Tribhuvan University
Faculty of Humanities and Social Sciences

A Project Proposal On
"HireNow"

Submitted To

Department of Computer Application

Lumbini City College

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In the partial fulfillment of the requirement for the Bachelor of Computer Application

Submitted by:

Sagar Paudel [T.U. Reg. No: 621134602019]

Deepen B.K. [T.U. Reg. No: 621134402019]

Under the Supervision of

Mr. Dinesh Neupane

CHAPTER 1: INTRODUCTION

Based on recent data from the Nepal Labor Force Survey (2017/18) and Labour Market Profile Nepal (2022/23), Nepal arise around 70,000 to 100,000 job vacancies annually. About 60% of these job applications are handled through traditional offline methods. Unfortunately, approximately 30% of job postings need to be reopened due to ineffective outreach or unsuitable candidates, resulting in a job placement success rate of just 20-25%. Additionally, 40% of job seekers report issues with spam and fraudulent postings, highlighting the need for secure, dedicated job platforms. To bridge the gap between employees and employers, we introduce **"HireNow,"** a job portal app built using Flutter and Firebase for reliable data management and smooth functionality across all devices. This app supports various job types, including online, offline, and physical jobs, with a special focus on micro jobs and niche roles that aren't suited for freelancing. It aims to increase job placement rates and reduce spam.

For employees, it simplifies the process of finding and applying for jobs. Users can search for jobs based on their skills and interests, upload their CVs, and write personalized cover letters. Before applying, users can make payments through an integrated payment system. The app includes multiple screens: a home page with job recommendations, an activity screen to track the status of applications and contracts, a contract page for job contract details, a message screen for chatting with employers, and a profile screen displaying user details.

Employers can easily post job listings by filling out detailed forms that include all necessary information, such as requirements and responsibilities. After posting a job, employers can review proposals from candidates and generate contracts to hire them. The app features various screens for employers, including a jobs section to view the status of their listings (like hired, completed, interview, open), a talents screen to browse available candidates, and a chat feature for interviewing and directly communicating with potential hires.

CHAPTER 2: PROBLEM STATEMENT

In today's fast-paced world, finding a job in the context of Nepali job market can be really frustrating. The process often involves multiple time-consuming steps. When a company has a job opening, the notice is usually sent to job links or social media. Job seekers then have to visit these platforms, pay a fee to access full job details, and physically go to the company to submit their CVs. Approximately 30% of job postings need to be reopened due to ineffective outreach or unsuitable candidates, making it difficult to track the status of applications. This lengthy and complicated process can be very tiresome for both job seekers and employers.

Here are some common problems with current job platforms:

- **Ineffective Outreach and Complex Process:** Finding and applying for jobs through offline processes and third-party mediums, offices involves many steps, making it slow and frustrating as well ineffective outreach to all job seeker.

- **Lack of Streamlined Hiring:** Many platforms don't simplify the hiring process, resulting in outdated and complicated procedures.

- **Inconsistent User Interface:** Job apps often have confusing and inconsistent designs, which make them difficult to use.

- **Missing Integrated Features:** Essential features like interviewing, proposal tracking, and real-time job updates are often missing within application, making the process disjointed.

- **Trust Issues and Cyberthreats:** Job seekers and employers often face trust and reliability issues due to a lack of verification and security, as well as misuse of personal information leading to spam, fraud, digital harassment and unwanted ads, link.

"HireNow" is here to address these issues. It simplifies the hiring process, offers a user-friendly interface, and includes features for interviews, proposal tracking, and more. By focusing on problem, requirements and job markets, app aims to make job searching and hiring easier, faster, and more reliable for everyone.

CHAPTER 3: OBJECTIVES

Here are the main objectives of the application that aim to address current market challenges and provide a unique, efficient solution for employees and employers:

- **To Streamline Job Applications:** Simplify job searching and applying by reducing time-consuming steps, making the process faster and more efficient.

- **To Improve Job Placement Success:** Increase job placement rates by effectively matching employers with suitable candidates, reducing the need to reopen 30% of postings.

- **To Offer a User-Friendly Design:** Enhance user engagement with a clean, intuitive interface that personalizes the job search experience for job seekers and employers.

- **To Integrate Key Features:** Provide essential tools like interview scheduling, proposal tracking, and real-time job updates to create a cohesive and efficient job search experience.

- **To Enhance Security and Cut Spam:** With 40% of job seekers reporting issues with spam and fraudulent postings, HireNow will implement robust security measures and verification processes to protect users and reduce spam incidents.

- **To Focus on Micro and Niche Jobs:** Cater to the specific needs of the Nepali job market by focusing on micro jobs and niche roles that aren't typically covered by freelancing platforms, broadening job opportunities.

CHAPTER 4: METHODOLOGY

In the development of the "HireNow" application, we will utilize the Agile methodology to ensure a flexible, iterative, and user centric approach. Agile will allow us to build the app in small, manageable sprints, focusing on core functionalities such as job searching, application submissions, employer job postings, and secure communication. By regularly incorporating feedback and iterating on features, we can adapt to evolving use cases and requirements, ensuring the app meets the specific needs of local job seekers and employers. This methodology will facilitate continuous improvement, real-time problem solving, and efficient delivery of a robust and user friendly platform, ultimately providing a seamless and effective hiring process for all users.

4.1 Requirement Identification

4.1.1 Study of Existing System

The current job market is inundated with a variety of platforms and methods for connecting job seekers and employers. Despite the abundance of resources, significant gaps and challenges persist. Traditional job portals, social media platforms, and specialized job websites each have unique drawbacks that hinder their effectiveness.

General Job Portals

Traditional job portals like Indeed, Glassdoor cater to a broad audience, offering diverse job listings. However, they often focus on high-profile professional jobs rather than covering all job types. These platforms also struggle with high levels of scamming, making it challenging for users to find jobs that closely match their skills. Employers face difficulties managing applications and ensuring a secure hiring process (Mutai, 2020).

Social Media Platforms

Social media platforms like Facebook and LinkedIn groups are commonly used for job postings but come with significant drawbacks. Job posts in private groups require membership, limiting accessibility. The lack of robust search and engagement tools makes it difficult to find genuine opportunities. Additionally, fraud and spam are prevalent, which can obscure real job offers and lead to user frustration. However, social media can also effectively connect professionals and engage them in one place.

Freelancing Platforms

Freelancing platforms such as Fiverr and Upwork primarily focus on online and tech-related jobs, leaving a gap for local and micro jobs. These platforms often require

international payment systems, which can be a barrier for users seeking local or small-scale employment opportunities. While they cater to a large market and help reduce unemployment by providing freelancing opportunities, they are less suited for addressing the needs of local job markets.

Job Portals in Nepal

In Nepal, job portals like Rojgari, Kumari Job, and Jobs Nepal offer job listings but face several limitations. These platforms often suffer from inconsistent user interfaces, low engagement, and trust issues due to fraudulent listings. They also lack advanced features and robust functionalities that could enhance the job-seeking and hiring experience. Challenges related to infrastructure and digital literacy further impact their effectiveness (Joshi, 2024; Shakya, 2024).

Country-Based Local Job Apps

Country-specific local job apps have proven effective in addressing the unique needs of local job markets. For instance, "WORK JAPAN: Jobs in Japan," "Lokal Jobs" in India, and "Jora Jobs" in Australia and New Zealand successfully connect local employers with job seekers. These apps focus on domestic job markets and make it easier for international students and workers to search for jobs within the country. By reducing dependency on international platforms and media, they increase user engagement and employment rates while also providing a convenient solution for international job seekers, students and workers (Adhyapramana, 2021).

4.1.2 Literature Review

The existing literature on job portals and online job search methods highlights the limitations and challenges faced by both job seekers and employers. Studies such as those by Jansen et al. (2005) and Ahmad & Bakri (2018) provide insights into the behaviors of job seekers using online portals, emphasizing the need for improved search functionalities and user engagement tools. These studies reveal that while traditional job portals offer a wide range of listings, they often fail to meet the specific needs of local markets.

Social media platforms, despite their popularity, are not without flaws. Ahmad and Bakri (2018) discuss the inefficiencies of using social media for job searches, pointing out the restricted access due to private groups and the prevalence of scams and fake posts. Similarly, the study by Pope and Sydnor (2011) highlights the issues of spam and fraudulent listings on classified ad websites like Craigslist, further complicating the job search process for users.

The integration of machine learning in job portals has been explored by Murthy and Karkera (2021), who suggest that while technology can enhance job matching, there remains a significant gap in addressing the needs of local job markets. The International Journal of Technology and Engineering also underscores the problem of fake job recruitment, stressing the importance of robust verification processes to protect job seekers from fraudulent job offers.

In the context of Nepal, job portals like Rojgari.com, Kumari Job, and Jobs Nepal have been found lacking in terms of user satisfaction and effective job matching. Research by Joshi (2023) highlights the cognitive approach of Nepali youth job seekers towards online recruitment, revealing the limitations of these platforms in addressing local market needs.

E-governance in Nepal also faces significant challenges in implementing effective online job portals. Shakya (2018) discusses the progress and possibilities of e-governance in Nepal, indicating that despite efforts to improve digital infrastructure, there are still many hurdles to overcome in terms of accessibility, user experience, and reliability.

In conclusion, the existing literature and studies of current job portal systems underscore the need for a platform like "HireNow," which addresses the specific challenges of local job markets. By focusing on all types of job opportunities, providing secure communication and payment solutions, and leveraging modern technology to enhance job matching, aims to fill the gaps left by traditional and specialized job portals, social media platforms, and classified ad websites.

4.1.3 Requirement Analysis

The "HireNow" requirement analysis defines the needs to address job market gaps and deliver a robust solution for employees and employers.

1. **Functional Requirements**

   User Registration and Login: Employees and employers can easily create accounts, log in, and manage their profiles and settings.

   Job Posting and Management: Employers can post job listings, review and manage proposals, create contracts, and conduct interviews.

   Proposal and Contract Tracking: Employees can search for jobs, apply, and track their proposals and contract statuses, including details of jobs they've been hired for.

   Job Search and Apply: Offer a powerful search tool to find jobs based on skills, experience, location, and job type, with filters to refine results.

Personalized Job Recommendations: Provide job suggestions tailored to users based on their profiles, past searches, and application history.

2. **Non-Functional Requirements**

User Interface (UI): Intuitive and user friendly design that is easy to navigate for both employees and employers.

Scalability: Ability to handle a growing number of users and job postings without performance issues.

Response Time: Fast loading times for job listings, application processing, and messaging.

Data Protection: Secure storage and protection of user data and job-related information against unauthorized access.

Reliability: High uptime and availability to ensure constant access to the application.

Cross Platform Support: Functionality across various devices and operating systems, including iOS and Android.

4.2 Feasibility Study

The application is feasible from technical, operational, and economic perspectives as outlined.

i. **Technical Feasibility**

Technology Stack: The app will be built using Flutter for cross platform support (iOS and Android) and Firebase for backend services (real-time database, authentication, and cloud storage).

Integration: Includes secure payment gateways, real-time messaging, and advanced search functionality.

Complexity: Medium complexity, involving integration of multiple systems and real-time features.

Scalability: Firebase provides scalability to handle increasing users and job postings efficiently.

ii. **Operational Feasibility**

User Experience: Designed to be user friendly with minimal learning curve. Simple interface for employees and employers.

Maintenance: Regular updates and support will be necessary to ensure smooth operation and to address bugs or issues.

Compliance: Aligns with e-governance standards to ensure data protection and regulatory.

iii.   Economic Feasibility

Development Costs: Utilizes cost effective technologies like Flutter and Firebase. Initial costs include design, development, testing, and deployment is minimal.

Operational Costs: Includes hosting, database management, ongoing support, and payment processing fees.

Revenue Model: Potential revenue from premium job listings, subscription plans, and in-app advertisements.

Market Potential: Strong demand for localized job platforms suggests a good return on investment, with focus on addressing gaps in the current market.

4.3 High Level Design of System

4.3.1 Methodology of the Proposed System
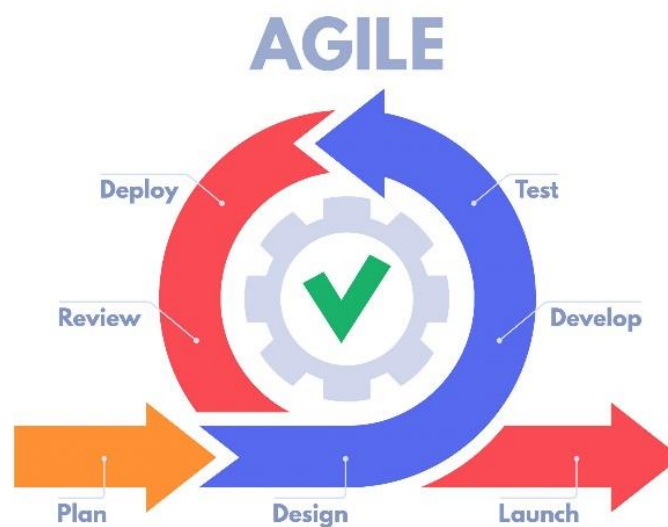
Fig 4.1: Agile Methodology
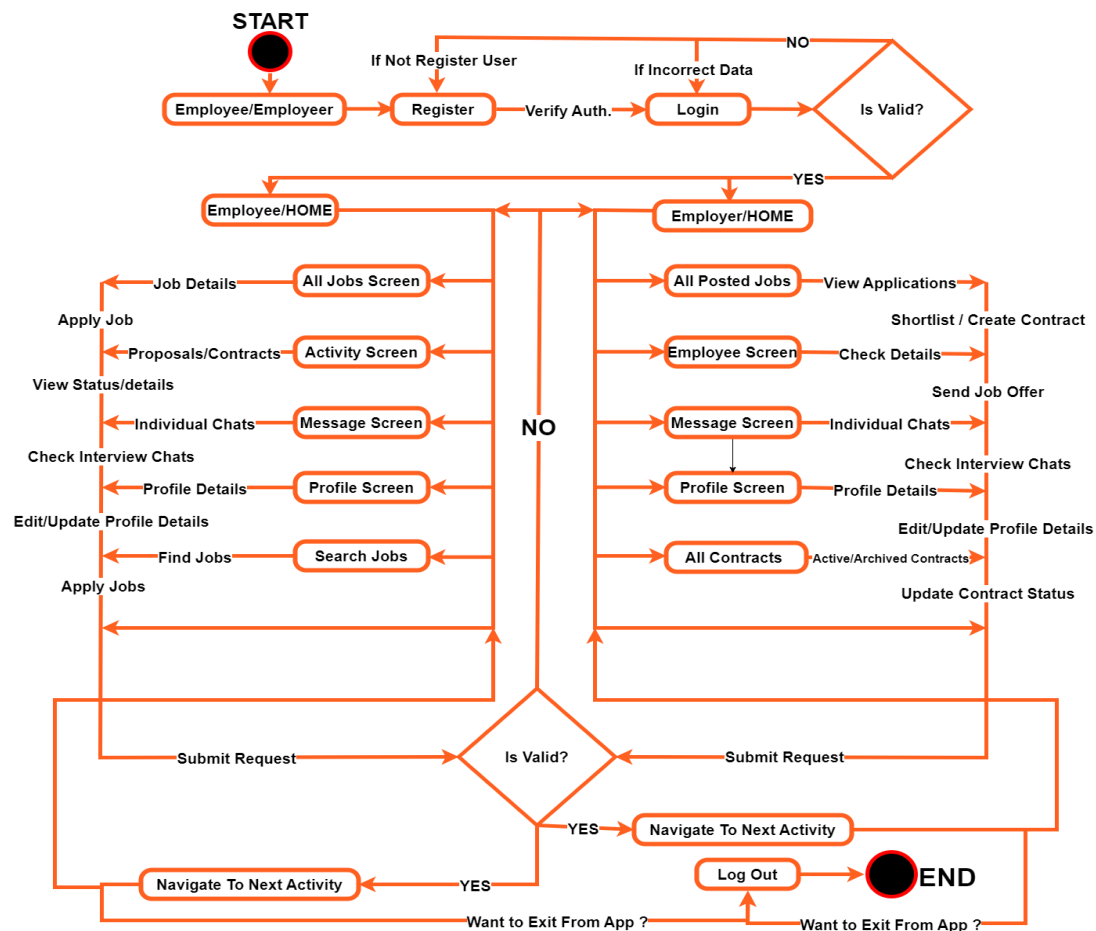
4.3.2 Working Mechanism of Proposed System

Fig: 4.2 Working Mechanism of HireNow
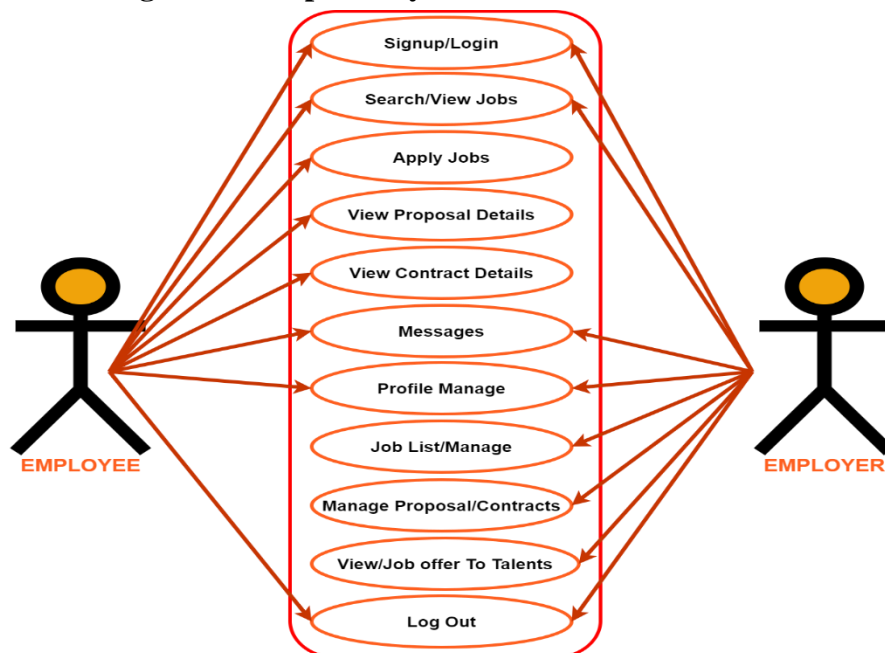
4.3.3 Use Case Diagram of Proposed System

Fig 4.3 Use Case Diagram of HireNow

4.3.4 Description of Algorithm

"HireNow" use algorithms and methods to achieve its objectives:

Recommendation Algorithm: Hybrid Collaborative Recommendation

The Hybrid Collaborative Recommendation Algorithm combines multiple recommendation techniques to improve the accuracy and relevance of job suggestions. In app, this algorithm integrates both user-based and item-based collaborative filtering approaches:

User-Based Collaborative Filtering: Finds similarities between users based on their job application history and preferences. It recommends jobs that similar users have liked or applied for.

Item-Based Collaborative Filtering: Recommends jobs similar to those the user has previously shown interest in, based on the similarity between jobs.

By combining these approaches, the Hybrid Collaborative Recommendation Algorithm offers more personalized job recommendations, taking into user profile details, search keywords, and application history.
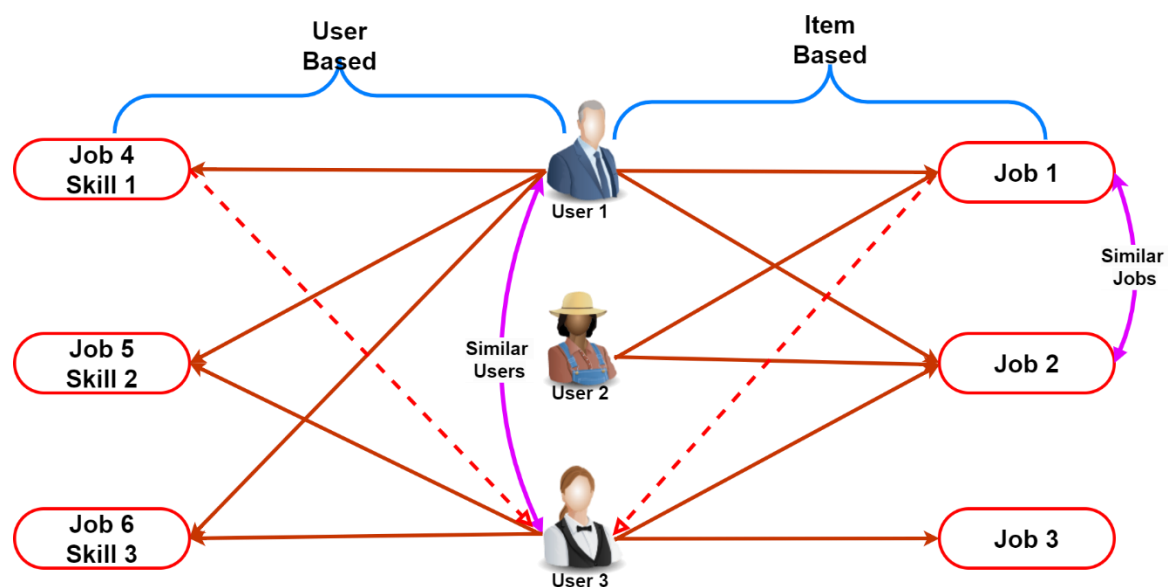
Fig 4.4 Hybrid Collaborative Recommendation

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CHAPTER 5: GANTT CHART

Tasks/Week	1 st	2 nd	3 rd	4 th	5 th	6 th	7 th	8 th	9 th	10 th	11 th	12 th
Documentation (Ongoing)	▓	▓	▓	▓	▓	▓	▓	▓	▓	▓	▓	▓
Planning & Req. gathering	▓										▓	
UI/UX Design		▓	▓					▓				
Firebase Integration				▓								
Authentication Setup				▓								
Upload and Fetch Data				▓	▓		▓					
Add Hybrid Collab. Rec. System						▓	▓					
Implement Filters and Sorting								▓				
Testing and Debugging									▓			
Deployment										▓		
Feedback and Iteration											▓	
Testing and Release												▓

Fig 5.1: Gantt chart

CHAPTER 6: EXPECTED OUTCOME

Expected Outcomes for the "HireNow" Application

- **Improved Job Placement Success:** Job placement rates will increase by effectively matching employers with suitable candidates, reducing the need to reopen 30% of postings.

- **Streamlined Hiring Process:** Employees will find it easy to apply for jobs, view proposals, and track contract statuses. Employers will be able to quickly list jobs, manage applications, conduct interviews, and hire candidates efficiently.

- **Enhanced Job Recommendations:** Personalized job suggestions will be provided through a hybrid collaborative recommendation system based on user profiles and activities.

- **Enhanced Security and Reduced Spam:** With 40% of job seekers reporting issues with spam and fraudulent postings, HireNow will implement robust security measures and verification processes to protect users and reduce spam incidents.

- **Effective Filtering and Sorting:** Job listings will be filterable and sortable by job type, experience level, and work mode, making it easier to find suitable opportunities.

- **Seamless Integration and Performance:** The app will use Firebase for smooth data management and real-time updates, while the backend will be scalable to handle increasing user numbers and job postings efficiently.

These outcomes aim to create a robust and efficient platform for both job seekers and employers, addressing key challenges in the job market.

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