CAREER PLATFORM APPLICATION

By

XXXXXXXXX

A Final Project submitted to the School of Science and Technology in Partial Fulfilment of the requirements for the degree of Bachelor of Science in Applied Computer Technology.

(SUMMER SEMESTER 2024) UNITED STATES INTERNATIONAL UNIVERSITY-AFRICA

ACKNOWLEDGEMENTS

I would like to express my deepest appreciation to all those who provided me the possibility to complete this project. A special gratitude to our final year project supervisor, Dr Paul Okanda, whose contribution in stimulating suggestions and encouragement, helped me to coordinate my project and in writing this report.

Furthermore I would also like to acknowledge my friends who listened to me whine about my life constantly and for supporting me throughout my project without whom I would not have reached this point with my sanity still (mostly) intact.

A special thanks to my parents John Finney and Helen, for encouraging me in all of my pursuits and inspiring me to follow my dreams and for supporting me emotionally and financially.

DECLARATION OF ORIGINAL WORK

"I certify that the material contained in this report is my own work and does not contain unreferenced or unacknowledged material. I also warrant that the above statement applies to the implementation of the project and all associated documentation. Regarding the electronically submitted version of this submitted work, I consent to this being stored electronically and copied for assessment purposes, including the Department's use of plagiarism detection systems in order to check the integrity of assessed work. I agree to my dissertation being placed in the public domain, with my name explicitly included as the author of the work."

Date: XXXXX Signed:

Abstract

To address these challenges, there was a growing need for a comprehensive platform that empowered individuals to explore career options, acquire relevant knowledge and guidance, and connect with valuable resources and networking opportunities. Traditional job search methods and career development resources often failed to provide a holistic and personalized approach, leaving many professionals feeling overwhelmed and uncertain about their career trajectories.

This project proposed the development of an innovative career web application that would serve as a one-stop solution for students, professionals, and job seekers alike. The application aimed to revolutionize the way individuals approached their careers by offering a seamless and immersive experience that combined cutting-edge technology, data-driven insights, and personalized support.

From career exploration and decision-making tools to personalized coaching and mentorship opportunities, the web application was designed to empower users to gain a deeper understanding of their strengths, interests, and potential career paths. Interactive assessments, tailored recommendations, and a knowledgeable chatbot were intended to guide users in making informed decisions about their professional futures.

Moreover, the web app offered a wealth of career advice, industry insights, and educational resources to foster continuous learning and professional development. Users would have access to a vast library of articles, webinars, and networking events, ensuring they stayed up to date with the latest trends and best practices in their respective fields.

TABLE OF CONTENTS

TABLE OF FIGURES

1. Introduction

The rapidly evolving job market and the changing nature of work had highlighted the importance of career development and lifelong learning. In the dynamic landscape, individuals were expected to navigate frequent career transitions, adapt to new technologies, and continuously upskill to remain competitive (Lent, 2018). However, traditional career resources and job search platforms often fell short in providing comprehensive and personalized support, leaving many professionals feeling overwhelmed and uncertain about their career trajectories.

According to a survey by Gallup (2022), nearly half of American workers were actively searching for new job opportunities, highlighting the need for effective career exploration and job search tools. Additionally, research by the Society for Human Resource Management (SHRM) (2021) indicated that employees who received personalized career development support were more likely to experience higher job satisfaction, increased productivity, and lower turnover rates.

Career decision-making was a complex process influenced by various factors, including individual interests, values, skills, and labor market trends (Patton & McMahon, 2014). Effective career guidance required a holistic approach that considered these diverse factors and provided tailored support to help individuals make informed choices (Sampson et al., 2020).

Networking and professional connections also played a crucial role in career development and job search success (Adler & Kwon, 2002). However, traditional networking opportunities were often limited by geographical constraints or lack of access to relevant industry events and communities.

Furthermore, the rise of artificial intelligence (AI) and machine learning technologies had opened new possibilities for personalized career recommendations and job matching (Xu et al., 2020). By leveraging data-driven insights and predictive analytics, these technologies could identify patterns and provide more accurate career guidance based on an individual's unique profile and preferences.

2. Literature Review

2.1 Global scale

2.1.1 Monster.com

Career websites began as simple job boards in the early 1990s, coinciding with the advent of the internet. As shown in Figure 1, pioneering sites like Monster.com, founded in 1994, and CareerBuilder, launched in 1995, were among the first to provide online job listings. These platforms revolutionized job searching by making job advertisements accessible online, which significantly increased their reach and efficiency compared to traditional newspaper ads (Lublin, 1994).

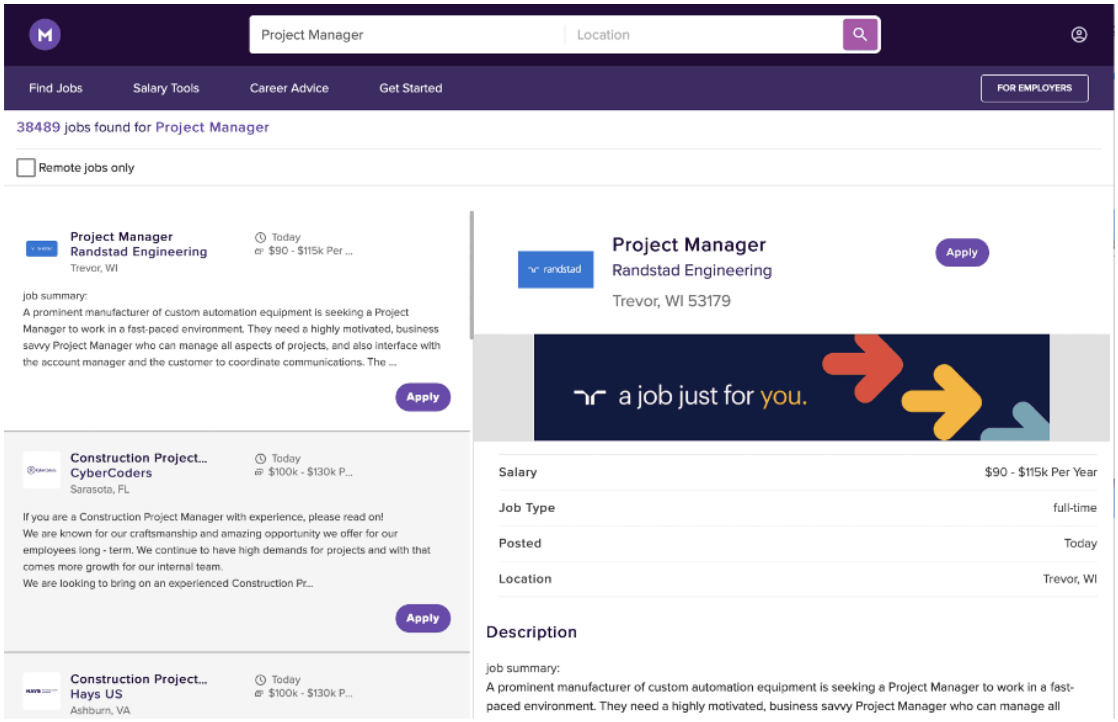


Figure 1 - Monster Website

Source: (Monster Jobs - Job Search, Career Advice & Hiring Resources | Monster.com, n.d.)

This figure shows a job search interface designed for users seeking employment opportunities. The interface features a search bar at the top, allowing users to input job titles and locations to refine their search. In this example, the term "Project Manager" has been entered, resulting in 38,489 job listings.

On the left side of the interface, a list of job postings is displayed. Each listing provides essential details such as the job title, company name, location, salary range, and a brief job summary. Users can see when the job was posted and have the option to apply directly through the interface by clicking the "Apply" button.

The right side of the interface offers a detailed view of a selected job posting, including more comprehensive information about the role, salary, job type, posting date, and location. The job summary is expanded, providing a fuller description of the position's responsibilities and requirements. Additionally, there is a visual element, such as an advertisement or company logo, enhancing the user experience.

The interface also includes options for users to filter their search results, such as a checkbox for remote jobs only. The design is clean and user-friendly, making it easy for job seekers to navigate and find relevant job opportunities efficiently.

These platforms primarily function as job boards, allowing users to search for job listings and upload their resumes for potential employers to review (Nikolaou, 2021). While these platforms offer basic job search functionality, they often fall short in providing personalized career guidance, professional development resources, and networking opportunities.

2.1.2 LinkedIn

As internet usage became more widespread, career websites evolved to offer more than just job listings. Platforms like LinkedIn, founded in 2003, introduced professional networking to the online space, allowing users to create profiles, connect with colleagues, and build professional networks, as shown in Figure 2. LinkedIn's integration of networking with job searching marked a significant shift in how individuals approached their career development (Smith, 2012).

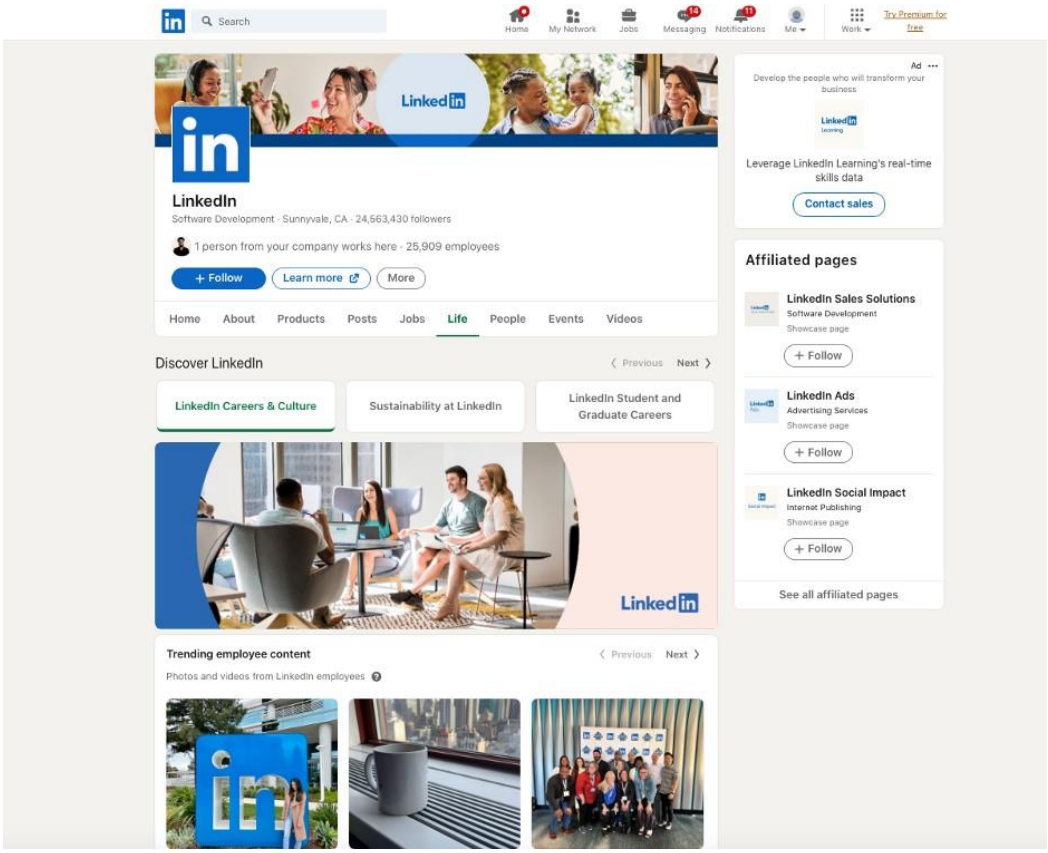


Figure 2 - LinkedIn Website

Where profiles allowed users to network more effectively (LinkedIn: Log in or Sign Up, n.d.)

This figure shows a corporate profile page on LinkedIn, designed to provide information about the company, its culture, and its job opportunities. At the top of the page, the company name "LinkedIn" is prominently displayed, along with its location (Sunnyvale, CA), follower count (24,563,430 followers), and a link indicating how many employees from the viewer's company work there (25,909 employees). Users have the option to follow the company, learn more about it, or access additional options via the "More" button. The navigation bar below the company information includes links to various sections of the profile: Home, About, Products, Posts, Jobs, Life, People, Events, and Videos. The "Life" section is currently selected, highlighting aspects of the company's culture and employee experiences.

Below the navigation bar, there is a "Discover LinkedIn" section with clickable tabs leading to different aspects of the company's culture and initiatives, such as "LinkedIn Careers & Culture," "Sustainability at LinkedIn," and "LinkedIn Student and Graduate Careers." Further down, the "Trending employee content" section showcases photos and videos from LinkedIn employees, providing a glimpse into the company's work environment and employee activities.

This section includes a carousel of images and videos that users can scroll through. On the right side of the page, there are advertisements and links to affiliated pages, such as LinkedIn Sales Solutions, LinkedIn Ads, and LinkedIn Social Impact, encouraging users to follow these related profiles.

During this period, websites also started incorporating resources like resume builders, interview tips, and career advice articles. For instance, Indeed, launched in 2004, not only aggregated job listings from various sources but also provided company reviews and salary information, giving job seekers a more comprehensive view of potential employers.

In the 2010s, career websites began to integrate interactive tools and personalized guidance. Some platforms have focused on enhancing user experience through technology. For example, MyPlan.com offers career assessments and personality tests to help users understand their strengths and interests, aligning them with suitable career paths.

2.1.3 The Muse

Platforms like The Muse, as shown in Figure 3, provide career advice tailored to individual needs, with a strong emphasis on personal development and career coaching. Additionally, there are career assessment tools and coaching services available, such as those offered by organizations like Gallup Strengths Center and The Muse. These resources aim to help individuals identify their strengths, interests, and potential career paths (Hirschi et al., 2020). However, these services are typically offered as standalone products or require separate subscriptions, limiting their integration with comprehensive job search and career development platforms.

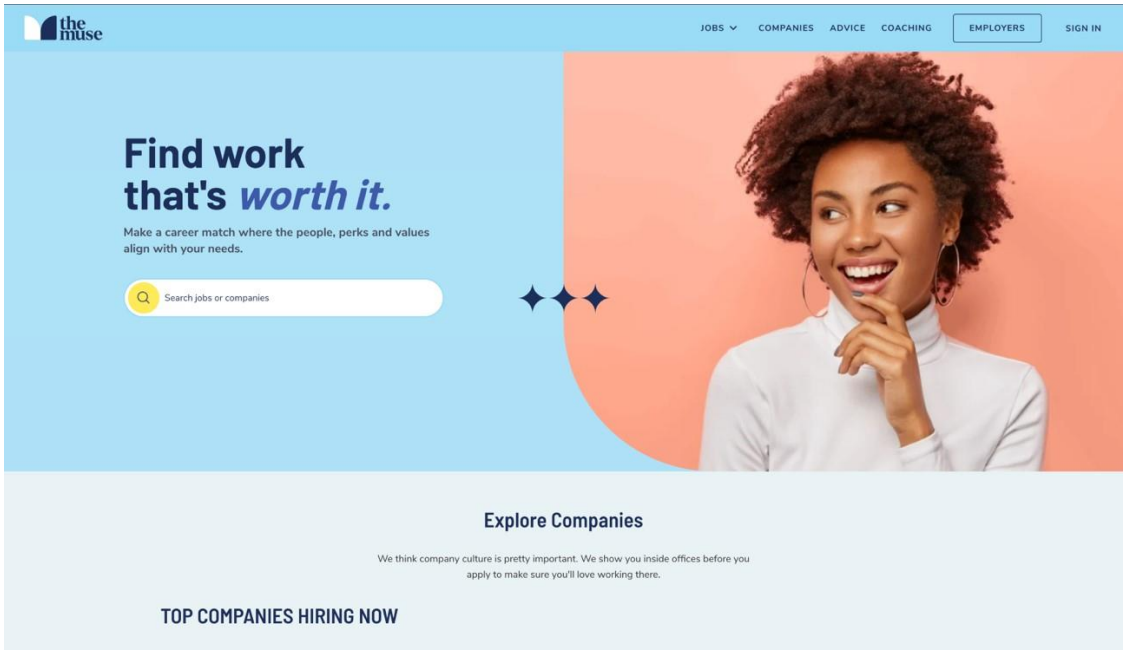


Figure 3 - The Muse Website

Where career advice was offered to its users *(The Muse, n.d.)*

This figure shows the homepage of The Muse, a career development and job search platform. The design prominently features a call to action encouraging users to "Find work that's worth it." This tagline is accompanied by a subtext that emphasizes making a career match where the people, perks, and values align with the user's needs. On the left side of the page, there is a search bar where users can search for jobs or companies. The search bar is strategically placed to be one of the first elements visitors see, encouraging immediate engagement.

To the right of the search bar is an image of a woman smiling, reinforcing a positive and inviting atmosphere. Below the main search area, there is a section titled "Explore Companies," which emphasizes the importance of company culture. It suggests that the platform offers insights into company offices to help users ensure they will enjoy working there.

Some companies have also developed employer branding and recruitment solutions, such as Workday and iCIMS, to assist organizations in attracting and managing talent (Sivertzen et al., 2013). However, these solutions are primarily targeted towards businesses and do not directly cater to the needs of individual job seekers or professionals seeking career development resources.

2.2 Local scale

2.2.1 BrighterMonday

In Kenya, the career development and job search landscape is still relatively small and budding, with limited options for comprehensive and integrated platforms. Traditional job boards like BrighterMonday and MyJobMag have gained popularity, allowing Kenyan job seekers to browse and apply for job listings (Njoroge, 2020), as can be seen in Figure 4. However, these platforms primarily focus on job postings and lack robust career guidance, professional development resources, and networking features.

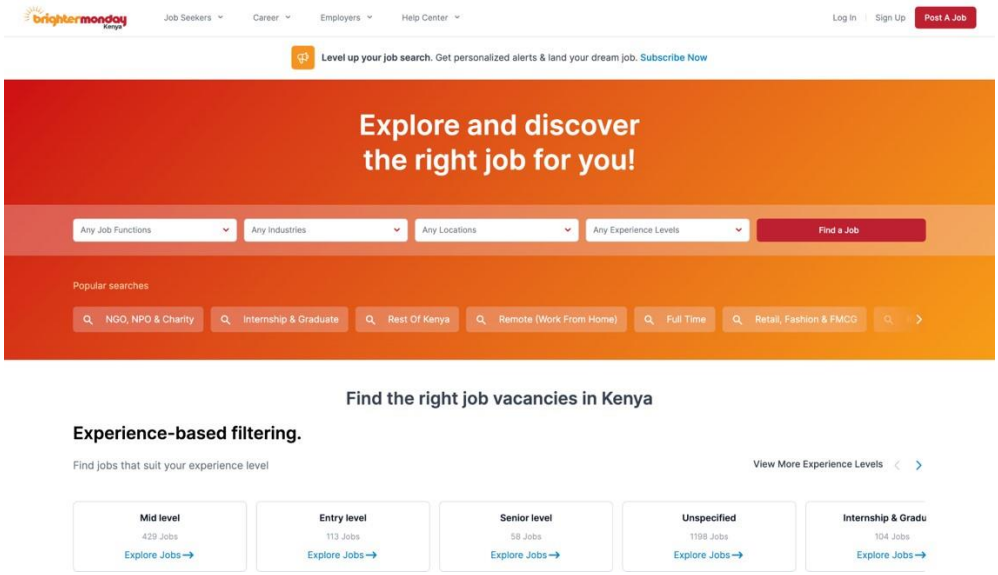


Figure 4 - BrighterMonday Website

Similar to LinkedIn where users can find job listings online *(BrighterMonday Kenya, 2024)*

This figure shows the homepage of BrighterMonday, a job search and career development platform in Kenya. The design prominently features a vibrant and dynamic header with the message "Explore and discover the right job for you!" This tagline is intended to engage users immediately, encouraging them to start their job search. Below the main message, there are several dropdown menus for refining job searches by various criteria, including job functions, industries, locations, and experience levels. This allows users to tailor their job search to their specific needs and preferences. A prominent "Find a Job" button is positioned to the right of these filters, inviting users to execute their search. Additionally, there are popular search tags such as "NGO, NPO & Charity," "Internship & Graduate," "Rest of Kenya," "Remote (Work From Home)," "Full Time," and "Retail, Fashion & FMCG." These tags provide quick access to commonly searched job categories, enhancing user convenience.

2.2.2 Kazi Mtaani

The Kenyan government had also implemented initiatives like the National Employment Authority (NEA) and the Kazi Mtaani program, which aim to connect job seekers with employment opportunities and provide vocational training (National Employment Authority, 2022). However, these programs tend to be more focused on specific sectors or target groups and may not offer a comprehensive solution for individuals across various career stages and industries.

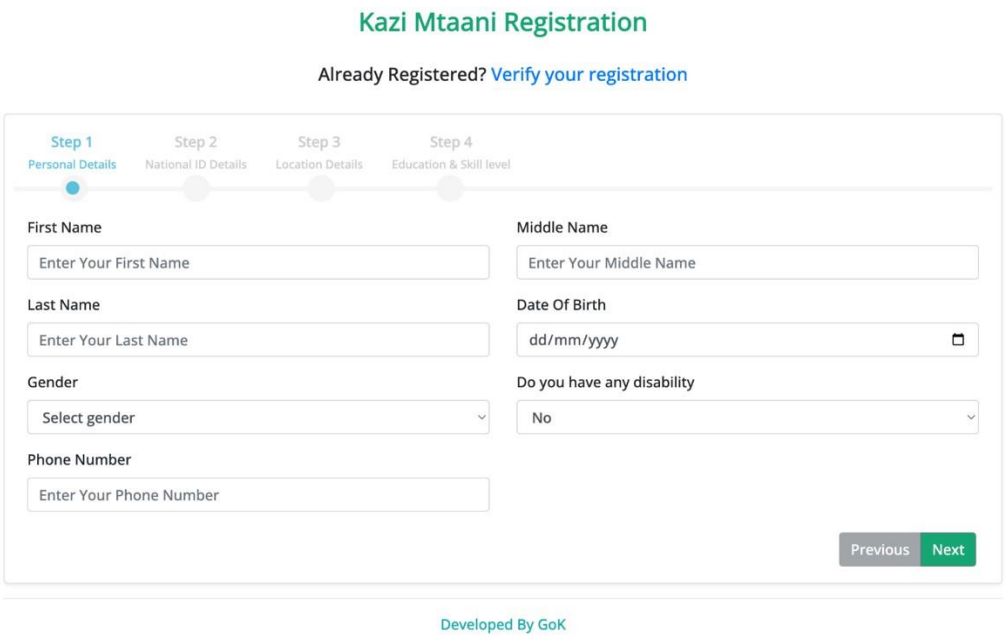


Figure 5 - Kazi Mtaani Website

(Kazi Mtaani Registration, n.d.)

This figure shows the registration page for the "Kazi Mtaani" program, a government initiative aimed at providing employment opportunities. The registration process is broken down into four steps: Personal Details, National ID Details, Location Details, and Education & Skill Level. The design also includes navigation buttons at the bottom right corner: "Previous" (grayed out and inactive since it's the first step) and "Next" (active for proceeding to the next step). Above the form, there is a message indicating whether the user is already registered, with a link to verify their registration status. At the bottom of the page, it is mentioned that the system is "Developed By GoK" (Government of Kenya).

Local recruitment agencies and career counseling centers also played a role in the Kenyan job market, offering services such as resume writing, interview preparation, and career advice (Kimuyu & Omiti, 2000). However, these services are often fragmented, and accessing them can be challenging for individuals in remote or underserved areas.

Overall, while there were existing systems and resources available globally and locally, there was a lack of a comprehensive platform that integrated personalized career guidance, job search functionalities, professional development resources, networking opportunities, and employer branding solutions into a seamless and user-friendly experience. This gap highlighted the need for an innovative career website that can address the diverse needs of individuals and organizations in Kenya and beyond.

2.3 Strengths and Weaknesses

Table 1

Website/Application	Strengths	Weaknesses
Global Scale		
Monster	- Pioneering job board - Revolutionized job searching by moving ads online - Increased reach and efficiency compared to newspaper ads	- Lacks personalized career guidance - Limited professional development resources - No networking opportunities
Career Builder	- Early online job listings - Simplified job application process	- Similar weaknesses to Monster.com - Limited integration of comprehensive career development tools
LinkedIn	- Introduced professional networking - Allows users to create profiles and connect with colleagues - Comprehensive professional network building	- Networking-centric, may not provide personalized career guidance - Limited professional development resources beyond networking

Indeed	- Aggregates job listings from various sources - Provides company reviews and salary information - Comprehensive view of potential employers	- Primarily focuses on job listings - Lacks personalized career guidance and professional development resources
MyPlan	- Offers career assessments and personality tests - Helps users understand strengths and interests - Aligns users with suitable career paths	- Services may require separate subscriptions - Limited integration with job search functionalities
The Muse	- Provides career advice tailored to individual needs - Emphasis on personal development and career coaching	- Career advice may require standalone subscription - Limited job search functionalities
Local Scale (Kenya)		
BrighterMonday	- Popular job board in Kenya - Allows browsing and applying for job listings	- Focuses primarily on job postings - Lacks robust career guidance and networking features
MyJobMag	- Another popular job board in Kenya - Facilitates job application process	- Similar to BrighterMonday - Limited career development resources and networking opportunities
Kazi Mtaani Program	- Government initiative - Provides vocational training and employment opportunities	- Limited scope - Focused on specific target groups, not a comprehensive career platform

The table above shows the strengths and weaknesses between different career websites and applications

Based on the strengths and weaknesses given in the table above, there was a growing need for a comprehensive platform that empowered individuals to explore career options, acquire relevant knowledge and guidance, and connect with valuable resources and networking opportunities. Traditional job search methods and career development resources often failed to

provide a holistic and personalized approach, leaving many professionals feeling overwhelmed and uncertain about their career trajectories.

My project proposed the development of an innovative career web application that served as a one-stop solution for students, professionals, and job seekers alike. The application aimed to revolutionize the way individuals approached their careers by offering a seamless and immersive experience that combined cutting-edge technology, data-driven insights, and personalized support.

From career exploration and decision-making tools to personalized coaching and mentorship opportunities, the website empowered users to gain a deeper understanding of their strengths, interests, and potential career paths. Interactive assessments, tailored recommendations, and a knowledgeable chatbot guided users in making informed decisions about their professional futures.

3. Aims and Objectives

The primary aim of the career application project was to serve as an innovative and comprehensive platform that empowered students, professionals, and job seekers to effectively navigate their career paths.

3.1 General Aims and Objectives

To enhance career development accessibility, we aimed to develop an integrated platform that provided comprehensive career development resources easily accessible to a broad audience, including job seekers, professionals, and employers.

By leveraging technological advancements, we utilized cutting-edge technologies, such as AI and machine learning, to offer personalized career guidance, enhance user engagement, and streamline job search processes.

Ensuring data security and privacy was crucial, so we implemented robust security protocols to protect user data, ensuring compliance with international and local data privacy laws and regulations.

Additionally, our goal was to foster career growth and networking by creating an ecosystem that supported mentorship, coaching, networking opportunities, and provided up-to-date information on career-related events.

3.2 Specific Aims and Objectives

The specific aims and objectives of this project were to;

- Conduct a literature survey to identify the requirements for the project, including the programming languages, tools, and technologies necessary for development.
- Design and develop a prototype Career Application with features such as coaching and mentorship services, resources for career advice, a section to keep up to date with career events or networking opportunities, and an AI Chatbot service.
- Perform user testing and validation to assess the extent to which the prototype system addresses the challenges identified earlier.

4. Proposed Project

The proposed project aimed to develop an innovative and comprehensive Career Development Web Application designed to facilitate career growth and guidance for students, professionals, and career counselors. This platform featured key functionalities such as access to valuable career resources, networking events, and mentorship opportunities.

Additionally, the application integrated an advanced AI chatbot using OpenAI's GPT to provide personalized career advice and support. Users benefited from a user-friendly interface, robust authentication, and an administrative panel for managing resources, events, and mentors.

The project was structured into three phases: initial research and requirements gathering, detailed design and implementation, and thorough testing and evaluation, culminating in a final presentation and comprehensive documentation. The aim of this project was to create a powerful tool to enhance career development and professional growth for its users.

4.1 Phases of the project

4.1.1 Phase one

Research

Conducting extensive research was the first step in identifying the goals for the project, which included determining the programming languages, tools, and technologies necessary for development. This research provided a clear understanding of the technical and functional requirements needed to build the platform. The research phase involved analyzing existing career development platforms, identifying their strengths and weaknesses, and understanding user expectations and technological trends. Key decisions made during this phase included selecting React for the front end, Firebase for the backend and database management, and OpenAI's GPT for the AI chatbot functionality.

Requirements gathering

Gathering all the essential requirements was crucial for guiding the design and development phases of the platform. This phase involved extensive consultations with potential users, including students, professionals, and career counselors, to understand their needs and pain points. Technical specifications were also detailed, such as user authentication, data storage, and security protocols. The result was a comprehensive list of user needs and technical specifications that served as the foundation for the platform’s development. These

requirements ensured that the platform would be user friendly, secure, and capable of delivering personalized career guidance.

Proposal

The project proposal was presented as a detailed outline of the best solution for creating the career website, incorporating the key features and functionalities identified during the research and requirements gathering phases. This proposal included a description of the platform's main components, such as the career resources library, networking events section, mentorship opportunities, and AI-powered chatbot. It also highlighted the technical architecture, user interface design principles, and security measures to be implemented. The proposal served as a roadmap for the development process, ensuring that all stakeholders were aligned on the project goals and expected outcomes.

4.1.2 Phase two

Software Design

The design phase focused on crafting the fundamental components of the system, including the user interface, database architecture, and interactions between various components such as the web app and the APIs. The user interface was designed to be intuitive and user-friendly, with a clean, modern look inspired by leading tech websites. Wireframes and mockups were created to visualize the layout and functionality of each section of the platform. The database architecture was structured to efficiently handle user data, resources, events, and mentorship information, ensuring scalability and security. Interaction design included defining the APIs for user authentication, resource management, event scheduling, and AI chatbot integration, ensuring seamless communication between the client and server.

Software Implementation

The implementation phase involved coding and integrating the designed components into a complete product. The front end was developed using React, ensuring a responsive and dynamic user experience. Firebase was employed for backend services, providing real-time data synchronization and robust authentication mechanisms. The AI chatbot was integrated using OpenAI's GPT, offering users personalized career advice and support. Each feature, from career resources to mentorship booking and event management, was implemented following the specified requirements and design guidelines.

Software Testing and Evaluation

Thorough testing was conducted to ensure the platform met all requirements and to identify and rectify bugs and defects. Unit tests, integration tests, and end-to-end tests were performed to verify the functionality of individual components and their interactions. Automated testing tools like Jest and Cypress were used to streamline the testing process and ensure comprehensive coverage. User acceptance testing (UAT) was also carried out to gather feedback from potential users and stakeholders, ensuring the platform was user-friendly and met their needs. Performance testing was done to ensure the platform could handle high traffic and data loads efficiently. The evaluation process included continuous monitoring and iterative improvements based on test results and user feedback, ensuring a reliable and robust final product.

4.1.3 Phase three

First Project Presentation

The initial presentation of the project was made to the lecturer, aiming to gather feedback and identify any necessary additions, deletions, or changes required for the final product. The presentation covered the research, design, and implementation phases, showcasing the platform's key features and functionalities. Feedback from the lecturer was crucial in refining the project, highlighting areas for improvement and validating the overall approach. This phase allowed for constructive criticism and provided a roadmap for the final stages of development.

Project Write-Up

The project write-up documented the entire process, encompassing the research, design, implementation, testing, and feedback stages. Each phase was meticulously detailed, outlining the objectives, methodologies, and outcomes. The write-up included the technical specifications, design decisions, implementation challenges, and testing results. It also documented the feedback received during the first project presentation and the subsequent adjustments made to the platform. This comprehensive documentation served as a valuable resource for understanding the project's evolution and the rationale behind key decisions.

Final Project Presentation and Submission of Report

The final project presentation showcased the completed platform, highlighting its success, challenges, and overall outcomes. The presentation demonstrated how the feedback from the first project presentation was incorporated to enhance the platform. The final version of the project was evaluated based on its functionality, user experience, and technical robustness. The accompanying final report summarized the project's achievements, evaluated its impact, and provided recommendations for future improvements. The report included an analysis of the project's strengths and areas for further development, offering insights for future iterations and potential enhancements. This comprehensive presentation and report marked the culmination of the project, demonstrating its value and potential in the field of career development.

4.2 Program of work

4.2.1 Phase one

Objective: Define the project requirements, present the proposal, and gather detailed requirements from stakeholders.

1.1 Research

Tasks:

- Identify the programming languages, tools, and technologies necessary for development.
- Conduct research to understand the technical and functional requirements.
- Review similar platforms for insights and best practices.

Deliverables:

- Technical and Functional Requirements

Timeline: 1 week

1.2 Requirements Gathering

Tasks:

- Compile a comprehensive list of user needs and technical specifications.

Deliverables:

- Requirements Specification Document

Timeline: 1 week

1.3 Proposal

Tasks:

- Develop a project proposal outlining the best solution for creating the career website.
- Define key features and functionalities based on research findings.
- Present the proposal to the lecturer for approval.

Deliverables:

- Project Proposal Document

Timeline: 2 weeks

4.2.2 Phase two

Objective: Design the system, implement the components, and ensure the platform meets all requirements through thorough testing.

2.1 System Design

Tasks:

- Design the user interface and user experience.

- Develop the database schema and architecture.
- Define interactions between various components such as the web app and APIs.

Deliverables:

- Design diagrams
- Wireframes and Mockups
- Database Schema

Timeline: 2 weeks

2.2 Software Implementation

Tasks:

- Set up the development environment.
- Implement user authentication (registration, login, logout).
- Develop main application features (Career Resources, Networking Events, Mentorship, AI Chatbot).
- Integrate with Firebase for authentication and data storage.
  Implement admin panel for managing resources, events, and mentors.
- Develop and integrate the AI chatbot using OpenAI API.

Deliverables:

- Source Code
- Live web application

Timeline: 3 weeks

2.3 Software Testing and Evaluation

Tasks:

- Perform unit testing.
- Conduct integration testing.
- Fix identified bugs and issues.

Deliverables:

- Test Cases
- Test Reports
- Bug Reports

Timeline: 2 weeks

4.2.3 Phase three

Objective: Present the project, document the process, and submit the final report. **3.1 First**

Project Presentation

Tasks:

- Present the project to the lecturer.
- Gather feedback to identify any additions, deletions, or changes required for the final product.

Deliverables:

- Presentation Slides
- Lecturer Feedback

Timeline: 1 week

3.2 Project Write-Up

Tasks:

- Complete the documentation of the entire project process, including research, design, implementation, testing, and feedback stages.
- Compile a comprehensive project report.

Deliverables:

- Final Project Report

Timeline: 1 week

3.3 Final Project Presentation and Submission of Report Tasks:

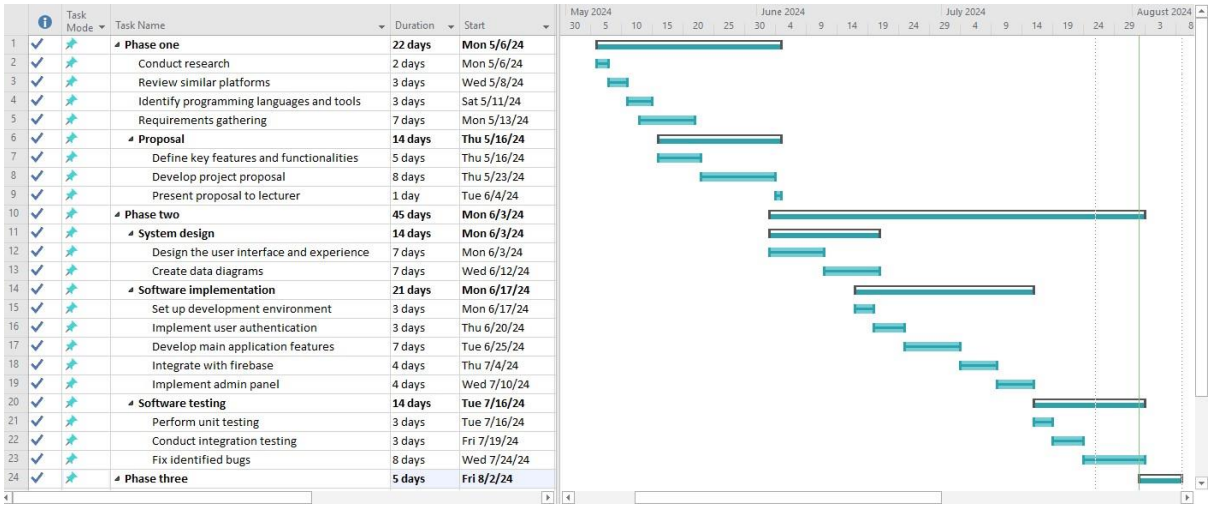
- Present the final version of the project to the lecturer.
- Outline the project's success, challenges, and overall outcomes.
- Submit the final report that summarizes the project's achievements, evaluates its impact, and provides recommendations for future improvements.

Deliverables:

- Presentation Slides
  Final Project Report Submission

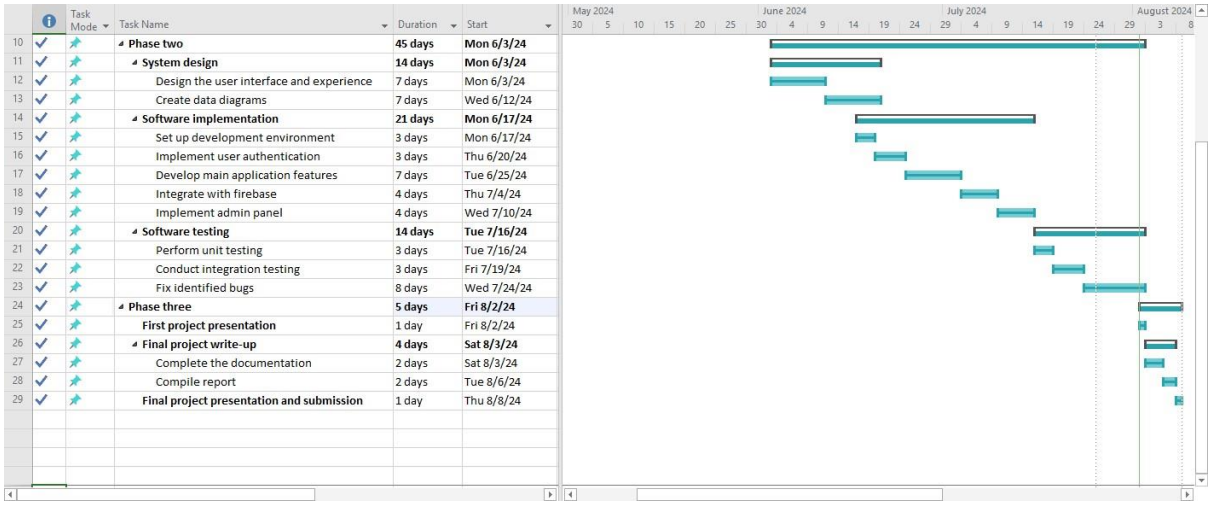
Timeline: 1 week

4.3 Gantt Chart



	Task Mode	Task Name	Duration	Start
1		**Phase one**	**22 days**	**Mon 5/6/24**
2		Conduct research	2 days	Mon 5/6/24
3		Review similar platforms	3 days	Wed 5/8/24
4		Identify programming languages and tools	3 days	Sat 5/11/24
5		Requirements gathering	7 days	Mon 5/13/24
6		**Proposal**	**14 days**	**Thu 5/16/24**
7		Define key features and functionalities	5 days	Thu 5/16/24
8		Develop project proposal	8 days	Thu 5/23/24
9		Present proposal to lecturer	1 day	Tue 6/4/24
10		**Phase two**	**45 days**	**Mon 6/3/24**
11		**System design**	**14 days**	**Mon 6/3/24**
12		Design the user interface and experience	7 days	Mon 6/3/24
13		Create data diagrams	7 days	Wed 6/12/24
14		**Software implementation**	**21 days**	**Mon 6/17/24**
15		Set up development environment	3 days	Mon 6/17/24
16		Implement user authentication	3 days	Thu 6/20/24
17		Develop main application features	7 days	Tue 6/25/24
18		Integrate with firebase	4 days	Thu 7/4/24
19		Implement admin panel	4 days	Wed 7/10/24
20		**Software testing**	**14 days**	**Tue 7/16/24**
21		Perform unit testing	3 days	Tue 7/16/24
22		Conduct integration testing	3 days	Fri 7/19/24
23		Fix identified bugs	8 days	Wed 7/24/24
24		**Phase three**	**5 days**	**Fri 8/2/24**

Figure 6 – Gantt Chart



	Task Mode	Task Name	Duration	Start
10		**Phase two**	**45 days**	**Mon 6/3/24**
11		**System design**	**14 days**	**Mon 6/3/24**
12		Design the user interface and experience	7 days	Mon 6/3/24
13		Create data diagrams	7 days	Wed 6/12/24
14		**Software implementation**	**21 days**	**Mon 6/17/24**
15		Set up development environment	3 days	Mon 6/17/24
16		Implement user authentication	3 days	Thu 6/20/24
17		Develop main application features	7 days	Tue 6/25/24
18		Integrate with firebase	4 days	Thu 7/4/24
19		Implement admin panel	4 days	Wed 7/10/24
20		**Software testing**	**14 days**	**Tue 7/16/24**
21		Perform unit testing	3 days	Tue 7/16/24
22		Conduct integration testing	3 days	Fri 7/19/24
23		Fix identified bugs	8 days	Wed 7/24/24
24		**Phase three**	**5 days**	**Fri 8/2/24**
25		**First project presentation**	1 day	Fri 8/2/24
26		**Final project write-up**	**4 days**	**Sat 8/3/24**
27		Complete the documentation	2 days	Sat 8/3/24
28		Compile report	2 days	Tue 8/6/24
29		**Final project presentation and submission**	1 day	Thu 8/8/24

Figure 7 – Gantt Chart Continued

The figures above illustrate a Gantt chart for the career development web application project. The Gantt chart visually represents the project's timeline, spanning from May 6, 2024, to August 8, 2024, and outlines the major phases and tasks involved. The chart indicates that each task has been assigned a specific duration, start date, and dependencies, ensuring a structured and sequential progression through the project phases. Each phase is marked by critical milestones that collectively aim to achieve the successful completion of the career development web application by the project's end date.

4.4 Requirements

Below are the software, hardware, server and budget requirements for the project:

4.4.1 Software

Code editor

- Visual Studio Code

Web browser

- Safari
- Brave

Chatbot API

- ChatGPT by OpenAI
- Dialogflow by Google

4.4.2 Hardware

Personal Computer

4.4.3 Server

Database server

- MongoDB
- Firebase

4.4.4 Budget

There will be no budget for the project as all the software will be free to use, and all the hardware will be my personal items.

References

Adler, P. S., & Kwon, S. W. (2002). Social capital: Prospects for a new concept. Academy of Management Review, 27(1), 17-40.

BrighterMonday Kenya. (2024, June 28). Find the right job vacancies in Kenya. BrighterMonday. https://brightermonday.co.ke/

Brown, J., & Taylor, S. (2020). Innovations in Career Development Platforms: A Comprehensive Review. Journal of Career Services, 15(3), 101-119.

Gallup. (2022). State of the Global Workplace: 2022 Report. https://www.gallup.com/workplace/349484/state-of-the-global-workplace.aspx

Hirschi, A., Pausits, A., & Steinmetz, J. (2020). Career decision-making in times of uncertainty: A review of the literature. Journal of Career Development, 47(6), 669-690.

Kazi Mtaani Registration. (n.d.). https://register.kms.go.ke/

Kimuyu, P., & Omiti, J. (2000). Institutional impediments to access to credit by micro and small scale enterprises in Kenya. Discussion Paper No. 2000-26, IPAR.

Lent, R. W. (2018). Career life preparedness: Revisiting career planning and adjustment in the new workplace. The Career Development Quarterly, 66(2), 178-188.

LinkedIn: Log in or sign up. (n.d.). LinkedIn. https://linkedin.com/

Lublin, J. S. (1994). Job Seekers Rush to the Web. The Wall Street Journal.

Monster Jobs - job search, career advice & hiring resources | Monster.com. (n.d.). Monster. https://monster.com/

National Employment Authority. (2022). About Us. https://nea.go.ke/about-us/

Nikolaou, I. (2021). Recruiting and job search in the digital era. In: The Cambridge Handbook of Technology and Employee Behavior. Cambridge University Press.
Njoroge, J. (2020). The Role of Online Job Portals in Addressing Unemployment in Kenya. International Journal of Scientific Research and Management, 8(06), 541-549.

Patton, W., & McMahon, M. (2014). Career development and systems theory: Connecting theory and practice (3rd ed.). Sense Publishers.

Sampson, J. P., Lenz, J. G., Reardon, R. C., & Peterson, G. W. (2020). A cognitive theory of career problem solving and decision making. In Career development and counseling: Putting theory and research to work (3rd ed., pp. 63-114). Cognella Academic Publishing.

Sivertzen, A. M., Nilsen, E. R., & Olafsen, A. H. (2013). Employer branding: Employer attractiveness and the use of social media. Journal of Product & Brand Management, 22(7), 473-483.

Smith, J. (2012). The LinkedIn Effect: Professional Networking in the Digital Age. Harvard Business Review, 90(9), 34-45.

Smith, J., & Johnson, A. (2021). Evaluating the Effectiveness of Online Career Resources. Journal of Career Development, 48(3), 234-250.

Society for Human Resource Management (SHRM). (2021). SHRM Research: The Value of Membership. https://www.shrm.org/about-shrm/Documents/SHRM%20Research%20Overview%20FINAL.pdf

The Muse. (n.d.). The Muse logo. https://themuse.com/

Xu, D., Cao, Y., Jiang, J., Kumuthini, J., & Wells, A. J. (2020). Intelligent career recommendation system on large-scale job transition data. IEEE Access, 8, 4425844268.