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| **Final Year Design Project Proposal**    **Employment and Service Platform for Professionals and Skilled Workers**    **Faculty of Computing & Information Technology University of the Punjab Lahore, Pakistan**      **Project Advisor: Dr. Shuja Ur Rehman Baig**    **Submitted By:**   |  |  | | --- | --- | | **Roll Numbers** | **Names** | | BSEF21M017 | Malaika Urooj | | BSEF21M022 | Syeda Rubaisha | | BSEF21M028 | Amna Shahzadi | | BSEF21M034 | Aalia Siddique |               1 |

**Project Title:**

Employment and Service Platform for Professionals and Skilled Workers

**Abstract of the Proposal:**

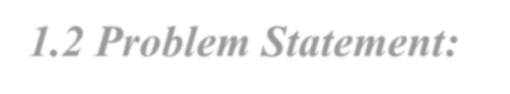
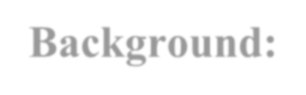
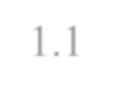
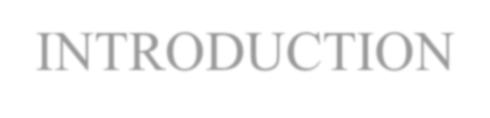
This project proposes the development of a mobile application that connects users in need of services (such as plumbing, tutoring, etc.) with available professionals. The app allows users to post service requests, which are immediately visible to nearby professionals through a location-based system. Professionals can view these requests and engage with users via in-app messaging to finalize details. The app aims to simplify the process of finding reliable professionals, offering features such as real-time notifications and secure communication. The mobile app will be developed using React Native for the frontend and ASP.NET Core for the backend, ensuring robust performance, scalability, and a user-friendly experience across platforms.

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# 1. INTRODUCTION

1.1 **Background:**

Unemployment affects both educated and uneducated individuals, with many facing difficulties in finding jobs suited to their skill set. While platforms like LinkedIn cater to professionals, there are very few platforms dedicated to hands-on workers like plumbers, drivers, electricians, and cooks etc. This project aims to bridge that gap, helping both educated and uneducated workers find jobs more easily by offering a dedicated platform that connects them with employers.



***1.2 Problem Statement:***

The core problem this project addresses is the lack of a digital platform tailored for both educated and uneducated workers. Existing job platforms are more suited to white-collar professionals, leaving tradespeople and service providers underserved. This platform seeks to provide a solution by offering location-based job searches, service requests, and an accessible interface designed for users with varying levels of digital literacy.

***1.3 Stakeholders & Interests****:*

1. **Job Seekers (Educated and Uneducated)**:
   * **Interest**: These are the primary users of the platform who seek job opportunities based on their skills. They want an easy-to-use interface that helps them find jobs, post their services, and communicate with potential employers.
   * **Role in SDLC**: Provide feedback during the **requirements gathering phase** to ensure the platform meets their needs. They may also participate in **user acceptance testing (UAT)** to validate the platform’s usability and accessibility.
2. **Employers**:
   * **Interest**: Employers use the platform to post jobs, view candidates, and contact job seekers directly. They expect the platform to provide easy filtering options, reliable candidate matching, and communication features.
   * **Role in SDLC**: Participate during the **requirements gathering** phase to provide insights on features needed for job posting, filtering, and communication. They also take part in **user acceptance testing** to confirm that the job posting and candidate search features work as expected.
3. **Platform Owners** (Developers, Maintenance, and Support Team): o **Interest**: They are responsible for the continuous operation, maintenance, and updates of the platform. They need the platform to be scalable, secure, and maintainable.
   * **Role in SDLC**: Involved in **all phases** of the SDLC, from planning and design to development, testing, deployment, and maintenance. They also handle **customer support** and **bug fixing** after the platform is launched.
4. **Project Manager**: o **Interest**: The project manager ensures that the project is completed on time, within budget, and meets the quality standards.
   * **Role in SDLC**: Responsible for **project planning, task management, and resource allocation**. They oversee the **development process**, ensuring communication among team members and stakeholders, and handle any risks or challenges that arise.
5. **Software Developers (Frontend and Backend)**:
   * **Interest**: Developers are tasked with building the platform according to the requirements specified. They are concerned with the technical aspects, including performance, scalability, and maintainability of the code.
   * **Role in SDLC**: Participate in the **design, development, and testing** phases. Frontend developers will work on the **React** UI, while backend developers will build the **ASP.NET Core API** and manage database interactions.
6. **UI/UX Designers**: o **Interest**: Designers are responsible for creating an intuitive and accessible interface for both skilled and unskilled users.
   * **Role in SDLC**: Play a crucial role in the **design phase**, ensuring the platform is user-friendly, visually appealing, and accessible to users with low digital literacy. They also collaborate with developers to ensure the design is implemented correctly.
7. **Testers/Quality Assurance (QA) Team**: o **Interest**: The QA team ensures that the platform is free of bugs and performs as expected across all devices and use cases.
   * **Role in SDLC**: Involved in the **testing phase**, conducting unit tests, integration tests, and user acceptance tests (UAT) to ensure the platform is robust, secure, and meets the functional requirements.
8. **Database Administrator (DBA)**: o **Interest**: The DBA ensures that the data stored in the platform is structured, secure, and efficiently managed.
   * **Role in SDLC**: Involved in the **development and maintenance** phases, responsible for database design, data integrity, and optimizing database performance. The DBA also helps ensure that the platform’s data storage complies with security and privacy regulations.
9. **Product Owner**:

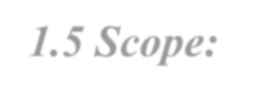
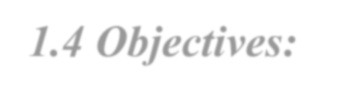
* **Interest**: The product owner is responsible for defining the vision of the platform and ensuring that it aligns with the business goals.
* **Role in SDLC**: Active during the **planning and requirement gathering** phases, they prioritize features and provide clarity to the development team on the product’s goals. They ensure that the final product delivers value to both job seekers and employers.

***1.4 Objectives:***

* Develop a user-friendly mobile application where job seekers can post their services.
* Allow employers to post jobs or services required and directly contact potential employees.
* Provide advanced search options, including location-based filters and skill-based searches.
* Enhance accessibility through features like voice search, language translation, and video tutorials.

***1.5 Scope:***

The platform will focus on job postings in several categories (e.g., plumbers, cooks, electricians), with advanced search functionality to allow users to find job opportunities or service providers. It will include user profiles, real-time messaging, and accessibility features, but will exclude heavy recruitment processes like resume evaluations and detailed employee background checks.



# 2. LITERATURE REVIEW

**1. Related Work:**

Several job platforms exist:

## 1.1 LinkedIn

LinkedIn is a professional networking platform designed primarily for educated individuals seeking career opportunities. It enables users to create detailed profiles showcasing their skills, experiences, and professional achievements. Users can connect with others in their industry, apply for jobs, and receive recommendations. However, LinkedIn is tailored towards professionals with a higher level of digital literacy, making it less accessible for unskilled workers or those with limited technical skills. Features like voice search and language translation are minimal, which may exclude a segment of potential users who need additional support to navigate the platform effectively. **1.2 Mahir App**



Mahir App connects users with skilled professionals for various services, including home repairs and cleaning. While it provides an easy way for users to find services, it is primarily aimed at users who have a certain level of digital literacy. The app lacks robust accessibility features, such as language translation and voice search, making it challenging for unskilled workers or users with low digital literacy to fully utilize its offerings. Additionally, Mahir App tends to target a niche market of freelancers, which may not cater to the broader unskilled worker demographic effectively.

## 1.3 Indeed

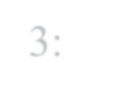
Indeed is a widely used job search platform that aggregates job listings from various sources, allowing users to search for employment opportunities easily. It offers features such as resume uploads and job alerts. However, like LinkedIn, Indeed is mainly geared towards individuals with some level of digital proficiency. While it provides extensive job listings, it does not prioritize accessibility features for unskilled workers, such as voice search or simple language interfaces. This limitation can hinder the ability of less digitally literate individuals to effectively engage with the platform and find suitable job opportunities.

**.**

***2. Gap Analysis:***

The gap that this project seeks to fill is the lack of a comprehensive platform that provides easy-to-use employment opportunities for both skilled and unskilled workers. Unlike existing platforms, this project emphasizes accessibility for users with low digital literacy, providing features such as voice search and language translation.

# 3: FYDP OVERVIEW



## FYDP Title: Employment Platform for Educated and Uneducated Workers to Reduce Unemployment

|  |  |  |  |
| --- | --- | --- | --- |
| **Sr. No** | **Roll Numbers** | **Name** | **Signatures** |
| 1. | Bsef21m017 | Malaika Urooj |  |
| 2. | Bsef21m022 | Rubaisha Zaidi |  |
| 3. | Bsef21m028 | Amna Shahzadi |  |
| 4. | Bsef21m034 | Aalia Siddique |  |

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| **FYDP Goals** |
| **1-**To develop a platform that connects educated and uneducated workers with employers, helping reduce unemployment. |
| **2-** To create an accessible interface that includes features such as voice search, chatbots, and language translation to accommodate users with varying levels of digital literacy. |
| **3-** To provide location-based job searching and service postings, making it easier for both employees and employers to find suitable opportunities. |
| **FYDP Objectives** |
| **1-**Develop a mobile platform where job seekers can create profiles and showcase their skills. |
| **2-**Allow employers to post jobs, view profiles, and directly contact job seekers. |
| **3-**Implement accessibility features like voice-based search, chatbots for assistance, and language translation to make the platform user-friendly. |
| **4-** Enable real-time communication between job seekers and employers using messaging. |
| **5-** Also provides location based search |
| **FYDP Success Criteria** |
| **1-**The platform should successfully handle 500+ registered users in its first three months of launch. |
| **2-** Positive feedback on accessibility features like voice search and translation. |
| 3- Secure, responsive, and user-friendly performance across mobile applications. |
| 4- An increase in successful job placements or service requests facilitated through the platform. |
| **Assumptions:** |
| Users will have access to basic internet services and devices (smartphones, computers). |
| Both educated and uneducated workers will be willing to use digital platforms to find employment opportunities. |
| Employers will actively use the platform to search for potential employees. |
| **Risks & Obstacles** |
| Data privacy and security issues may arise, particularly around sensitive user information. |
| Some users may have difficulty adapting to digital tools due to low digital literacy. |
| Competition from existing job search platforms may make it difficult to attract a user base. |
| The complexity of integrating accessibility features like voice search and language translation. |
| **Organization Address: FCIT, University of the Punjab, Lahore, Pakistan** |
| **Target End Users:** |
| Individuals who possess certain skills (e.g., electricians, plumbers, cooks, etc.) and are looking for job opportunities. They will be required to provide their national identity card (CNIC) to be eligible for job postings and applications |
| Unskilled individuals who are seeking employment in basic service roles such as helpers, drivers, or laborers. They must provide their CNIC to access job opportunities. |
| Employers, both businesses and individuals, who are looking to hire skilled or unskilled workers for various services. They will post job vacancies and connect with eligible workers who have a verified identity (CNIC). |
| Any individual in Pakistan can browse the App, view job categories, and explore services without the need for identity verification. However, they will not be able to apply for jobs or post services until they verify their identity through their CNIC. |
| Individuals or teams responsible for managing the platform, verifying identity cards, handling support requests, and maintaining user data security. |
| **Suggested Project Supervisor: Dr. Shuja Ur Rehman Baig** |
| **Approved By:** |
| **Date: October 08, 2024** |

# 4: TOOLS, LIBRARIES AND TECHNOLOGIES WITH REASONING

## 1. Table: Tools, Technologies, and Libraries for Frontend, Backend, and Microservices Development

|  |  |  |  |
| --- | --- | --- | --- |
| **Category** | **Tool/Library** | **Version** | **Purpose** |
| **Frontend** | Visual Studio Code | Latest | Code editor for writing and debugging React Native code. |
|  | Expo | Latest | Framework to develop and deploy React Native apps quickly. |

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|  | React Native | Latest | Framework for building crossplatform mobile applications. |
|  | React Navigation | Latest | Library for handling navigation and routing in React Native apps. |
|  | Axios | Latest | Promise-based HTTP client for making API requests. |
|  | Redux | Latest | State management library for managing app state. |
| **Backend** | Visual Studio 2022 | Latest | IDE for developing ASP.NET Core applications. |
|  | ASP.NET Core | 6.0+ | Framework for building APIs and backend logic. |
|  | Entity Framework Core | Latest | Object-Relational Mapping (ORM) for database operations (SQL Server). |
|  | Swagger | Latest | Tool for API documentation and testing. |
|  | Postman | Latest | API testing tool for ensuring seamless communication. |
|  | Docker | Latest | Containerization tool for deploying the application. |
| **Microservices** | ASP.NET Core Web  API | 6.0+ | To build individual microservices for different application components. |
|  | Docker | Latest | For containerizing each microservice for deployment. |
|  | Kubernetes | Latest | For orchestrating and  managing microservices in production. |
|  | RabbitMQ or Kafka | Latest | For handling messaging between microservices. |
| **Database** | SQL Server | Latest | Relational database management system for data storage. |
| **Real-time Communication** | SignalR | Latest | Library for adding real-time web functionality. |
| **Cloud Services** | Azure Cognitive Services | Latest | Provides language translation and chatbot integration. |
|  | Azure | Latest | Cloud hosting for deploying backend services and databases. |

# 5: WORK DIVISION

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Sr.**  **No** | **Roll Number** | **Name** | **Role Assignment** | **Work Division** |
| 1. | BSEF21M017 | Malaika Urooj | Backend Developer | Backend |
| 2. | BSEF21M022 | Rubaisha Zaidi | Frontend Developer | Frontend |
| 3. | BSEF21M028 | Amna Shahzadi | Project Manager | Backend |
| 4. | BSEF21M034 | Aalia Siddique | SQA & Database Administrator | Frontend |

# 6: REFERENCES

## 1. LinkedIn

LinkedIn: A professional networking platform for job searching, business networking, and professional development.

[https://www.linkedin.com](https://www.linkedin.com/)

## 2. Mahir App

Mahir: An app connecting users with skilled professionals for services like home repairs, cleaning, and more.

[https://www.mahircompany.com](https://www.mahircompany.com/)

## 3. Indeed

Indeed: A job search platform that aggregates job listings from various sources, helping users find employment opportunities easily. [https://www.indeed.com](https://www.indeed.com/)