FEU Institute of Technology
COLLEGE OF ENGINEERING • COLLEGE OF COMPUTER STUDIES

SYSTEM INTEGRATION AND ARCHITECTURE II
Final Project Paper

HustleHub:
An Online Gig Freelance Services Platform

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MARCH 2022

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I.   Introduction

With the emergence of technological evolution, companies that have job openings in a face to face setup pre-pandemic are transitioning to a more digital platform. The applicants in the companies that lack resources on where to get jobs, where to offer their services in the public market and get actual income without having to go through the tiring application process physically and remotely. We have come up with a platform that can be their way to expand and offer jobs to an appropriate applicant wherein they can hire someone for a limited time or task, a contract with a lower price for their services.

The problems stated above helped to determine the solution for the market of HustleHub. HustleHub is a web application platform posted by lean entrepreneurs that offers freelance services that are called "*gigs*". The HustleHub is created by making every business of all sizes a marketplace around the globe, to make opportunities for the people who are affected by the pandemic and adapting remote work, a side hustle for an undergraduate but skilled workers, an independent talent, and a self-taught workers. The objective of the project was to develop an online freelance services marketplace with web application that caters to the lean entrepreneurs, and freelancers to offer their services to their potential clients, and hiring companies to help find potential employees who can fill a temporary labor shortage.

The freelancers, applicants, and employers will benefit from the project as they are able to get better compensation despite the barrier factors, transact faster with their clients and that their data is properly stored.

II.   Objectives

The general objective of the study was to develop a marketplace for the services with web applications that caters to the lean entrepreneurs, and freelancers to offer their services.

Specifically, this project aims to fulfill the following:

a. To develop a system using PHP CodeIgniter Framework.

b. To develop a Dashboard for newly posted gigs for the clients.

c. To create a Registration Module for the freelancer applicants with email verification to ensure that the individual who will work on the platform were a legitimate person.

d. To create a Login Module and include a forgotten password code verification to ensure that the person who is trying to access the forgotten password of an account was his/hers.

e. To include MyGigs Module that have CRUD (Create, Read, Update, and Delete) operations for the freelancers to their own gigs and view other entrepreneurs created gigs as well.

f. To be able to evaluate the platform using the FURPS model.

III.   Related Studies

● Adaptation of Remote Working
  ○ Since the start of the pandemic, many companies have started to shift to remote work. Many of the companies now are working from their home rather than working in offices. Remote working has been beneficial to the workers, instead of commuting to work, the employees can focus on themselves and their own families. It is also seen that it has increased productivity and provides greater opportunities to those who cannot work in offices. Since companies have shifted to remote work, a study by Cai (2021) shows that workers adapt to the work practices remotely such as learning new technology, pushing themselves with deadlines, improving communication and collaboration skills. The employees need to learn new technology for them to work remotely. In remote work, the

supervisors do not see the employees working, on the employees side, they need to learn how to push themselves with the deadlines and motivate themselves to stay focused. In working remotely and working with their co-workers, only one person can speak at the time during the meetings so they can freely speak without interruptions. As the study found that online meetings are more structured, the employees had to know how to collaborate with their work to maximize the time they have.

- Remote Work Increases Productivity Rate
    - In the past, remote employees had a bad reputation as they would be too easily distracted at home and their managers would not keep an eye on their performances. But since the Covid-19 pandemic has opened companies' minds to the idea of starting to adopt remote working or Work-From-Home commonly known as "WFH" for all or partially of their workforces. According to Ciotti (2022), remote working showed a healthy growth of 80% increase in the telecommunication employees from 2005 to 2012. This shows that working remotely has a positive impact as a remote employee. A study by Stanford (2015), of 16,000 workers over the span of over 9 months found that working from home increases their productivity by 13% and increases their performance due to a quieter, and more convenient working environment.This only shows that there are employees who enjoy working at home as they have their flexible hours when to do their works.

- Disabled Inclusiveness and Equal Opportunities for All
    - As the surge increases, many of the disabled persons have been stuck indoors since the lockdown happened. In 2020, the increase of disability employment gap between the disabled people was 53.7% compared to non-disabled people with 82%, to address this, flexible working must be maintained (Ryan, 2021). According to the study of Blanck (2021), there are over 41 million members of people with disability in the US alone, but these demographics do not translate into employment. Thus, new forms of employment and economic opportunity must be sustained in order for them to strive whilst in the pandemic.

- Hassle-Free Transportation for the Commuters
    - An everyday avoidance of commuting to work can open up a range of opportunities as everyone can now perform from home. According to Daily Inquirer (2020), commuters in

Metro Manila lost an average of 257 hours or approximately 10 days in their commute during the rush hours, since this has been clearly a drawback when working in a face to face set up, and the onset of COVID-19 has the mass shifted into a remote work, thus, Watkins (2022) survey article found out that 70% of the respondents that they have surveyed have had a positive experience of working from home setup rather than commuting for work and 86% of the sample said that they will continue to work remotely at least once in the following years. By having these numbers, we can assure that many of the workers would love at least to have remote working days instead of fully onsite setup.

- Economies with Highest Potential for Remote Work
  - Over the past years, companies have been forced to integrate remote working in their workflow. Although the transition to remote work has made the economy running, employers have found during the pandemic that while some tasks can be done remotely in a crisis, they are much more effectively done in person. A study conducted by Lund et al. (2020) on 2,000 tasks, 800 jobs, and 9 countries concluded that the finance, management, professional services, and information sectors have the highest potential for remote work. In fact, remote work potential is higher in advanced economies leading to a higher demand in the remote workforce. While the majority of the workforce cannot work remotely, up to one quarter in advanced economies can do so three to ve days a week. Due to this increasing demand for remote work, it is by no surprise that remote work is effective. According to Ozimek (2020) for 56% of hiring managers, working remotely has gone better than expected, and for another 35%, it has gone as expected. For only about one in ten has it gone worse than expected.

- Higher Productivity Rate
  - With the ongoing advancement in the technological sector, such as communication and automation, productivity rises to an extent. While both companies and employees benefit from his perspective, doing remote work has even made productivity even higher. According to Clancy (2020), remote-accessible firms are 15% more productive compared to those who do not. Another study was mentioned to prove this as a Chinese travel-booking company participated in a remote work experiment called "CTrip". In the experiment 249 randomly sampled interested and qualified employees were selected to work from home (WFH) relative to the controlled environment in the office. Attrition

also dropped exponentially by 50%, saving the company $2000 per worker per year which resulted in the expansion of remote work options in their company. Another trend was born from the work from home concept known as work-from-anywhere (WFA) where employees are allowed to work remotely all the time and to relocate anywhere. Choudhury et al. (2021) found out that it even increased the productivity of WFA to 4.4% than those in the standard WFH setup who were already more productive than those colocated employees.

- Freelancer Management System
  - The growth of freelancing in many countries has been relevant today as the pandemic affects most of us. The gig economy widens the talent pool and provides a great platform for employers to find potential employees who can fill a temporary labor shortage at a much lower price. The freelance entrepreneurs that are currently estimated to be 1.1 billion worldwide (Warner, 2021) are still challenging the existing online freelance service platforms. A Freelancer Management System (FMS) acts as a start-up with complex operational needs as it has software solutions that assists freelance entrepreneurs in offering their services to their potential clients. As years go by, the number of freelancers, and administrative tasks increases simultaneously with the various existing systems. A study of Mahomodally & Suddul (2022), to test the security vulnerabilities of these FMS, they has been able to solve the issues of it by adding a machine-learning based hiring feature in a FMS, they generated qualified freelancers for their project, this includes automating the invoice and payment, enabling the freelancers to electronically sign contracts, to further add personalize projects they have added an e-Kanban board feature for quick and visualization of project processes. As with many existing FMS platforms there is no assurance that the freelancers are legitimate and will deliver the work by the deadline or that an employer will pay for the task that is being completed. (Gupta et al., 2020)

- Online Labor Index
  - The Oxford Online Labor Index (OLI) is a tool used by researchers to measure the impact of the COVID-19 pandemic on the labor markets. It is like traditional labor market statistics (Kässi & Lehdonvirta, 2018). Online Labor Index also helps employers monitor their employees' performance and provides them with tools such as an HR management

system, wage calculator, and other features. The report focuses on the effects of the pandemic on the United States through the OLI data, and we can see that the country's demand for online labor is unevenly distributed among various geographies. In 2020, extra than 40% of worldwide demand stems from the United States, even as the second biggest single country purchaser of online exertions is the United Kingdom with eight percent. This information recommends that the United States' demand forms the worldwide online labor call. Dunn et al. (2020)

- Crowd Feedback System
  - Freelancing projects prove to be a vital replacement over colocated work for short and long-term projects. However, freelancers face problems when it comes to marketing their skills and knowledge constructing their favorable impressions on clients. Techniques such as impression management theory defined by García-Sánchez et al. (2018), social psychology analyses how individuals modify their image to be perceived favorably are used to increase their chances to attract clients. Such techniques can be employed in a feedback system to modify their outputs according to the inputs of their clients. According to Foong (2020), Crowd feedback systems can provide regular, rapid, and inexpensive feedback from new, diverse and readily-available paid online crowdworkers on individual creative projects. A study conducted by Foong with 30 freelance graphic design professionals in the US and 1, 386 unique crowdworkers from MTurk in North America found that in both parties, feedback is indeed helpful for gaining insights and participants used this feedback to plan changes to projects in their portfolio.

- Online Freelance Marketplace
  - Existing freelance platforms such as Truelancer.com costs extra charges to be profitable for the freelancers and clients alike. Given the fact that this existing platforms are based outside of the freelancers country, restrictions such as mode of payment and biases in choosing a freelancer such as racial bias which Hannák et al. (2017) concluded in their study that Black, especially men received 32% fewer reviews over others and also received lower rating score in fiverr. While women especially White received less reviews for about 10% than workers who perceived to be men. Along with the racial bias comes the search algorithm bias as workers perceived to be women are more likely to appear at the bottom. This poses a problem as several local projects are popping to solve

this case. EarnBan is no exception as it tries to solve payment difficulties, demand in their country and provide service for their people (Hasan, 2021).

- Challenges of Online Freelancing
  - Online freelancing has grown notably in the last couple of years. Industry sales in 2020 had been over $15.4 billion, with an increase of 34.6% after falling by 19.6% (Milliot, 2022). This surge may be attributed to two factors. First, technological improvements, including digital deliverability of jobs and rapid Internet connections, have accelerated the delivery of jobs carried out through freelancers. Despite this latest growth, online freelancing faces many challenges, primarily the traditional data asymmetry or lemon's problem. Second, freelance markets provide a low-value way for geographically remote players to trade, specifically since there is an abundance of unemployed professional employees in rising economies (Indian subcontinent, Eastern Europe) with low living prices and a healthful call for professional people in advanced countries. In this neighborhood, hard work is expensive. Note that customers face significant risks in those marketplaces – sellers can also additionally supply low-quality services, abscond with advance payments, hold-up the task without finishing it or postpone it, steal Intellectual Property (IP) given to them at some point of the task and promote it to a competitor or use it themselves. While it is theoretically achievable to the agreement on quality, provider contracts are notoriously tough to spell out and enforce. Even if contracts can be made, since maximum dealers are geographically distant from customers and belong to growing countries, in which IP rights are relatively lax and legal systems corrupt, it is tough for injured customers to gain legal restitution. (Brousseau and Glachant, 2010)

IV. Significance of the Study

The implementation of HustleHub will help the freelancers, companies and the general public that are interested in the platform that will aid their job opportunities. Not only will it bring financial benefits but also the user satisfaction since the searching of jobs or services will be streamlined and in accordance with the user's preferences.

Freelancers: The platform will be useful as it is intended for them to offer their gigs and accept potential clients for them to gain income.

Employers: HustleHub will be useful for employers as it will help them find potential employees who can fill temporary labor shortage for specific tasks.

General Public: For the general public, HustleHub will be useful as it is free and convenient for all users that are interested in looking for clients and offering their services as well in the market.

V.   Scope and Delimitations

The project focused on developing a marketplace where users can offer their services that handles the offering and acceptance of a project or task through our platform. The HustleHub is a website platform for freelancers and employers to have a way of communicating with each other and will not have to interact physically.

Furthermore, the platform was directed to the module features, freelancers and employers through the platform.

- **Registration Module** - The new users in the platform will be able to register themselves as a freelancer or a client. In this module, after registering, there will be a 6-digit code user verification through email to determine whether the registered user is a legitimate user.
- **Dashboard Module** - In this module, the users will be able to see the previous, ongoing, and requested projects as well as the offers and history of transactions or orders by the freelancers' potential clients and vice-versa for the client side.

- **MyGigs Mobile -** In this module of the platform, freelancers will be able to offer their services to the public market within the platform. It contains the gig that the freelancer offers to the market, such as a task, description, and price range, etc.

- **Profile Module -** In this module, users whether a freelancer or a client will be able to update their profile, upload their photo, and delete their account.

On the other hand, the general users could access all the features of the platform just by registering and logging into their own accounts through the platform.

VI.   Methodology
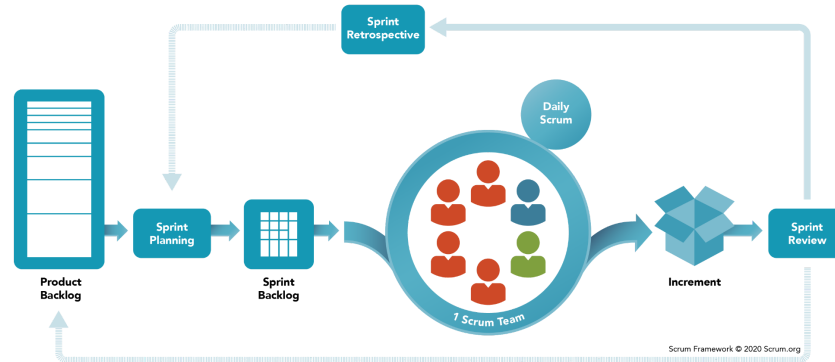
Project Development

Figure 1. Scrum Framework

Figure 1 shows the scrum framework, it is one of the agile development frameworks that are frequently used in software development and engineering. It turns the complex project into a small manageable task. In this kind of approach, the project will be entirely manageable, reducing the complexity of and high amount of risk of the project. It is appropriate for the project for small teams, aggressive deadlines, high degree of uniqueness, and high level of complexity. This development framework relies on incremental development of work, and each iteration that is called sprints.

Data Gathering

The developers of the project will use quantitative and qualitative research of the project to gain more accurate results that can help in the development and implementation of the developed system. Additionally, to have a better understanding regarding what the general users will be needing within our platform.

Document Overview

The developers intend to gather more information through the related studies and analysis of similar systems if there is any so that the platform would be in its best condition, useful for the general users, and has competitive features against the extempler.

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Online Surveys

The developers will cater only surveys in determining who are the general users that are interested in using the platform and be able to know if the platform would fit the needs of potential users.

Sampling Technique

The sampling technique that the developers will use is convenience sampling to assess the effectiveness and the usability of the system. A non-probability sampling technique, the convenience sampling will be used to select participants based on the interest of the general public to use our platform. In this technique, the developers relied on their own judgment when choosing and saved time by accessing a specific subset of participants that interests the general public.

Respondents of the Study

The sampling technique enabled the developers to correlate with the objectives of the study to the intended end users through the respondents. The developers will consider 30-50 respondents of the survey as the standard sample size for the online survey questionnaire as according to Central Limit Theorem (CLT) this sample size of 30-50 is deemed to be sufficient and fairly distributed (Ganti, 2021) as it is for general users without a client. The developers will use a technical survey questionnaire to further evaluate the platform's quality in accordance with the FURPS model.

Likert Scale

Numerical Scale	Verbal Interpretation	Score Range
5	Strongly Agree	4.6 – 5.0
4	Agree	3.6 – 4.5
3	Neither/Nor agree	2.6 – 3.5
2	Disagree	1.6 – 2.5
1	Strongly Disagree	1.0 – 1.5

Table 1. Likert Scale

Weighted Mean

This is used to evaluate the data from the surveys answered by the respondents of the system.

Formula:

$$X = \frac{fx}{n}$$

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where,

$$X = \text{weighted mean}$$

$$f = \text{frequency}$$

$$x = \text{weight of each item}$$

$$n = \text{number of respondents}$$

Requirement Analysis

This section presents the results of reports whether the platform does indeed meet the operational, technical, schedule, and economic feasibility in developing the platform. This must be taken into consideration to determine whether the development of the platform is attainable.

Operational Feasibility

Operational feasibility is the assessment of whether the developed platform can resolve the encountered problems and optimize the platform. The developed platform will be sustainable to all the users of the HustleHub as these can substantially improve the efficiency of operations with communication of two users namely, a freelancer and a client.

Technical Feasibility

Technical Feasibility includes the requirements needed to attain the full potential of the platform. The requirements are based on the features that the developers wish to offer in the platform. The following are the lists of requirements categorized by software and hardware, that will be required for the platform implementation:

Hardware Requirements
- **Web**
  - Hard drive: at least 8GB
  - Processor: Intel Pentium 4 and above
  - Memory (RAM): At least 4GB of memory (minimum) or higher (recommended)
  - Monitor, mouse, and keyboard: Any peripheral device

- **Internet Connection**
  - DSL, Cable, or Wireless Fidelity (Wi-Fi)

Software Requirements

Software Deployment

The user must meet the following requirements, which are stated below. To begin, the Desktop Operating System is one of the essential parts of a computer software, and the three primary Operating Systems are Windows, macOS, and Linux. It serves as a link between the user and the computer's hardware. After which, to utilize the HustleHub website or platform, the user must have a web browser, and the developers will make use of a database to store the users data.

Software Design and Development

These are the programs used in creation of the platform for software design and development. First is the Figma, it is an easy-to-use tool for web design, mobile design, and any other design needs. Next, one of the most popular web design frameworks for faster website design construction is Tailwind CSS. Then there is the PHP CodeIgniter 3 framework for web development alongside PHP Mailer for email verification.

Schedule Feasibility

The way towards the completion of the platform is evaluating the potential time allotment and completion dates for every single activity within the project and ensuring that it will meet due dates and limitations for influencing change. In this feasibility, the proponents will display a summary of the task plan.

Phases		Transition	
		2022	
		Feb	Mar
Ideation	Planning	■	
	Analyze Data Requirement	■	
	System Documentation	■	
System Design	Design Website	■	
	Design Database	■	
Implement Website	Registration Module	■	
	MyGigs Module	■	■
	Dashboard Module		■
	Profile Module		■
Software Testing	Alpha Testing		■
	Beta Testing		■
System Completion	System Deployment		■
	System Maintenance		■

Figure 2. HustleHub Gantt Chart

Figure 2 shows the Gantt Chart indicating the task plan and completion dates. For the first month, it started with planning on how the developers came up with the idea of the system. For the following months, the developers focused on gathering and analyzing data requirements to solidify the concept of the documentation of the system. The figures additionally demonstrate the timetable of each task stated.
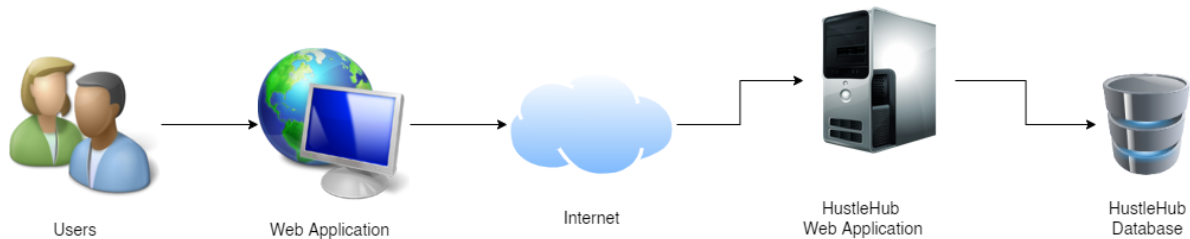
System Architecture

Users   Web Application   Internet   HustleHub Web Application   HustleHub Database

Figure 3. HustleHub System Architecture

Figure 3 shows the structure of components of the platform and their relationship with each other. This helped in understanding the behavior and the flow of it. The users who are the freelancers, and clients have to use a computer which requires an internet connection in order to use the platform. The database will then receive the information that is being passed over the internet then can save the data in the web application.
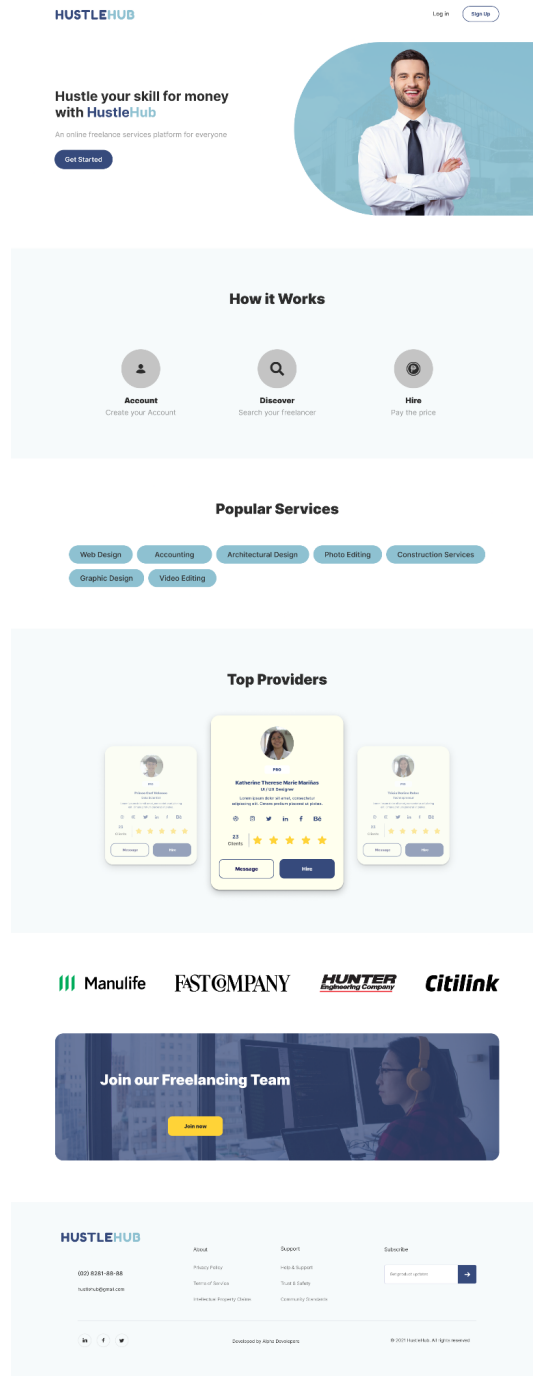
VII.   System Design

Figure 4. HustleHub Homepage User Interface

Figure 4 shows the User Interface of the Homepage. This is the first page of the platform when you load the website wherein they can either browse through the links or either log in to their account or sign up.
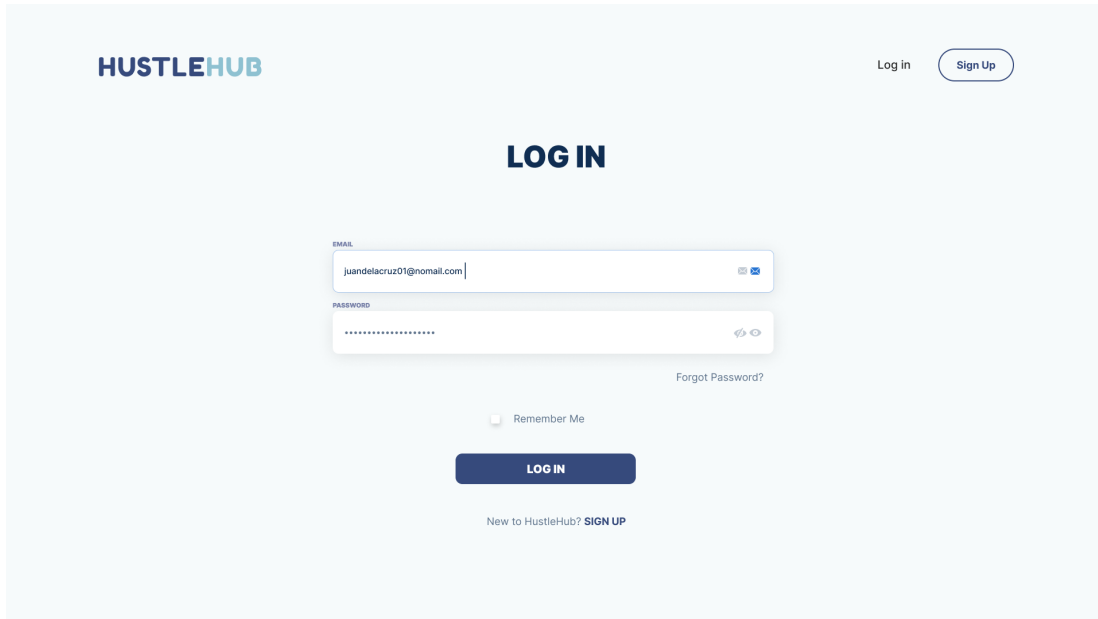
Figure 5. HustleHub Login Page User Interface

Figure 5 shows the User Interface of the Login Page. This is where the users can input their credentials in order to gain access to the features in the platform.
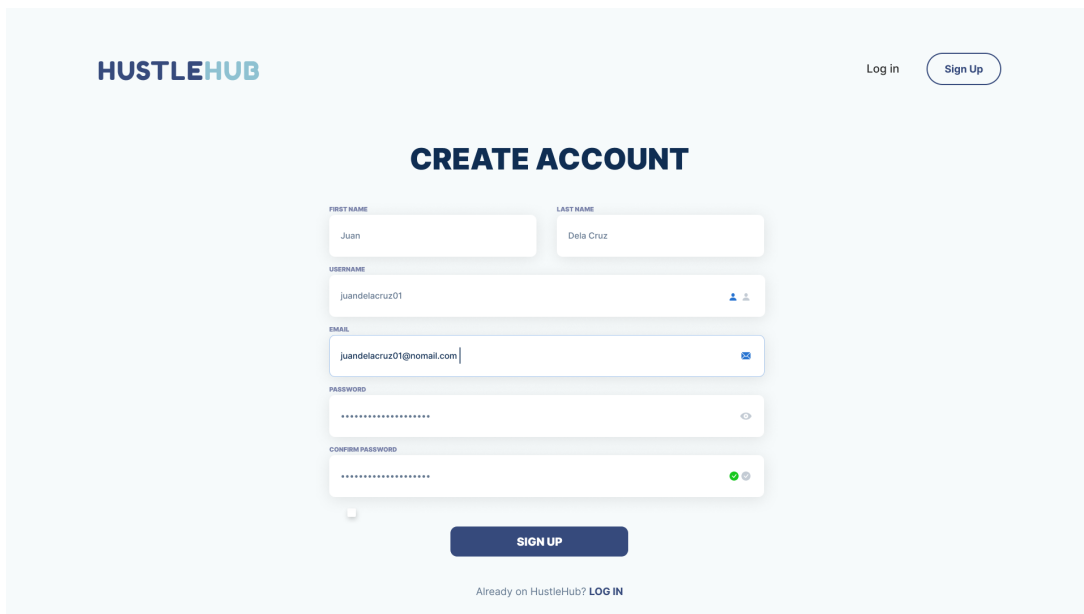

Figure 6. HustleHub Sign Up Page User Interface

Figure 6 shows the User Interface of the Sign Up Page. This is where the user registers themselves in order to use the various features of the platform.
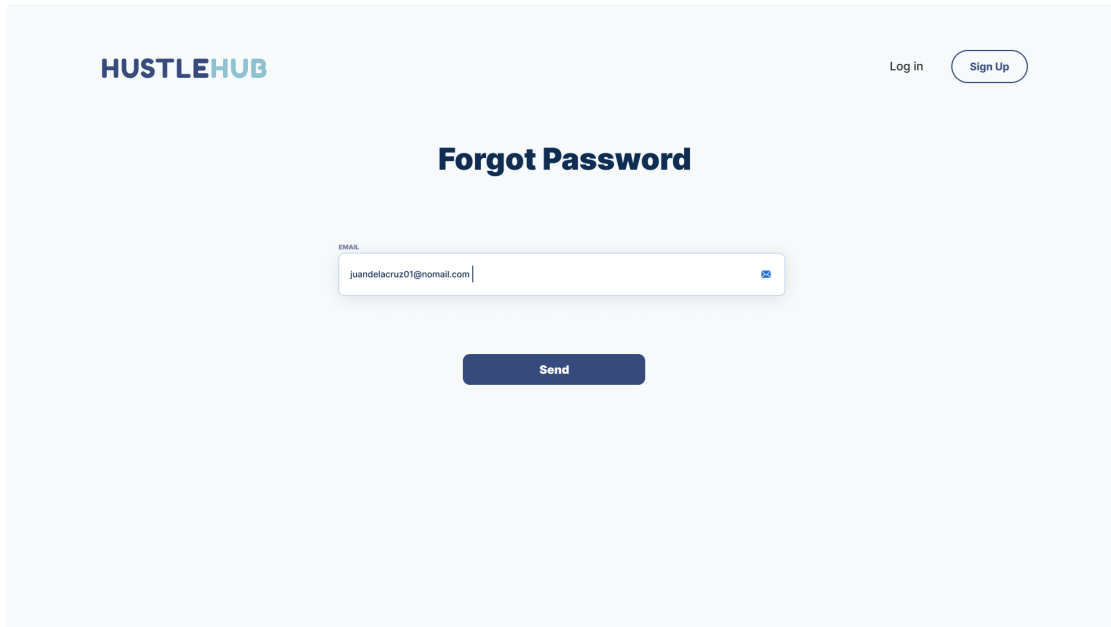
Figure 7. HustleHub Forgot Password Page User Interface

Figure 7 shows the User Interface of the Forgot Password Page. This is where the platform redirects a user whenever the user forgot his/her password in order to recover it.
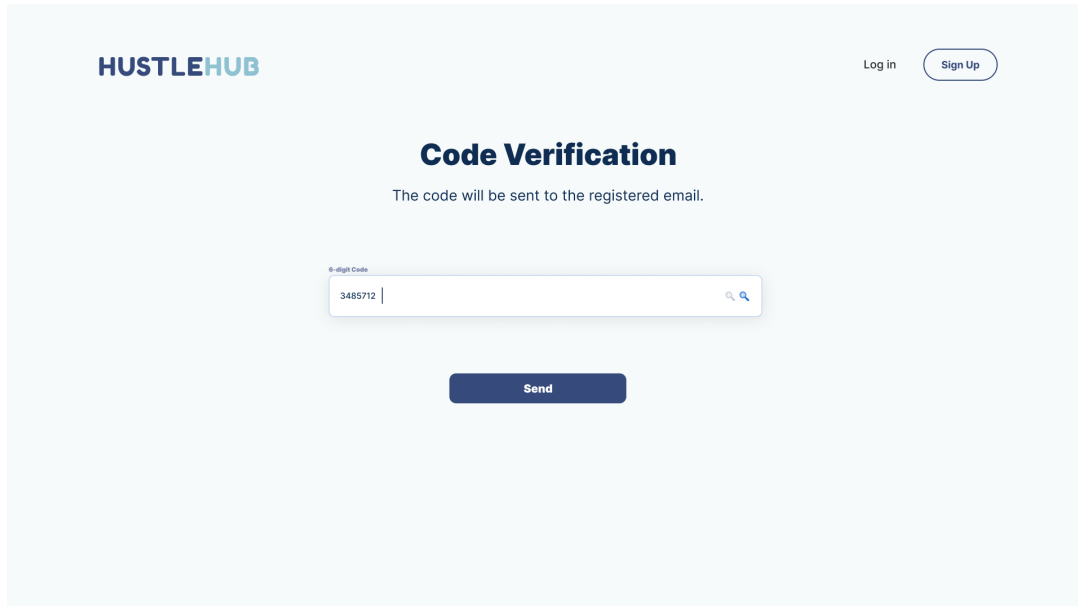

Figure 8. HustleHub Forgot Password Page User Interface

Figure 8 shows the User Interface of the Code Verification Page. This is where the user will input or enter the code sent into their emails in order to reset their password credentials in the platform.
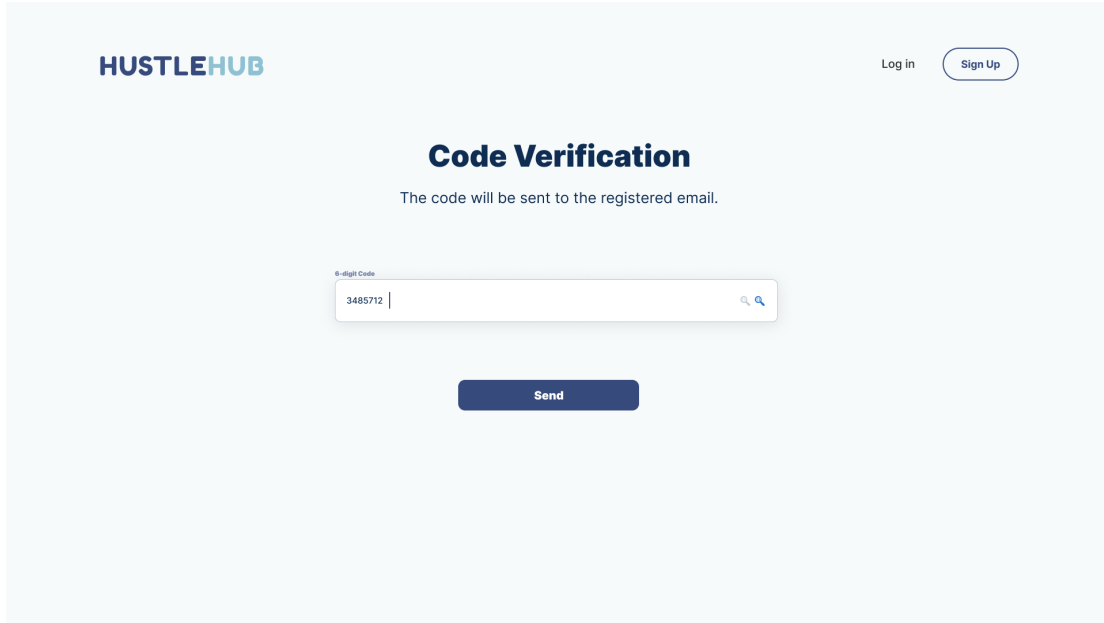
Figure 9. HustleHub Forgot Password Page User Interface

Figure 9 shows the User Interface of the Code Verification Page. This is where the user will input or enter the code sent into their emails in order to reset their password credentials in the platform.
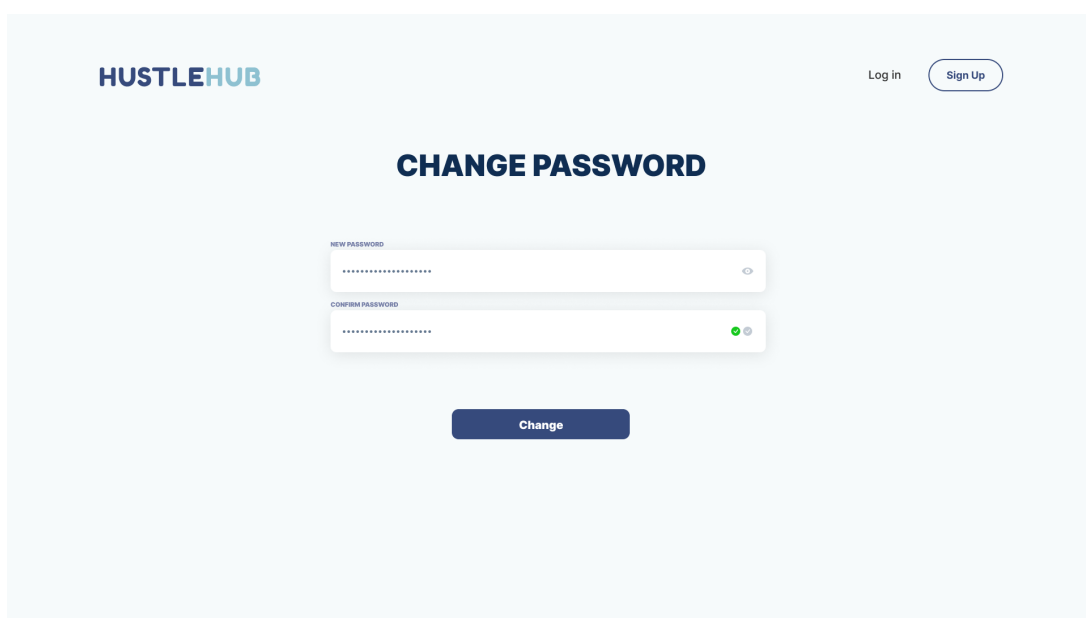

Figure 10. HustleHub Change Password Page User Interface

Figure 10 shows the User Interface of the Change Password Page. This is where the user will input another password credential not similar with the previous one whenever they forgot their passwords.
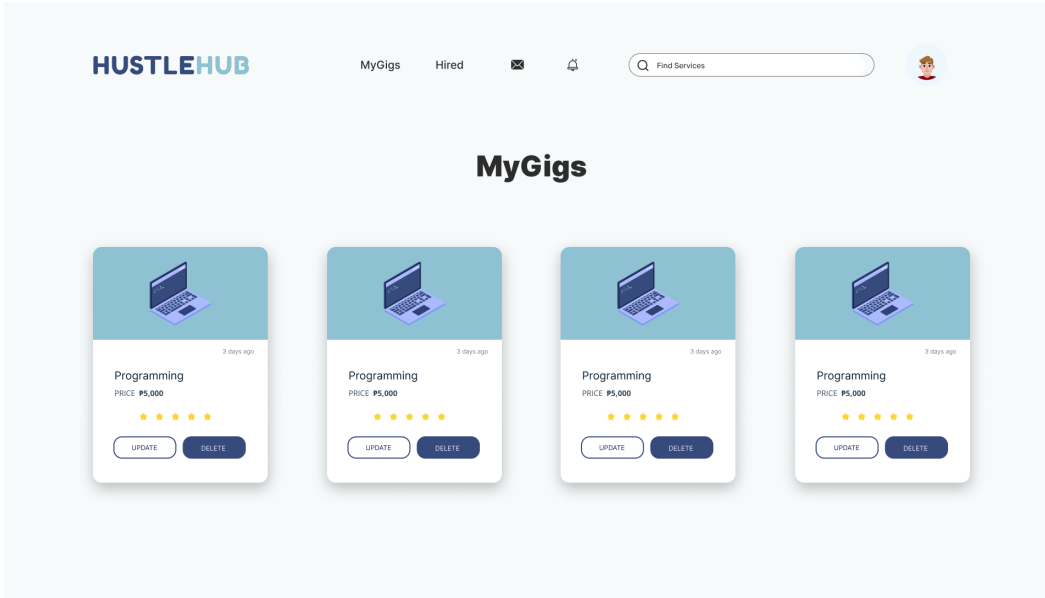
Figure 11. HustleHub MyGigs Catalog Page User Interface

Figure 11 shows the User Interface of the MyGigs Catalog Page. This is where the user can view the different offered services of the freelancers.
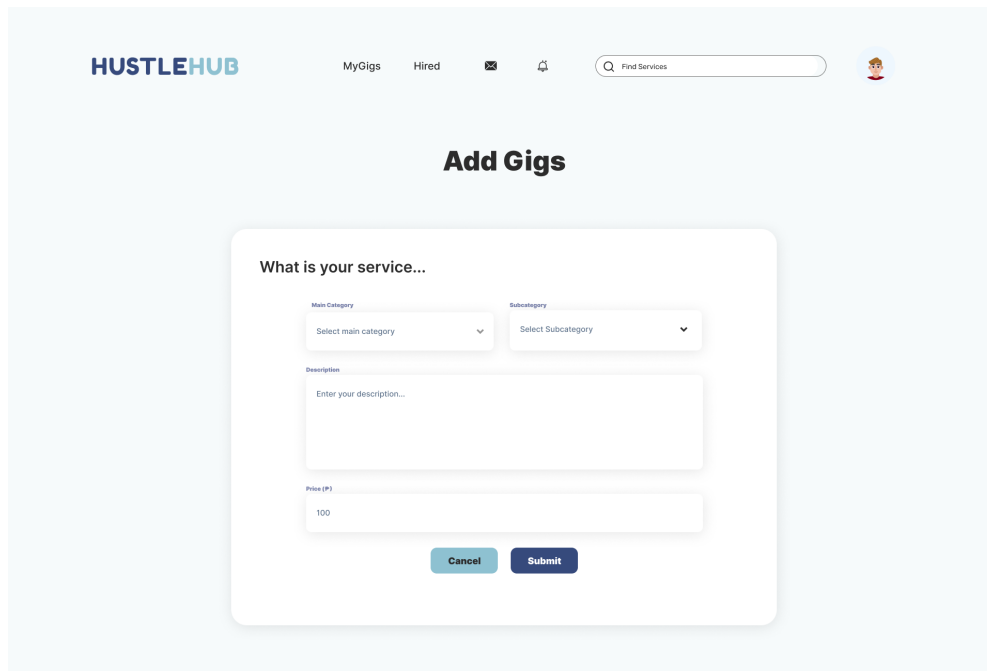

Figure 12. HustleHub MyGigs Creation Page User Interface

Figure 12 shows the User Interface of the MyGigs Creation Page. This is where freelancers can add their own services or gigs on the platform.

Figure 13. HustleHub MyGigs Creation Page User Interface

Figure 13 shows the User Interface of the MyGigs Creation Page. This is where freelancers can add their own services or gigs on the platform.
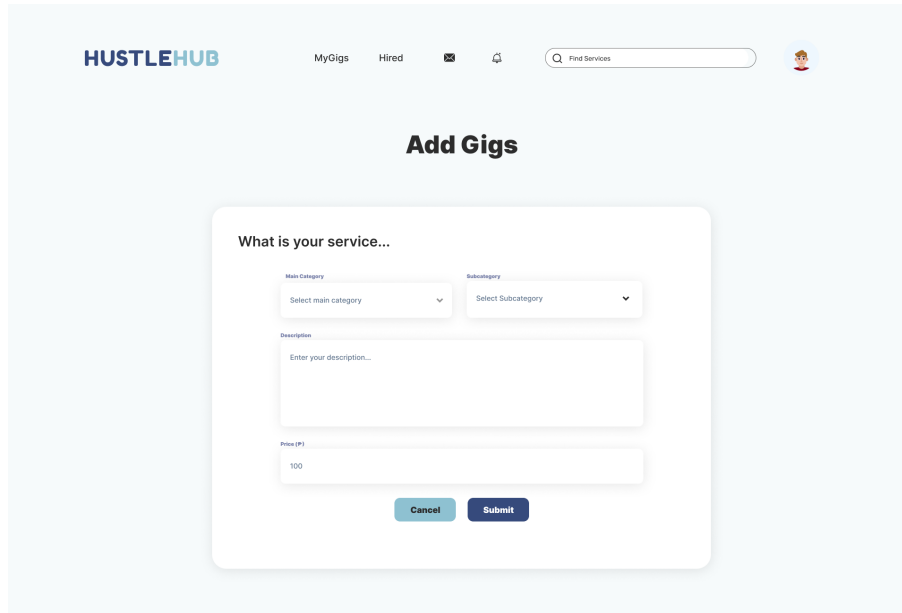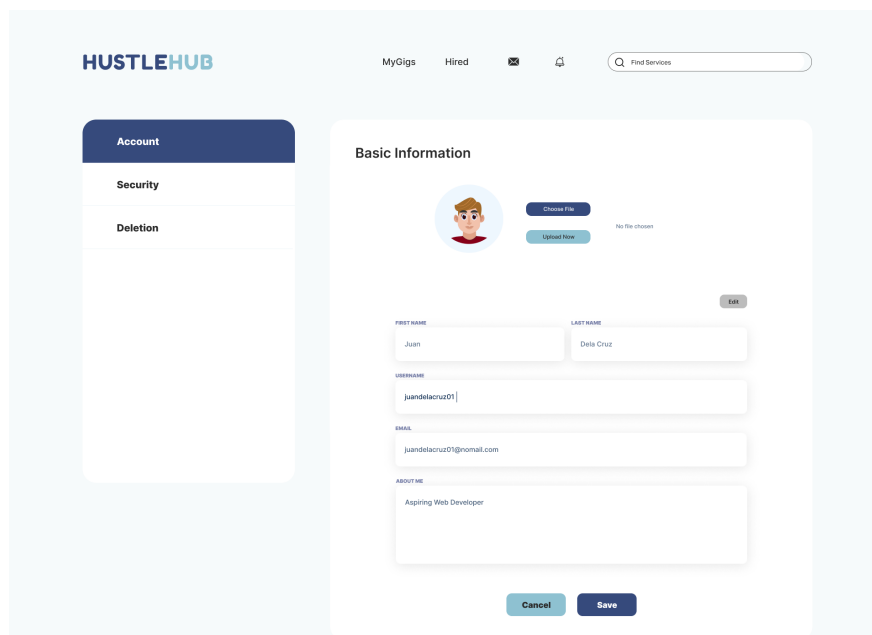

Figure 14. HustleHub Account Settings Page User Interface

Figure 14 shows the User Interface of the Account Settings Page. This is where users can manage their own profiles and delete their accounts.

VIII. System Functionality
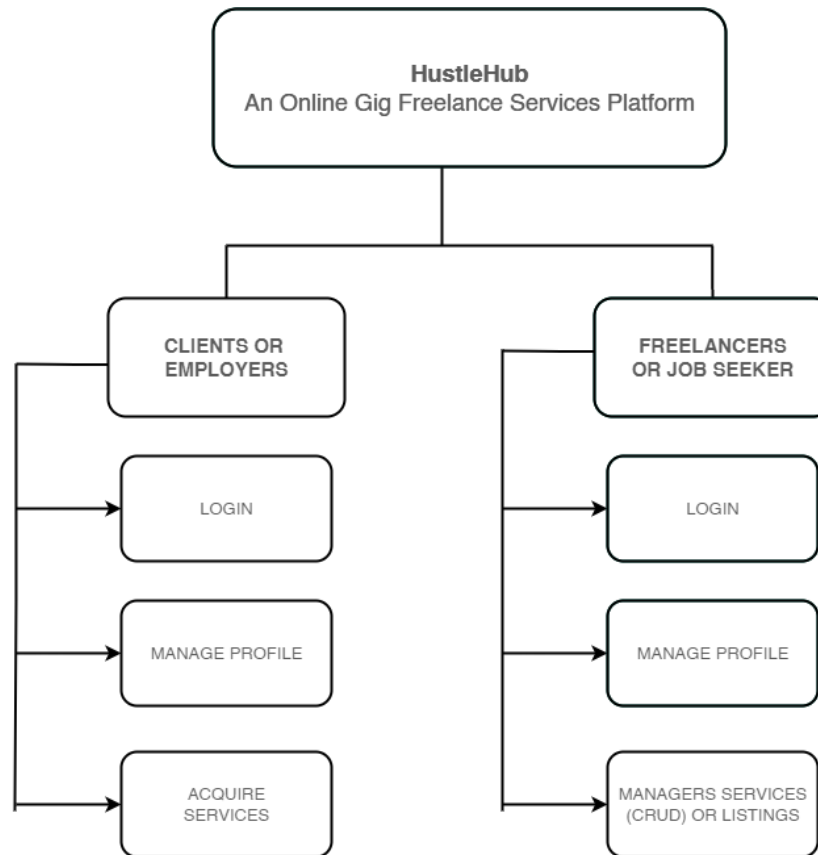
Figure 15. HustleHub Functional Decomposition Diagram (FDD)

Figure 15 displays the Functional Decomposition Diagram of HustleHub which reveals the two (2) major users of the proposed system: the Clients or Employers, and the Freelancers or Job Seekers. All of the users can access the website using their credentials and have full control over their accounts wherein they can update and delete their profiles.

The Clients and Employers can acquire specific services from the freelancers for a specific task and services, and hire them for labor within a limited time. While on the other hand, the Freelancers or Job Seekers can perform CRUD to their gigs or services under MyGigs Module, and accept hiring clients or employers.

Figure 16. HustleHub Use Case Diagram

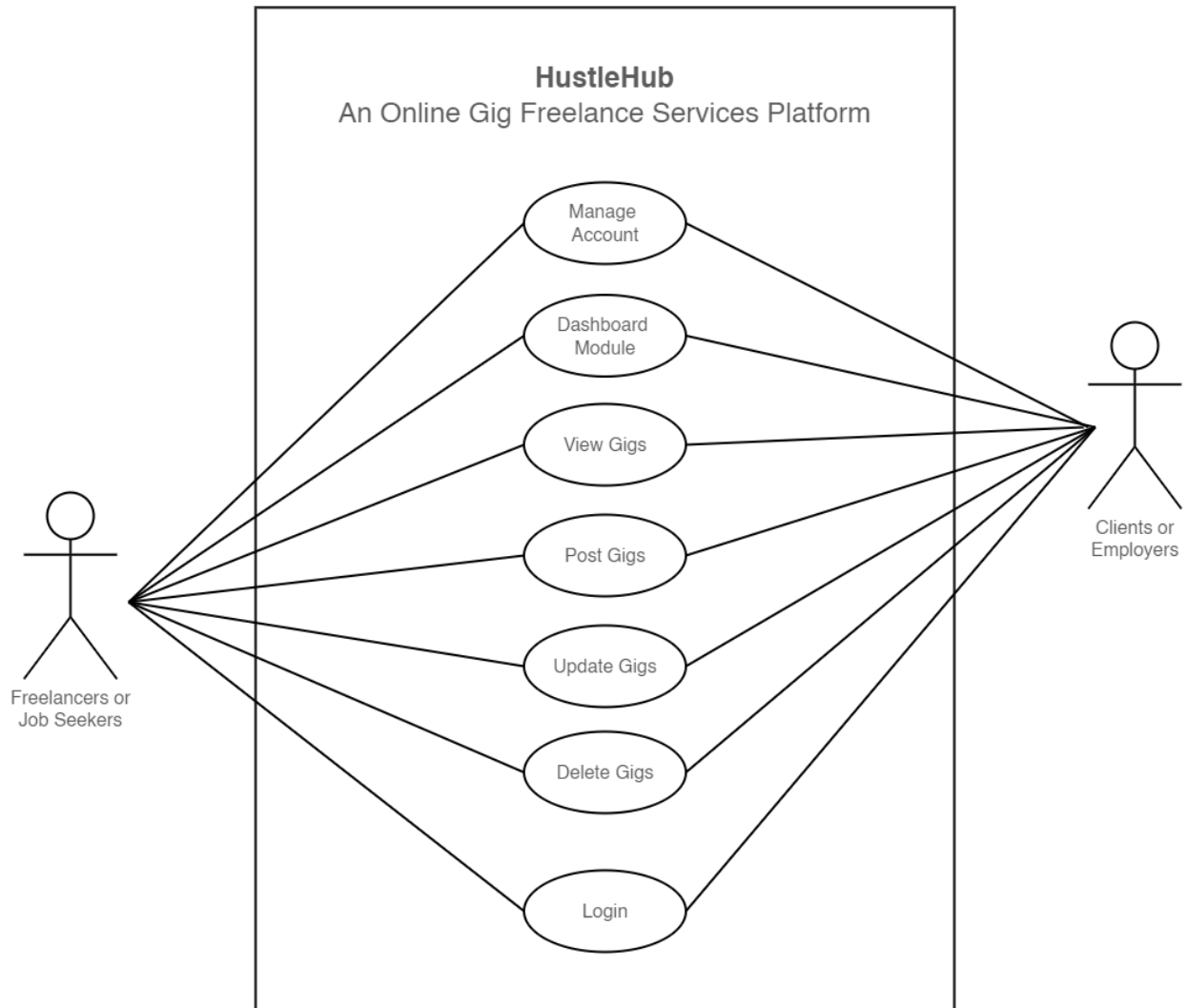Figure 16 shows the Use Case Diagram which reveals the interactions of each actor from the website. The clients and the freelancers are the two (2) actors in the diagram. Both of the actors can login, manage their accounts, and both can offer services.

Cumulative Flow Diagram
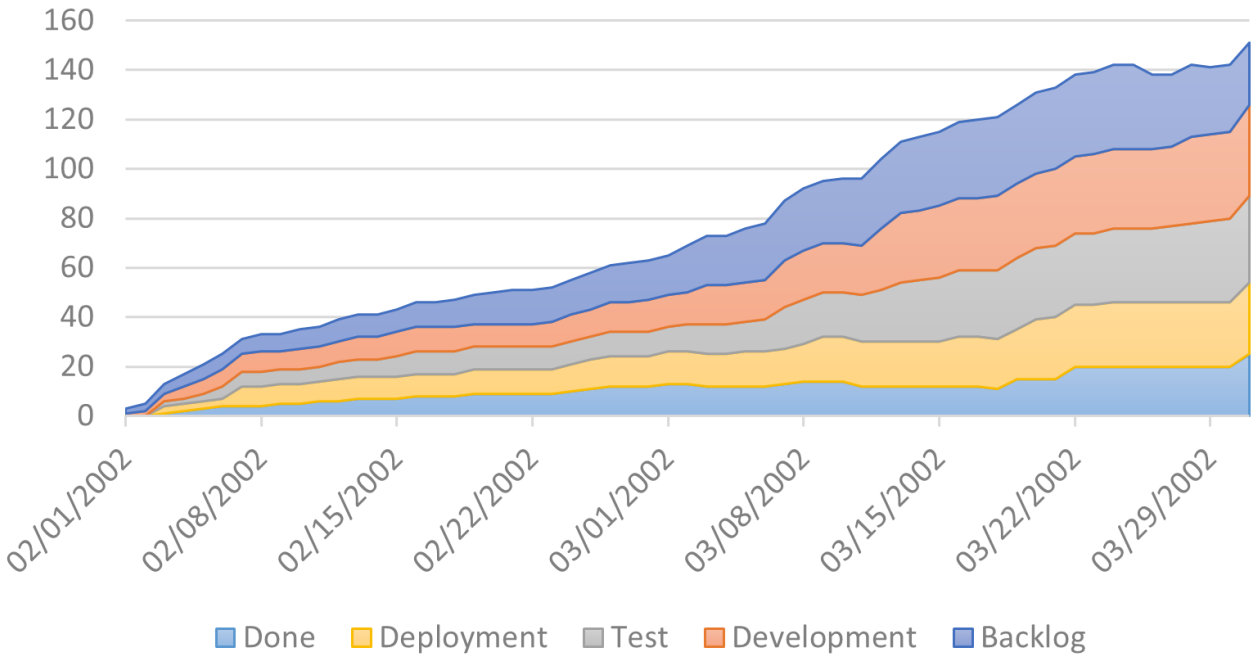
Figure 17. HustleHub Project Cumulative Flow Diagram (CFD)

Figure 17 shows the cumulative flow diagram showing the team progresses through its iteration. Its primary purpose is to give an insight into the team's progress from a given period. The diagram has five (5) parts: backlog, development, test, deployment, and done. The backlog is the list of items that are to be done. The development part consists of all activities necessary to improve the system incrementally. The test phase consists of testing, and the deployment phase consists of deploying the product. Lastly, the done phase closes the iteration and moves on to the next one.
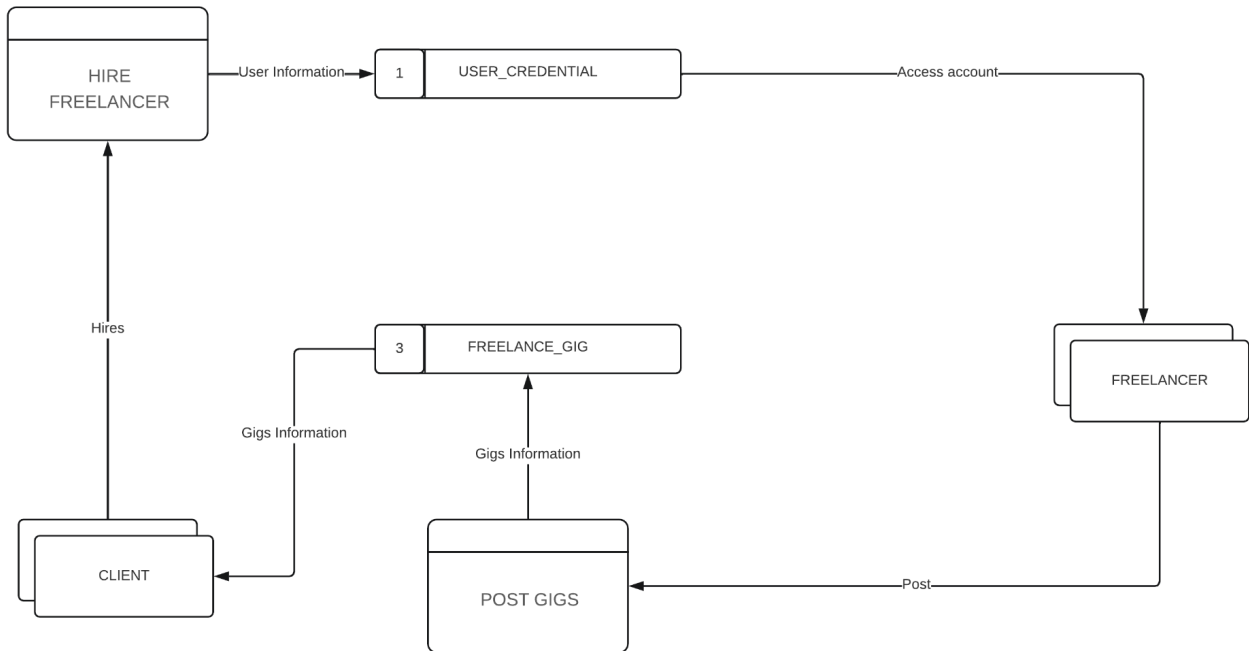
Figure 18. HustleHub Level 1 Data Flow Diagram (DFD)

Figure 18 displays the Level 1 Data Flow Diagram for the HustleHub. It shows the two (2) major users of the project namely, the clients, and the freelancers. The freelancers will post their gigs or services through the platform, after that the information that is posted can be viewed by the potential clients, and then the freelancer will get hired after a specific client wants to avail a freelancer's gig.
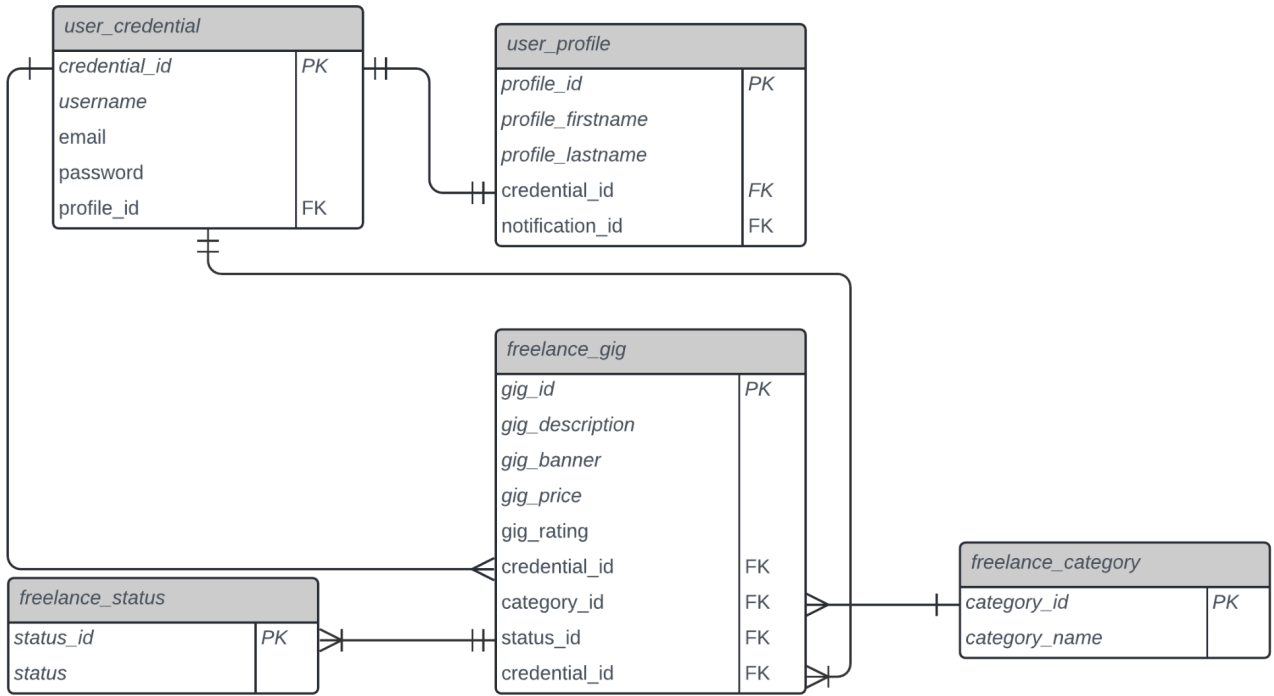
Figure 19. HustleHub Entity Relationship Diagram (ERD)

Figure 19 shows the Entity Relationship Diagram of HustleHub. The freelancer must have an account thus the table "user_profile" that has all the attributes a person has and each person is mandatory to have only one account thus the table "user_credential". A freelancer can have many gigs, thus the table "freelance_gig", and each of these gigs can only have one specific category, thus the table "freelance_category".

Figure 20. HustleHub Sequence Diagram

Figure 20 shows the sequence diagram of HustleHub. The freelancer can add and update gigs in MyGigs page, the freelancer can also manage his/her gigs by performing the CRUD operations. The client can browse gigs and hire a freelancer depending on their needed service.
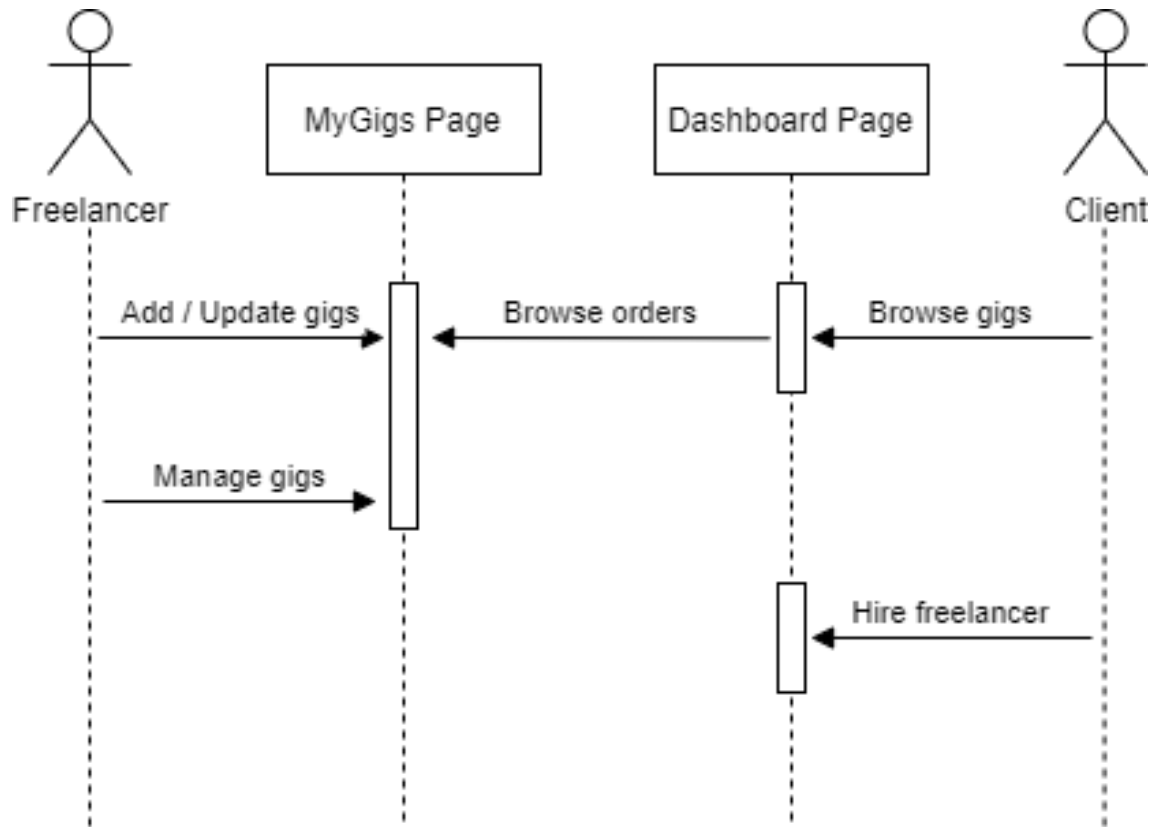
IX.   Results and Discussion

This section discusses the results and interpretation that derived from the evaluation conducted. These collected data are from the respondents who have performed the software testing and their perceptions on the website. The questions that are used in the survey were generated using the FURPS model. These results were needed to determine the status of the website and were used as a basis for possible systems for improvements for future use.

Survey Questionnaire Results

The developers used the FURPS criteria for the survey to determine what would be the evaluation of the respondents regarding the system. Thus, for the overall assessment, each of the questions on the other hand was accumulated using statistical analysis.

FUNCTIONALITY	Respondents	
	MEAN (x)	*Interpretation*
1. The user can view Gigs under the MyGigs module.	4.70	Strongly Agree
2. The user can acquire and offer a freelancer a Gig.	4.60	Strongly Agree
3. The user can create a new Gig.	4.73	Strongly Agree
4. The user can upload a file or a photo in his/her account.	4.73	Strongly Agree
5. The user can view their previous posted gigs.	4.53	Agree
COMPOSITE MEAN	**4.66**	**Strongly Agree**

Table 2. Respondents' Summary of Assessment in the matter of Functionality

Table 2 shows the data gathered from the functionality category of the survey, responses showed that it functions well, as it can create a new Gig, and upload their photos under their accounts. It meets the expectations of the respondents for the basic functionalities of the platform such as viewing, creating, and uploading. The overall average reached a total of 4.66 means that all respondents strongly agreed to it.

USABILITY	Respondents	
	MEAN (x)	*Interpretation*
1. The user can easily navigate through the system.	4.70	Strongly Agree
2. The system's layout is well organized and appealing.	4.73	Strongly Agree
3. The user did not feel discomfort during the experience with the platform.	4.73	Strongly Agree
4. Color variations in information systems are sufficient in terms of brightness and color contrast.	4.77	Strongly Agree
COMPOSITE MEAN	**4.73**	**Strongly Agree**

Table 3. Respondents' Summary of Assessment in the matter of Usability

Table 3 shows the data gathered from the usability category of the survey, most of the respondents has strongly agreed with the usability of the platform with the total average of 4.73 which means that the usability of the platform is on the above average level that is gives convenience and did not experience discomfort during their navigation of the platform in terms of its accessibility.

RELIABILITY	Respondents	
	MEAN (x)	*Interpretation*
1. The platform generated the appropriate and consistent data just as I expected it to be.	4.60	Strongly Agree
2. The platform does not fail considering a number of transactions.	4.47	Agree
3. The platform informed me of my wrong inputs.	4.57	Agree
4. The platform does not need to be restarted when an error occurs.	4.33	Agree
COMPOSITE MEAN	**4.49**	**Agree**

Table 4. Respondents' Summary of Assessment in the matter of Reliability

Table 4 shows the data gathered from the reliability category of the survey, most of the respondents that the system generated the appropriate and consistent data and with the overall average of 4.49 which means that the platform is reliable and consistent in informing the users thus user field validations, can handle multiple transactions at the same time, and presenting appropriate results of the data gathered from the platform.

PERFORMANCE	Respondents	
	MEAN (x)	*Interpretation*
1. The platform was able to respond to my action swiftly.	4.57	Agree
2. The platform's interface is loaded almost immediately.	4.33	Agree
3. The platform's processing speed is commendable.	4.43	Agree
COMPOSITE MEAN	**4.44**	**Agree**

Table 5. Respondents' Summary of Assessment in the matter of Performance

Table 5 shows the data gathered from the performance category of the survey, most of the respondents agree that the platform was able to respond to their actions swiftly and with the overall average of 4.44 which means that the respondents are satisfied and find the platform easy to use.

SUPPORTABILITY	Respondents	
	MEAN (x)	*Interpretation*
1. The platform is responsive, it can adapt to different screen sizes.	4.67	Strongly Agree
2. The user did not feel the need to ask for help from a technical person to be able to use the platform.	4.40	Agree
3. The platform can be used with different browsers.	4.73	Strongly Agree
COMPOSITE MEAN	**4.60**	**Strongly Agree**

Table 6. Respondents' Summary of Assessment in the matter of Supportability

Table 6 shows the data gathered from the supportability category of the survey, most of the respondents agree with the supportability of the system. With the general average of 4.60 which means that the platform can adapt to different browsers with various screen sizes.

Summary of Findings

Criteria	Weighted Mean	Response Description
Functionality	4.66	Strongly Agree
Usability	4.73	Strongly Agree
Reliability	4.49	Agree
Performance	4.44	Agree
Supportability	4.60	Strongly Agree
OVERALL MEAN	**4.59**	**Agree**

Table 7. Summary of Weighted Mean

Table 7 represents the calculated weighted mean based on the results obtained in answering the survey conducted by the respondents. The table shows that the usability of the platform being the highest with 4.73 average and the performance being the lowest that reached a total of 4.44 only and the rest of the criteria is agreed. Generally, it reaches 4.59 for the overall mean which is covered by the agree of the Likert scale degree.

X.   Conclusion

The main objective of the project is to develop a website that would help self-taught skilled workers find jobs, offer their services to their potential clients, and hiring companies find potential employees and applicants who can fill a temporary labor shortage. With that, solving the target customers' problems led to the conclusion of developing the HustleHub.

Throughout the course of the project, the developers and the developed platform successfully attained the following specific objectives: First, the developers successfully developed the platform using purely the PHP CodeIgniter 3 Framework alongside with the Web design construction with Materialize CSS. Second, to be able to post new gigs for the clients to view and avail with thus having a dashboard page for it will be efficient. Third, creating a registration module for the freelancer applicants with email verification to ensure that individuals who will post and acquire services on the platform are legitimate persons. Fourth, the users will be able to retrieve their account as the platform has a forgotten password code verification that will send to their registered email address on the platform and by this, it can ensure that the person who is trying to access the platform has his/her account. Fifth, the users will be able to have CRUD (Create, Read, Update, and Delete) operations to their MyGigs Dashboard that their potential clients will be able to view. Lastly, performance evaluation. At the end of the development, the system was evaluated using the system evaluation tool FURPS model, and was tested by a total of 30 respondents.

Based on the gathered result testing, the total weighted mean for the Usability category in the survey was 4.73 being the highest which means that the respondents strongly agree that the platform is convenient and they did not feel any discomfort while using the platform. While on the other hand, weighted mean from the Performance category in the survey being the lowest with 4.44 that the respondents agreed and somewhat satisfied with the platform being able to respond to their actions swiftly. To sum it all up, based on the results and comments from the respondents, the general aim of specific objectives of the project was met.

XI.   Recommendations

The overall results obtained from the survey alongside with the platform evaluation conducted were used as a basis. The developers, and the respondents came up with a list that contains the possible recommendations and suggestions for the project. The recommendations listed below will be used as a guide for the future researchers and developers that would want to come up with a similar concept.

The developers would like to recommend the following:

- To integrate more features such as recommendation section algorithms for the newly posted gigs or newly created client account.

- To add features such as having an integrated messaging application to the platform for the users to communicate with.

- To add an invoice maker whenever a project is done.

The respondents would like to recommend the following:

- To add payment methods in order for the users to secure their slot or down payment when acquiring a freelancer.

- To increase security verification such as submitting valid IDs, and supporting documents to know if the created account was from a legitimate person.

XII.   References

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XIII.   Appendices

Survey Questionnaire

Responses cannot be edited

HustleHub Survey

Good day!

We are currently a 4th year student from FEU - Institute of Technology taking up Bachelor of Science in Information Technology with specialization of Web and Mobile Application. This survey questionnaire is part of our System Integration and Architecture 2 entitled "HustleHub: An Online Gig Freelance Services Platform", a Freelance Management System that caters caters to the lean entrepreneurs, and freelancers to offer their services to their potential clients, and hiring companies to help find potential employees who can fill a temporary labor shortage.
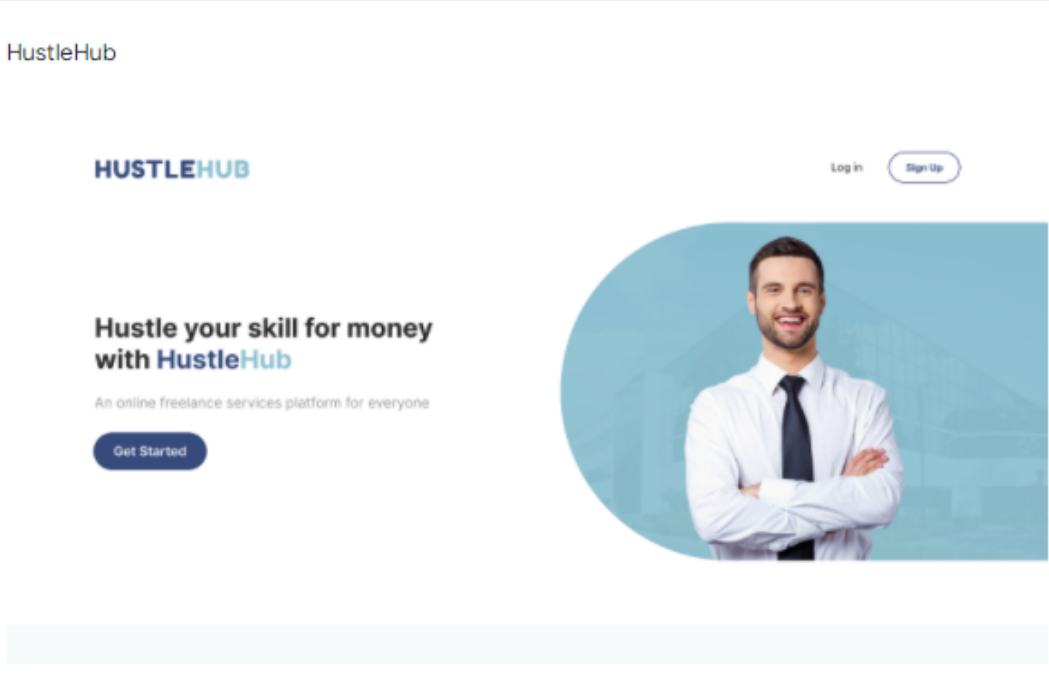
As part of the required deliverables, we need to conduct our survey to assess the HustleHub's quality. With that, we would like to ask for your permission to participate as one of our respondents in this survey. Rest assured that your answer will be treated with utmost confidentiality.

Thank you for your kind cooperation. If you have any questions or clarification, feel free to reach out by sending an email to us at princevelasco16@gmail.com or tdgrelox@gmail.com.

Sincerely,
ALPHA

* Required

HustleHub

HUSTLEHUB   Log in   Sign Up

Hustle your skill for money with HustleHub

An online freelance services platform for everyone

Get Started

Data Privacy Consent Form

In compliance with the Data Privacy Act (DPA) of 2012, effective since September 8, 2016, I allow the ALPHA Researchers to store and use data for the purpose of their research study, and other purposes stated within the document.

Upon filling up the form, I give my full consent and authorization the ALPHA Researchers to:

1. Use my personal data for this activity only authorized for this academic year 2021-2022.
2. The ALPHA Researchers will retain my information only until the execution of the said activity at any time.
3. Access to the responses of this form will be limited to ALPHA Researchers only.
4. Improper use of the information in this form (online, offline, or printed) will be subjected to appropriate actions under the Data Privacy Act of 2012 and the University Student Handbook.
5. We understand and assured that the necessary precautions will be taken by the UNIVERSITY and the ALPHA Researchers to protect any personal information.

We also acknowledge that we have attained the consent from all parties relevant to this consent by filling up the required email above.

DATA PRIVACY POLICY STATEMENT

FEU Group of Schools is committed to uphold the rights of individuals to data privacy.

Each person shall be guided by the principles of transparency, legitimate purpose and proportionality in processing personal data of students, parents, employees, external parties, and other stakeholders. These principles shall guide the university in the acquisition, use and dissemination of the cited personal data.

Transparency. Data subjects must be aware of the nature, purpose, and extent of the processing of his or her personal data, including the risks and safeguards involved, the identity of the personal information controller, his or her rights as a data subject, and how these can be exercised.

Legitimate Purpose. Personal data collected shall be processed based on declared and specified purpose, and shall not be contrary to law, morals, or public policy.

Proportionality. Processing of personal data shall be adequate, relevant, suitable, necessary, and not excessive in relation to the functions of the institution.

We shall adhere to all the provisions of Republic Act No. 10173 or the Data Privacy Act of 2012, its Implementing Rules and Regulations, relevant policies and issuances of the National Privacy Commission, and all other requirements and standards for continuous improvement and effectiveness of personal data security management system.

FEU GROUP OF SCHOOLS

By checking the "I agree" box, you understand the Data Privacy Consent Form. *

◉ I agree.

◯ I disagree.

Demographics Profile

First Name

Arthom

Last Name

Callejo

Gender

○ Female

⦿ Male

○ Prefer not to say

○ Other: _____

Age

23

HustleHub Website Prototypes

Before proceeding to the rating section of this questionnaire, we would like to try to use it with an open mind. You can register an account and try to use the features of the website. After which, please rate using the inscribed following areas according to your experience.

FUNCTIONALITY

Functional requirements specify actions that a system must be able to perform, without taking physical constraints into consideration. This includes features, capabilities, and securities.

Q1: The user can create and view Gigs under the MyGigs module. *

- ⦿ Strongly Agree (5)
- ○ Agree (4)
- ○ Neither/Nor Agree (3)
- ○ Disagree (2)
- ○ Strongly Disagree (1)

Q2: The user can acquire and offer a freelancer a Gig. *

- ⦿ Strongly Agree (5)
- ○ Agree (4)
- ○ Neither/Nor Agree (3)
- ○ Disagree (2)
- ○ Strongly Disagree (1)

Q3: The user can create a new Gig. *

- ⦿ Strongly Agree (5)
- ○ Agree (4)
- ○ Neither/Nor Agree (3)
- ○ Disagree (2)
- ○ Strongly Disagree (1)

Q4: The user can upload a file or a photo in his/her account. *

- ⦿ Strongly Agree (5)
- ○ Agree (4)
- ○ Neither/Nor Agree (3)
- ○ Disagree (2)
- ○ Strongly Disagree (1)

Q5: The user can view their previous transactions. *

- ⦿ Strongly Agree (5)
- ○ Agree (4)
- ○ Neither/Nor Agree (3)
- ○ Disagree (2)
- ○ Strongly Disagree (1)

USABILITY

Usability includes looking at, capturing, and stating requirements based around user interface issues - things such as accessibility, interface aesthetics, and consistency within the user interface.

Q1: The user can easily navigate through the system. *

- ⦿ Strongly Agree (5)
- ○ Agree (4)
- ○ Neither/Nor Agree (3)
- ○ Disagree (2)
- ○ Strongly Disagree (1)

Q2: The system's layout is well organized and appealing. *

- ⦿ Strongly Agree (5)
- ○ Agree (4)
- ○ Neither/Nor Agree (3)
- ○ Disagree (2)
- ○ Strongly Disagree (1)

Q3: The user did not feel discomfort during the experience with the platform. *

- ⦿ Strongly Agree (5)
- ○ Agree (4)
- ○ Neither/Nor Agree (3)
- ○ Disagree (2)
- ○ Strongly Disagree (1)

Q4: Color variations in information systems are sufficient in terms of brightness and color contrast. *

- ⦿ Strongly Agree (5)
- ○ Agree (4)
- ○ Neither/Nor Agree (3)
- ○ Disagree (2)
- ○ Strongly Disagree (1)

RELIABILITY

Reliability includes aspects such as availability, accuracy, and recoverability - for example, computations, or recoverability of the system from shut-down failures.

Q1: The platform generated the appropriate and consistent data just as I expected it to be. *

- ◉ Strongly Agree (5)
- ◯ Agree (4)
- ◯ Neither/Nor Agree (3)
- ◯ Disagree (2)
- ◯ Strongly Disagree (1)

Q2: The platform does not fail considering a number of transactions. *

- ◉ Strongly Agree (5)
- ◯ Agree (4)
- ◯ Neither/Nor Agree (3)
- ◯ Disagree (2)
- ◯ Strongly Disagree (1)

Q3: The platform informed me of my wrong inputs. *

- ◉ Strongly Agree (5)
- ◯ Agree (4)
- ◯ Neither/Nor Agree (3)
- ◯ Disagree (2)
- ◯ Strongly Disagree (1)

Q4: The platform does not need to be restarted when an error occurs. *

- ◯ Strongly Agree (5)
- ◉ Agree (4)
- ◯ Neither/Nor Agree (3)
- ◯ Disagree (2)
- ◯ Strongly Disagree (1)

PERFORMANCE

Performance involves things such as throughput of information of the system, system's response time (which is also related to usability), recovery time, and start-up time.

Q1: The platform was able to respond to my action swiftly. *

- ◉ Strongly Agree (5)
- ○ Agree (4)
- ○ Neither/Nor Agree (3)
- ○ Disagree (2)
- ○ Strongly Disagree (1)

Q2: The platform's interface is loaded almost immediately. *

- ◉ Strongly Agree (5)
- ○ Agree (4)
- ○ Neither/Nor Agree (3)
- ○ Disagree (2)
- ○ Strongly Disagree (1)

Q3: The platform's processing speed is commendable. *

- ◉ Strongly Agree (5)
- ○ Agree (4)
- ○ Neither/Nor Agree (3)
- ○ Disagree (2)
- ○ Strongly Disagree (1)

SUPPORTABILITY

In supportability, this is where we specify a number of other requirements such as testability, adaptability, compatibility, configurability, installability, scalability, localizability, compatibility, and so on.

Q1: The platform is responsive, it can adapt to different screen sizes. *

- ⦿ Strongly Agree (5)
- ◯ Agree (4)
- ◯ Neither/Nor Agree (3)
- ◯ Disagree (2)
- ◯ Strongly Disagree (1)

Q2: The user did not feel the need to ask for help from a technical person to be able to use the platform. *

- ◯ Strongly Agree (5)
- ⦿ Agree (4)
- ◯ Neither/Nor Agree (3)
- ◯ Disagree (2)
- ◯ Strongly Disagree (1)

Q3: The system can be used with platform browsers. *

- ⦿ Strongly Agree (5)
- ◯ Agree (4)
- ◯ Neither/Nor Agree (3)
- ◯ Disagree (2)
- ◯ Strongly Disagree (1)

Other comments/suggestions: *

None