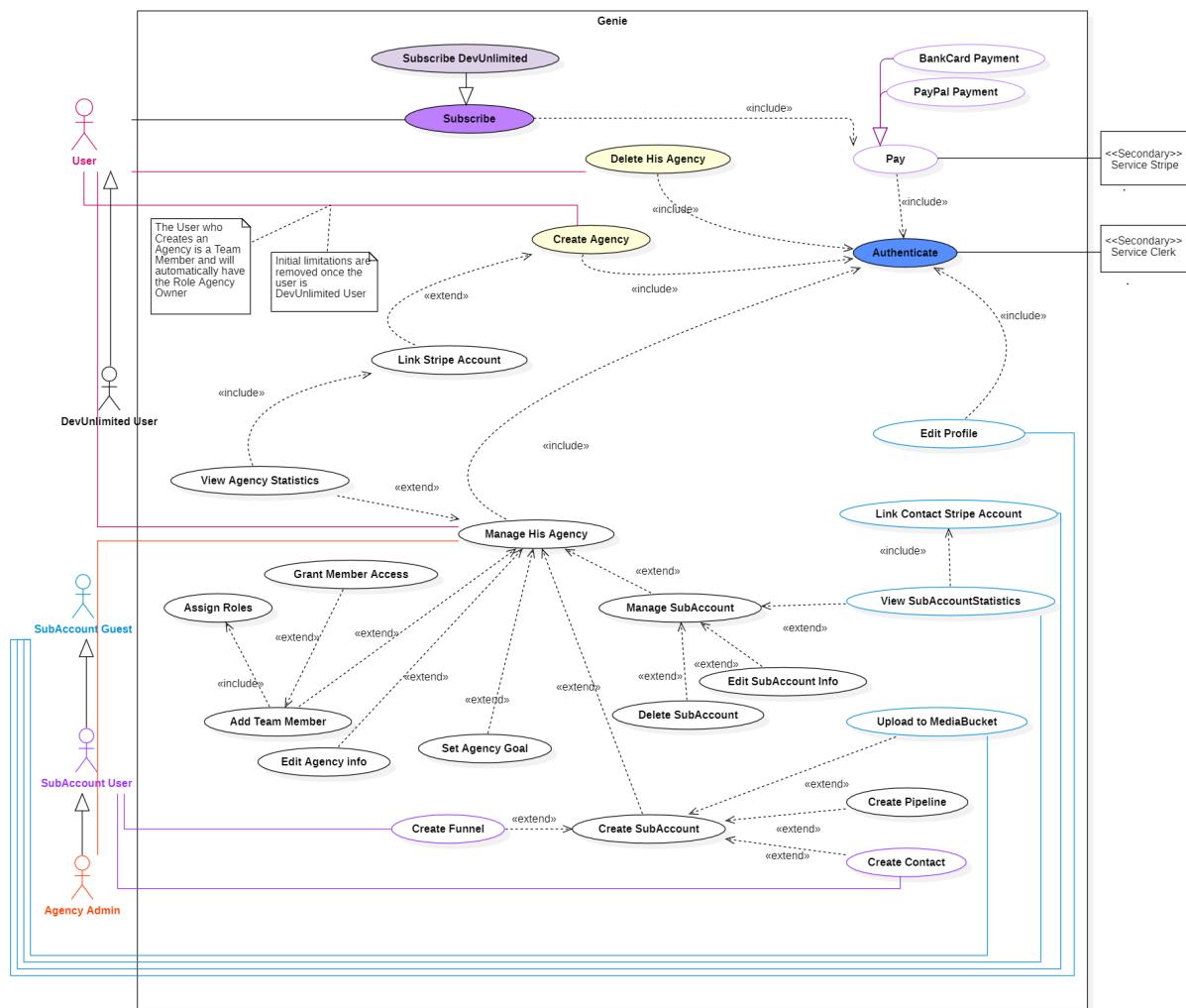


Figure 3.21: Use Case Diagram For Sprint 5

To accept the Agency Owner's invitation, a Team Member needs to confirm or accept the invitation through their email service.

The following Figure 3.22 illustrates the use case diagram for the Funnel functionality, showcasing the process of creating websites within the Agency, including the roles and interactions involved

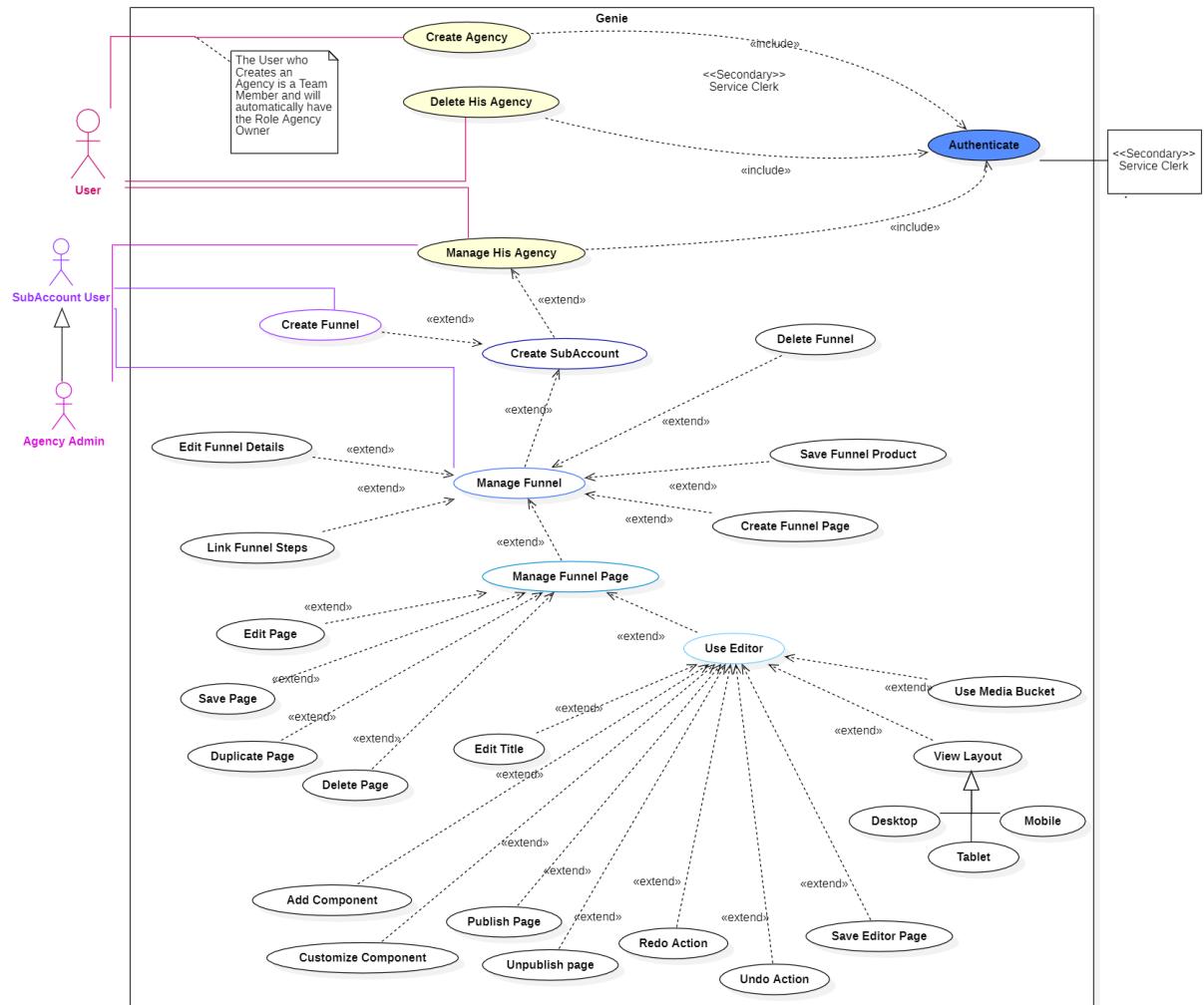


Figure 3.22: Use Case Diagram For Sprint 5 - Funnel Functionality

The following Figure 3.23 illustrates the use case diagram for the Pipeline functionality within the Funnel management part, showcasing how tasks are assigned and managed.

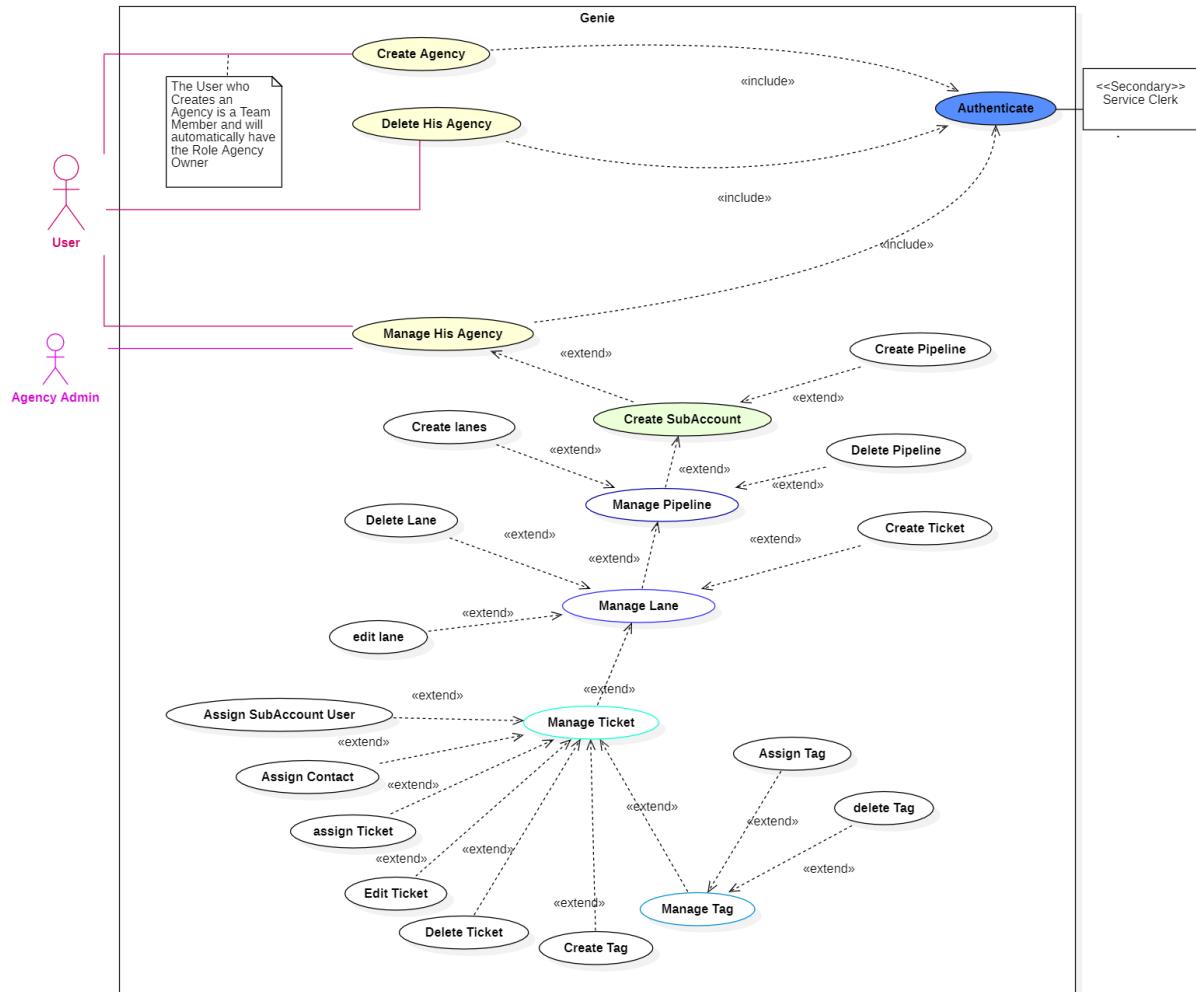


Figure 3.23: Use Case Diagram For Sprint 5 - Pipeline Functionality

3.3.3 Textual Description Of The Use Cases For Sprint 5

This section will present the textual description of some of the use cases for the fifth sprint.

1. Create Agency

The Table below presents the textual description for the "Create Agency" use case.

Actor	User (Agency Owner)
Purpose	Enable the user to create an agency within the Genie platform, allowing them to manage multiple sub-accounts and their associated resources.
Pre-condition	The user is registered and logged into the Genie platform.
Post-condition	An agency is successfully created, and the user becomes the Agency Owner.
Nominal Scenario	<ol style="list-style-type: none">1. The user navigates to the "Create Agency" section.2. The user enters the required information.3. The system validates the information.4. Upon successful validation, the agency is created, and the user is assigned the role of Agency Owner.5. The user is redirected to the agency dashboard.
Alternative Scenario	- The entered data is invalid or conflicts with existing agencies, an error message is displayed, and the creation process is halted.

Table 3.5: Description Of The Use Case « Create Agency »

2. **Create SubAccount** The Table below presents the textual description for the « Create SubAccount » use case.

Actor	Agency Owner or Agency Admin
Purpose	Enable the creation of sub-accounts within an agency for better management and resource allocation.
Pre-condition	The actor is logged into the Genie platform and has an existing agency.
Post-condition	A sub-account is successfully created within the agency.
Nominal Scenario	<ol style="list-style-type: none"> 1. The actor navigates to the "Create SubAccount" section. 2. The actor enters the required information. 3. The system validates the information. 4. Upon successful validation, the sub-account is created. 5. The actor is notified of the successful creation.
Alternative Scenario	- The entered data is invalid or conflicts with existing sub-accounts, an error message is displayed, and the creation process is halted.

Table 3.6: Description Of The Use Case « Create SubAccount »

3. **Subscribe Unlimited** The Table below presents the textual description for the « Subscribe Unlimited » use case.

Actor	User (Agency Owner)
Purpose	To subscribe to the Dev Unlimited plan.
Pre-condition	The user is registered and logged into the Genie platform.
Post-condition	The subscription to the Dev Unlimited plan is successfully activated.

Nominal Scenario	<ol style="list-style-type: none">1. The user navigates to the subscription section.2. The user selects the Dev Unlimited plan.3. The user enters payment details.4. The system processes the payment.5. Upon successful payment, the Dev Unlimited plan is activated.6. The user is notified of the successful subscription.
Alternative Scenario	- If the payment fails or the information is invalid, an error message is displayed, and the subscription process is halted.

Table 3.7: Description Of The Use Case « Subscribe Unlimited »

3.3.4 Design Diagrams For Sprint 5

In this section, we present the design diagrams that outline the architecture and interactions for the new features introduced in Sprint 5.

3.3.4.1 Class Diagram For Sprint 5

The figure 3.24 represents the class diagram for the fifth sprint.

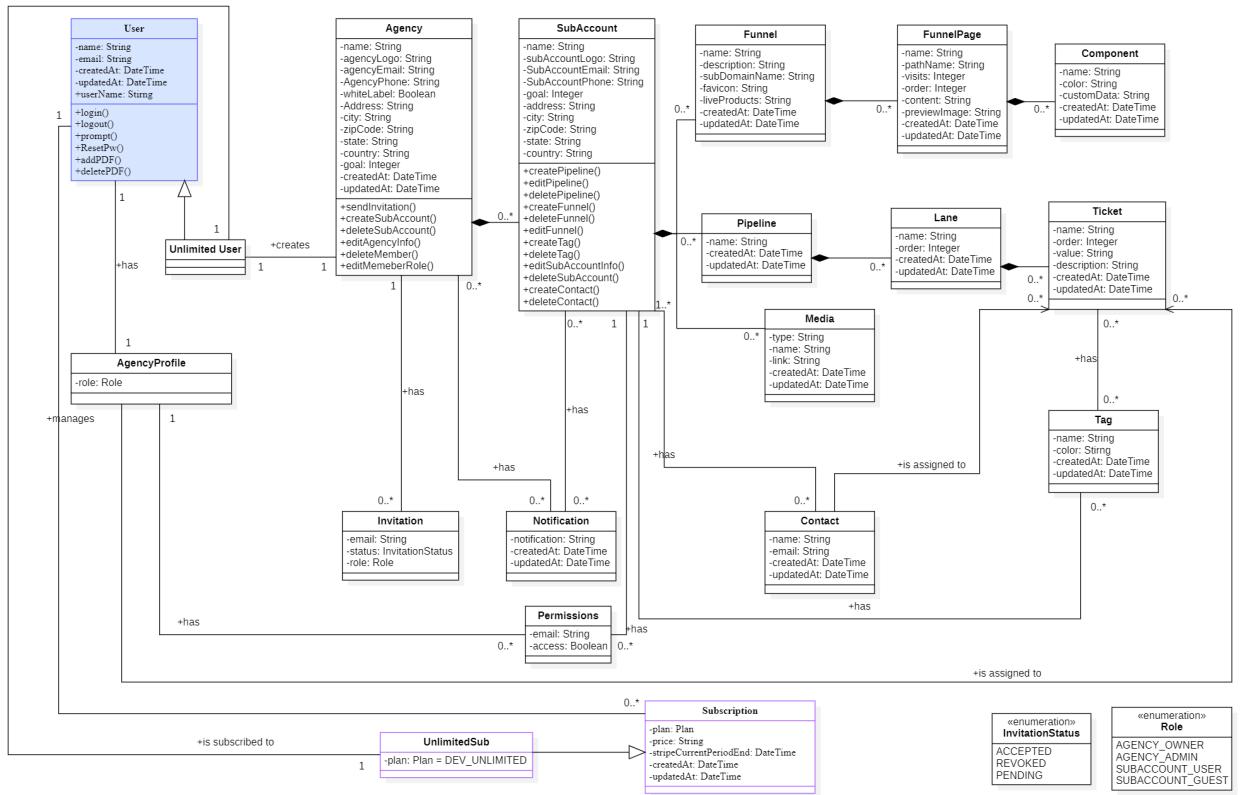


Figure 3.24: Class Diagram for Sprint 5

3.3.4.2 Detailed Sequence Diagram For The « Add Team Member » Use Case

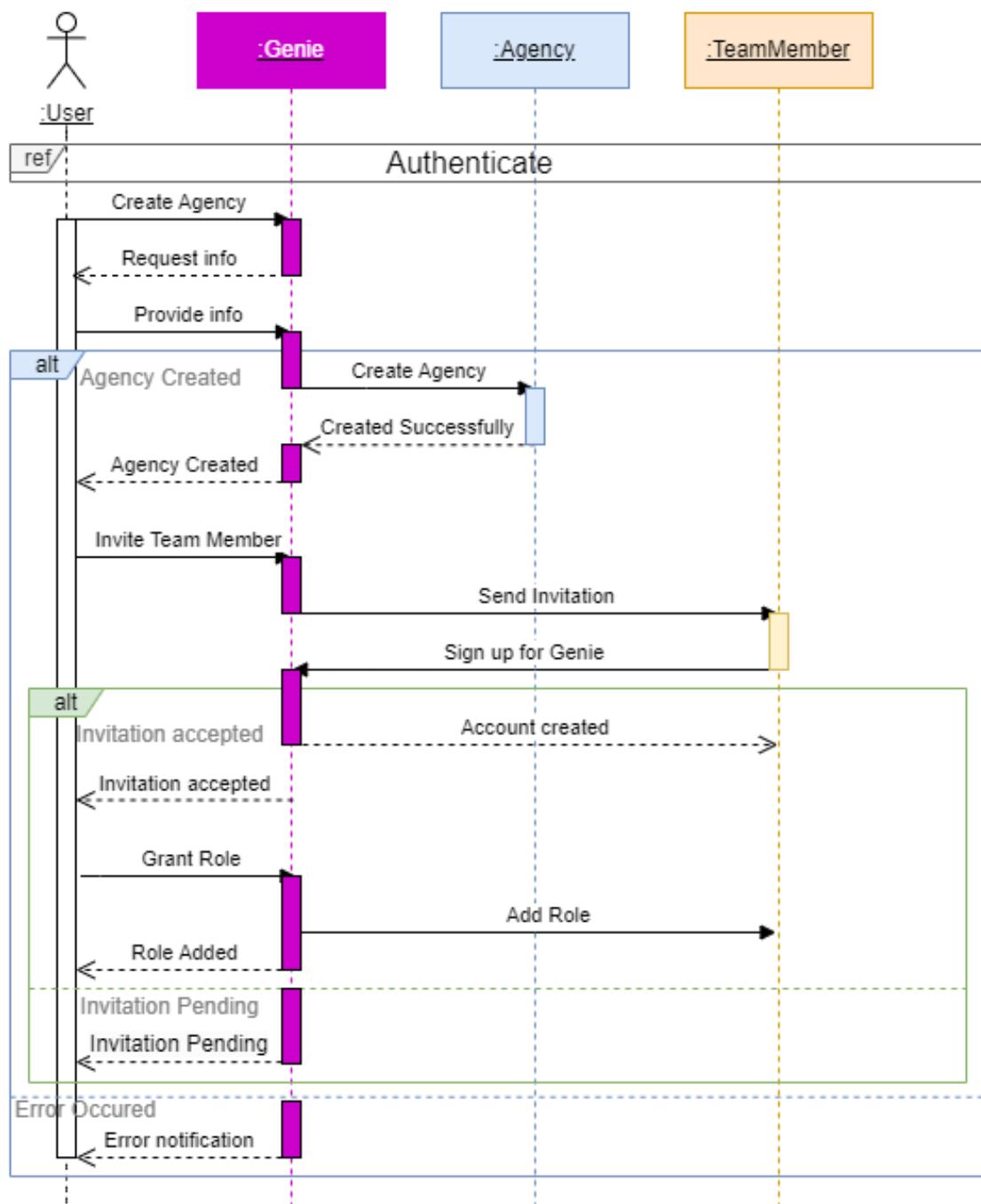


Figure 3.25: Sequence Diagram For The « Add Team Member » Use Case

3.3.5 Implementation Of Sprint 5

This section outlines the implementation plan for Sprint 5, detailing the steps required to develop and integrate the new functionalities.

3.3.5.1 Agency Interfaces

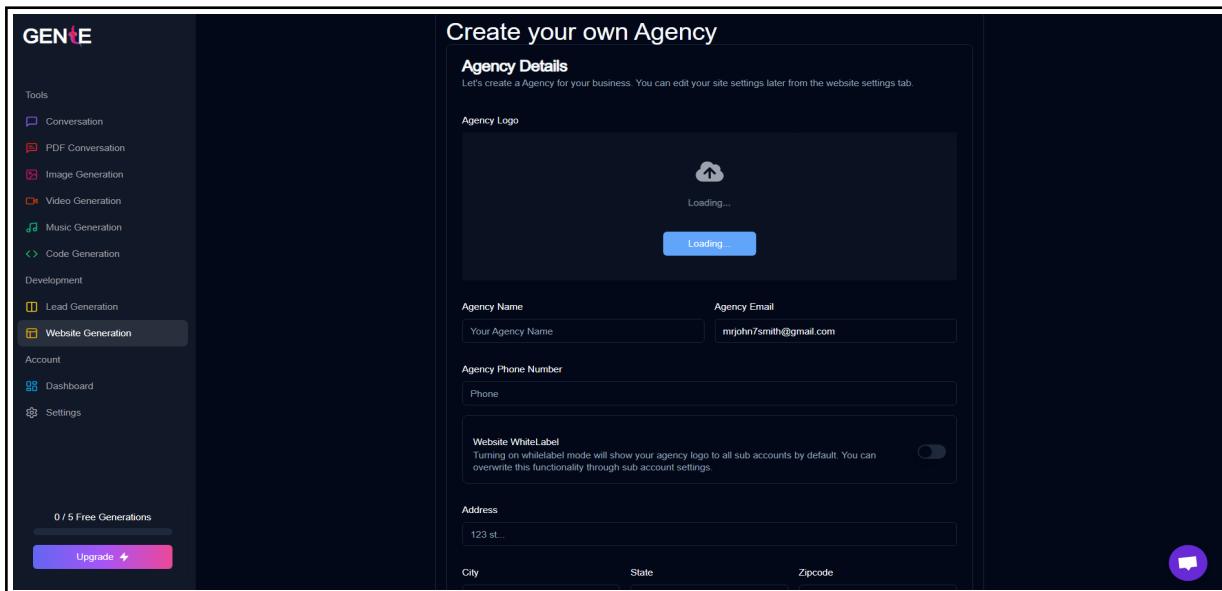


Figure 3.26: Agency Creation: Dark Theme

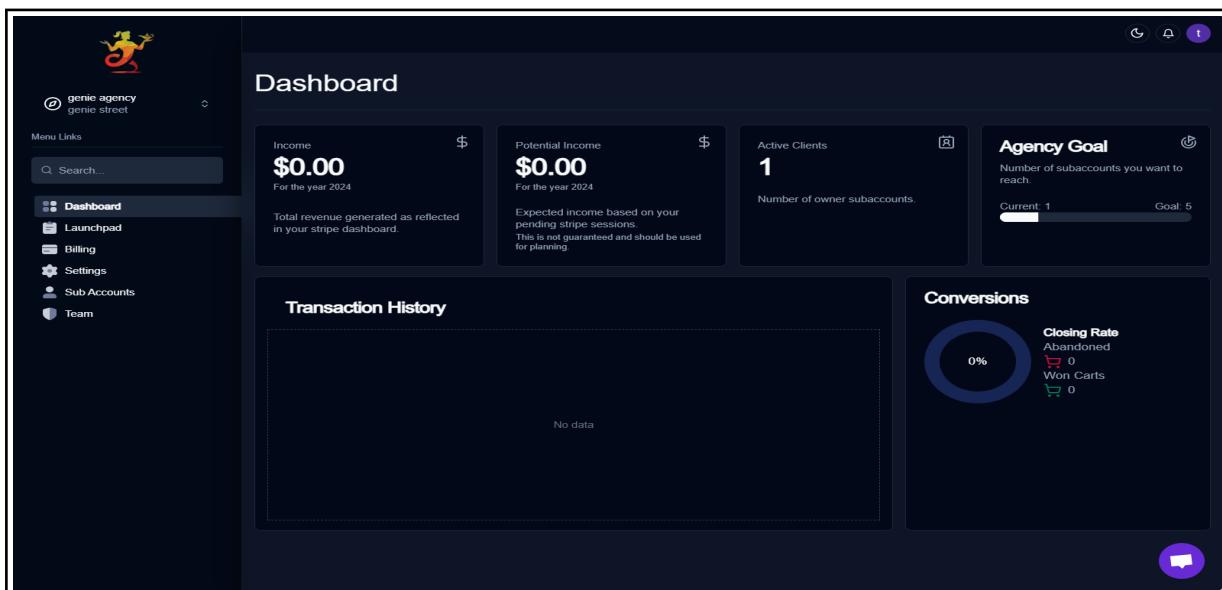


Figure 3.27: Agency Dashboard: Dark Theme

CHAPTER 3. RELEASE 2: GENIE DEVELOPER

After the user establishes an agency and becomes the agency owner, it enables them to invite team members and assign specific roles. Team members designated as agency admins gain the authority to invite additional members as well as manage the agency.

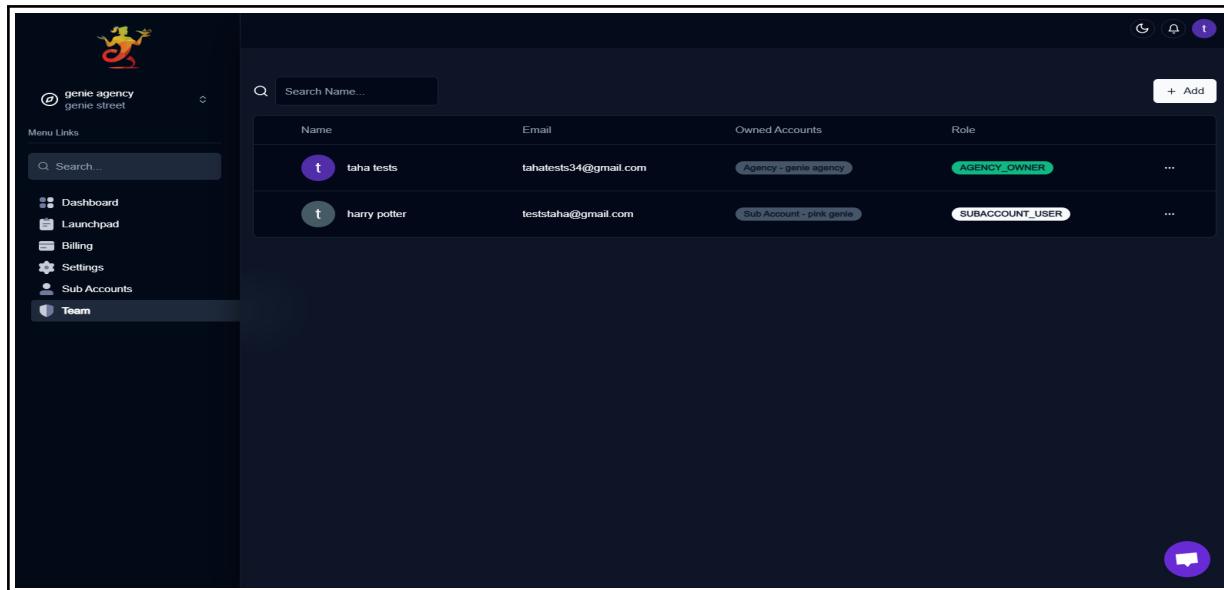


Figure 3.28: Agency Team Management: Dark Theme

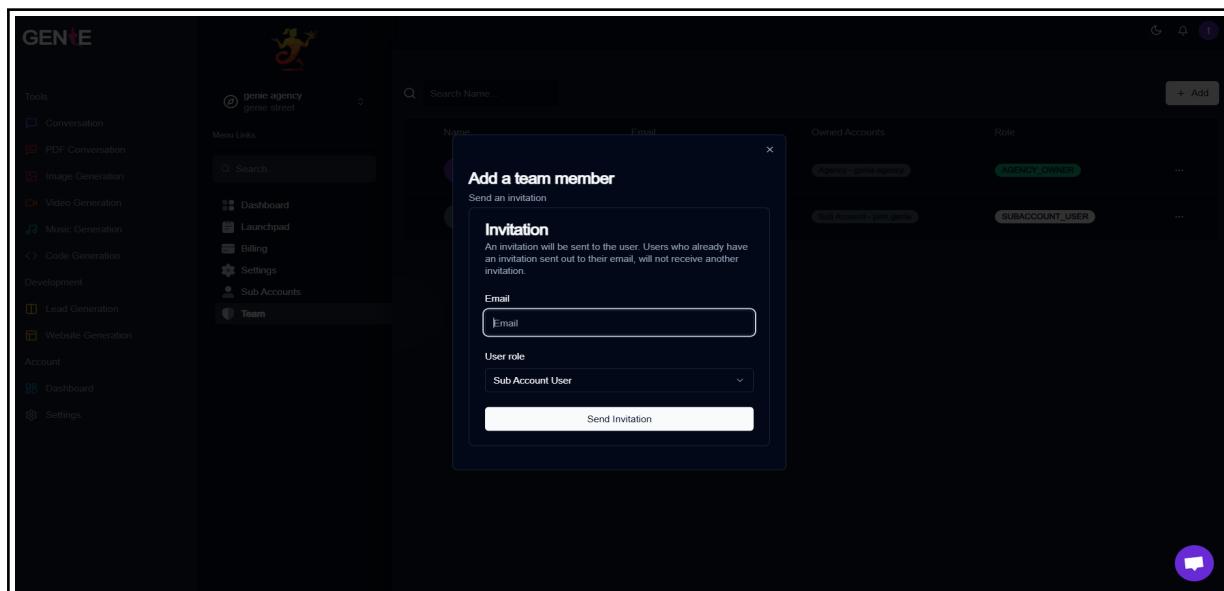


Figure 3.29: Agency Team Invitation: Dark Theme

CHAPTER 3. RELEASE 2: GENIE DEVELOPER

Only the agency owner and agency admins can create and manage sub accounts. This functionality allows for efficient organization and delegation within the agency.

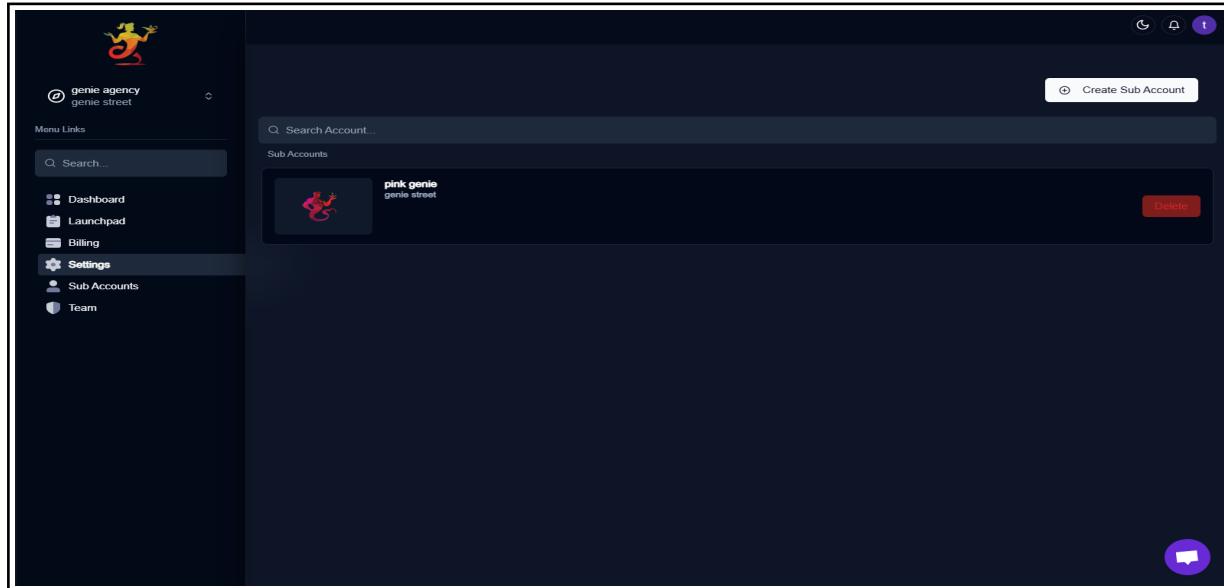


Figure 3.30: Sub Account Management: Dark Theme

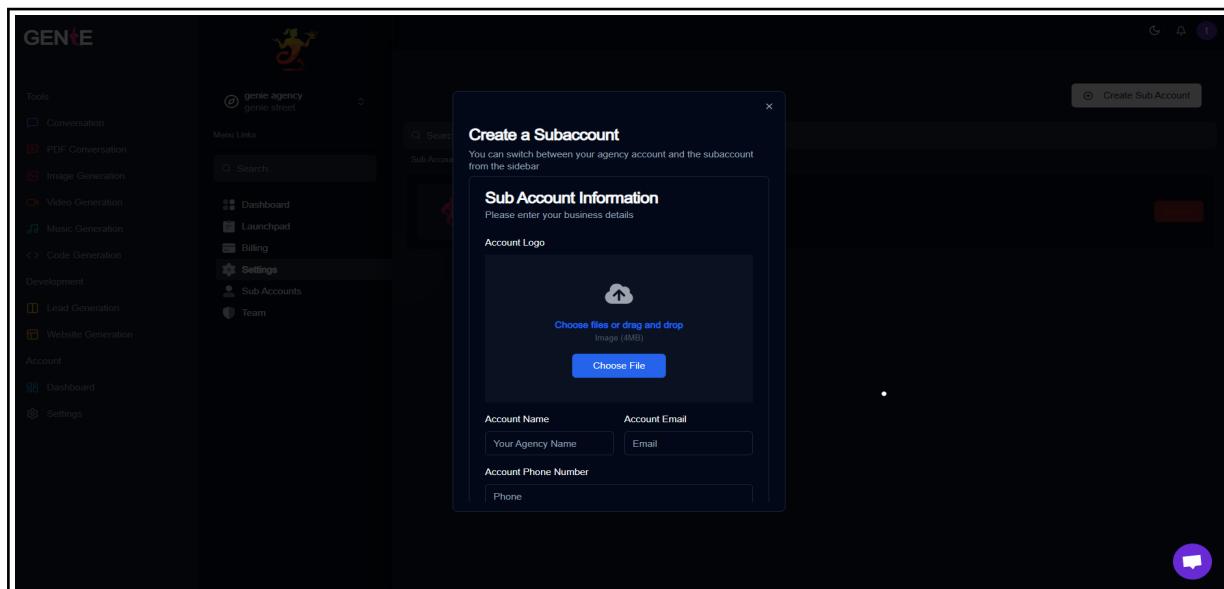


Figure 3.31: Sub Account Creation: Dark Theme

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After having created a sub account and link it with stripe, sub account team members can view statistics of their sub account activities from their dashboard. As for the agency owner and sub account admins they can manage the sub account as well as delete it.

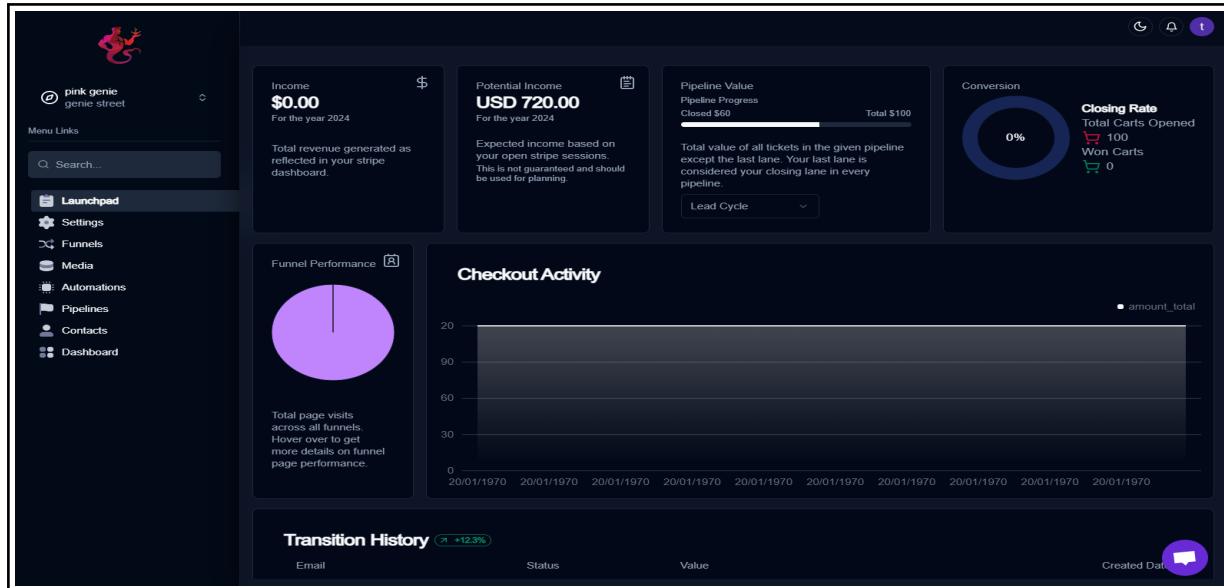
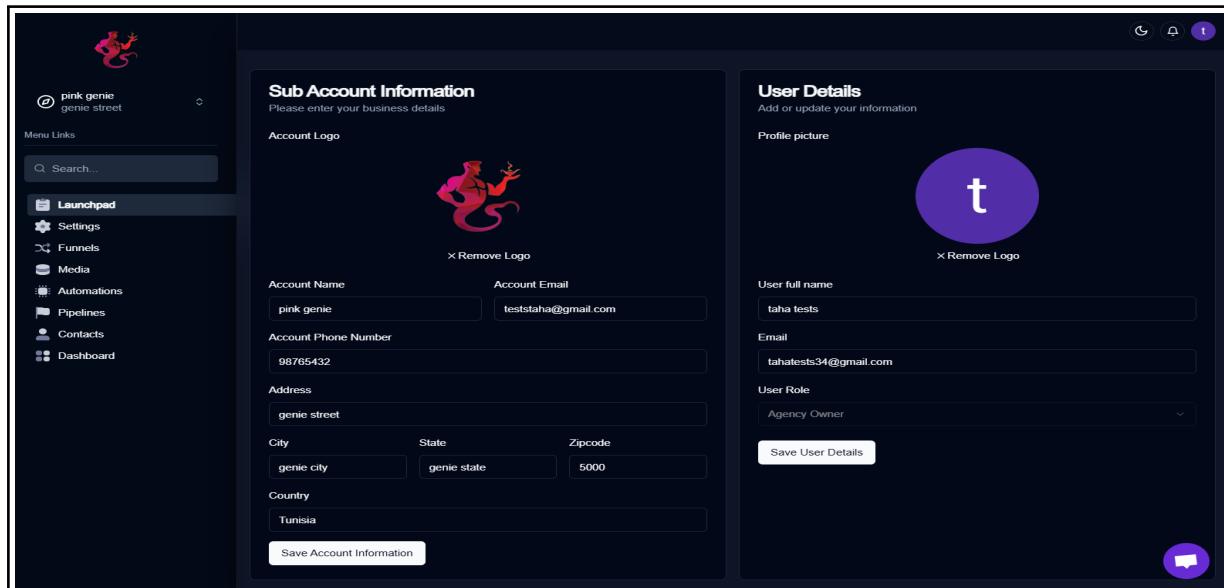


Figure 3.32: Sub Account Dashboard: Dark Theme



The screenshot shows the Sub Account Settings page in a dark theme. The left sidebar is identical to the dashboard. The main area is divided into two sections: 'Sub Account Information' and 'User Details'. 'Sub Account Information' includes fields for 'Account Name' (pink genie), 'Account Email' (teststaha@gmail.com), 'Account Phone Number' (98765432), 'Address' (genie street), 'City' (genie city), 'State' (genie state), 'Zipcode' (5000), and 'Country' (Tunisia). A 'Save Account Information' button is at the bottom. 'User Details' includes fields for 'Profile picture' (a placeholder with a 't'), 'User full name' (taha tests), 'Email' (tahatests34@gmail.com), and 'User Role' (Agency Owner). A 'Save User Details' button is at the bottom. A message bubble icon is in the bottom right corner.

Figure 3.33: Sub Account Seeings: Dark Theme

Additionally, all team members can upload images to the media bucket, ensuring that all necessary visual assets are accessible and managed centrally. Also, they can add client contacts to their respective sub accounts, facilitating robust client management.

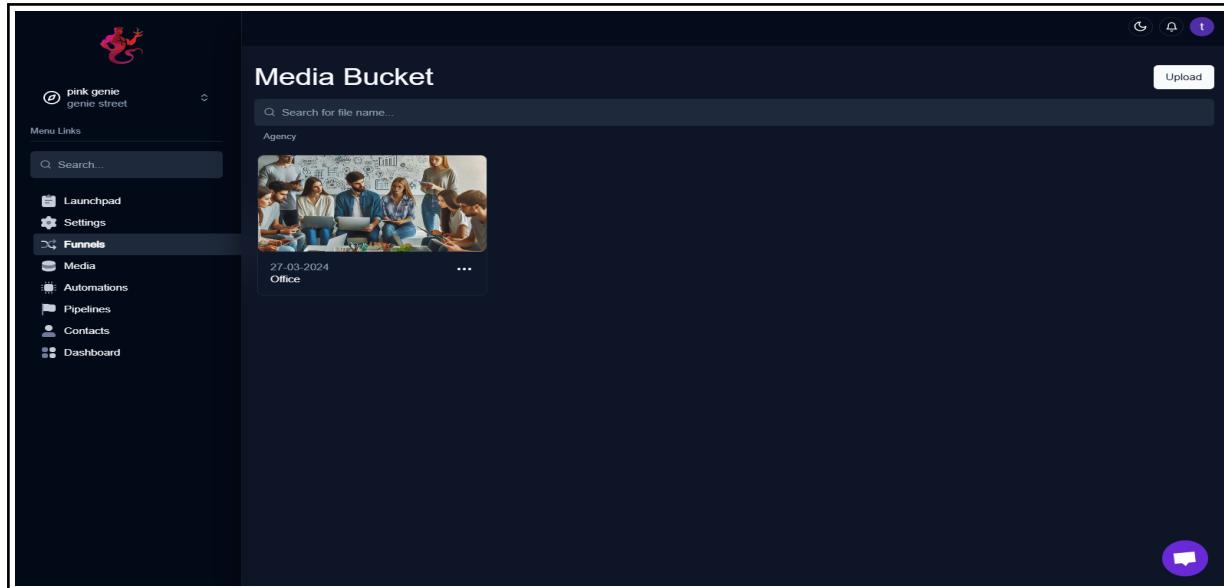


Figure 3.34: Sub Account Media Bucket: Dark theme

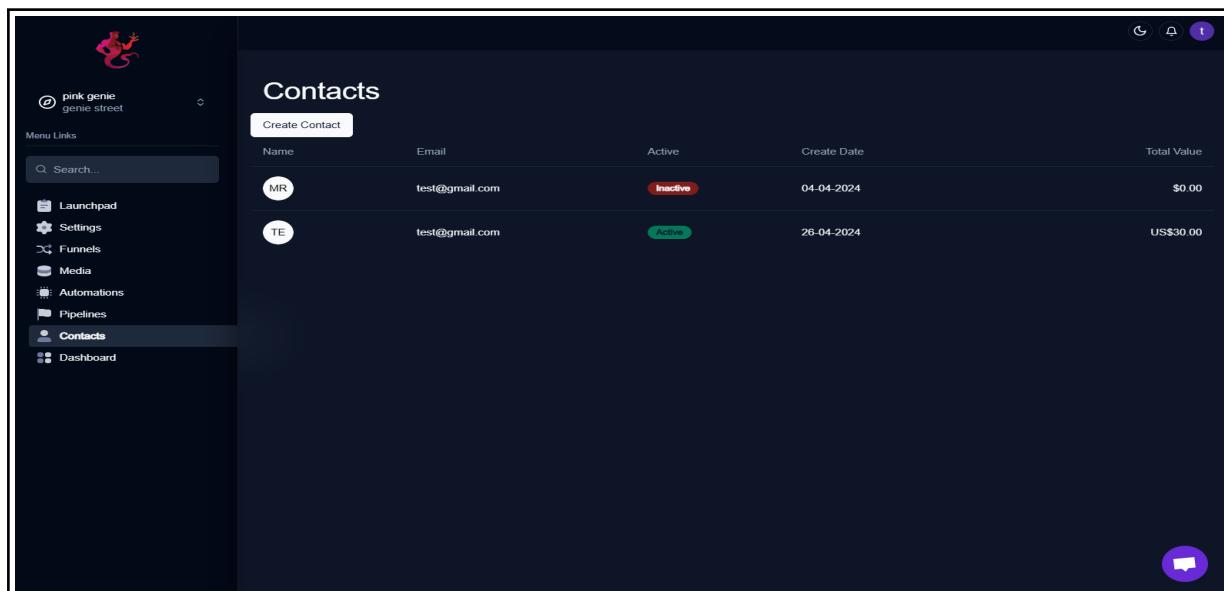


Figure 3.35: Sub Account Contact Management: Dark theme

CHAPTER 3. RELEASE 2: GENIE DEVELOPER

To streamline workflow and task management, agency admins can organize tasks within the pipeline section and assign tickets to sub account users. These users can then further assign contacts to each ticket, ensuring that client tasks are tracked and managed effectively.

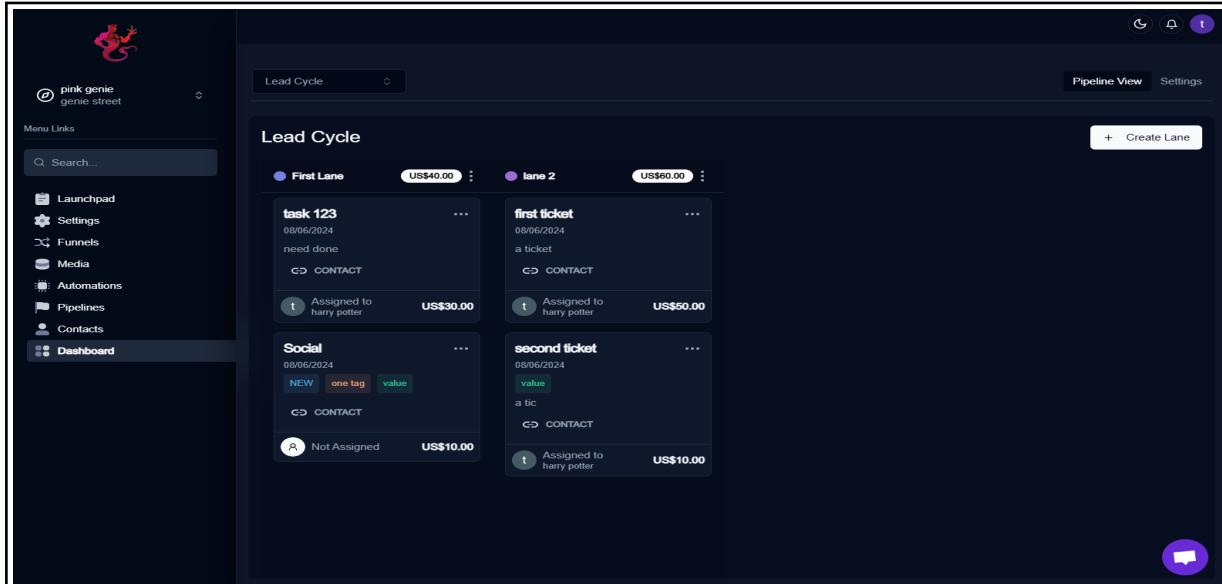


Figure 3.36: Sub Account Pipelines: Dark theme

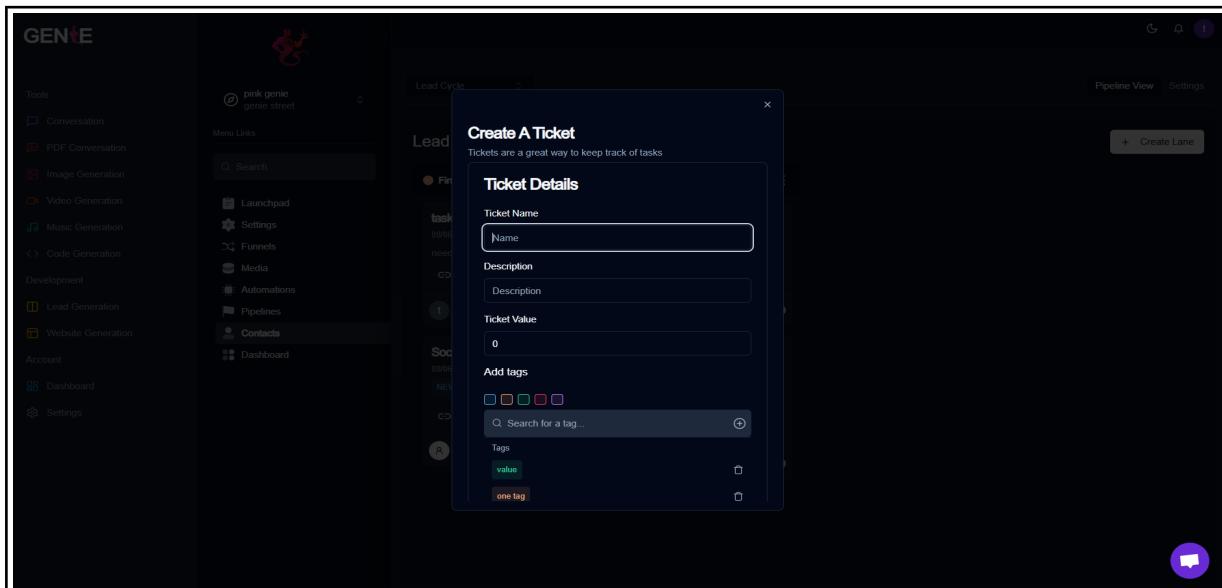
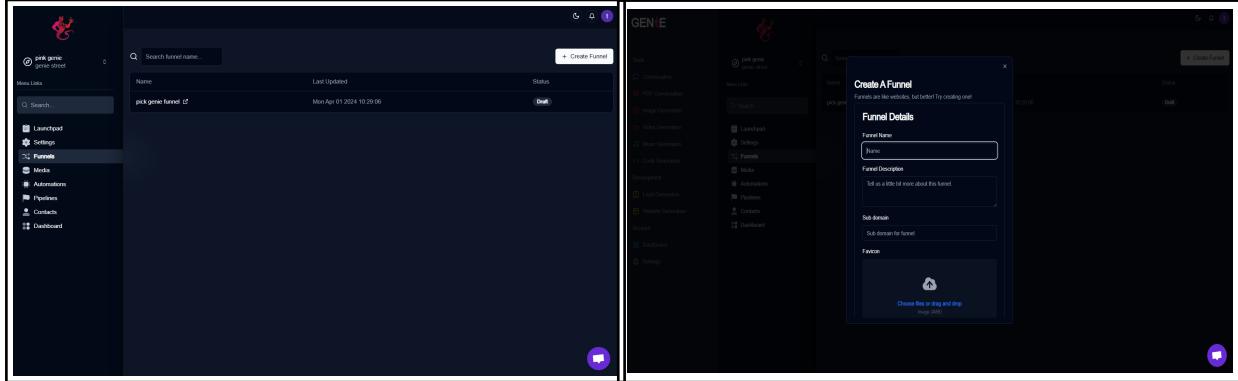


Figure 3.37: Pipeline Ticket Creation: Dark theme

Furthermore, sub account users, agency admins, and the agency owner have the capability to create and manage funnels (websites) for their clients. This comprehensive approach to website management enables the agency to deliver tailored online solutions, ensuring each client's needs are met with precision and professionalism.

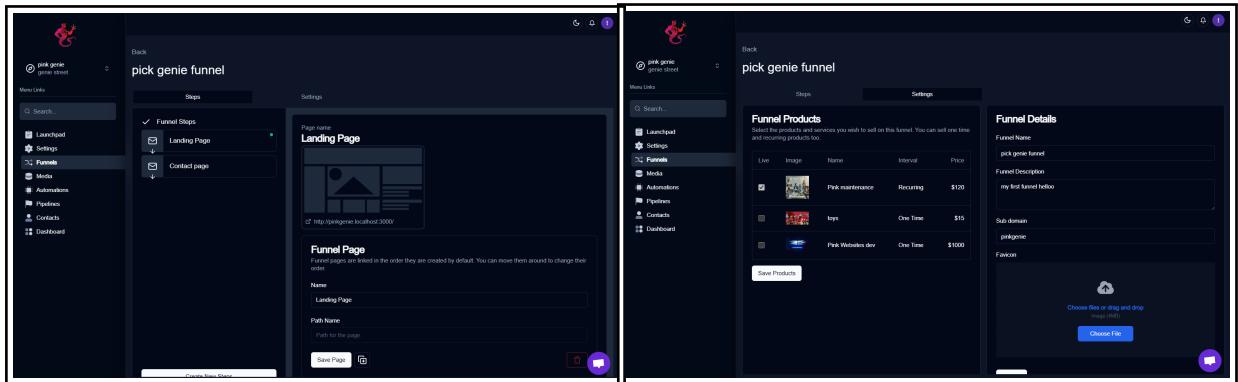


(a) Sub Account Funnels Management

(b) Sub Account Funnel Creation

Figure 3.38: Sub Account Funnels Section

In addition to managing the funnels, they can also pull products from their sub account's linked stripe account to showcase in their funnels' pages.



(a) Sub Account Funnel Steps

(b) Sub Account Funnel Settings

Figure 3.39: Sub Account Created Funnel

The editor is structured into four primary sections: Settings, Layers, Components, and Media. The process of editing and creating funnel pages is straightforward and user-friendly. Users can effortlessly drag and drop elements from the Components section and customize them by simply clicking to edit within the Settings section. The Layers section provides a hierarchical representation of the current state of the canvas, making it easy to navigate and manage different elements. The Media section contains all the media files associated with the sub-account, allowing for easy access and integration into the project.

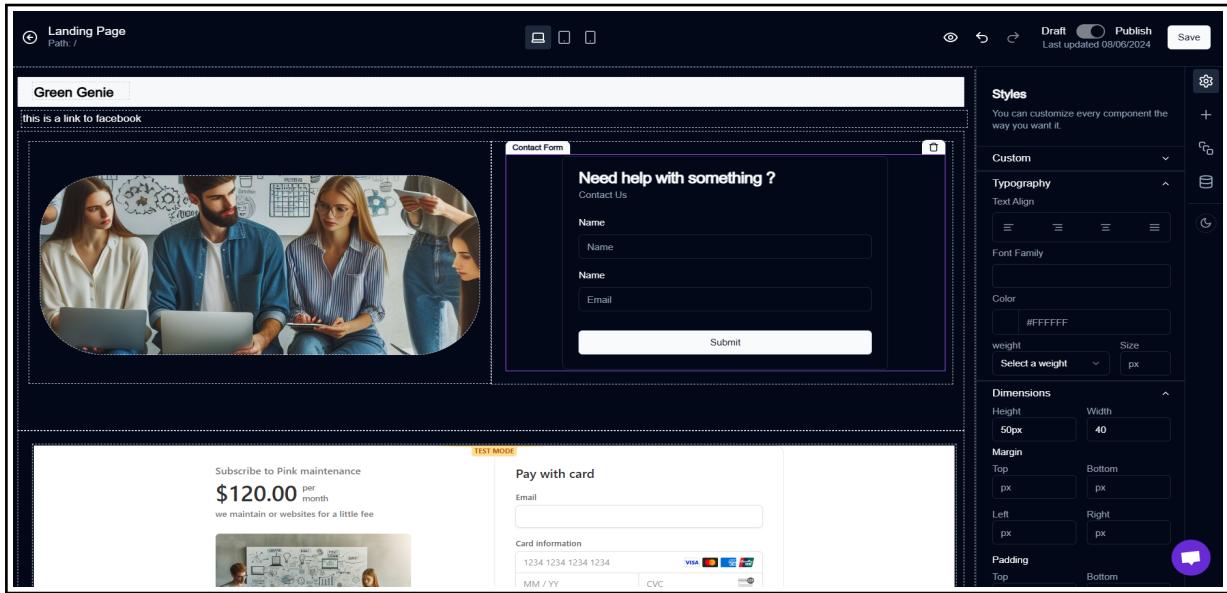


Figure 3.40: Sub Account Funnel Editor: Dark theme

3.4 Sprint 6 Development

Sprint 6 focuses on enhancing the Genie platform with advanced subscription options, a comprehensive dashboard, and the sub Account automation capabilities. These enhancements are designed to streamline agency management, provide continuous support, and integrate external services for improved efficiency. **Subscription Options Provided:**

- **Dev Ultimate:** Provides unlimited access to all Genie plans within the Sub Accounts, exclusively for the Agency Owner.
- **Enterprise:** Includes all features of Dev Ultimate, along with additional customization options for more team members access and permissions and enhanced functionalities.
- **24/7 Support Team:** Grants access to Genie Support Developers for comprehensive project assistance.

3.4.1 Sprint Backlog For Sprint 6

The Following Table describes the sprint 6 backlog.

Epic	ID	User Story	Estimation
Dev Ultimate Subscription	1.1	As an Agency Owner, I want to have unrestricted access to all Genie plans within my Sub Accounts to utilize the full potential of the platform.	4h
Enterprise Subscription	1.2	As an Agency Owner, I want to extend access and permissions for Genie Tools to members customized as i need to enhance productivity and collaboration.	4h
24/7 SupportTeam Subscription	2.1	As an Agency Owner, I want access to Genie Support Developers 24/7 to get timely assistance for any project issues or queries.	4h
	2.2	As an Agency Owner, I want to ensure my team can reach out to support anytime, minimizing downtime.	
Dashboard Creation	3	As a user, i want to be able to monitor each of my subscriptions from the dashboard.	6h
SubAccount Automation	4.1	As an Agency Admin, i want to link my SubAccount with my external services.	56h
	4.2	As an Agency Admin, i want to link my services by drag and drop on the canvas.	
	4.3	As an Agency Admin, i want to send messages and instructions from my SubAccount to all linked services and view the responses.	
	4.4	As an Agency Admin, i want to retrieve files from the linked Google Drive account.	
	4.5	As an Agency Admin, i want to Create and Manage my workflows.	
	4.6	As an Agency Admin, i want to Create templates for future references.	

Table 3.8: Sprint Backlog For Sprint 6

3.4.2 Use Case Diagram For Sprint 6

In this section, we will present the Use Case Diagram for Sprint 6. which focuses on handling various subscription plans.

The following Figure 3.41 illustrates the use case diagram for the sixth sprint, detailing the Different subscription plans.

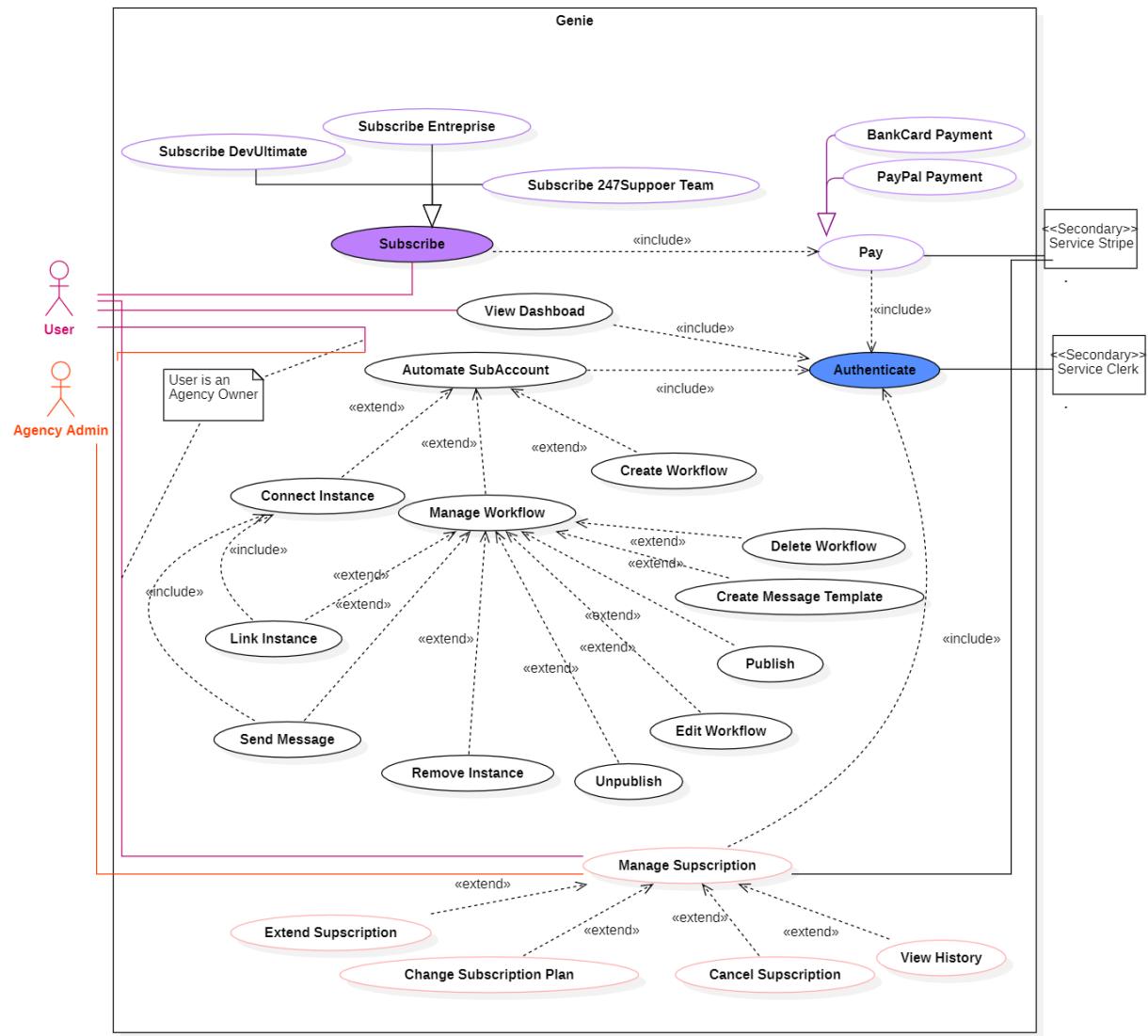


Figure 3.41: Use Case Diagram for Sprint 6

3.4.3 Textual Description Of The Use Cases For Sprint 6

This section will present the textual description of some of the use cases for the sixth sprint.

1. SubAccount Automation : Connect Instance

The Table below presents the textual description for the "Connect Instance" Use Case.

Actor	User (Agency Owner, Admin)
Purpose	Enable the user to integrate external services (Instances) such as Google Drive into the agency's workflow.
Pre-condition	User has the necessary permissions to link external accounts.
Post-condition	User can manage files and resources from integrated accounts within Genie.
Nominal Scenario	<ol style="list-style-type: none">1. The user navigates to the "Automation" section within the SubAccount.2. The user chooses the "connect instance" option.3. The user chooses from the list of available external services.4. The Genie platform prompts the user to authenticate and grant access to their external account.5. The user enters their credentials and grants the necessary permissions.6. The Genie platform verifies the credentials and integrates the external service with the agency account.7. The user can now manage files and resources from the external service directly within the Genie platform.8. The system confirms the successful integration and notifies the user.

Alternative Scenario	<ul style="list-style-type: none"> - The system displays an error message indicating the unavailability of the external service and suggests the user try again later or the provided credentials are invalid.
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Table 3.9: Textual Description For The Use Case «Connect Instance»

2. SubAccount Automation : Create Workflow

The Table 3.10 presents the textual description for the "Create Workflow" Use Case.

Actor	User (Agency Owner, Admin)
Purpose	Enable the user to Connect Instances and them send messages.
Pre-condition	User has the necessary permissions to link Instances.
Post-condition	User can send messages to different instances and forward messages from an instance to another within Genie.
Nominal Scenario	<ol style="list-style-type: none"> 1. The user navigates to the "Automation" section within the SubAccount. 2. The user chooses the "create workflow" option. 3. The user is redirected to the editor. 4. The user chooses external services (Instances) drag them and then drop them in the editor. 5. The User links Instances. 6. The user sends a message to a specific Instance or forwards messages from an Instance to another. 7. The Genie platform forwards messages to the Instance or from an Instance to another.
Alternative Scenario	<ul style="list-style-type: none"> - The system displays an error message indicating an error in linking Instances. The user try again later.

Table 3.10: Textual Description For The Use Case «Create Workflow»

3. **Subscribe Ultimate** The Table below presents the textual description for the "Subscribe Ultimate" use case.

Actor	User (Agency Owner)
Purpose	To subscribe to the Dev Ultimate plan.
Pre-condition	The user is registered and logged into the Genie platform.
Post-condition	The subscription to the Dev Ultimate plan is successfully activated.
Nominal Scenario	<ol style="list-style-type: none">1. The user navigates to the subscription section.2. The user selects the Dev Ultimate plan.3. The user enters payment details.4. The system processes the payment.5. Upon successful payment, the Dev Ultimate plan is activated.6. The user is notified of the successful subscription.
Alternative Scenario	- If the payment fails or the information is invalid, an error message is displayed, and the subscription process is halted.

Table 3.11: Textual Description For The Use Case « Subscribe Unlimited »

3.4.4 Design Diagrams For Sprint 6

In this section, we present the design diagrams that outline the architecture and interactions for the new features introduced in Sprint 6.

3.4.4.1 Class Diagram For Sprint 6

The figure 3.42 represents the class diagram for the sixth sprint.

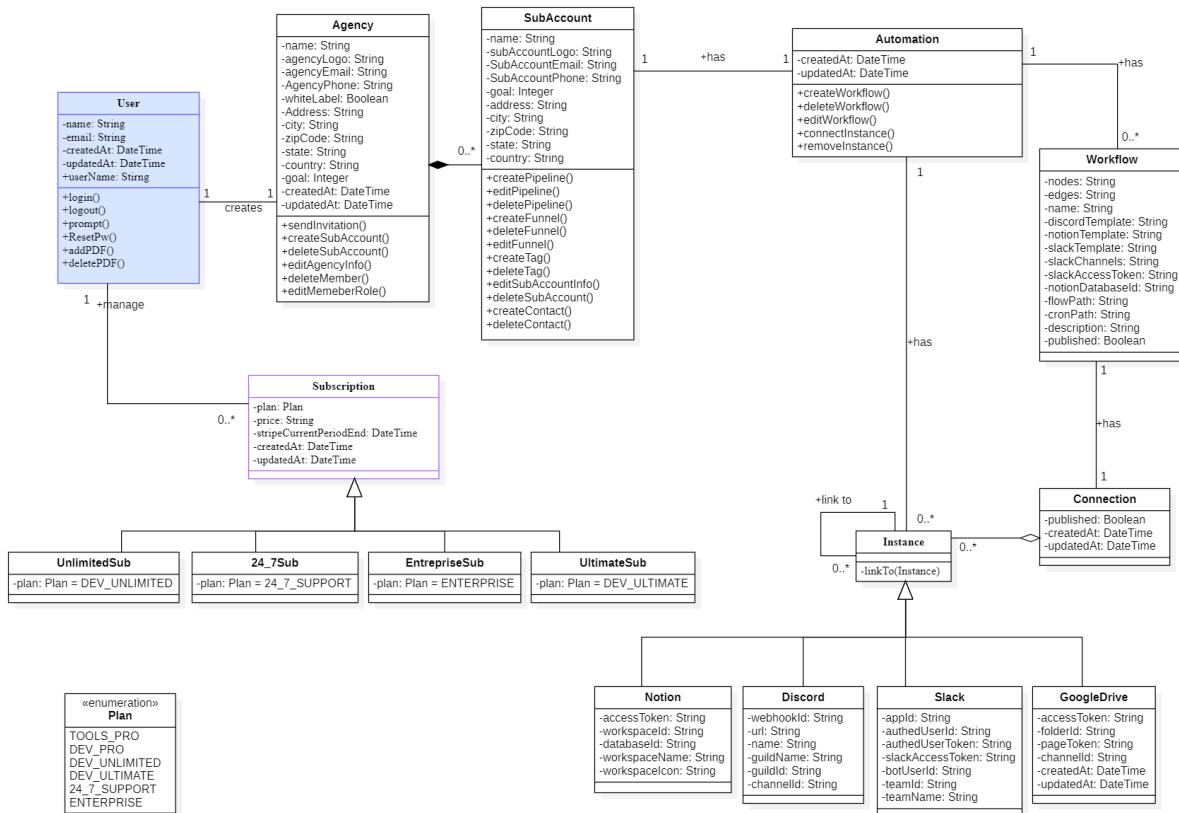


Figure 3.42: Class Diagram For Sprint 6

3.4.4.2 Detailed Sequence Diagram For The « Connect Instance » Use Case

The Figure 3.43 presents the sequence diagram for the « Connect Instance » use case.

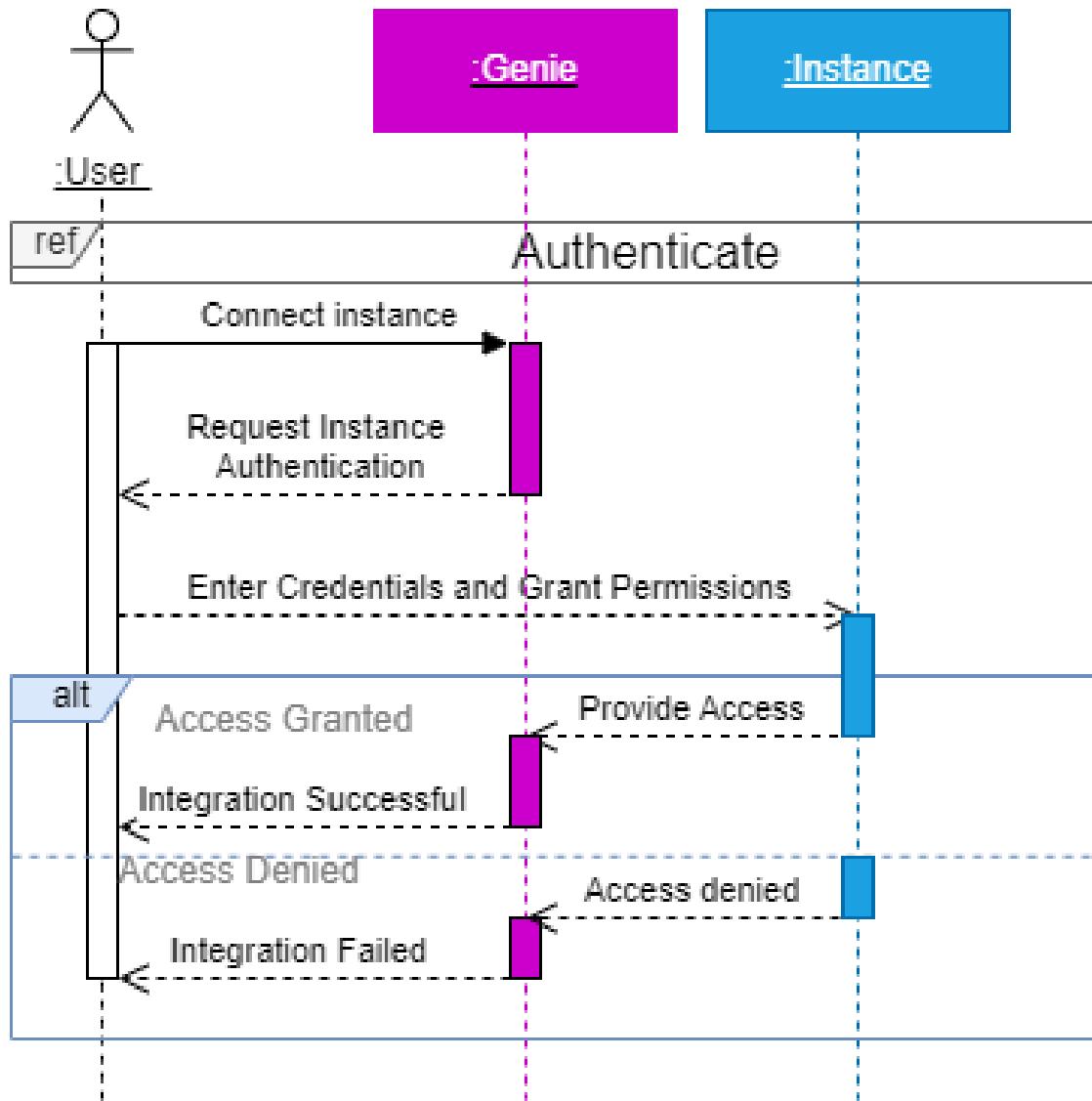


Figure 3.43: Sequence Diagram For « Connect Instance » Use Case

3.4.4.3 Detailed Sequence Diagram For The « Create Workflow » Use Case

The Figure 3.44 presents the sequence diagram for the « Create Workflow » use case.

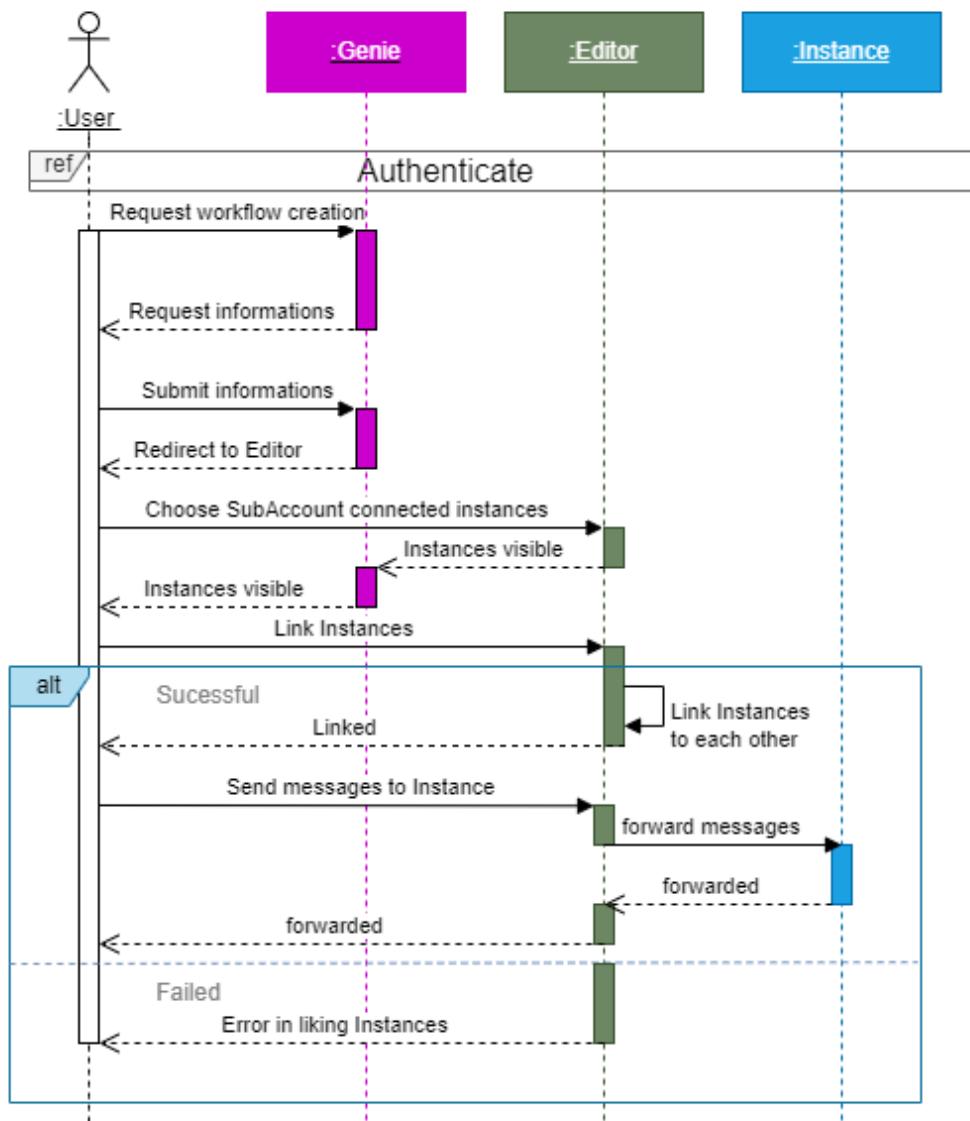


Figure 3.44: Sequence Diagram For « Create Workflow » Use Case

3.4.5 Implementation Of Sprint 6

This section outlines the implementation plan for Sprint 6.

3.4.5.1 SubAccount Automation

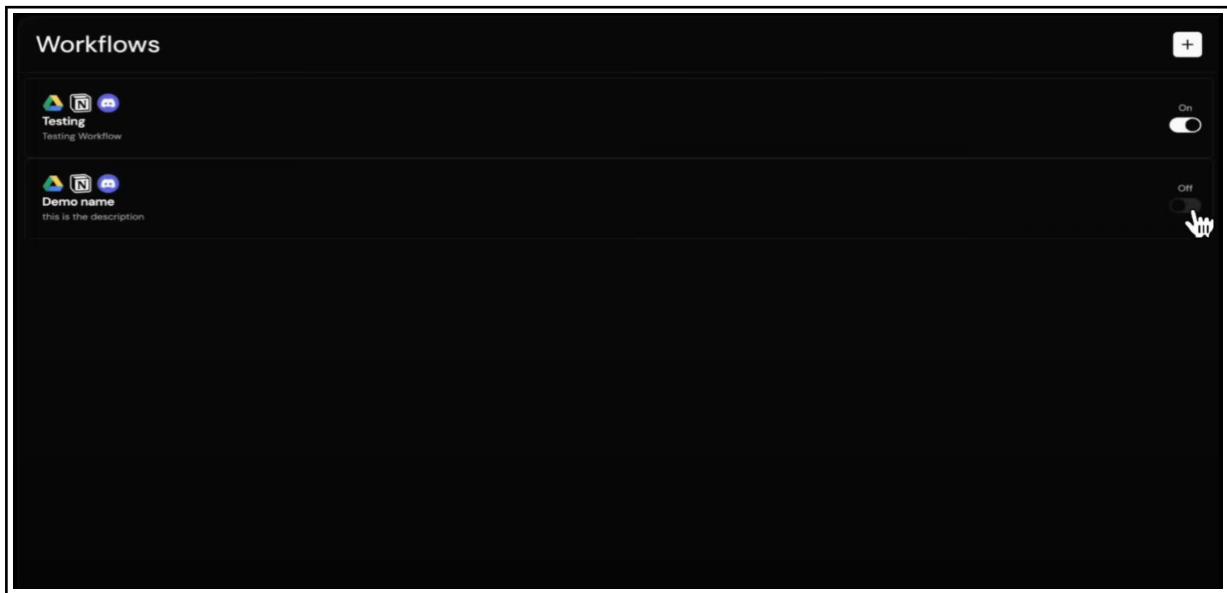


Figure 3.45: Subaccount Automation Workflows UI

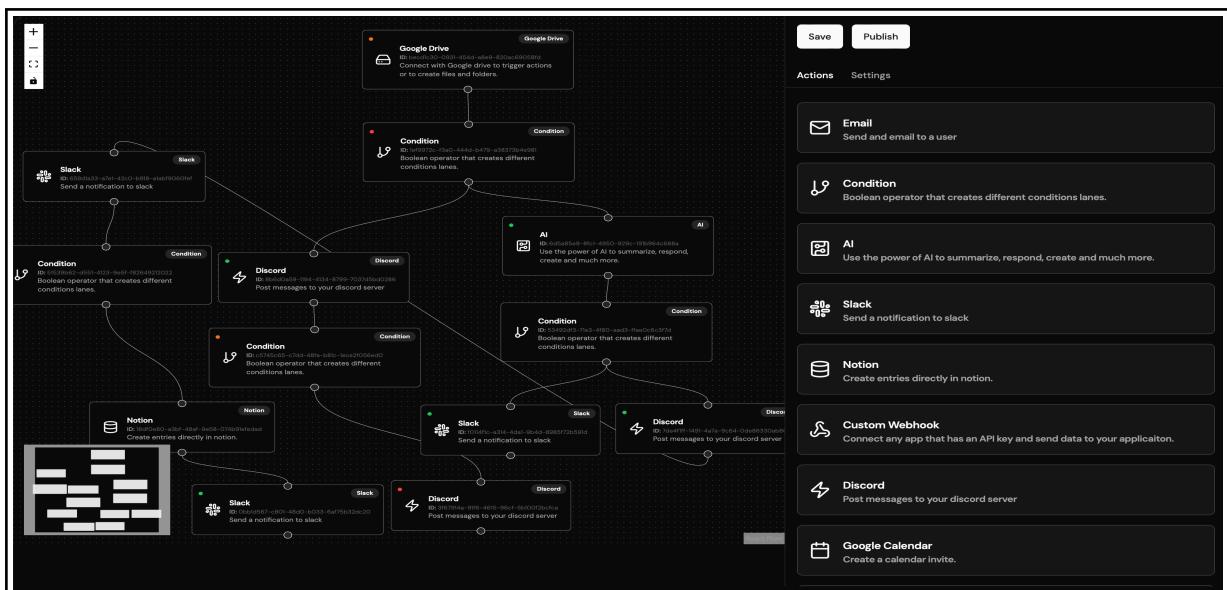


Figure 3.46: Subaccount Automation Workflow Editor UI

3.4.5.2 Subscription & Payment

The screenshot shows the 'BillingPage' interface in a dark-themed browser. On the left, a sidebar menu includes 'genie agency' and 'genie street' with a logo, followed by 'Menu Links' and a search bar. Below these are 'Dashboard', 'Launchpad', 'Billing', 'Settings', 'Sub Accounts', and 'Team'. The main content area features a 'Current Plan' section with two plans: 'Dev Ultimate' at \$80/month and '24/7 priority support' at \$150/month. A 'Plan Options' box allows modification of the plan. To the right is a 'Payment History' table listing five invoices with details like date, status, and amount. A purple message icon is visible in the bottom right corner.

Figure 3.47: Agency Billing: Dark theme

This screenshot shows the 'BillingPage' interface with a modal dialog titled 'Manage Your Plan'. The dialog displays two plan options: '\$80 Dev Ultimate' and '\$45 Dev Unlimited'. It also includes a 'Payment Method' section with 'Card' and 'PayPal' buttons, and a note about a 'Secure, 1-click checkout with Link'. The background shows the same dark-themed layout as Figure 3.47, including the sidebar and payment history table. A purple message icon is present in the bottom right.

Figure 3.48: Agency Billing: Payment

3.4.5.3 Global Dashboard

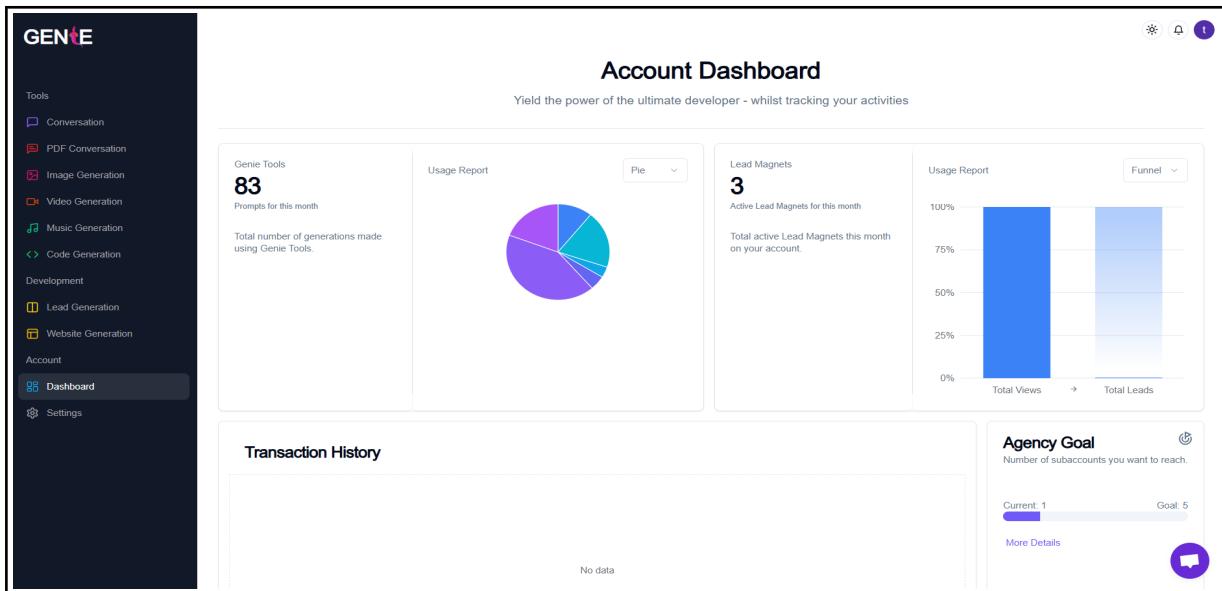


Figure 3.49: Account Global Dashboard

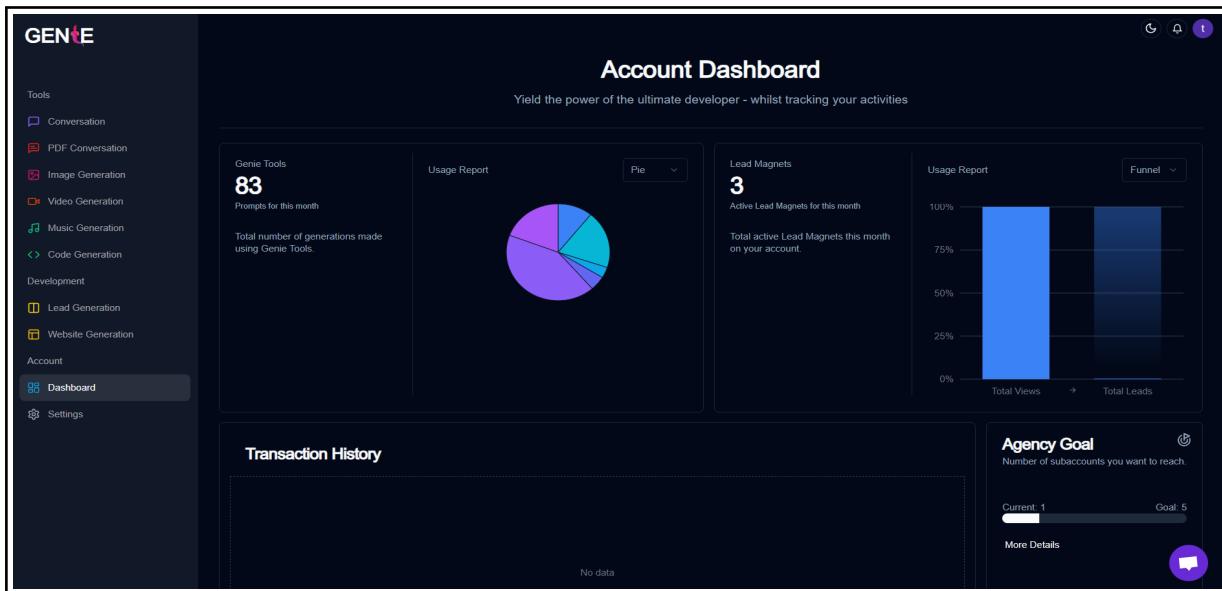


Figure 3.50: Account Global Dashboard: Dark Theme

3.4.6 Testing

Similarly to the testing section in the first release, we used ESLint to detect type and syntax errors early in the development process and Cypress for E2E testing [31].

E2E Testing: For our E2E tests, we conducted the following:

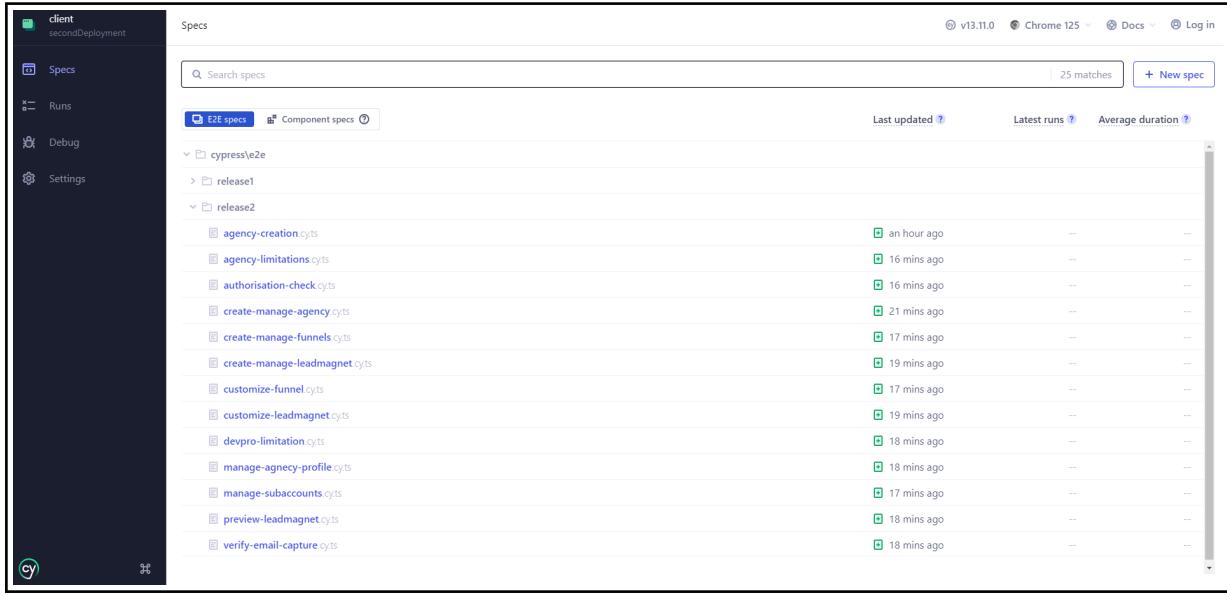


Figure 3.51: Cypress E2E testing specs

- **Lead Magnet:**

- **Create and Manage Lead Magnets:** Verified the ability to create new lead magnets and edit existing ones. And Ensured they can be saved, deleted, published, and unpublished successfully.
- **Customize Lead Magnet:** Ensured editing layout, bot prompts, and profile information reflect correctly in the lead magnet.
- **Preview Lead Magnet:** Ensured previewing lead magnets before and after publishing accurately represents the expected result.
- **Verify Email Capture:** Ensured the bot don't work unless the lead submits his name and email.
- **DevPro limitation:** Tested creating more than 2 active lead magnets for DevPro and unsubscribed users.

- **Website Generation:**

- **Create And Manage Agency:** Tested creating, deleting, and managing an agency and verified the actions reflect accurately in the system.
- **Manage Agency Profile:** Tested editing agency profile information and verified changes are saved correctly.

- **Manage SubAccounts:** Tested creating, deleting, and managing subaccounts and verified the actions reflect accurately in the system.
 - **Create And Manage Funnels:** Tested creating, deleting, and managing funnels and verified actions like publishing/unpublishing and ordering of pages.
 - **Customize Funnel Pages:** Tested adding, removing, and customizing components on funnel pages and verified changes reflect accurately in the editor.
 - **Agency Limitation:** Tests adding more than 2 team members and active subaccounts for Dev Unlimited, Dev Ultimate and unsubscribed users.
- **Authorisation Check:** Checked auth scenarios, such as private pages, public pages, login, etc...
 - **Subscribe Tests Scenarios:** Tested how the platform handles both subscribed and unsubscribed users when they try to subscribe.

3.4.7 Deployment

Deployment involves the steps taken to transition the final product from the development environment to the production environment. The Figures below show our platform working as expected whilst being deployed on Vercel.

Lead Magnets Deployed:

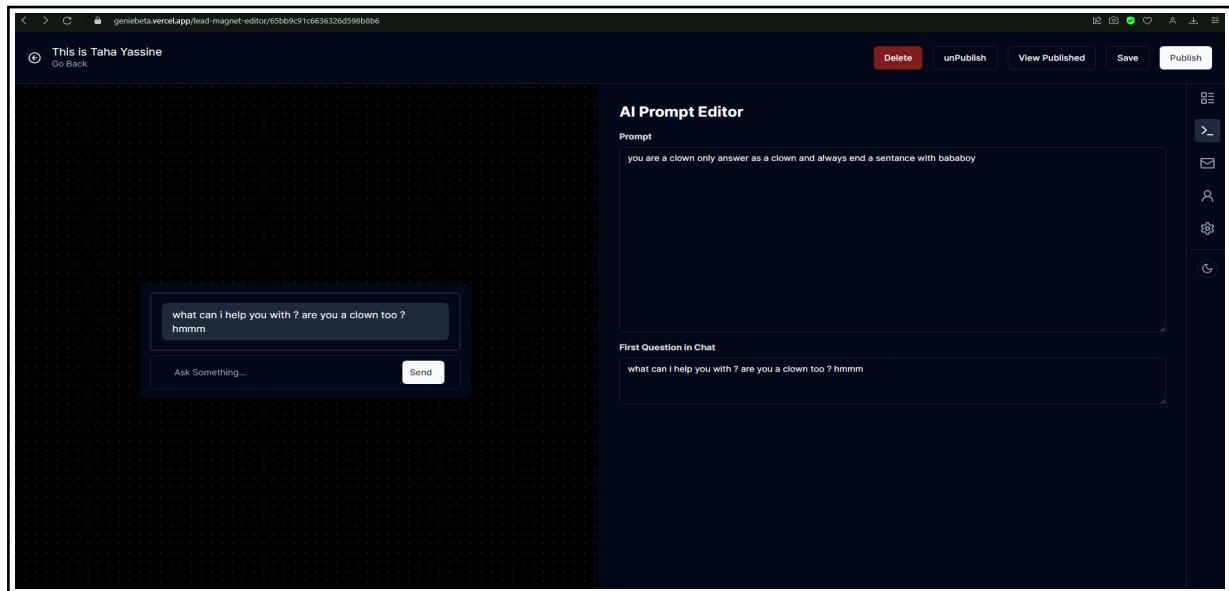


Figure 3.52: Platform Deployed: Lead Magnet Editor Dark theme

CHAPTER 3. RELEASE 2: GENIE DEVELOPER

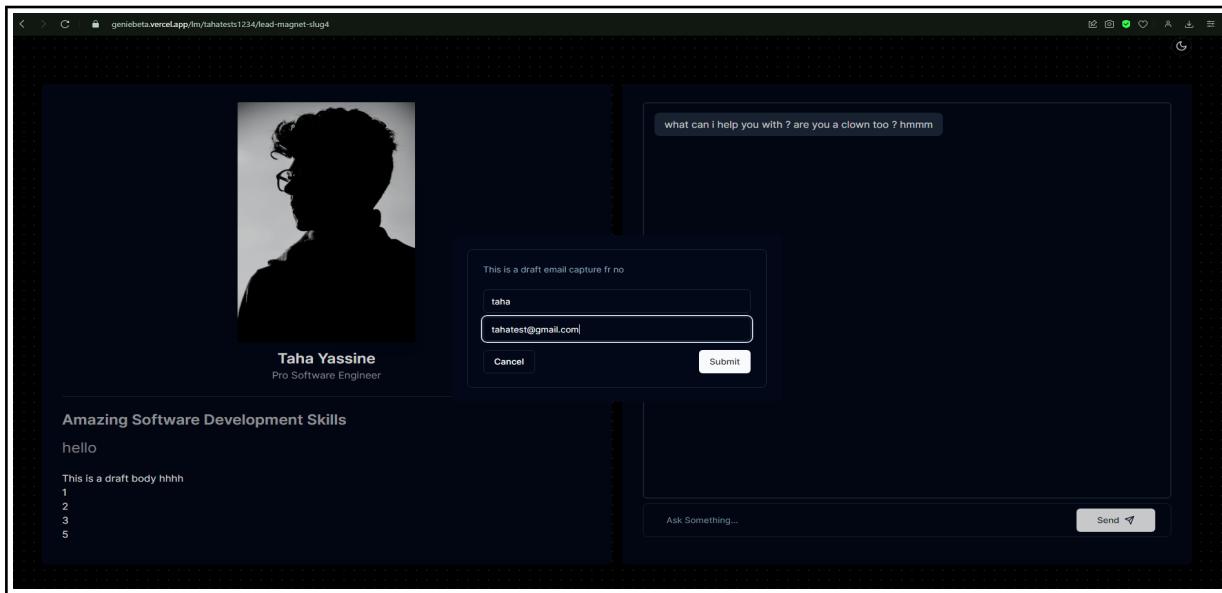


Figure 3.53: Platform Deployed: Published Lead Magnet

Agency Funnels Deployed:

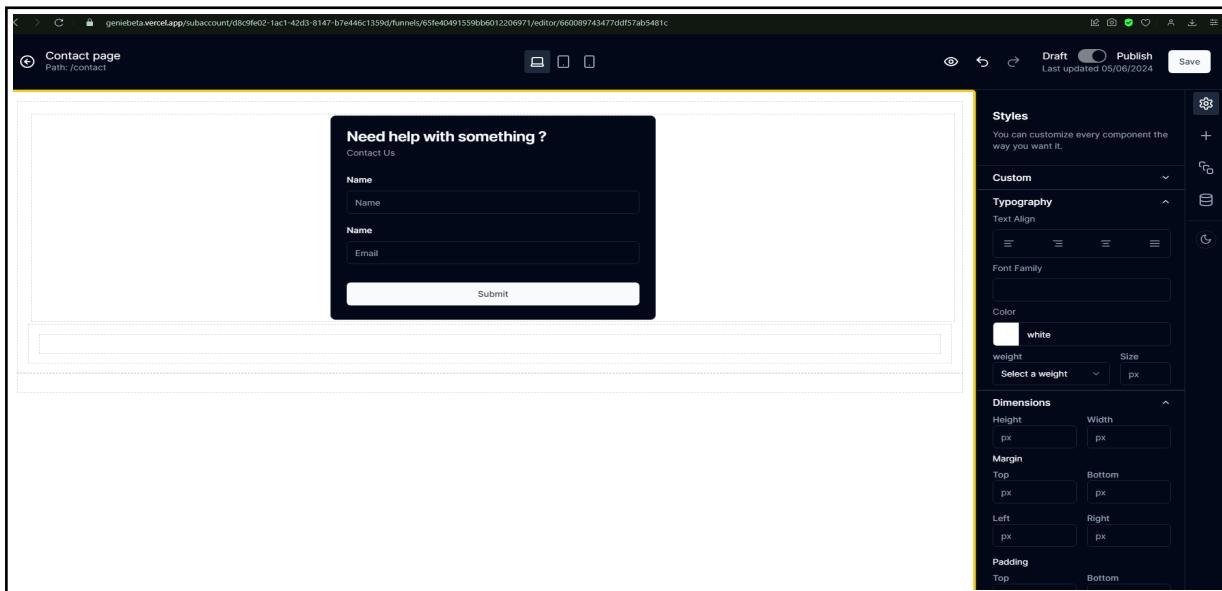


Figure 3.54: Platform Deployed: Agency Funnel's Editor Dark theme

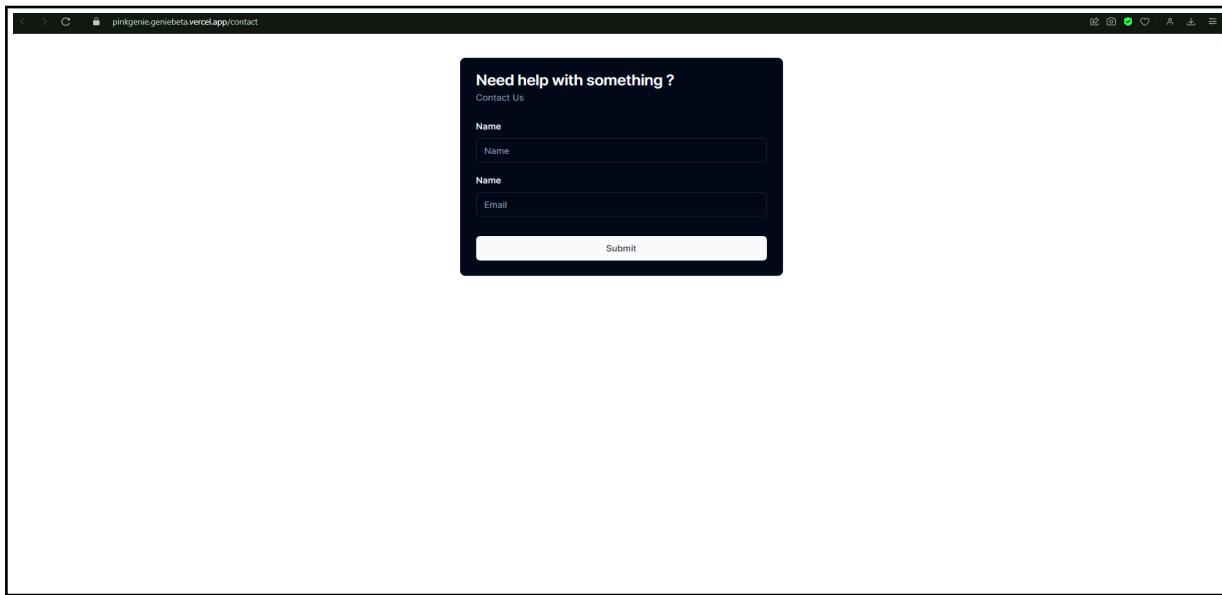


Figure 3.55: Platform Deployed: Published Funnel's Page

3.4.8 Conclusion

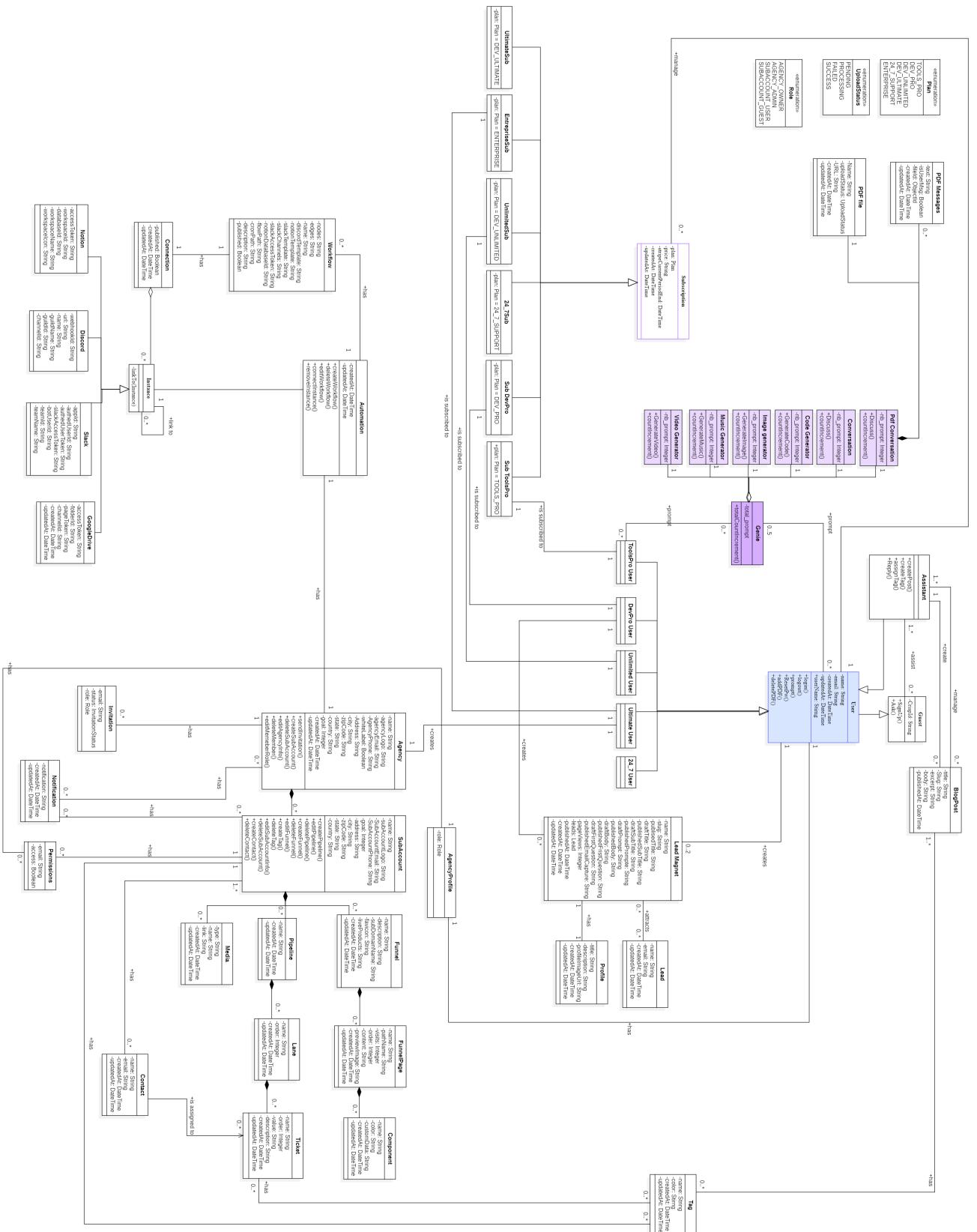
The completion of this project marks a significant milestone in our journey to enhance the Genie platform. Over multiple sprints, we have successfully implemented key features such as the creation and management of Agencies, sophisticated subscription plans including Dev Unlimited, Dev Ultimate, and Enterprise, as well as support mechanisms through the 24/7 Support Team.

These enhancements have empowered users with extensive tools for managing sub-accounts, creating funnels, and automating processes, thereby increasing productivity and collaboration within the platform. Our rigorous testing, feedback, and deployment processes have ensured that these new functionalities meet high standards of reliability and performance.

As we look forward, the continuous improvement and scaling of Genie will remain our priority, driven by the invaluable insights gained from this development phase. This project not only achieves its immediate objectives but also lays a strong foundation for future innovations and user-centric enhancements.

ANNEX 1: GLOBAL CLASS DIAGRAM

Global Class Diagram



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