

CreatorLink

Building a Digital System for Managing Brand–Creator Campaigns



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Abstract

CreatorLink is a website platform that connect companies with creators in an easy and organized way. As social media and creator marketing is growing in a rapid way. Companies nowadays need a way in finding suitable creators. And creators need more collaboration opportunities, as they might find it hard to get discovered. Our platform creator link helps solve this problem by providing a platform where companies and creators can connect and find each other.

Our platform, allow companies to create their accounts, search for the suitable creator and post campaigns. While, creators can create their own profiles and apply for campaigns. And the companies review those applications. Additionally, admins manage their users and make sure that the platform is running in a smooth way and there's no one violating the policies. Our project included stages such as requirements gatherings, system analysis, feasibility study, database & user interface design.

Our project also showed some diagrams in order to let us understand more how the system works these diagrams were DFD, Use-case, Activity diagrams and sequence diagrams. The database design had seven entities, and the database design was made sure that it followed the normalization principles in order to reduce redundancy. Creator link, provides a practical solution. The platform makes it easier for companies and creators to work together. Moreover, the platform will improve efficiency and communication the platform will help match both brands and creators.

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Chapter 1

1.1 Introduction

The rapid growth of social media has revolutionized content creation and marketing, platforms like TikTok, Facebook, Instagram, and YouTube have created a whole new industry, the creator industry. According to Adobe, the American computer software company, there are more than 303 million creators globally [1], with 4.7 million of them coming from Egypt [2].

And now, brands have shifted how they promote their products and services, the rise of content-based marketing as opposed to traditional advertising has been remarkable. According to Grand View Research, a U.S.-based market research and consulting company, the global creator economy market size was estimated at USD 205.25 billion in 2024 and is projected to reach USD 1,345.54 billion by 2033, growing at a CAGR of 23.3% from 2025 to 2033 [3], with many forecasts suggesting the creator economy will overtake the agency sector in value soon after 2030 [4].

1.2 Motivation

Brands often rely on manual searches or third-party agencies to reach creators, which is inefficient, costly, and wastes time. These difficulties are:

1. **Time and resource drain:** manually searching for creators or vetting through agency lists consumes significant marketing team hours, which diverts time away from other important tasks.
2. **No data-driven approach:** current methods rely on subjective methods (like follower count), which could lead to poor ROI, if the creators target audience to not match with the target audience of the brand.

3. **Expensive for small businesses:** external agencies usually cost a lot of money, so many small and medium sized brands (SMBs) cannot afford or to pay in order to use them.

Creators also deal with many obstacles and barriers, such as:

1. **Little recognition:** new & small creators find it very difficult to get recognized by trusted brands, even though if they have high engagement rate.
2. **Payment uncertainty:** creators are constantly at risk of late payments, scope creep, or even non-payments, which is a major source of financial instability.

Due to these challenges mentioned, there is a strong need for an integrated and centralized online platform that links brands and creators in a clear and reliable way.

1.3 Problem Definition

The project aims to solve the absence of a secure, clear, efficient and effective platform. That helps brands and content creators link and cooperate. Brands currently spend a lot of time searching for the suitable creators and often rely on expensive third-party agencies. Furthermore, this makes it hard and difficult for small business and startups to afford creator marketing. Because of this, talented creators that are with high engagement rate and low followers' creators remain unrecognized by famous brands and companies, although they have highly active audiences. Additionally, startups and small brands with limited budgets struggle and face challenges promoting their products and services. The lack of a centralized platform results in lower returns for brands, creators still remain undiscovered. Startups also struggle as they may have financial constraints. Finally, there will be a slow growth of Egypt's creator economy, which prevents it from reaching its full potential.

1.4 Proposed System Overview

The proposed system is designed to be a web application that facilitates communication between creators and brands. It is divided into 2 main interfaces; a brand-facing portal, and a creator-facing portal. Brands are able to view different creator profiles and filter through them, or create a job post with their requirements. Creators can set up their profiles, add their information, and link their accounts. They are also able to apply to job postings they find suitable.

1.4.1 Objectives

The main objectives for the system will be:

1. To develop a web platform that connects brands and creators efficiently and transparently.
2. To provide an accessible entry point for new creators or brands into the user generated content space.
3. To create a responsive user-interface that adapts to different screen sizes and devices.
4. To create an intuitive and easy-to-use platform, even for tech-illiterate people.
5. To create a fast and performant web app with fast loading times.
6. To allow brands to search and filter through creators using relevant metrics.
7. To allow creators to showcase their skills to their potential clients through their profiles and applications.
8. To ensure security and reliability through user authentication and web security best practices.
9. To create a robust, error-resilient system that handles errors gracefully.

1.4.2 Scope

This project's scope is divided into 2 parts, brand-related scope and creator-related scope.

1. Brand related scope:
 - (a) User authentication including login and registration.
 - (b) Profile setup and adding brand information.
 - (c) Exploring content creators or creators with a powerful and advanced filtering tools.
 - (d) Creating job posts and setting the required qualifications and conditions.
 - (e) Checking applications and reviewing them and selecting the suitable creator.
 - (f) Managing job listings and monitoring progress updates.
 - (g) Simple analytics dashboard for viewing and managing the campaign results.

2. Creator related scope:

- (a) User authentication including login and registration.
- (b) Setting up a profile and providing personal or professional information.
- (c) Connecting social media accounts to the platform we will try to do it.
- (d) Exploring and viewing different job opportunities available on the platform.
- (e) Applying to suitable job opportunities.
- (f) Check the current status of their job applications.
- (g) Providing progress updates for acquired jobs.

Furthermore, the platform will try to include in the future AI chat that will facilitate the process beside the above features.

1.4.3 Opportunities

This proposed platform is designed to take advantage of two key opportunities:

1. **Market leadership:** the project aims to become a leading online platform that connects brands and creators in one place, helping the creator economy reach its full potential. By helping brands find the right creators more easily, the platform can improve campaign performance and generate better ROI (return on investment). Moreover, the platform will create more job opportunities for creators, especially the growing creators who have a good potential and find it hard getting discovered. This will allow them to earn a more stable income and feel more confident about their professional future.
2. **Accessibility:** the project will address the main pain point for both users: the lack of an easy entry point for SMBs, who are priced out by expensive agencies, and small creators, who often face difficulty attracting clients.

1.5 Proposed System Constraints and Assumptions

1.5.1 Constraints

1. **Time constraint:** the entire project, including analysis, design, and implementation, should be completed within the two academic semester timeline.

2. **Regulatory constraint:** the system must comply with all data privacy and content regulation laws in the target location (Egypt) to ensure legal feasibility.
3. **Scope constraint:** the system's functionality is strictly limited to the features outlined in 1.4.2.
4. **Resource constraint:** the project is limited to open source or academic license technologies to maintain minimal cost.
5. **Technological constraint:** the system should be accessible via standard, modern web browsers available on the majority of devices.

1.5.2 Assumptions

1. **Social media API stability:** it is assumed that the APIs necessary for creators to link their social media accounts (e.g. TikTok, Instagram) will remain stable and accessible throughout the development process.
2. **User literacy:** it is assumed that system users will possess a basic level of digital literacy, enough to interface with an intuitive web application.
3. **Data quality:** it is assumed that the public data retrieved from the social media APIs will be accurate and sufficient to fulfill the requirements for the brand-facing search and filtering (see 1.4.2).

1.6 System Stakeholders

1.6.1 Primary Stakeholders

1. **Brands:** brands are core customers who will use the platform to discover, hire, and manage creators. Their success (higher ROI and efficient campaigns) will be paramount to the overall project success.
2. **Creators:** creators are also core customers who will setup their profiles in order to be discovered by brands. Their ability to find jobs and secure payments is equally crucial.
3. **Project team:** these are the individuals responsible for the design and development of the system.
4. **Project supervisor:** the supervisor is responsible for guiding the project and evaluating its outcomes.

1.6.2 Secondary Stakeholders

1. **Social media platforms:** these platforms are essential as they host the creators' content and provide the APIs necessary for linking accounts and retrieving data.
2. **Regulatory bodies:** government agencies responsible for overseeing e-commerce, digital transactions, and content regulation. Their requirements set constraints for the system, therefore, they are considered an influential stakeholder.

1.7 Required Tools

The required tools to develop the system are split into two main groups:

1. **Development tools (tech stack):** these are the primary programming languages, frameworks, and libraries used to develop the system.
 - (a) Front-end: React (TypeScript)
 - (b) Back-end: Node.js (TypeScript)
 - (c) Database: SQLite
2. **Infrastructure tools (Cloud Platforms):** these platform will be used to store, deploy, and serve the system to users. They will also host the back-end.
 - (a) Cloud hosting platform: Cloudflare
 - (b) Version control: Git (GitHub)
 - (c) Social media APIs: Instagram and TikTok
 - (d) In the future there may be AI chat: Google Gemini through OpenRouter

1.8 SWOT Analysis

Strengths	Weaknesses
<ul style="list-style-type: none"> - Data-driven filtering: Which enables brands to target audiences more accurately and improve their marketing ROI. - Centralized marketplace: which means a platform that connects brands and creators. As it will improve collaboration and eliminate manual searching. - Accessibility for SMBs: It will be an opportunity for us. As startups and medium-sized businesses will find it cost-effective. Moreover, there will be no need for SMBs to rely on third-party agencies. - Security: the website will only be accessible to authenticated users. 	<ul style="list-style-type: none"> - Initial low user base: a major challenge and weakness that the project might face in the introduction phase. Because of this, brands may hesitate to join the platform if there are not enough creators. Additionally, creators may also hesitate to join if there are no opportunities. - Trust building challenge: Which means that brands require verified creators especially rising creators. And creators need a secure payment. - Dependence on public social media data: Which means the data must be accurate and consistent any incorrect or unavailable data will surely harm the decision-making.
Opportunities	Threats
<ul style="list-style-type: none"> - Massive market growth: By 2033, the market is predicted to reach over USD 1.3 trillion, generating a high demand for digital solutions that enhance brand-creator partnerships. This makes it possible for the system to join a thriving sector with promising long-term growth. - Untapped SMB market: Many small and medium businesses cannot afford third-party agencies. Moreover, they waste time, resources and money. - Shift toward content-marketing: As brand now prefer to market themselves and raise brand awareness, through content-creators rather than traditional marketing that is probably more costly. 	<ul style="list-style-type: none"> - Social media API dependency: The system needs data from social media platforms like Facebook, Instagram and TikTok. If these apps block access or change the rules, the system system may face problems functioning properly. - Threat of new entrants: new entrants might enter the market if they find the project to be successful. In order to stand out, the project needs to have a competitive advantage, and should aim to gain the highest market share.

1.9 Development Approach

The project will use the **Agile Iterative Model**. This approach breaks development into short sprints (1 to 4 weeks) to facilitate continuous feedback and adaptation. The goal is to deliver a functional Minimum Viable Product (MVP) within the academic timeline, supported by continuous testing throughout the cycles.

Chapter 2

2.1 Introduction

This chapter details the methodology for requirements analysis for the brand-creator marketplace. It outlines the interactive and unobtrusive techniques used to gather comprehensive user and system requirements from key stakeholders. The findings are presented as distinct Functional (FRs) and Non-Functional Requirements (NFRs) that define the system's scope.

2.2 Requirements Identification

2.2.1 Interactive Techniques

2.2.1.1 Interviews

No interviews were conducted in the requirements identification process.

2.2.1.2 Questionnaires

Questionnaires were used to collect data from a large number of potential users (creators and brands). This method helped identify shared needs and reveal specific trends. The main purpose of the questionnaires was to evaluate:

1. **Challenges faced by creators:** Obstacles that face creators that prevent them from securing paid opportunities, such as limited or lack of knowledge or concerns about not receiving payment.
2. **Wasted efforts by brands:** the amount of time brands spends searching for suitable creators, highlighting the need for more efficient and effective platform.
3. **Feature importance:** identifying the features that users consider the most important, such as escrow payments and secure messaging.

2.2.1.3 Surveys

The first question was displayed for all participants

Do you create content on social media?

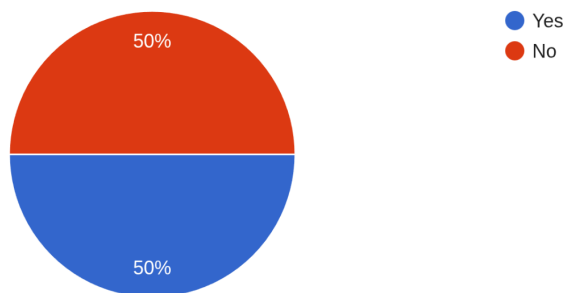
26 responses



Questions for current content creators:

Have you ever created paid content before (e.g., brand sponsorships, affiliate marketing, paid reviews, etc.)?

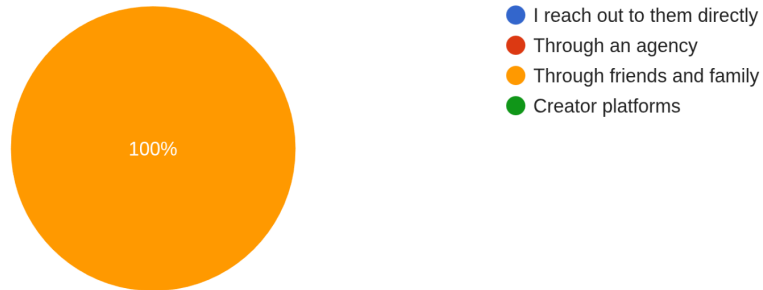
4 responses



Questions for current paid content creators:

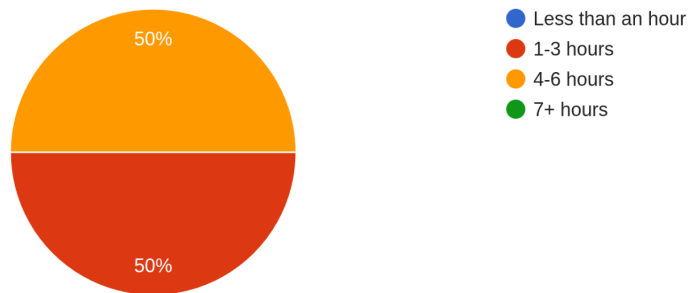
How do you find new collaboration opportunities with brands?

2 responses



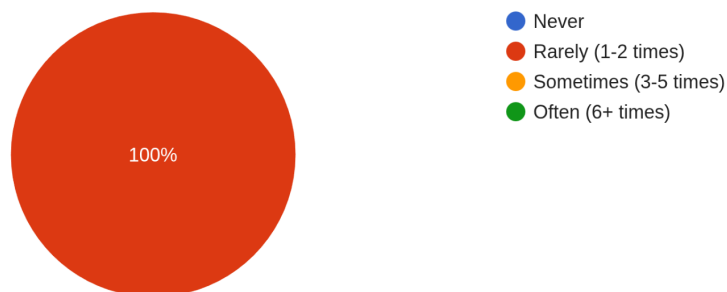
On average, how many hours per week do you spend looking for new brand collaborations?

2 responses



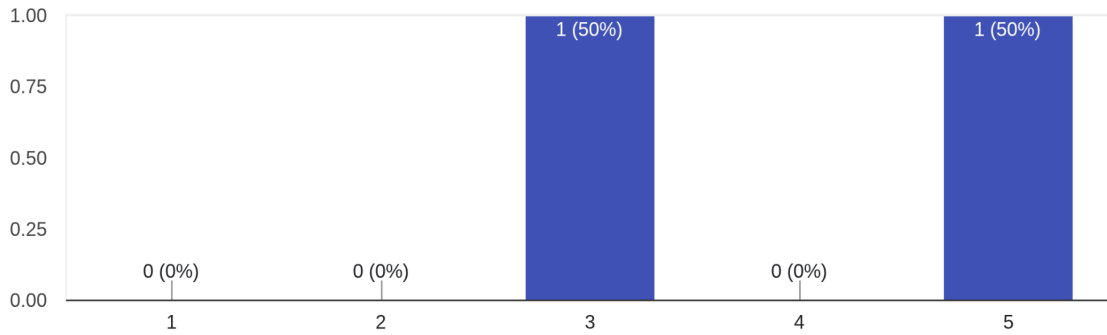
How often have brands paid you late or not at all after you completed a collaboration?

2 responses



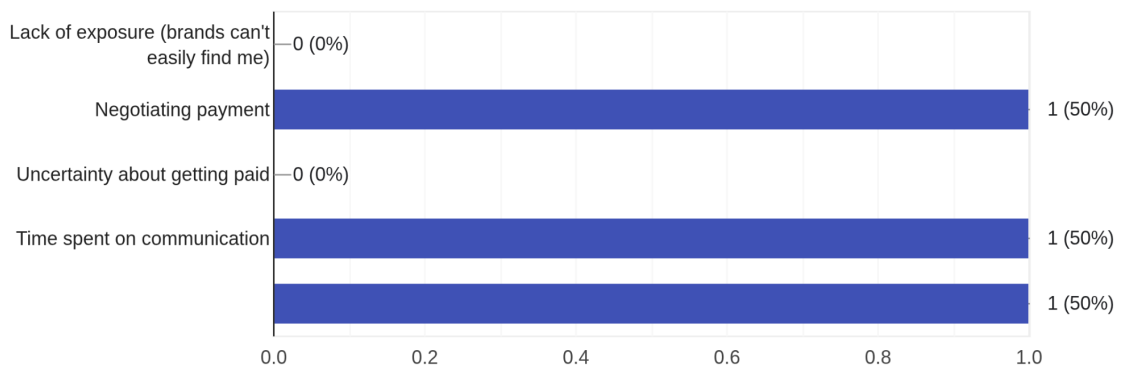
How important is a secure, third-party payment system to you when negotiating a new collaboration?

2 responses



What is the most frustrating part of your current process for getting brand deals?

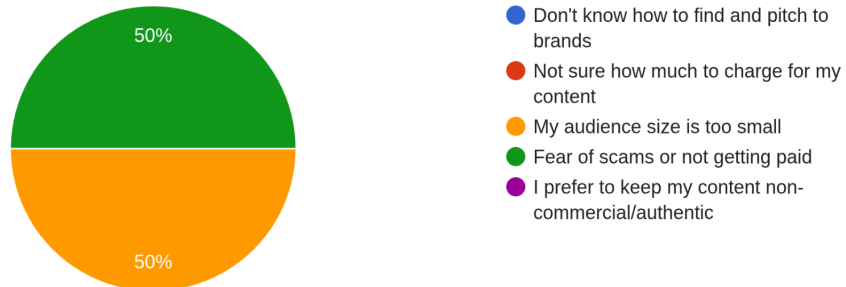
2 responses



Questions for current non-paid content creators:

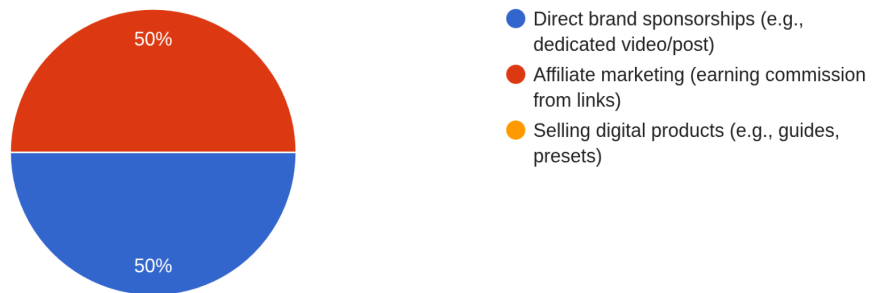
What is the biggest challenge preventing you from seeking out paid brand collaborations

2 responses



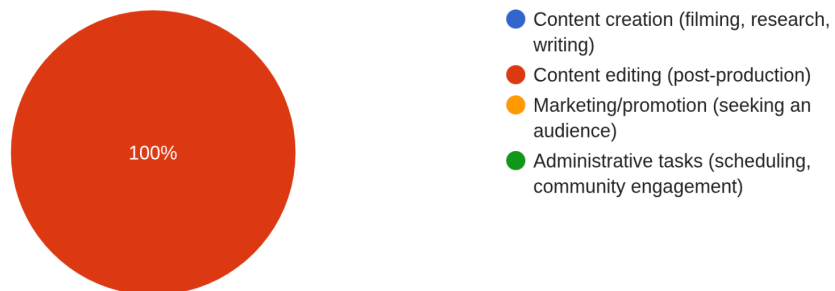
When you think about making money from your content (monetization), what is your most desired stream of income?

2 responses



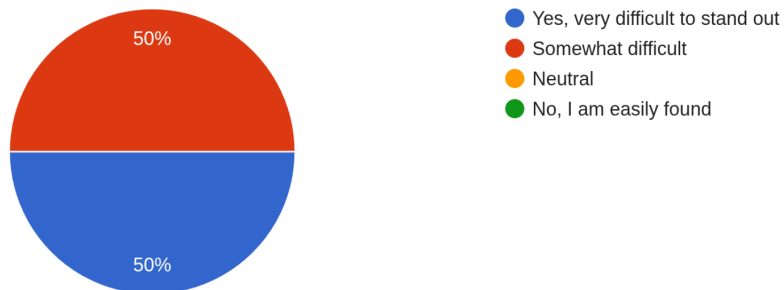
Which of these activities consumes the most of your time?

2 responses



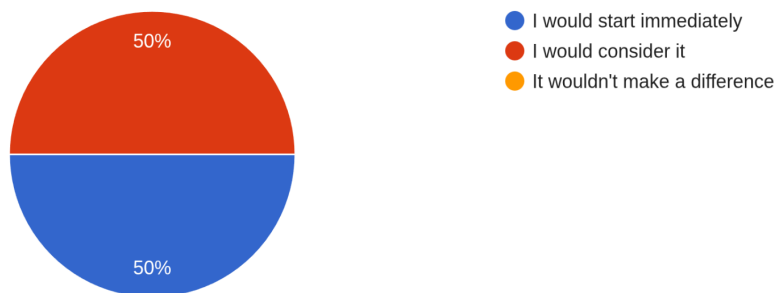
Do you believe your content is currently difficult for brands to discover (i.e., you lack visibility)?

2 responses



How much would a dedicated platform for paid brand deals influence your decision to start creating paid content?

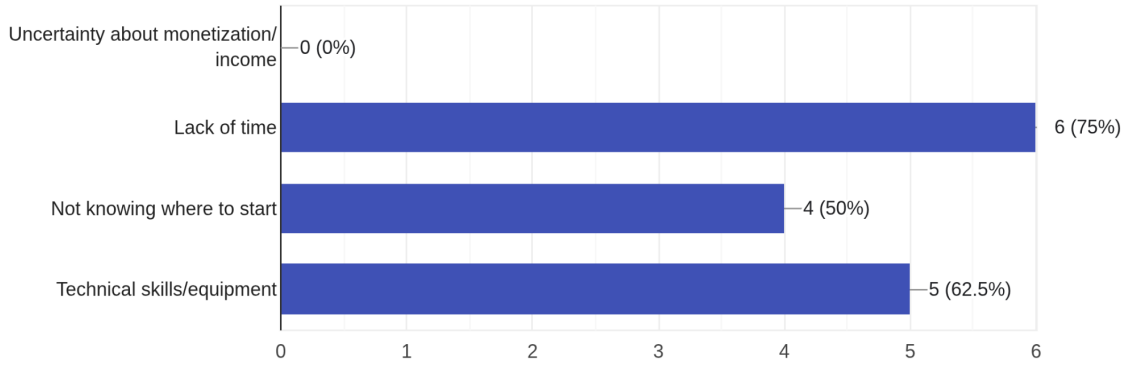
2 responses



Questions for future content creators:

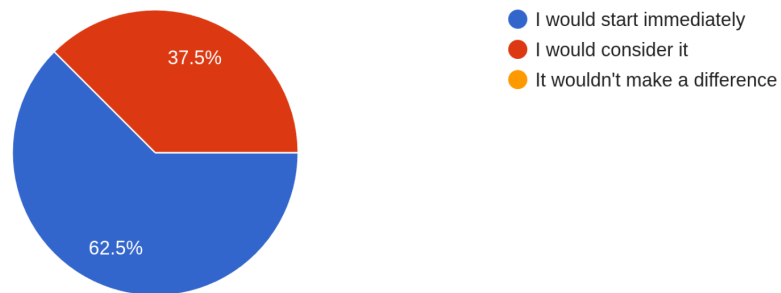
What is the single biggest obstacle currently preventing you from starting content creation?

8 responses



How much would a dedicated platform for paid brand deals influence your decision to start creating content?

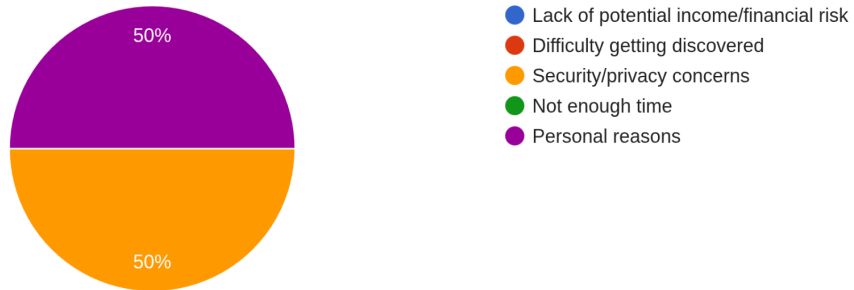
8 responses



Questions for participants who were interested:

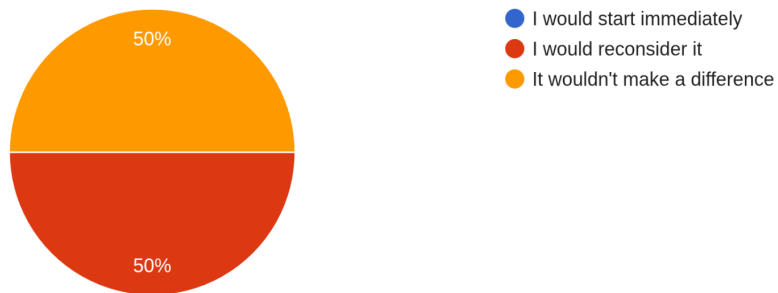
Which factor most contributed to your decision not to pursue content creation?

2 responses



How much would a dedicated platform for paid brand deals make you reconsider your decision?

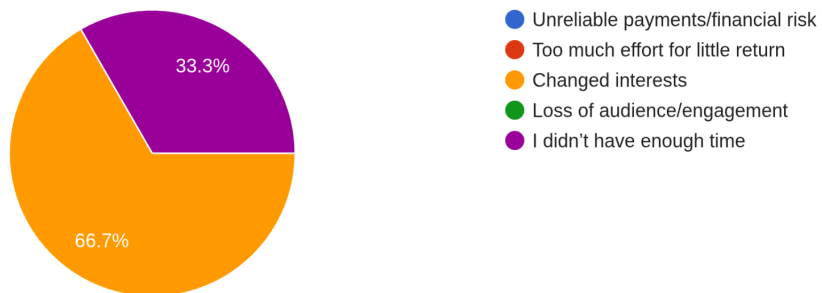
2 responses



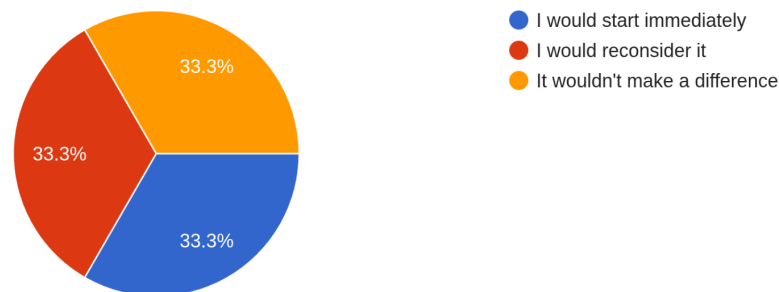
And finally, questions for ex-content creators:

What was the primary reason you stopped creating content?

3 responses



How much would a dedicated platform for paid brand deals make you reconsider your decision?
3 responses



2.2.2 Unobstructive Techniques

Requirements were gathered by reviewing existing documents, reports, and industry information without directly interacting with users. Moreover, the unobstructive technique helped to gain a clear understanding of the most effective practices used in the industry, identify weaknesses in competitor platforms and assess whether certain features can be built and implemented effectively.

2.2.2.1 Online Search

Internet research consisted of a detailed review for the important information from external sources:

1. **Market reports and research papers:** market reports and academic studies were reviewed to analyze the growing and growth of the global creator economy and its market size, helping support the project's opportunities and potential benefits.
2. **Industry forums and blogs:** forms and blogs were reviewed to understand the challenges faced by creators and brands in order to confirm the project's problem statement.
3. **API documentation:** API documentation was reviewed to tell whether social media platforms could be integrated for profile linking and data access.

2.2.2.2 Similar Systems

Existing and current platforms and solutions were studied to understand how brands and creators currently collaborate or work together.

1. **Feature analysis:** the main features available in creator marketplaces, agencies and social media business tools example: Features on social media that help promote and analyze their content and marketing activities.
2. **UX/UI review:** the usability, movement structure (navigation), and the overall user experience of the competitor platforms. In order to, guide and create an intuitive user-friendly interface.
3. **Feature gap analysis:** competitor platforms were examined to help identify the missing features, especially escrow payments if we will add it in the future. Moreover, advanced database filtering, to highlight the advantages of the proposed system.

2.2.2.3 Common Points and Competitive Edges

1. **Common points:** features that were commonly available in competitor platforms, such as user profiles, messaging, job posting. These were identified as essential requirements for the proposed system.
2. **Competitive edges:** weaknesses and missing features in existing platforms, such as the lack of safe payments and limited database filtering, they were identified as opportunities for our proposed system to offer better solutions and stand out from competitors. These results helped identify the key functional requirements.

2.3 Obtained Requirements

This section provides a summary of the user's need and system expectations that were identified during the requirements gathering process that was explained in section 2.2. Moreover, the requirements are grouped into two categories: the first one functional requirement (FRs), which explain the functions the system must perform. The second one non-functional requirements (NFRs), which define the system's quality standards and constraints.

2.3.1 Functional Requirements (FRs)

- **FR1 – User authentication:** the system shall allow users (brands and creators) to securely login using their email addresses and passwords.
- **FR2 – Dual profile setup:** the system shall enable users to create and manage distinct profiles: brand profiles (with company details) and creator profiles (with portfolio and linked social accounts).

- **FR3 – Job posting management:** brands shall be able to create, edit, post, and close detailed job listings including requirements, budget, and timeline.
- **FR4 – Creator discovery/search:** brands shall be able to search and filter creators using various criteria, including performance metrics.
- **FR5 – Secure application process:** creators shall be able to view job postings and submit applications directly through the platform.
- **FR6 – Basic analytics dashboard:** brands shall have access to a basic dashboard for viewing campaign results and tracking key performance indicators (KPIs).

2.3.2 Non-Functional Requirements (NFRs)

- **NFR1 – Security:** all passwords and sensitive financial data shall be encrypted using industry-standard hashing and encryption protocols.
- **NFR2 – Performance:** the system shall load all primary pages (e.g., Search Results, Profile Views) within 3 seconds under normal operating conditions.
- **NFR3 – Usability/UX:** the interfaces shall be intuitive and highly responsive across various devices and screen sizes.
- **NFR4 – Maintainability:** the code base shall adhere to current best practices to facilitate future updates, bug fixes, and scalability.

Chapter 3

3.1 Introduction

The feasibility analysis helps us determine if our project can be developed, executed and sustained. In other words, it answers the question, *can we realistically build this system and if it will actually work in the real world?* Moreover, it covers four main parts: technical, operational, legal and economic feasibility.

3.2 Technical Feasibility

In the technical feasibility section, we checked whether our team has the right technology, tools, skills, and resources to successfully build the system. As previously mentioned (see 1.7), the required tools to develop the system are split into two main groups:

1. Development tools (tech stack): these are the primary programming languages, frameworks, and libraries used to develop the system
 - (a) Frontend: React (TypeScript)
 - (b) Backend: Node.js (TypeScript)
 - (c) Database: SQLite

All of those tools are free making it feasible

2. Infrastructure tools (cloud platforms): these platforms will be used to store, deploy, and serve the system to users. They will also host the backend.
 - (a) Cloud hosting platform: Cloudflare
 - (b) Version control: Git on GitHub, in order to save and share the code.
 - (c) Social media APIs: Instagram and TikTok

(d) AI chat: Google Gemini through OpenRouter.

All of the above mentioned are either free, or have generous free tiers, which makes them cost efficient.

Since our project's team members are business intelligence students, we already have skills in:

- Web development
- Backend systems (Node.js, APIs)
- Database management
- System analysis and design

Our system will include the industry-standard web security measures to ensure safety (HTTPS connections, SSL certificates, CSRF and XSS protection, cookie-based authentication, etc.). The technologies chosen are scalable, meaning that the programs can handle growth later on if the system gets many users.

3.3 Operational Feasibility

In the operational feasibility, our team evaluates if the web-system will work in real life. In simpler meaning we see if users will accept the new system? Moreover, one of the most important questions to ask will our system solve a problem? Is it appealing and it has a good interface? Will people actually use it?

Our system solves problems for both brands and digital creators. As we mentioned before, brands wasting time to find the right people. And creators also struggle to get discovered and get noticed.

Our web system provides:

- A centralized platform
- Easy searching and filtering
- Job posting + applications
- Progress tracking

- Secure communication
- AI chat support

Our system solves a real problem, as the world shifts from traditional marketing to creator marketing. Users will not struggle to cope with our system, our target users should know the basic technology, the bare minimum which is called “basic digital literacy”.

Our system will provide the following:

- Simple web pages
- Clear buttons
- Easy navigation
- AI chat support

Our system is appealing and easy to use so our target users will not struggle to use it. It also fits existing behavior, because users are doing the same thing manually as they use social media. Contact each and negotiate through social media. Our system makes adoption easy as users already understands profiles, messaging, job applications and posting content.

Before our system:

- Our target users used to search for brands and creators manually, send private messages and waiting for replies due to many other people who send fake and spamming messages. Moreover, negotiating manually and hoping that the brand pays. This slow and wastes time for both digital creators and brands.

With our new system:

- Our target users can create a profile
- Browse available jobs
- Apply with one click
- Track application progress
- Receive secure job confirmation

Which leads to better ROI for brands and saving time and for digital creators to get noticed and simplify the working process. We are not creating a new behavior our goal is to simplify it.

3.4 Legal Feasibility

Data privacy and personal data protection

In the legal feasibility section, we checked if our system can operate without breaking any laws, especially regarding user data, payments, and communication. According to the “Egyptian Personal Data Protection Law (Law 151/2020)”, our system must comply with regulations ensuring data is collected safely.

- The system must seek approval before gathering personal information or data.
- The system must use secure data storage to protect data from unauthorized access.
- The system must allow users to modify or delete their personal information.
- The system must not share information with third parties without the user’s permission.

Data protection and secure communication

In order, to maintain compliance with laws and building user trust, our system must follow web security practices:

- All data that is transferred through the system is protected using encrypted HTTPS connection.
- User authentication is securely managed using cookies.
- The system must use role-based permissions to control what brands and creators can perform and access.

Social media APIs and third-party data usage

The system connects to third-party platforms such as Instagram and TikTok using their APIs. Compliance is maintained by:

- The system accesses only data that API providers allow it.
- Following the platform’s terms of service.
- Not saving and storing personal data without approval.

Intellectual property and content ownership

Creators keep complete ownership of their content. The platform does not take ownership or share the content. To prevent copy right problems.

Legal feasibility conclusion

Overall, based on the above analysis and legal feasibility the project is feasible.

3.5 Economic Feasibility

Moving on to the economic feasibility, it determines whether the proposed marketplace is financially practical. Moreover, it estimates the costs of developing and running the system and compares the costs with expected benefits.

3.5.1 System Costs

- Development and labor costs:
 - Implementation duration: 6 months
 - Team members: 3 students
 - Estimated monthly effort value: 3,000 EGP (Conservative estimate for academic work).
 - Calculation: $6 \times 3 \times 3,000 = 54,000$ EGP.
- Hardware and software costs:
 - Hardware: personal laptops (0 EGP).
 - Software: open-source (React, Node.js, PostgreSQL, GitHub) (0 EGP).
- Hosting and infrastructure costs (annual):
 - Cloudflare (free tier): 0 EGP.
 - Basic cloud database hosting: estimated at 10,000 EGP per year for server resources and maintenance suitable for an MVP.
- Maintenance costs (annual):
 - Estimated at 15,000 EGP covers basic bug fixing, security updates, and monitoring.

Table 3.1 System Cost Summary

Category	Cost (EGP)
Development & labor (one-time)	54,000
Hardware & software	0
Hosting & infrastructure (annual)	10,000
Training	0
Maintenance (annual)	15,000
Total initial cost	54,000
Total annual operating cost	25,000

3.5.2 Cost–Benefit Analysis

Tangible benefits:

- Reduced agency costs: assumed 10 active brands saving 15,000 EGP each. Total: 150,000 EGP/year.
- Time savings: assumed 10 brands saving 5,000 EGP worth of time. Total: 50,000 EGP/year.
- Potential revenue:
 - Creator subscriptions: $50 \text{ EGP} \times 20 \text{ creators} \times 12 \text{ months} = 12,000$.
 - Brand subscriptions: $100 \text{ EGP} \times 5 \text{ brands} \times 12 \text{ months} = 6,000$.
 - Total revenue: 18,000 EGP/year.

Table 3.2 Total Tangible Benefits

Benefit source	Value (EGP/year)
Reduced agency and marketing costs	150,000
Time savings and operational efficiency	50,000
Total potential revenue (Later stages)	18,000
Total tangible benefits	218,000

Intangible benefits: increased trust, secure communication, fair opportunities for creators, and improved decision-making.

3.5.3 Payback Analysis

Annual Net Benefit = Total Benefits – Operating Costs = 218,000 – 25,000 = 193,000 EGP

$$\text{Payback Period} = \frac{\text{Total Initial Cost}}{\text{Annual Net Benefit}} = \frac{54,000}{193,000} \approx 0.28 \text{ years (approx. 3.4 months)}$$

Overall, this short payback period shows that the system is financially feasible and practical.

3.5.4 Project Size Estimation (Use-Case Points)

3.5.4.1 Step 1: Unadjusted Use Case Weight (UUCW)

Use Case	Steps	Complexity	Weight	Score
1. User Registration	3	Simple	5	5
2. User Login	3	Simple	5	5
3. Brand Profile Mgmt	5	Average	10	10
4. Creator Profile Mgmt	6	Average	10	10
5. Browse & Filter Creators	6	Average	10	10
6. Create Job Posting	5	Average	10	10
7. Apply to a Job	4	Average	10	10
8. View Applications	5	Average	10	10
9. Manage Job Progress	7	Average	10	10
10. Basic Analytics Dashboard	8	Complex	15	15
Total UUCW				105

3.5.4.2 Step 2: Unadjusted Actor Weight (UAW)

Actor	Type	Complexity	Weight
1. Brand (User)	Human (Rich UI)	Complex	3
2. Creator (User)	Human (Rich UI)	Complex	3
3. System Admin	Human (Rich UI)	Complex	3
4. Social Media API	External System	Simple	1
Total UAW			10

3.5.4.3 Step 3: Technical Complexity Factors (TCF)

$$TCF = 0.6 + (0.01 \times 34.5) = 0.945$$

3.5.4.4 Step 4: Environmental Complexity Factors (ECF)

$$ECF = 1.4 + (-0.03 \times 11.5) = 1.055$$

Factor	Weight	Rating	Score	Explanation
1. Distributed System	2	3	6	Web-based, multiple users.
2. Response Time	1	2	2	No real-time requirement.
3. End-user Efficiency	1	3	3	Fast interaction needed.
4. Complex Processing	1	3	3	Filtering and matching logic.
5. Reusability	1	2	2	Reusable components.
6. Easy to Install	0.5	2	1	Simple deployment.
7. Easy to Use	0.5	3	1.5	Simple UI required.
8. Portability	2	1	2	Runs on modern browsers.
9. Maintainability	1	3	3	Easy to update.
10. Concurrent Users	1	2	2	Moderate user base.
11. Security	1	4	4	Sensitive data/Auth.
12. Third-party Access	1	3	3	Social Media APIs.
13. Training Needs	1	2	2	Minimal training.
Total Technical Score			34.5	

Factor	Weight	Rating	Score	Explanation
1. Team Experience	1.5	2	3	Basic experience.
2. App Experience	0.5	2	1	Limited scale experience.
3. OOP Experience	1	2	2	Basic experience.
4. Analyst Capability	0.5	3	1.5	Good analytic skills.
5. Motivation	1	4	4	Highly motivated.
6. Stable Requirements	2	2	4	Core requirements clear.
7. Part-time Staff	-1	1	-1	Academic schedule.
8. Diff. Prog. Language	-1	3	-3	Mixed background skills.
Total ECF Score			11.5	

3.5.4.5 Final Calculation

$$UCP = (UUCW + UAW) \times TCF \times ECF$$

$$UCP = (105 + 10) \times 0.945 \times 1.055 = 114.7$$

Based on a standard productivity factor of **20 hours per UCP**:

$$\text{Total Effort} = 114.7 \times 20 \approx 2,300 \text{ hours}$$

With a team of 3 members working approx. 93 hours/month each (total 280 hours/month):

$$\text{Duration} = \frac{2,300}{280} \approx 8.2 \text{ months}$$

3.6 Risk Assessment

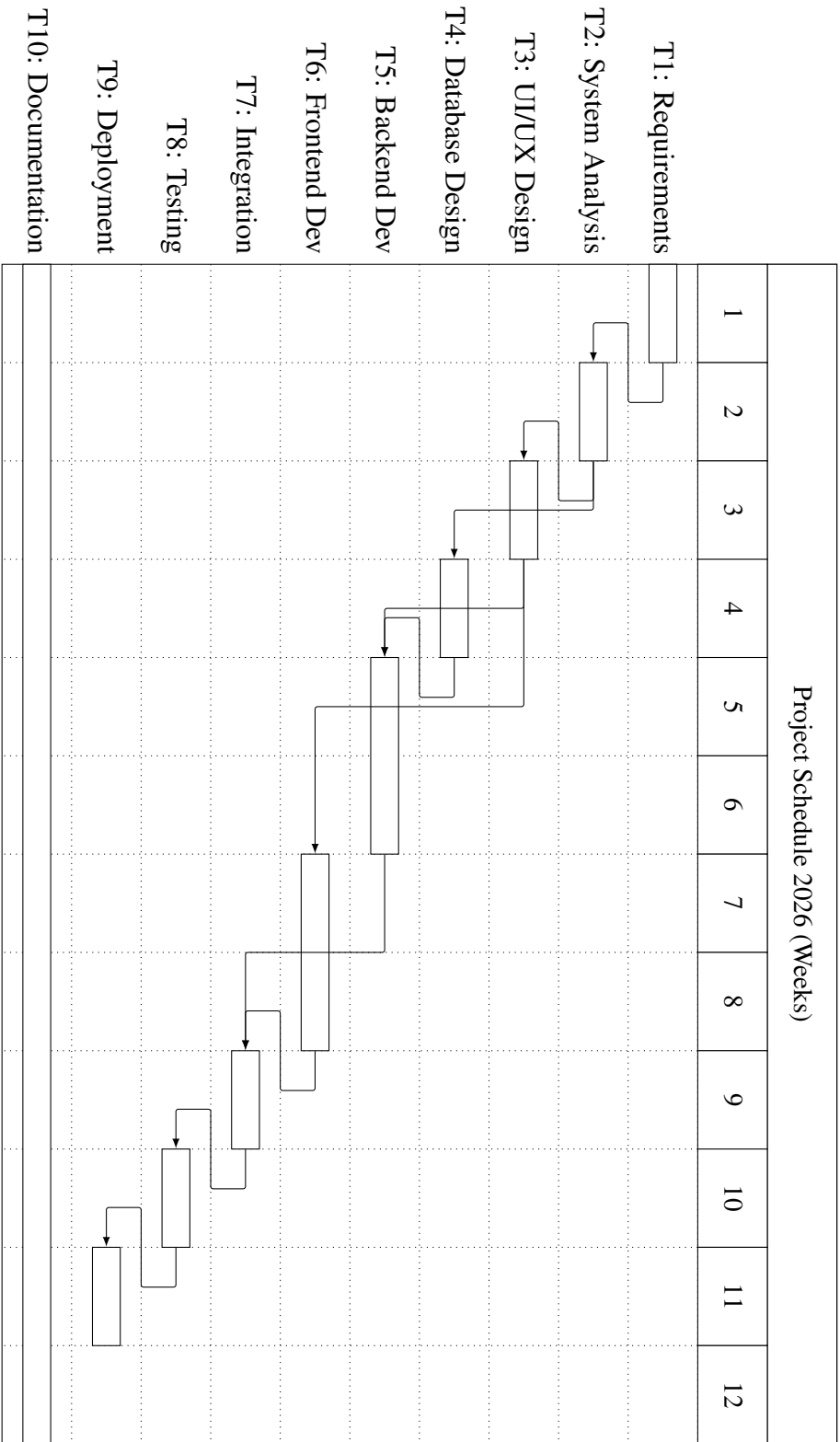
- API dependency (technical risk): any changes or instability in social media APIs, such as Instagram and TikTok, may affect data syncing.
 - **Impact:** High.
 - **Mitigation:** our project, must use reliable error handling and a local database cache to keep the system running when APIs are unavailable.
- Data security (security risk): unauthorized users may gain access to sensitive user data or financial records.
 - **Impact:** High.
 - **Mitigation:** implement industry standard encryption and strict authentication protocols to protect user information.
- Financial constraints (financial risk): the expenses for cloud hosting or external third-party services in our project may be higher than the planned budget.
 - **Impact:** Medium.
 - **Mitigation:** check the cloud resource usage carefully and our team will try to use free tools whenever possible.
- Timeline slippage (management risk): delays during development may cause the project to miss the graduation deadline.
 - **Impact:** High.
 - **Mitigation:** our team will try to use the agile steps to deliver the project early and use project management tools to monitor progress.
- Limited user acceptance: users may find our system hard to use or may not trust our new platform. This will lead to low usage.
 - **Impact:** Medium.
 - **Mitigation:** test the UI/UX and promote the system's security features to build user trust.

3.7 Project Management

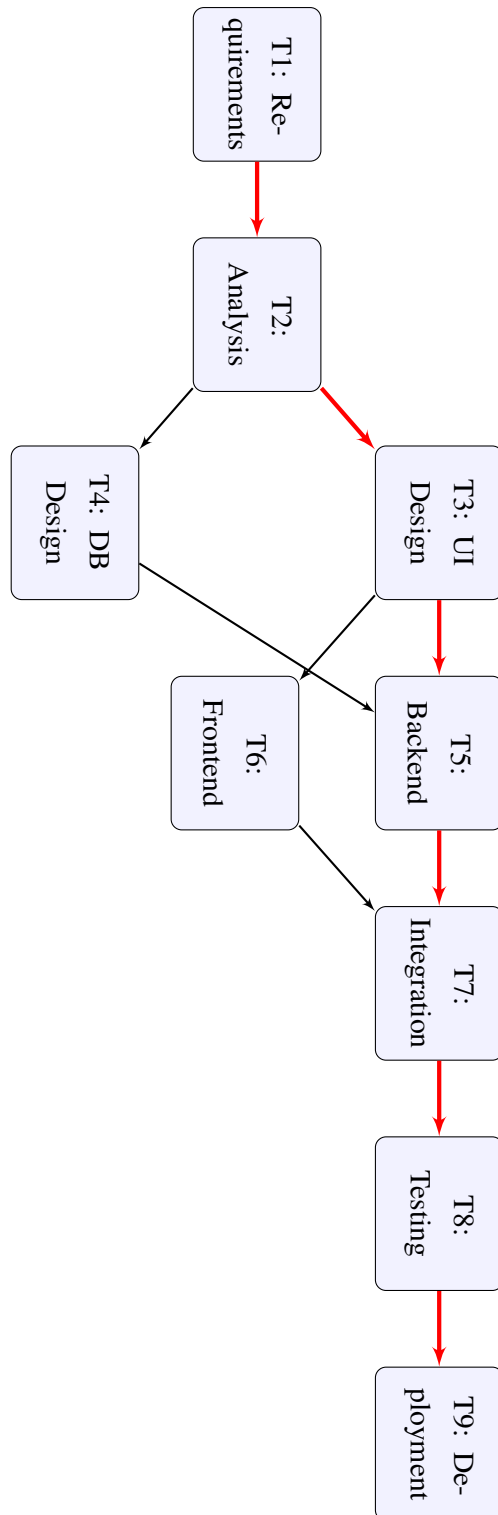
The section explains the methods and tools that our team used to plan, monitor, and complete the project's tasks efficiently and effectively, to make sure that our project is finished on time.

- **Task identification:** our project is broken down into clear and controllable tasks, such as requirements collection, system analysis, design, development and testing.
- **Timeline management:** each task is given a set of duration and deadline to keep the project on track and to ensure it's done on time before the graduation deadline.
- **Roles and responsibilities:** tasks are assigned to the team are assigned based on their skills to ensure fairness and effectiveness.
- **Project management tools:** tools like Trello are used to track progress, organize tasks, and help team members collaborate together.

3.7.1 Gantt Chart



3.7.2 PERT Chart



Chapter 4

4.1 Process Modeling

In this section, it explains the main process used for our brand & creator campaign management system. This section includes Data flow diagrams (DFDs), Additionally, Functional Hierarchy Diagram (FHD), Use case diagrams and activity diagrams. Together, these models define the system boundary, external actors, internal processes, and user interactions at different abstraction levels.

4.1.1 Data Flow Diagrams

4.1.1.1 Context-Level DFD

The context-level DFD defines the system boundary and shows the brand–creator campaign management system as a single high-level process that exchanges data with external actors such as brands, creators, admins, and social media platforms.

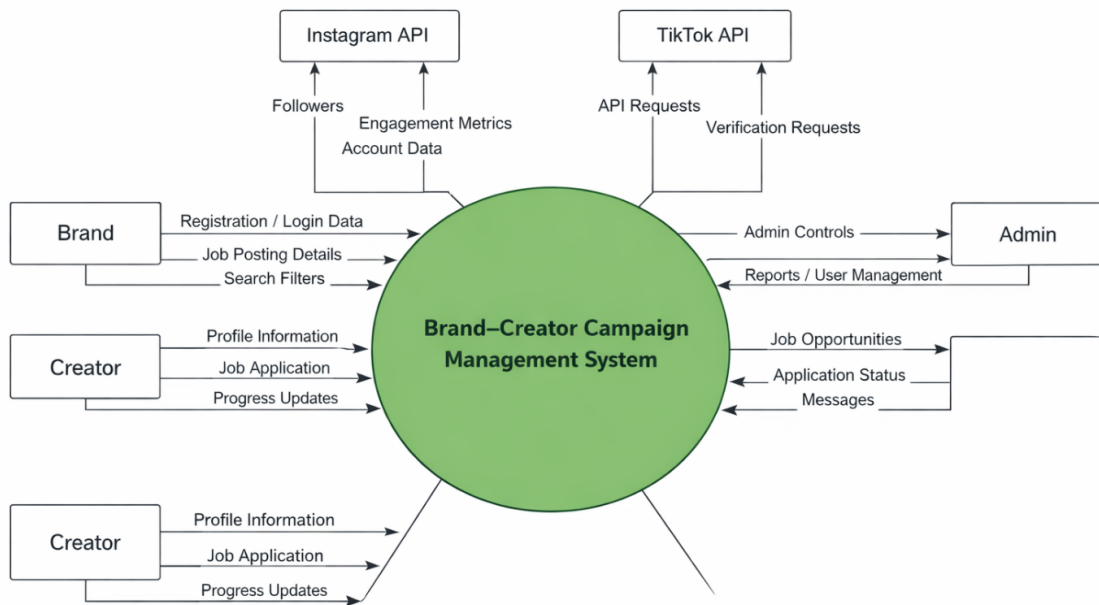


Fig. 4.1 Context-level DFD

This diagram:

- Defines the system boundary
- Identifies external actors
- Shows high-level data exchange
- Provides an overview before breaking into detailed DFD levels

It does not show internal processes or databases because that level of detail is handled in the Level 0 and Level 1 DFDs.

4.1.1.2 Level 0 DFD

The Level 0 DFD decomposes the single process from the context diagram into the main internal processes of the system and shows the data stores used.

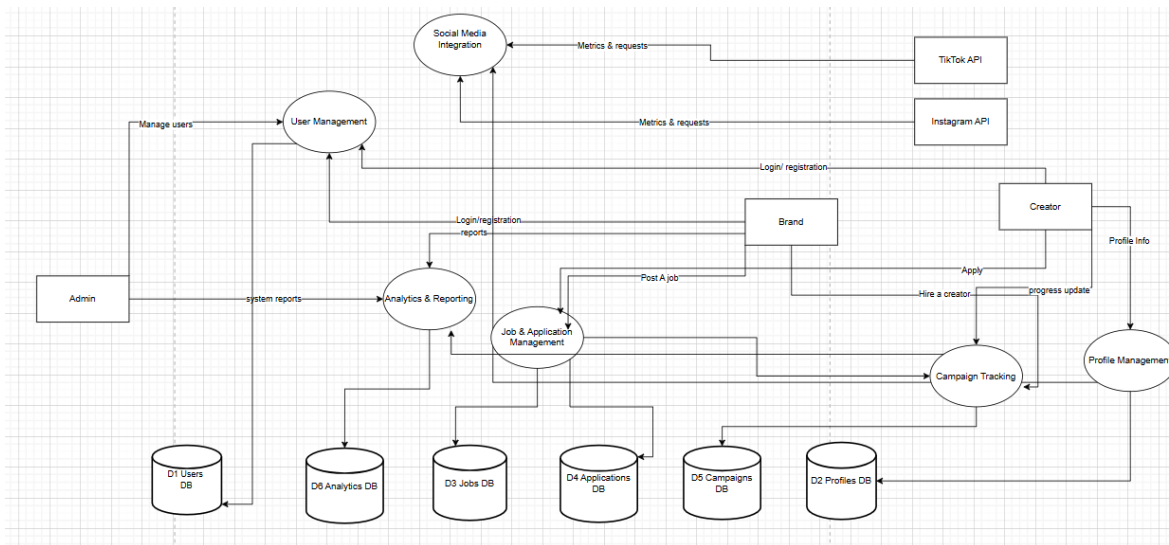


Fig. 4.2 Level 0 DFD

The Level 0 DFD shows the internal structure of the brand–creator campaign management system. Unlike the context diagram (which shows the system as one process), this diagram breaks the system into major internal processes and shows how data moves between them and the main data stores.

4.1.1.3 Level 1 DFD

The Level 1 DFD further refines one of the core processes from Level 0, focusing on job and application management.

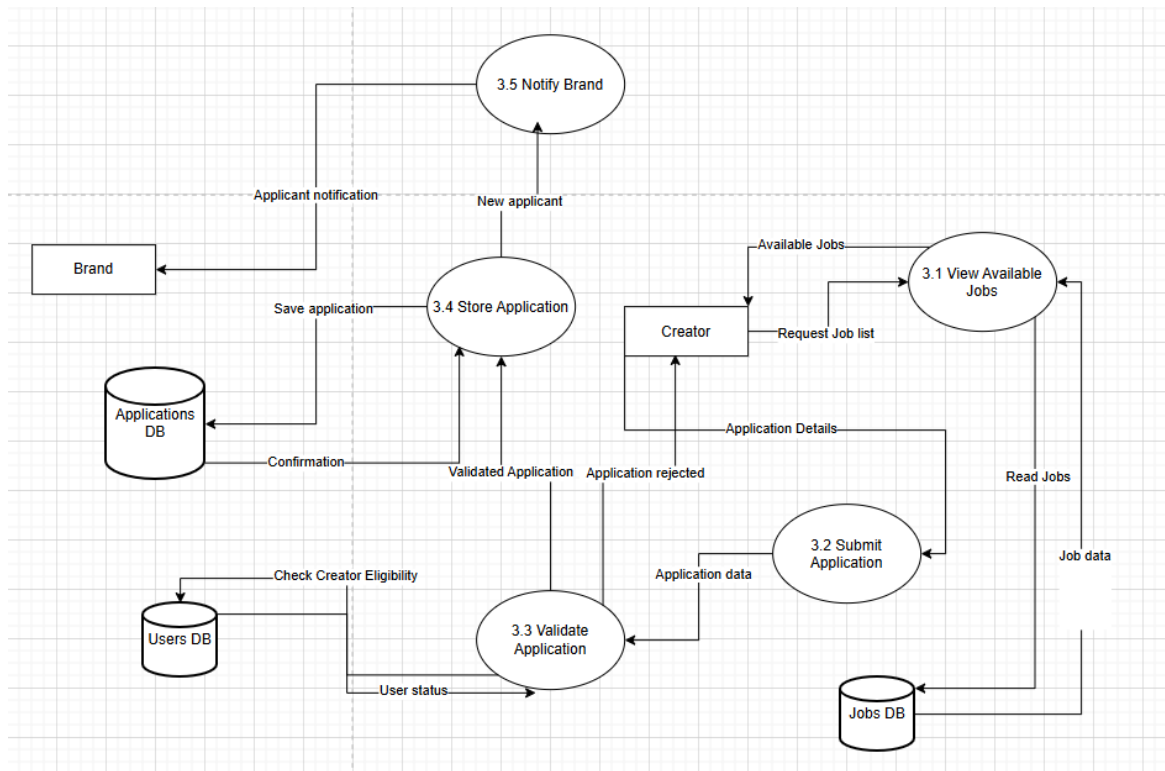


Fig. 4.3 Level 1 DFD for job and application management

This Level 1 DFD breaks down the job and application management process into smaller steps. It explains what happens from the moment a creator searches for a job until the brand is notified about a new application.

4.1.1.4 Functional Hierarchy Diagram (FHD)

The functional hierarchy diagram organizes the system functions into a tree structure, starting from the overall system and drilling down into sub-functions and detailed tasks.

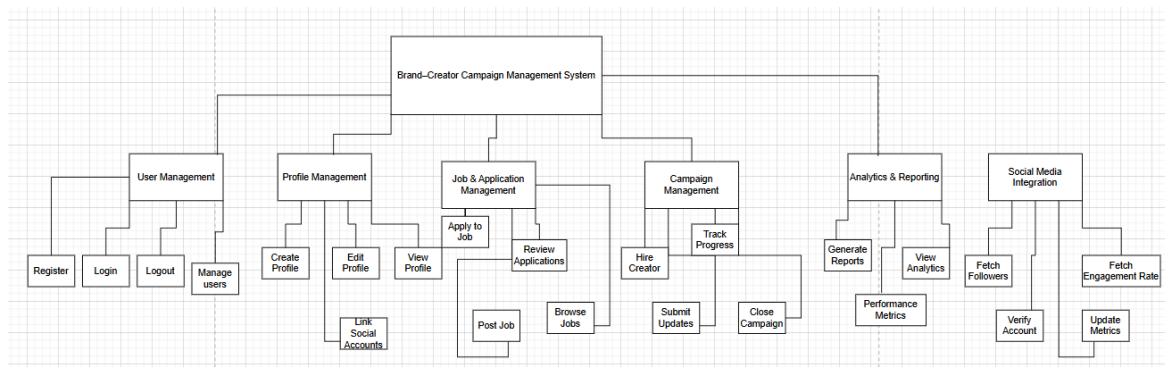


Fig. 4.4 Functional hierarchy diagram

The functional hierarchy diagram organizes the system's features into a tree structure, showing how the main system is divided into major modules and detailed sub-functions.

4.1.2 Use-Case Diagrams

The use-case model shows how external actors interact with the system to achieve their goals.

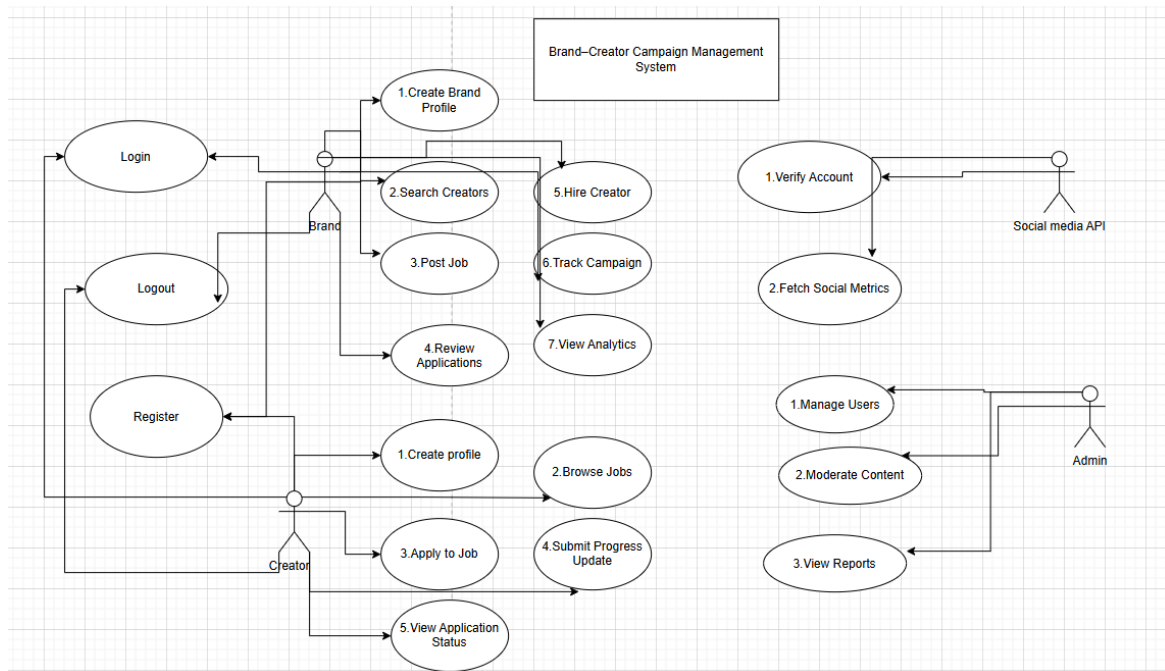


Fig. 4.5 Use-case diagram

The use-case diagram represents the interactions between different users and the brand-creator campaign management system. It identifies the system actors and the actions each actor can perform within the platform. The system has four main actors: brand, creator, admin, and social media API.

4.1.2.0.1 Brand actor The brand represents companies or clients who want to collaborate with creators to run marketing campaigns. The brand can perform the following actions:

- Register / login / logout: access and authenticate into the system.
- Create brand profile: add company information and brand details.
- Search creators: filter and discover creators based on metrics and category.
- Post job: publish campaign opportunities and requirements.

- Review applications: view creators who applied to a job.
- Hire creator: select a creator for collaboration.
- Track campaign: monitor campaign progress and updates.
- View analytics: see campaign performance and results.

4.1.2.0.2 Creator actor The creator represents creators or content creators who want to find brand deals. The creator can perform the following actions:

- Register / login / logout: access the platform.
- Create profile: add personal information and portfolio.
- Browse jobs: view available brand campaigns.
- Apply to job: submit an application to participate in a campaign.
- Submit progress update: upload work progress for approval.
- View application status: track whether applications were accepted or rejected.

4.1.2.0.3 Admin actor The admin manages the platform and ensures proper operation. The admin can:

- Manage users: control user accounts and permissions.
- Moderate content: remove inappropriate data or misuse.
- View reports: monitor system activity and statistics.

4.1.2.0.4 Social media API actor The social media API represents external platforms (such as Instagram and TikTok) connected to the system. It performs automated operations:

- Verify account: confirms the creator's linked social media account.
- Fetch social metrics: retrieves followers and engagement statistics.

4.1.2.0.5 Overall system interaction Through these interactions, the system allows brands to publish campaigns and hire creators, while creators can discover opportunities and collaborate securely. The admin supervises system activities, and social media APIs provide real-time performance metrics for decision-making.

4.1.3 Activity Diagrams

Activity diagrams describe the flow of activities for key scenarios in the system, such as brand registration, creator job application, and campaign tracking.

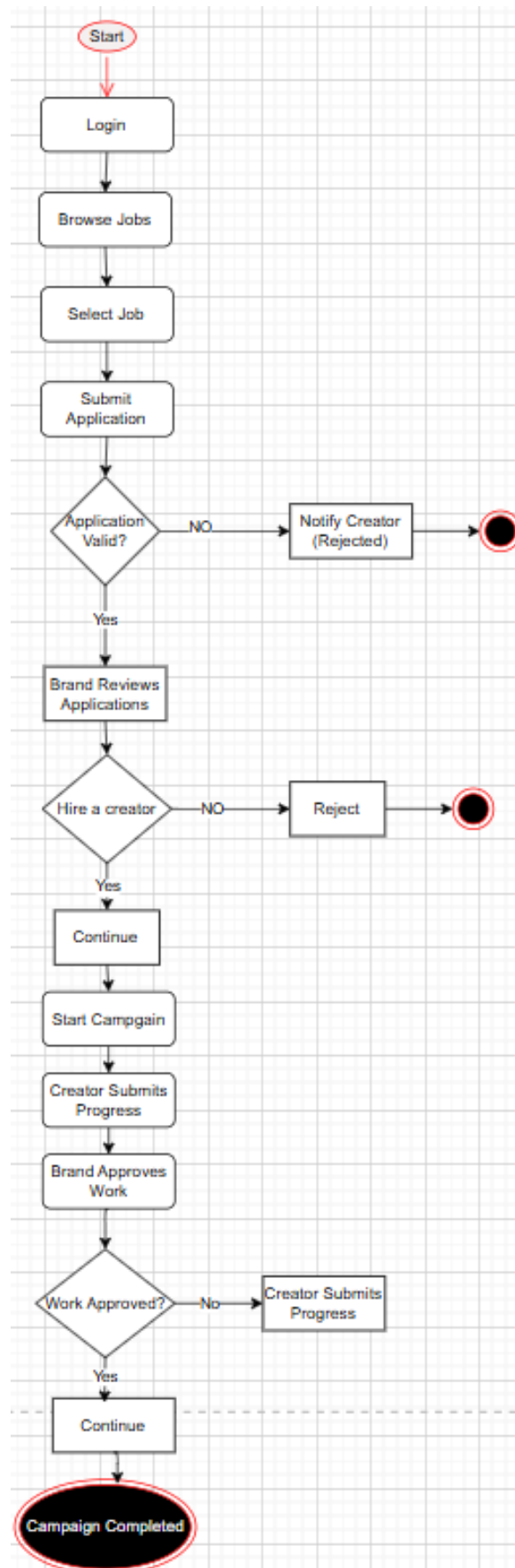


Fig. 4.6 Activity diagram for creator applying to a job

4.2 Logical Modeling

In this section in the logical modeling, it explains the decision-making process used in our platform brand & creator management system. Moreover, the system checks if a creator is suitable for a campaign through a predefined criterion. There's a decision table and decision tree to help show us the process clearly.

4.2.1 Decision Table

Our platform help brands to choose the most suitable creator for the campaign. This decision is based on three main things:

1. Whether the creator matches the campaign requirements, such as the category ex: fitness, Food & beverage. Whether the creator also fits the audience and content style
2. Checking if the creator's engagement rate is within the acceptable range.
3. Checking if the creator's price for collaboration fits with the campaign budget.

Based on the above criteria the system and brands decide whether to accept the creator, reject the creator or negotiate with the creator.

Rule	Description	Requirement match	Engagement acceptable	Price within budget	Action
R1	All conditions satisfied	Yes	Yes	Yes	Accept creator
R2	Fails requirements or engagement	No	–	–	Reject application
R3	Meets requirements and engagement but price too high	Yes	Yes	No	Request negotiation

The table shows how the system evaluates creator applications:

- If all conditions are satisfied, the creator is accepted.

- If the creator fails to meet essential campaign requirements or engagement standards, the application is rejected.
- If the creator meets the requirements but the price exceeds the budget, the system suggests negotiation instead of rejection.

4.2.2 Decision Tree

The same logic can be visualized using a decision tree to make the evaluation flow more intuitive.

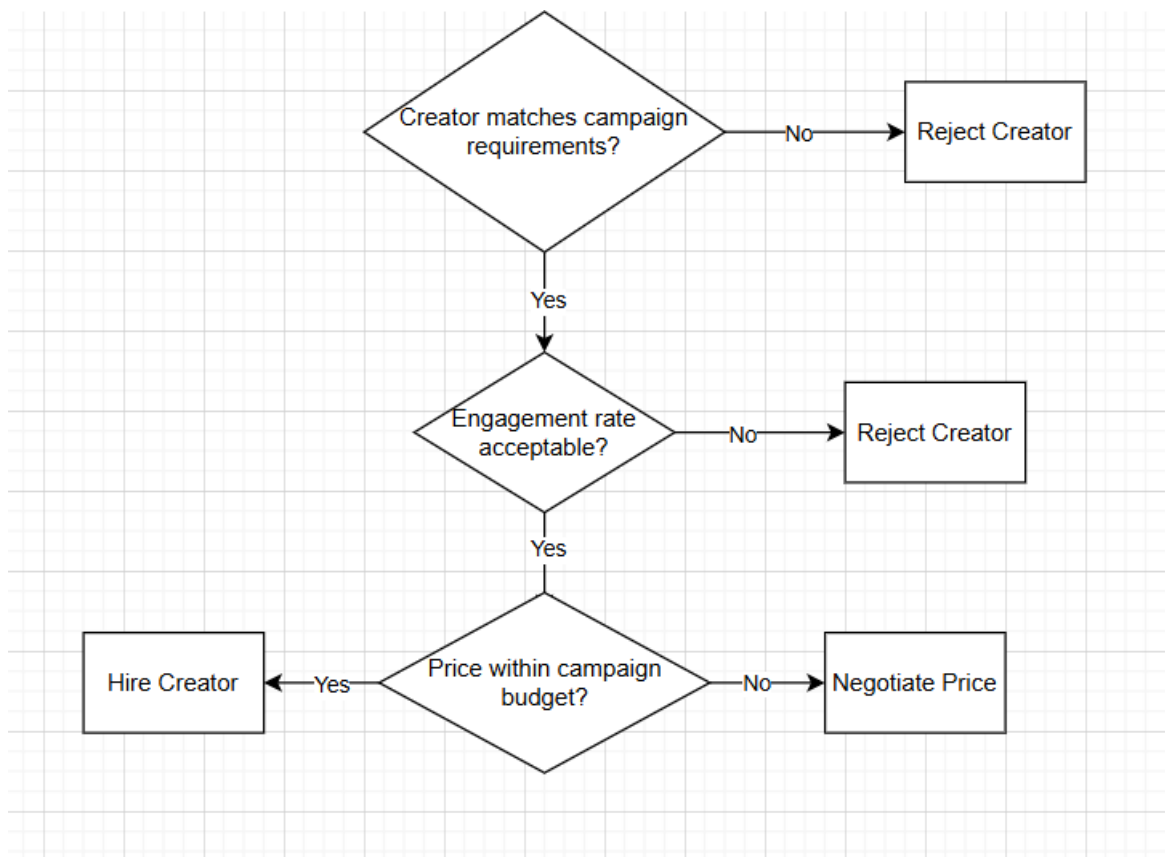


Fig. 4.7 Decision tree for evaluating creator applications

4.3 Structural Modeling

4.3.1 Class Diagram

The class diagram represents the structural design of the brand–creator campaign management system. It shows:

- System classes (objects)
- Attributes (data stored)
- Methods (functions performed)
- Relationships between classes

This diagram models how the system is implemented at the object-oriented level.

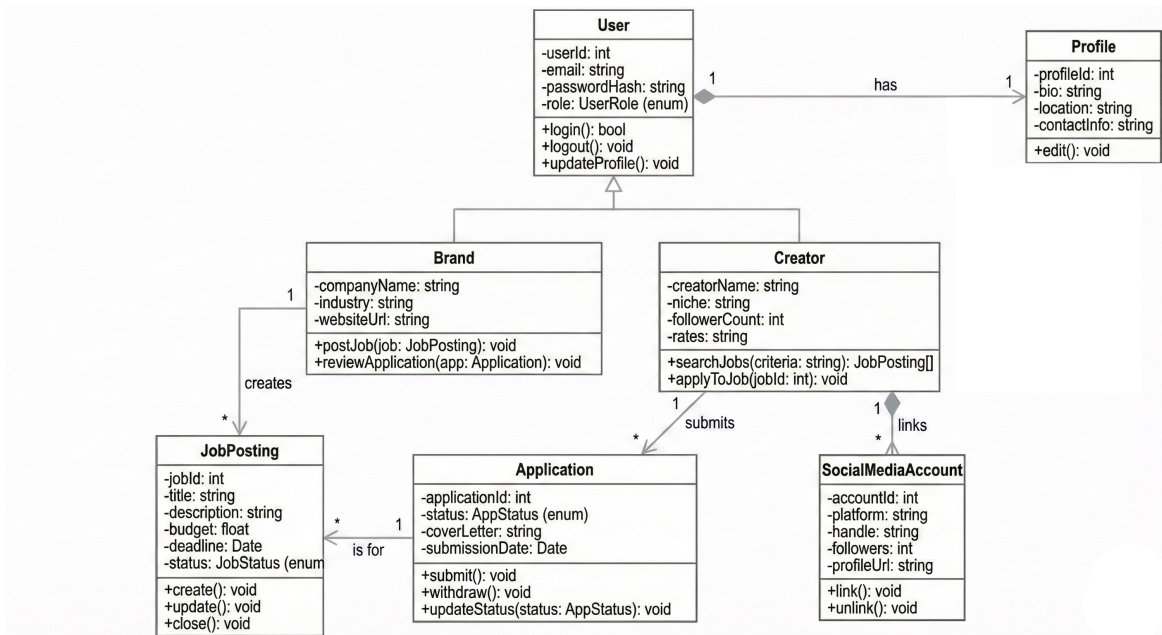


Fig. 4.8 Class diagram

4.3.2 Object Diagram

The object diagram illustrates a real snapshot of the brand–creator campaign management system by showing actual instances of the classes and how they are connected at a specific moment in time.

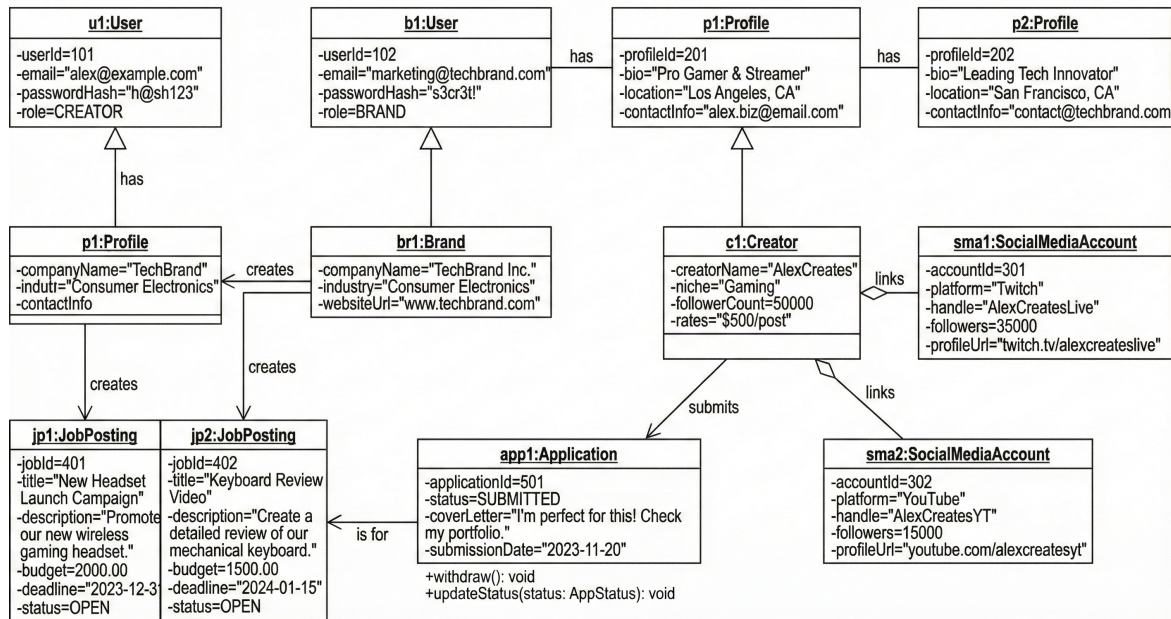


Fig. 4.9 Object diagram

In this diagram it helps us visualize the creator and a brand, each connected to their profile. The brand can create multiple job postings, and the creator on the other hand applies to one of them. Moreover, the creator is connected to several social media accounts, and the diagram shows us how external platforms are integrated into our system. Lastly, this diagram shows us how users, profiles, job posts, applications, and social media accounts are linked in real scenario.

4.3.3 CRC Cards

The CRC cards used in our project helps us show the main classes in our platform. It shows the system’s roles and their objectives and responsibilities. The CRC explains how the classes communicate with each other. Each of the card represents a class and it explains to us its main tasks and collaborations with other classes.

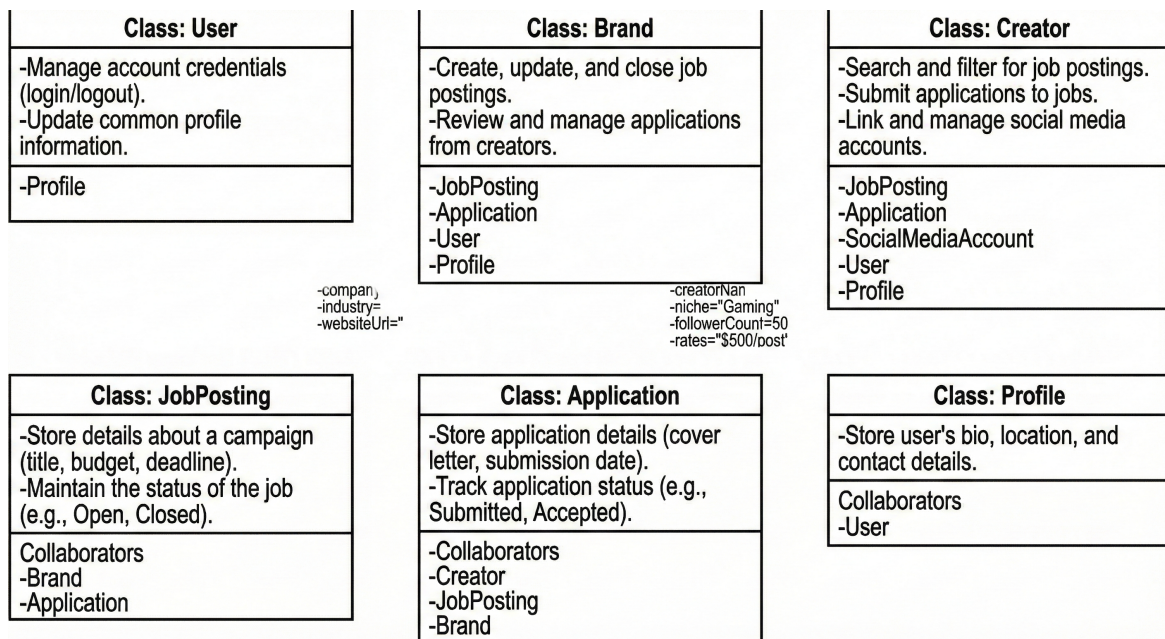


Fig. 4.10 CRC cards for the main system classes

An example for the above table, the user class can manage login and their profile. While on the other hand the Brand handles job posts and the applications for creators. The creator searches for the suitable job and applies for it. Moreover, the job postings store all information about the campaign details. The above diagram shows what classes do and how they relate to each other.

4.4 Behavioral Modeling

4.4.1 Sequence Diagram

Sequence diagrams describe how objects interact over time for specific scenarios. The example below shows how a brand posts a job in the system.

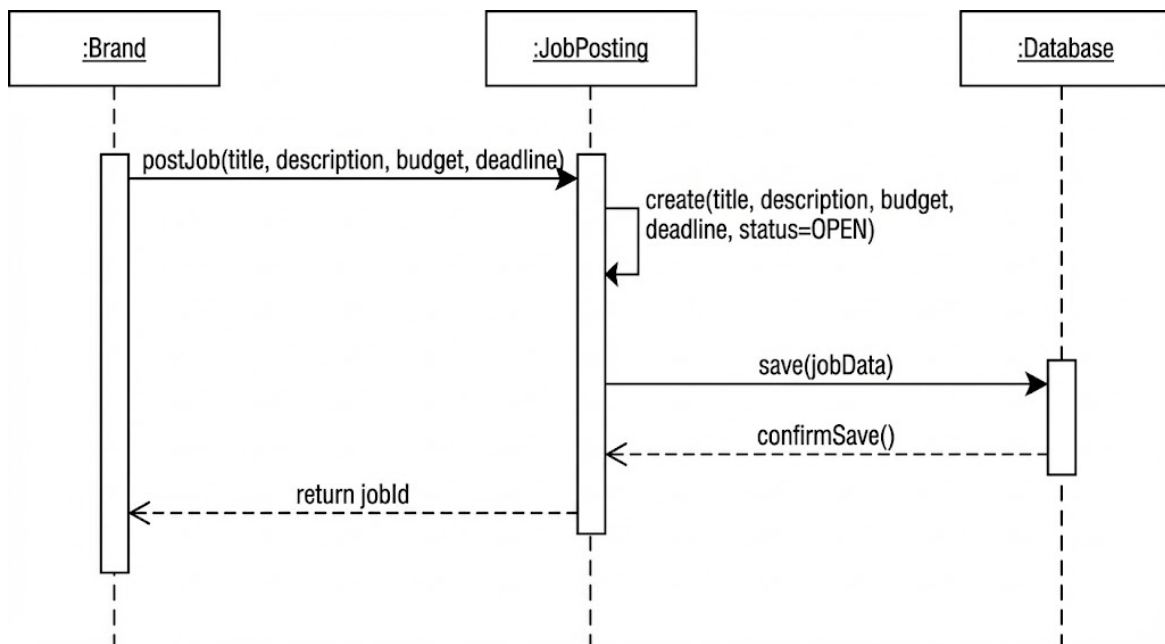


Fig. 4.11 Sequence diagram for posting a job

In this diagram, the brand sends a `postJob()` request to the `JobPosting` object with job details. The job is created with status set to `OPEN` and then saved in the database. After the database confirms the save operation, the system returns the generated job ID to the brand.

4.4.2 Communication Diagram

The communication diagram focuses on the exchange of messages between objects and the relationships that link them during a particular interaction.

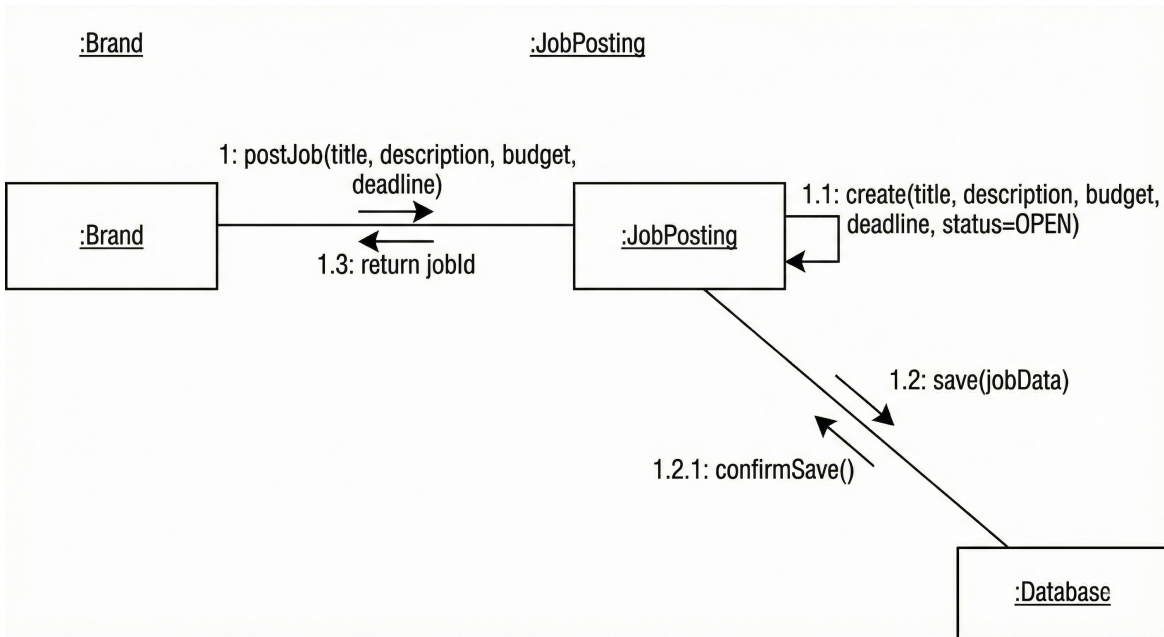


Fig. 4.12 Communication diagram for posting a job

4.4.3 State-Machine Diagram

The state-machine diagram models how an important object in the system changes state in response to events. A typical example is the lifecycle of a job posting.

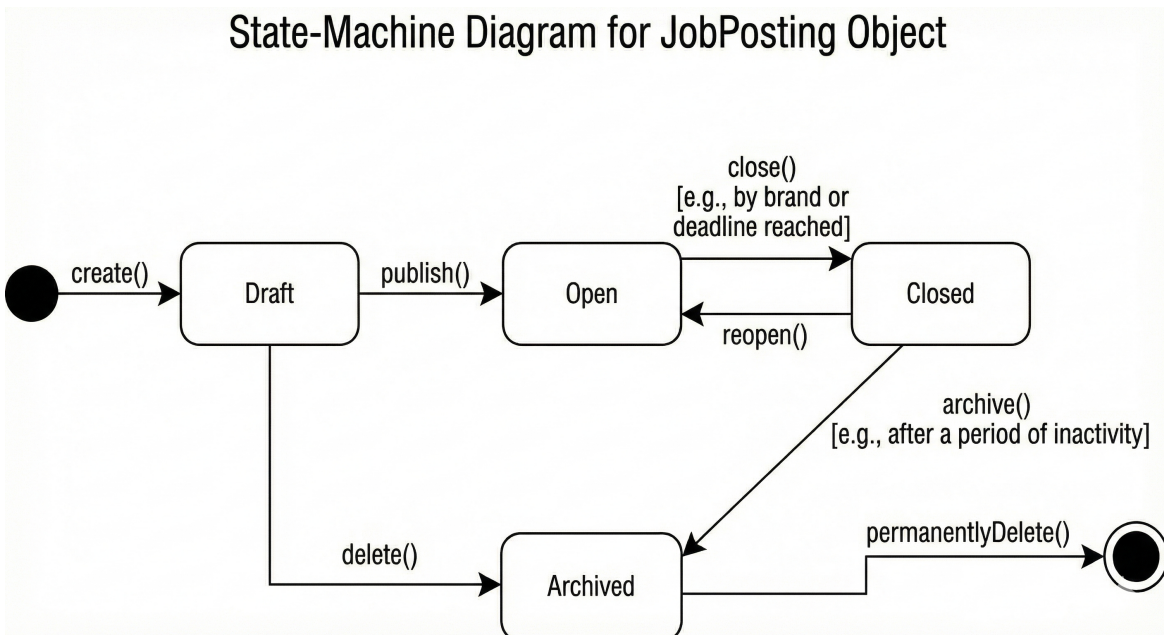


Fig. 4.13 State-machine diagram for job posting lifecycle

Chapter 5

5.1 Database Design

This part turns the system requirements from the other previous chapters into an organized and arranged database design. Our goal is to build a database where we can store, arrange and retrieve information easily. The database is designed to make sure that there is:

- Data integrity
- Minimal redundancy
- Ability of the system to handle more users and growth in the future
- Easy and fast searching, filtering for creators and brands

5.1.1 ERD (Entity–Relationship Diagram)

The ERD shows how the database of our brand-creator campaign system is organized and structured. The **Users** table stores account details for both creators and brands. It is also connected to the **Brands** and **Creators** tables. Brands can create job offers through the **Job_Postings** table. Meanwhile, creators can apply for these job offers through the **Applications** table. Creators can also connect or merge their social media accounts using the **Social_Media_Accounts** table to showcase their online presence. Finally, the **Profiles** table stores additional information for each user.

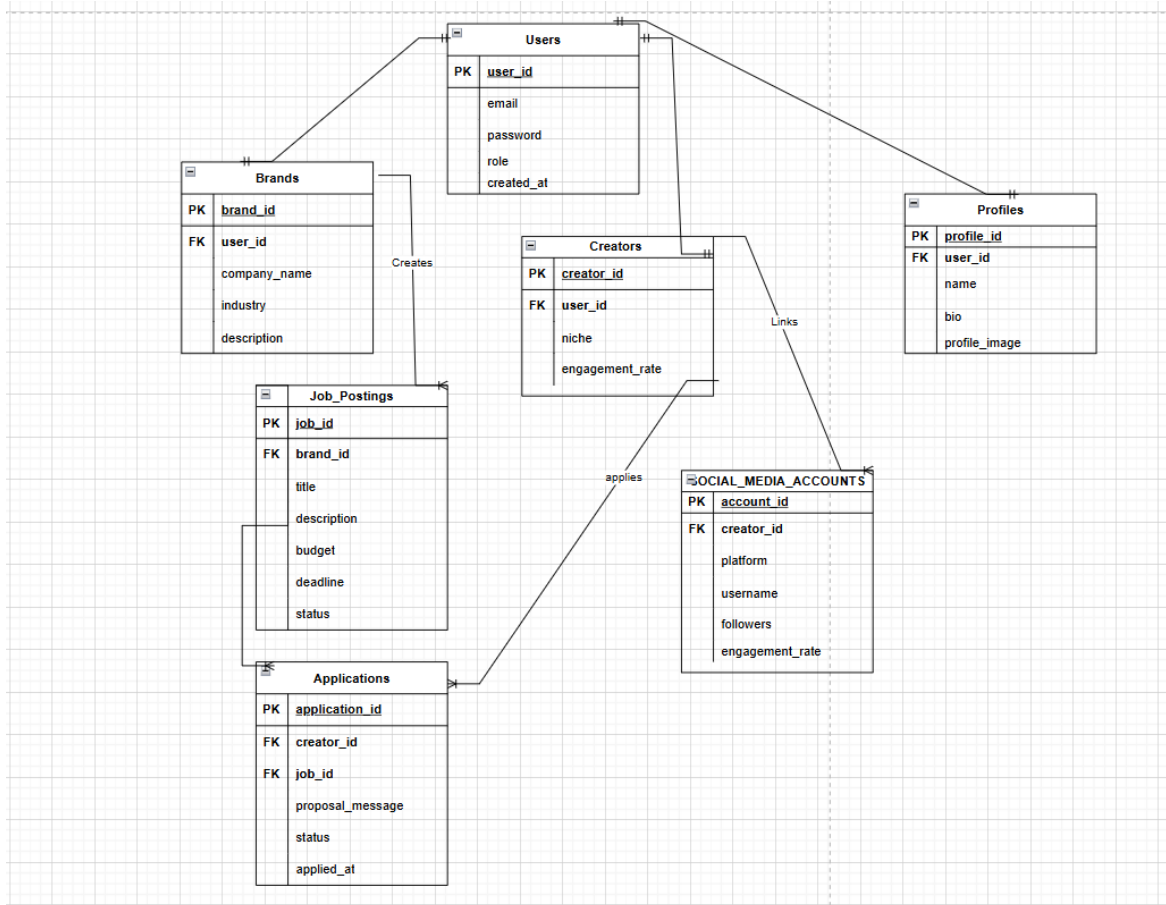


Fig. 5.1 Database schema

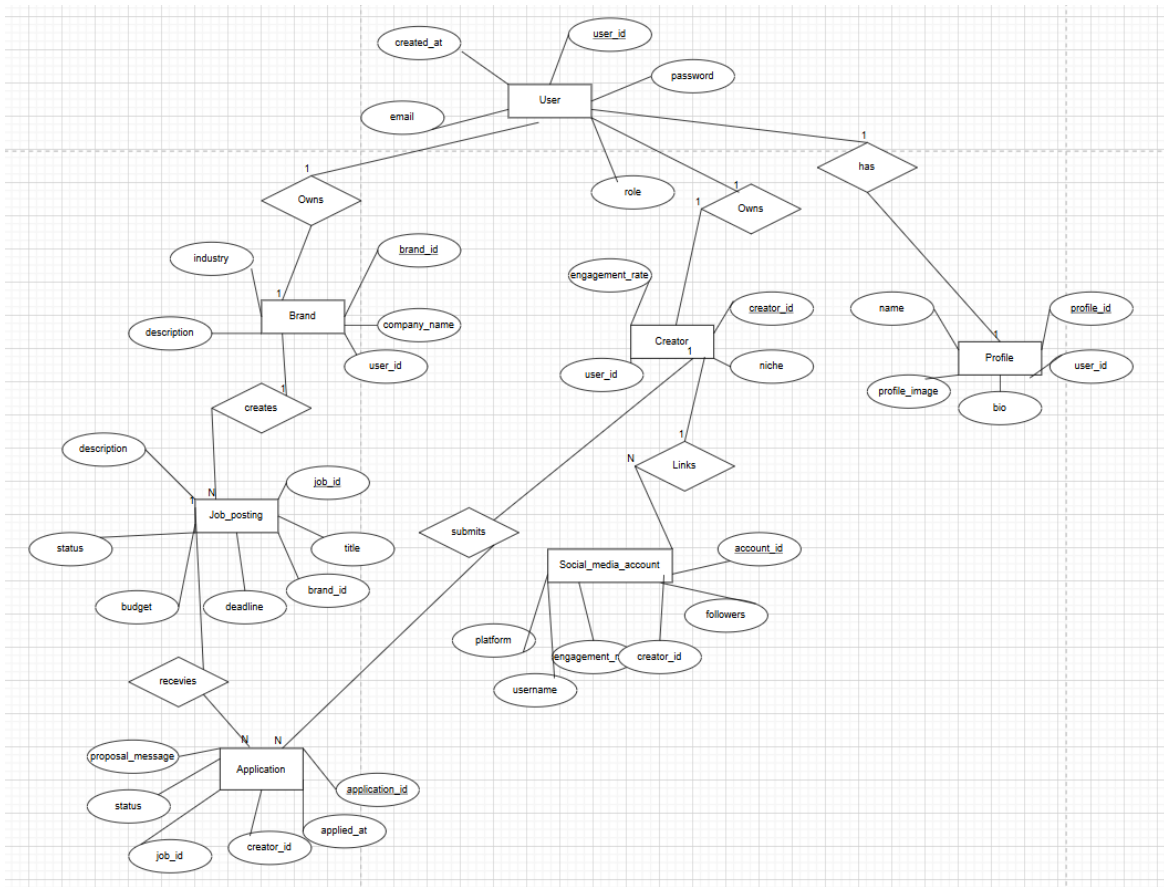


Fig. 5.2 ERD

5.1.2 Data Dictionary

Users table

Field name	Description	Data type	Size	Required	Source
user_id	Unique identifier for each user	INT	11	Yes	System generated
email	Email address used for login	VARCHAR	255	Yes	User input
password	Encrypted user password	VARCHAR	255	Yes	User input
role	Type of user (brand, creator, admin)	VARCHAR	20	Yes	System
created_at	Date the account was created	DATETIME	–	Yes	System generated

Brands table

Field name	Description	Data type	Size	Required	Source
brand_id	Unique identifier for each brand	INT	11	Yes	System generated
user_id	References the user account	INT	11	Yes	System
company_name	Name of the company	VARCHAR	150	Yes	User input
industry	Business industry category	VARCHAR	100	No	User input
description	Description of the brand	TEXT	–	No	User input

Creators table

Field name	Description	Data type	Size	Required	Source
creator_id	Unique identifier for each creator	INT	11	Yes	System generated
user_id	References the user account	INT	11	Yes	System
niche	Content category of the creator	VARCHAR	100	Yes	User input
engagement_rate	Average engagement rate of content	FLOAT	–	No	Calculated/system

Profiles table

Field name	Description	Data type	Size	Required	Source
profile_id	Unique identifier for profile	INT	11	Yes	System generated
user_id	References the user account	INT	11	Yes	System
name	Display name of the user	VARCHAR	150	Yes	User input
bio	Short biography or description	TEXT	–	No	User input
profile_image	URL or path of profile image	VARCHAR	255	No	User upload

Job_Postings table

Field name	Description	Data type	Size	Required	Source
job_id	Unique identifier for job posting	INT	11	Yes	System generated
brand_id	Brand that created the job	INT	11	Yes	System
title	Title of the job campaign	VARCHAR	200	Yes	User input
description	Detailed job description	TEXT	–	Yes	User input
budget	Budget allocated for campaign	DECIMAL	–	Yes	User input
deadline	Deadline for applications	DATE	–	Yes	User input
status	Status of job (open/closed)	VARCHAR	20	Yes	System

Applications table

Field name	Description	Data type	Size	Required	Source
application_id	Unique application identifier	INT	11	Yes	System generated
creator_id	Creator applying for job	INT	11	Yes	System
job_id	Job being applied to	INT	11	Yes	System
proposal_message	Message from creator to brand	TEXT	–	Yes	User input
status	Application status (pending/accepted/rejected)	VARCHAR	20	Yes	System
applied_at	Date the application was submitted	DATETIME	–	Yes	System generated

Social_Media_Accounts table

Field name	Description	Data type	Size	Required	Source
account_id	Unique identifier for social account	INT	11	Yes	System generated
creator_id	Creator who owns the account	INT	11	Yes	System
platform	Social media platform name	VARCHAR	50	Yes	User input
username	Social media username	VARCHAR	100	Yes	User input
followers	Number of followers	INT	–	No	API/system
engagement_rate	Engagement rate of account	FLOAT	–	No	API/system

5.1.3 Relational Data Model

The relational data model shows how the database is organized and arranged based on the ERD. Each of the entities becomes a table, each of these tables has a primary key (PK) to identify each record and if there's any foreign keys to connect it with other tables. This design keeps the data accurate and reduces repeated data.

- **USERS** (user_id PK, email, password, role, created_at)
- **BRANDS** (brand_id PK, user_id FK, company_name, industry, description)
- **CREATORS** (creator_id PK, user_id FK, niche, engagement_rate)
- **PROFILES** (profile_id PK, user_id FK, name, bio, profile_image)
- **JOB_POSTINGS** (job_id PK, brand_id FK, title, description, budget, deadline, status)
- **APPLICATIONS** (application_id PK, creator_id FK, job_id FK, proposal_message, status, applied_at)

- **SOCIAL_MEDIA_ACCOUNTS** (account_id PK, creator_id FK, platform, username, followers, engagement_rate)

The database schema or structure follows the third normal form(3NF). Each table represents a single entity and also contains attributes that depend only on the primary key. Moreover, there's no partial or transitive dependencies between attributes.

5.2 Human Computer Interaction

5.2.1 Site Map



Fig. 5.3 Site map for the brand-facing web app

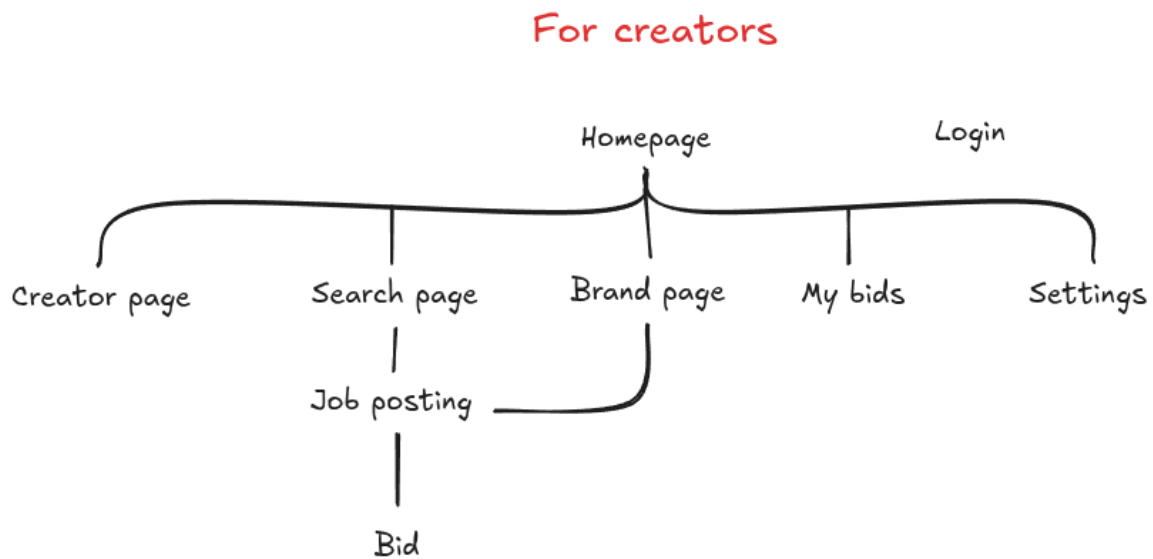


Fig. 5.4 Site map for the creator-facing web app

Login page

- This is the first page users see when they enter the website or system.
- After logging in successfully, the user is taken automatically to their homepage based on their role either the brand or creator.

Brand navigation

- **Homepage:** this is the central navigation hub. It provides access to all major modules: brand page, search page, job posting, my jobs, and settings.
- **Search page:** allows brands to search, leading to a specific creator page, which then connects to a bid screen.
- **Job posting:** provides functionality for job management and includes direct navigation paths to both a creator page and a bid screen.
- **Brand page, my jobs, & settings:** main modules accessible directly from the Homepage to manage the brand's profile, active jobs, and system configurations.

Creator navigation

- **Homepage:** this is the central navigation hub. It provides access to all major modules: creator page, search page, brand page, my bids, and settings.

- **Search page:** allows creators to search, leading to a specific job posting, which then connects to the bid screen.
- **Brand page:** displays brand information and provides an alternative navigation path directly to a job posting.
- **Creator page, my bids, & settings:** main modules accessible directly from the homepage to manage the creator's profile, track submitted bids, and manage system configurations.

5.2.2 Storyboard

Login page

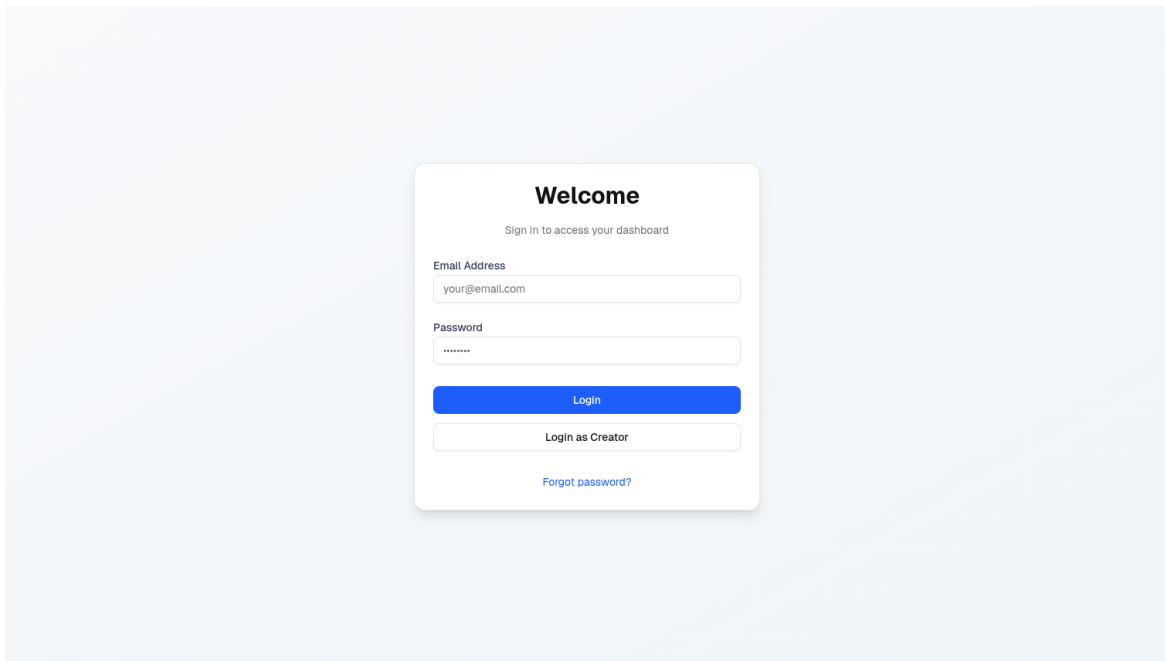


Fig. 5.5 Login storyboard

- **Screen number:** 1
- **Screen Name:** Login page
- **Purpose:** to authenticate users and route them to the correct dashboard depending on their role (brand or creator).
- **Access:** admin, staff, brand, creator

- **Input fields**

Field name	Description	Data type	Required?
Email address	User account email	Varchar/Text	Yes
Password	Account password	Varchar/Text	Yes

- **Buttons / actions**

Button name	What happens when clicked?
Login	Authenticates user and redirects to appropriate Homepage.
Forgot password	Redirects to password recovery flow.

- **Navigation**

- If user clicks **Login (brand)** → Goes to **brand homepage**.
- If user clicks **Login (creator)** → Goes to **creator homepage**.

- **Validation rules**

- Email must contain an "@" symbol and valid domain.
- Password cannot be empty.

Brand Homepage

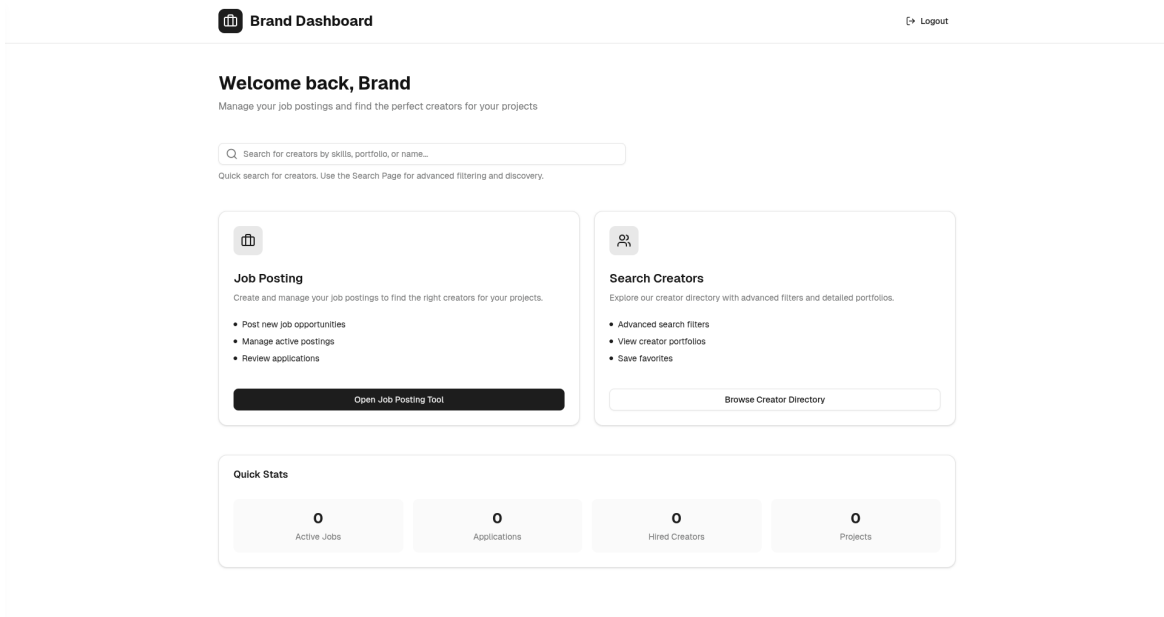


Fig. 5.6 Brand homepage storyboard

- **Screen number:** 2
- **Screen name:** brand homepage
- **Purpose:** central navigation hub for brands to manage jobs and find creators.
- **Access:** brand
- **Input fields**

Field name	Description	Data type	Required?
Search bar	Quick search for creators	Varchar/Text	No

- **Buttons / actions**

Button Name	What happens when clicked?
Job posting	Opens the job management and creation tool.
Search page	Opens the advanced creator search directory.

- **Navigation**

- If user clicks **Job Posting** → Goes to **job posting screen**.
 - If user clicks **Search Page** → Goes to **search page**.
- **Validation rules**
 - None for basic navigation.

Submit Bid

← Submit Your Bid

Job Details

Job ID
#3020124

Project Title
Content Creator Job

Budget Range
\$1,000 - \$5,000

Tips for your bid:

- Be competitive with pricing
- Showcase relevant experience
- Keep proposal concise and clear

Bid Details
Submit your proposal and pricing for this job opportunity

Bid Amount *

\$ 0.00

Your total project fee for this job

Proposal Message *

Share your pitch to the brand. Tell them why you're the perfect fit for this project...

Describe your approach and why you're a great fit for this project 0 characters

Fig. 5.7 Submit bid storyboard

- **Screen number:** 3
- **Screen name:** submit bid
- **Purpose:** allows a creator to submit a proposal and rate for a specific job.
- **Access:** creator
- **Input fields**

Field name	Description	Data type	Required?
Bid amount	Financial offer for the job	Decimal	Yes
Proposal text	Pitch message to the brand	Text/Memo	Yes

- **Buttons / actions**

Button name	What happens when clicked?
Submit bid	Saves the bid to the database and notifies the brand.
Cancel	Discards the current bid draft.

- **Navigation**

- If user clicks **Submit Bid** → Goes to **My Bids**.
- **Cancel/Back** returns to **Job Posting**.

- **Validation rules**

- Bid amount must be greater than 0.
- Proposal text must not exceed 1000 characters.

Chapter 6

6.1 Implementation

We used the following tools to build our platform:

Domain	Component
Language	TypeScript
Framework	React
Database	SQLite
Tools	VSCode, GitHub
Deployment	Cloudflare

6.1.1 System Modules

1. **Admin:** Manages the platform and ensures that the platform is running smoothly and no one is violating the policies.
2. **Creators:** creators who build their profiles and apply for campaigns.
3. **Brands:** Companies who search for creators and post campaigns.

6.1.2 System Screenshots

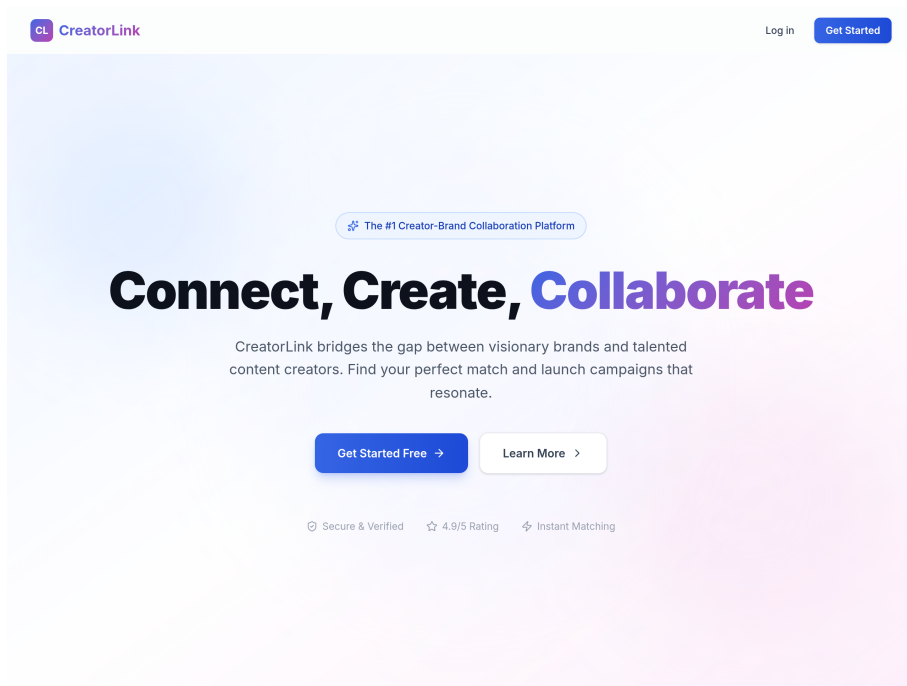


Fig. 6.1 Homepage

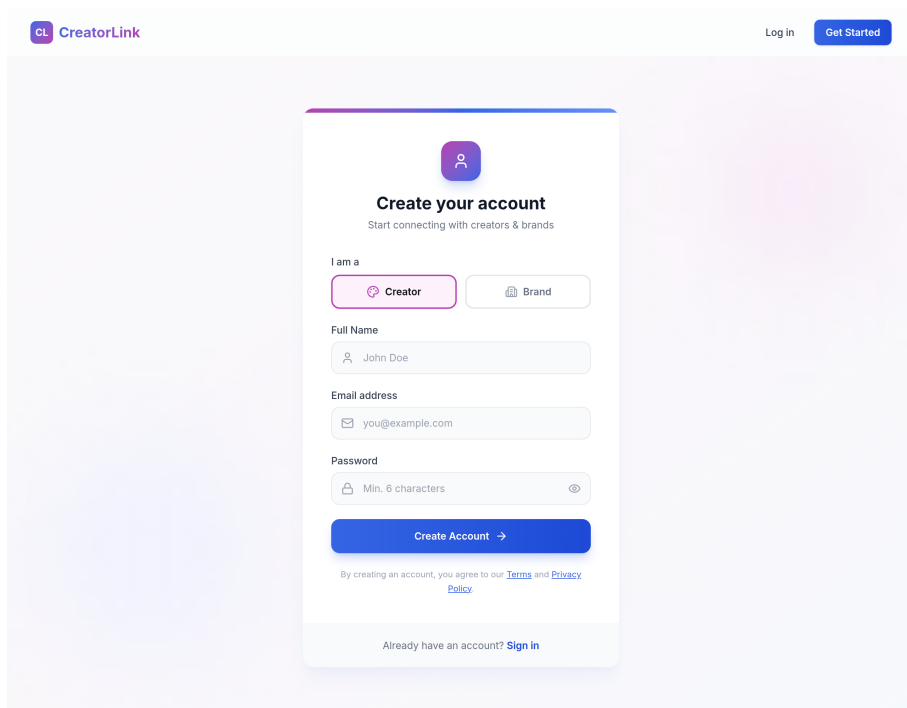


Fig. 6.2 Login page

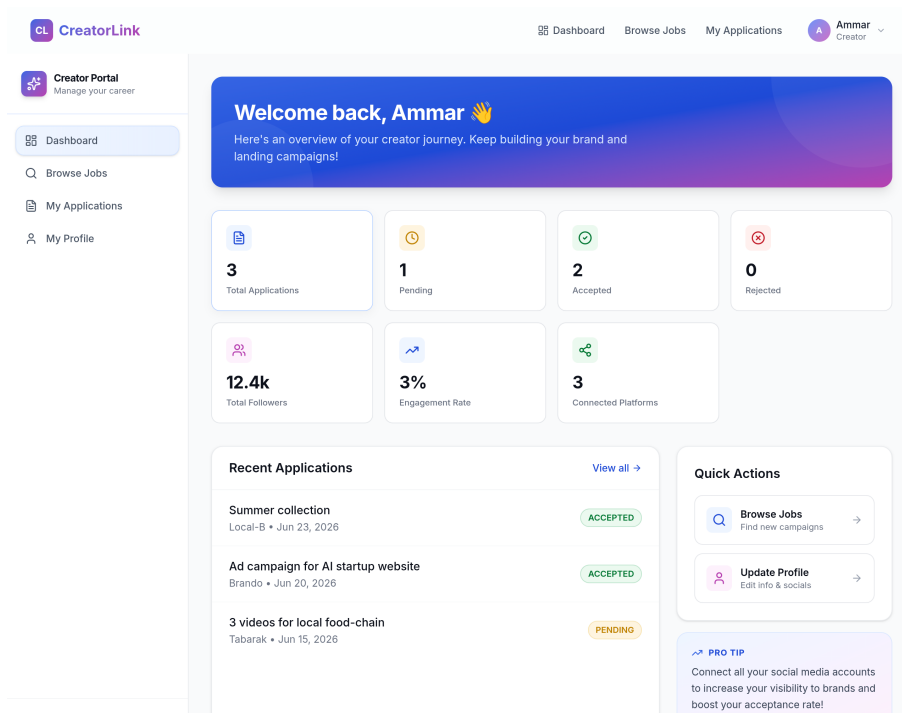


Fig. 6.3 Creator dashboard

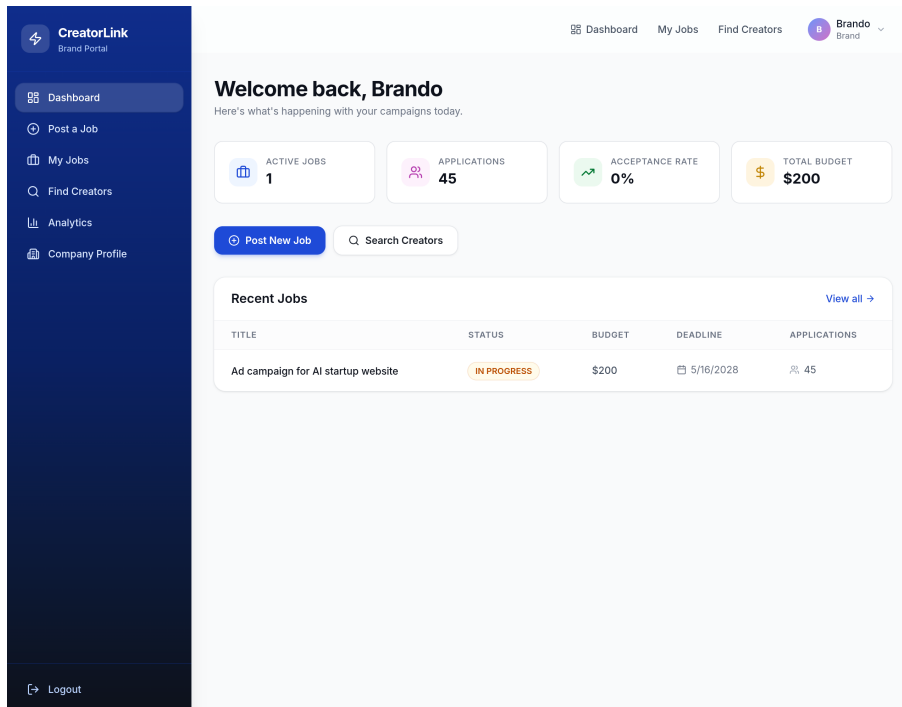


Fig. 6.4 Brand dashboard

Conclusion

In conclusion, this project explained the design and analysis of our Brand & Creator management system which was named “Creator Link”. The system is a digital platform created to make collaboration, between brands (companies) and content creators easier and more effective. The idea of this project came from the fast growth of the creator economy and the increasing use of creator marketing on platforms like Instagram, TikTok and Facebook. As it’s explained in this project, that traditional methods of finding creators usually rely on manual searching or expensive agencies. These methods require a lot of time, increases a lot of time, increase expenses, and make the process more challenging for both brands and creators. Therefore, the proposed system was created as a centralized online platform that connects brands and creators in a more organized, efficient, and transparent way.

The project started with a detailed study of the problems faced by both brands and creators. Brands or companies have difficulties finding suitable creators, measuring campaign success, and achieving a good return on investment. At the same time, creators often struggle to get noticed and find opportunities. To address those problems, the proposed system was developed as a simple web platform. Brands can search for creators and post campaigns. And, creators can build their profiles, link their social media accounts and apply for opportunities directly through the platform.

In chapter one, the project explained the objectives, scope, opportunities, stakeholders. The main goals of the project were to develop a responsive and user-friendly platform that allows creators to be discovered and noticed easier and quickly. Brands posting jobs and managing their campaigns. Moreover, our platform would suit Small-medium sized business as they will find it cost-efficient. The project scope explained the features available for each user type, including brands, creators and Admins. Lastly, the SWOT analysis explained the project’s strengths, weaknesses, opportunities and threats.

In chapter Two, the project focused on collecting requirements and analyzing the system.

Different techniques were used to identify users' needs and technical requirements. Questionnaires and surveys helped find the main problems faced by creators and brands, while online research provided a better understanding for the market. Based on these results, the system requirements were divided into functional requirements and non-functional requirements. The functional requirements included user registration and login, creator discovery, campaign posting management, applications, and analytics dashboards. Moreover, the non-functional requirements focused on system performance, security, usability to make sure the platform is reliable.

Chapter Three, focused on the feasibility analysis of our project. The technical feasibility showed that the selected technologies, for our project to build the website will be Node.js for the backend. React for the frontend and SQLite for the database. Moreover, the operational feasibility confirmed solves real problems and the platform is suitable for both brands and creators as they use social media, and have the bare minimum of digital literacy. Moreover, the legal feasibility focused on following the data protection regulations and keeping the user information secure. As it's required legally and ethically. Additionally, the economic feasibility showed that the project is affordable as we use tools that are free. Lastly, the chapter included risk assessment, Gantt charts, and PERT charts to organize development tasks and reduce possible project risks.

Moreover, in chapter 4 the project also included detailed system models and diagram analysis like Dataflow diagram, Use case diagram, Class Diagrams, State machine diagrams. These diagrams help show the system's structure and its process or operations. Those diagrams help show us how users communicate with the system components. The helps us also understand the flow of information and functions in the platform.

Chapter 5, was all about the system design phase, it focused on database design and the Human-Computer interaction (HCI). The database converted the system requirements into a structured database. That is goal to store and manage data in an efficient way. The ERD shows the relationship between the entities. There were 7 entities and we made sure that the database follows the 3NF.

Chapter 5, was all about the system design phase, it focused on database design and the Human-Computer interaction (HCI). The database converted the system requirements into a structured database. That is goal to store and manage data in an efficient way. The ERD shows the relationship between the entities. There were 7 entities and we made sure that the

database follows the 3NF.

Finally, the project focuses on providing a functional and scalable website. Future improvements may include AI recommendations, secure online payment, advanced analytics and providing a mobile application. These future features can improve the user experience and make the platform more competitive in the digital marketing industry.

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