FINAL YEAR PROJECT

Career Connect Narowal

Umair Aslam	20-UON-0573
Muhammad Hussain	20-UON-0594
Muhammad Shameer	20-UON-0583

BS COMPUTER SCIENCE (SESSION 2020-2024)

Supervised By: Mr. Zishan Zafar

FACULTY OF COMPUTING AND INFORMATION TECHNOLOGY

DEPARTMENT OF COMPUTER SCIENCE

UNIVERSITY OF NAROWAL FALL 2024

Circular Road Narowal, Punjab, Pakistan

And that there is not for man except that for which he strives.

(SURAH NAJAM: VERSE NO 39)

STATEMENT OF SUBMISSION

This thesis is submitted to Department of Computer Science, University of Narowal. This is certifying that **Umair Aslam** Registration No. **20-UON-0573**, **Muhammad Hussain** Registration No. **20-UON-0594** and **Muhammad Shameer** Registration No **20-UON-0583** successfully completed **Career Connect Narowal** as final year project at the department of Computer Science, University of Narowal, to fulfill the requirements of Bachelor's degree of Computer Science.

Project Coordinator	Project Supervisor
External Examiner	Coordinator

ACKNOWLEDGEMENT

With the blessings of Almighty Allah and the prayers of our parents, we have made this humble attempt to achieve the goal that was set for us at the beginning of this project. Although it was not an easy task, the research work embodied in this dissertation was accomplished under the able guidance and affectionate supervision of Mr. Zishan Zafar, Head of Department, Department of Computer Science.

Date: 11-07-2024

DEDICATION

We dedicate this project work to Almighty ALLAH our creator. He has been the source of our strength, knowledge and understanding throughout this research and in his name only have we soared. We also dedicate this report to our parents, whose unwavering faith, support, and encouragement have enabled us to position in the vital attempt to complete the project to hand.

ABSTRACT

Accessible and effective job solutions have grown extra necessary in current years, mainly for local groups. Companies struggle to perceive the right individuals, at the same time as job seekers regularly struggle to connect with potential employers and examine new competencies. In order to deal with those troubles, this study offers "Career Connect Narowal," an online employment portal [1] created especially to satisfy the necessities of the metropolis of narowal.

Thru the comprehensive platform provided through career connect narowal, job seekers can also sign up in free courses to increase their employability. With the help of this tool, customers may learn new skills which are in demand within the exertions market nowadays. By finding and pairing appropriate candidates with businesses, the portal serves as a middleman between job seekers and employers, rushing up the recruiting process and reducing the quantity of work needed to discover the appropriate fit.

The platform runs on a business method that guarantees sustainability even as providing beneficial offerings to the network. It makes cash via taking a ten% fee on a success hiring. Career connect narowal's target market is college and college students so as to develop a educated hard work force that could fulfill the desires of nearby corporations.

Career connect narowal, which turned into created with the help of the mern stack (mongodb, explicit, react, and node.js), gives an easy-to-use interface that makes the task search technique less complicated. Finding employment options that suit their desires and credentials is made easy for customers by means of the platform's smooth navigation.

Career Connect Narowal performs a essential position inside the digital transformation of narowal metropolis by tackling the vital issues of talent improvement and task matching. This initiative fosters community guide and economic prosperity. This initiative fosters a more a success and connected community through facilitating the powerful usage of local talent and improving the overall user enjoy.

Table of Contents

BS COMPUTER SCIENCE (SESSION 2020-2024) **1**
UNIVERSITY OF NAROWAL FALL 2024 ..... **1**
STATEMENT OF SUBMISSION ..... **II**
ACKNOWLEDGEMENT ..... **III**
DEDICATION ..... **IV**
ABSTRACT ..... **V**
CHAPTER 1: INTRODUCTION TO CAREER CONNECT NAROWAL **1**
1.1 Introduction 2
1.2 Project Heading 2
1.3 Project overview 3
1.4 project objectives and goals 3
1.4.1 Objectives 3
1.4.2 goals 3
1.5 Scope of Project 4
1.5.1 learning and skill development 4
1.5.2 extra employment possibilities 4
1.5.3 clean application process 4
1.5.4 tailored Employment Placement 4
1.5.5 system of user feedback 4
1.6 high-level factors of the system 5
1.6.1 Mern Stack web application 5
1.6.2 Analytics and Reporting Engine 5
1.6.3 Notification gadget through e mail 5
1.6.4 user management and the Admin Dashboard 5
1.7 list of useful units that are optional 5
1.7.1 data source 6
1.7.2 Multi-Language 6
1.7.3 advanced Analytical Framework 6
1.7.4 strengthened security Protocols 6

1.7.5 user reviews and ratings 6
1.8 exclusions 6
1.8.1 buying and installing hardware 6
1.8.2 configuring community infrastructure 6
1.8.3 development of ai algorithms 6
1.8.5 help and education for users 7
1.8.6 integration of legacy structures and data migration 7
1.8.7 renovation of hardware and software 7
1.9 Gantt Chart 7
1.10 Streamlined Job Matching and Database Interaction 8
1.11 hardware requirements 8
1.12 Software Specifications 9
1.12.1 Web Application Framework 9
1.12.2 Database Management System MySQL 9
1.12.3 Operating System 9
1.12.5 Programming Languages 9
1.12.6 Version Control 10
1.12.7 Additional Libraries and Tools 10
1.13 Tools and Technologies used with Reasoning 10
1.13.1 Web Server 10
1.13.2 MongoDB 10
CHAPTER 2: CAREER CONNECT NAROWAL FEASIBILITY REPORT 12
2.1 Introduction 13
2.2 Project/product Feasibility Report 13
2.2.1 Conceptual Viability 13
2.2.2 Practicality of Operation 13
2.2.3 guidance and assistance 14
2.2.4 realistic expense 14
2.2.5 Practicality of time table 15
2.5 Introduction to Team Members and Their Skills 19
2.6 Task and Members Assignment Table 19

2.7 Risk List 20
CHAPTER 3: OBJECT-ORIENTED ANALYSIS 24
3.1 Introduction 25
3.2 structure for web applications 25
3.2.1 Frontend Presentation Tier 25
3.2.2 utility/Server-aspect good judgment/Processing 25
3.3 Diagram of data flow 26
3.4Object-Oriented Analysis (OOA) 26
3.5 Class Diagrams 27
Figure 3.2: Class Diagram 27
3.6 ER Schematic 27
3.7 Diagrams in flow 28
3.9 Career Connect Narowal Implementation Process 29
Figure 3.8: Site Map 30
CHAPTER 4: METHEDOLOGY 31
4.1 Introduction 32
4.2 using generation to develop Careers in Narowal 32
4.3 MERN generation's advantages for career connect Narowal 32
4.3.1 better user experience 32
4.3.2 performance and Scalability 32
4.3.3 control of real-Time information 32
3.4 environment for integrated development 32
4.3.5 Strengthening the virtual Revolution in Narowal 33
4.4 purchaser communique using Career Connect Narowal 33
4.4.1 The reason of job Seekers in creating Profiles 33
4.4.2 developing an in-intensity profile 33
4.4.3 including Corresponding documents 33
4.4.4 making use of to Positions available 33
4.5 limitations and things to consider 34
4.6 Summarization 34
4.6.1 prospects for the destiny 34

4.6.2 Conclusions 35
CHAPTER 5: USER INTERFACE 36
5.1 Introduction: 37
5.2 Landing / Home Page 37
5.2.1 Homepage 37
Figure 5.1: Homepage(a) 37
Job Detail Page 38
Registration 39
5.4 Sign In 40
5.5 Job Seaker Dashboard 41
Job Seaker Update Profile 41
5.5.1 Job Seaker Applications 42
Figure 5.6: Job Seaker Applications 43
Recruiter Job Post Page 43
Recruiter Job Manage Page 44
Figure 5.8: Manage Job 44
Admin Statistics Page 44
Admin Applications Management Page 46
Admin Manage Users Page 48
Admin Job Request Management Page 47
Admin Manage Jobs Page 47
CHAPTER 6: SOFTWARE TESTING 49
6.1 Introduction 50
6.2 Test Plan 51
6.2.1 Purpose 51
6.2.2 range 51
6.2.3 desires for testing 51
6.2.4 Test Environment 52
6.2.5 Testing Approach 52
6.2.6 Testing Schedule 52
6.2.7 Resources 52

6.2.8 Deliverables 53
6.2.9 Risks and Mitigation 53
6.3 Test Cases 53
Table 6.1: User Login Test 53
Table 6.2: User Register Test 54
Table 6.4: Job Application Submission Test 58
6.3.5 Test Case: Application Status Updates Functionality 59
Table 6.5: Application Status Update Functionality 59
Table 6.6: Profile Update Functionality Test 60
Table 6.7: Password Change Functionality Test 61
Table 6.9: Email Functionality Test 64
Table 6.13: Responsiveness Test 64
REFERENCES 66

LIST OF TABLES

CHAPTER 1: INTRODUCTION TO CAREER CONNECT NAROWAL..... 1
Table 1.1: Gantt Chart 8

CHAPTER 2: CAREER CONNECT NAROWAL FEASIBILITY REPORT.....13
Table 2.1: Members's Skills 20
Table 2.2: Task and Dependencies 20

CHAPTER 3: OBJECT ORIENTED ANALYSIS 13
Table 3.1: Career Connect Narowal Implementation Process 20

CHAPTER 6: SOFTWARE TESTING..... 46
Table 6.1: User Login Test 50
Table 6.2: Register User Test 51
Table 6.3: User Creation and Processing Test 52
Table 6.4: Comment Functionality Test 53
Table 6.5: Status Update Functionality 54
Table 6.6: Profile Update Functionality Test.....55
Table 6.7: Password Change Functionality Test 56
Table 6.8: New User Registration by Admins Test.....57
Table 6.9: Filters Test 58
Table 6.11:Email Functionality Test 59
Table 6.12: In-App Notification Functionality Test 60
Table 6.13: Responsiveness Test 61

LIST OF FIGURES

CHAPTER 1: INTRODUCTION TO CAREER CONNECT NAROWAL 1
Figure 1.1: Career Connect Narowal Goals and Objectives. 4

CHAPTER 3: OBJECT-ORIENTED ANALYSIS 25
Figure 3.1: Data Flow Diagram 27
Figure 3.2: Class Diagram 28
Figure 3.3: Entity Relationship Diagram 29
Figure 3.4: User Flowchart 30
Figure 3.5: Admin Configuration Flowchart 30
Figure 3.6: Super admin Oversight Flowchart 31
Figure 3.8: Site Map 35

CHAPTER 5: USER INTERFACE 41
Figure 5.1: Homepage 42
Figure 5.2: Job Page 43
Figure 5.3: Job Detail Page 43
Figure 5.4: Register/ Sign Up 43
Figure 5.5: Sign in Page 44
Figure 5.6: User Dashboard 44
Figure 5.7: Update Profile 44
Figure 5.8: User Applications 46
Figure 5.9: Employer Post Job 46
Figure 5.10: Employer Manage Job 47
Figure 5.11: Admin Stats 47
Figure 5.12: Admin Job Request 48
Figure 5.13: Admin Manage Job 49
Figure 5.14: Admin Manage Applications 50
Figure 5.15: Admin Manage Users 51

CHAPTER 1: INTRODUCTION TO CAREER CONNECT NAROWAL

1.1 Introduction

Global the need for creative strategies to close these gaps has been highlighted by the world's population expansion and developing unemployment rates. A unique method for lowering unemployment through ability development and process placement is being implemented in Narowal, where the population of college and university students is continuously developing. We suggest "Career Connect Narowal," an online employment web site, as a method to this trouble. Its aim is to empower job seekers by enabling them to benefit new abilities thru free guides and get a job. Our platform now not only connects agencies with job seekers but also works to beautify Narowal's net image.

Because of developing populations and a rise within the need for professional labor, unemployment continues to be a major problem in many regions. Career connect Narowal allows transform this problem into an opportunity by connecting younger humans with abilities with companies that need their expertise. We facilitate the advent of win-win relationships among provider carriers and seekers to beautify the financial stability of the community.

Career connect Narowal is a change-catalyst, not only an application. Employers can find the first-rate candidates fast thanks to it, even as job seekers may hone their skills and emphasize their advantages. By way of promoting non-stop expert increase, our platform hopes to convert the hard work marketplace and assure that businesses and process seekers [12] benefit from this changing environment.

1.2 Project Heading

The modern "Career Connect Narowal: Empowering Job Seekers via talent development and Employment opportunities" initiative goals to tackle the two main problems facing Narowal, specifically skill development and unemployment. In a world where generation is usually changing and the need for skilled exertions is increasing, this platform is revolutionary.

It affords people with a unique danger to expand, examine, and earn a livelihood, and it offers companies immediately access to a pool of capable applicants. Via bringing agencies and task

seekers together, career connect Narowal objectives to enhance the employment surroundings and aid digital transformation and economic development in Narowal.

1.3 Project Overview

The goal of Career Connect Narowal is to exchange the way Narowal's method developing their skills and finding a job. Through the advent of an online task portal [1] that hyperlinks employers and process seekers and gives unfastened education, this initiative objectives to help individuals locate employment and decorate their skill units. The use of MERN technology, the platform gives a user-friendly interface that hastens the recruiting, skill mastering, and activity search approaches. Organizing a dynamic, networked surroundings that complements people's quality of life by fostering wise connections and facilitating job access is the aim of Career Connect Narowal.

1.4 Project Objectives and Goals

The "Career Connect Narowal" project seeks to create a more powerful and user-friendly on-line activity board in order to increase Narowal's employment prospects. The following are the project's goals.

1.4.1 Objectives

The following is a summary of Career Connect Narowal's objectives:

- Increase employability: provide free workshops to job seekers so they may learn new talents.
- Promote work matching: let customers utilize the app to pick suitable work opportunities. [2]
- Simplify the utility procedure: make it simple for process searchers [12] to post applications for opportunities which can be available.
- Notify customers of updates: after someone is selected for an interview, send them an email.

1.4.2 Goals

Career Connect Narowal has helped accomplish the subsequent goals:

a) **User-Centric Platform:** Provide a straightforward website wherein users can join up, look for work, and enroll in classes.
b) **Powerful Job Matching:** Establish a device that identifies and matches suitable peoplewith appropriate job openings, consequently lessening the effort at the part of employers and job searchers alike.

c) **Notifications:** Create an e-mail notification device to inform customers approximately upcoming courses, process openings, and updates at the development of programs.
d) **Data-Driven Insights:** Gain understanding about person engagement, application fulfillment rates, and process market trends the use of analytics, which allows more strategic decision-making.
e) **User-Friendly Interface:** Provide a visually attractive and without difficulty navigableinterface to help people in their task search and talent improvement.
f) **Community Cognizance:** Allow Narowal's job searchers to check in, helping local employment and assisting within the digital improvement of the city.
g) **Revenue:** Make use of an agency plan that ensures sustainability even as offering worthwhile offerings, earning a 10% commission on hiring who are a success.

The "Career Connect Narowal" initiative seeks to provide corporations and process seekers with adynamic, effective, and user-friendly platform through the pursuit of those goals and objectives. The undertaking intends to revolutionize Narowal's employment and task seek processes by way of using the abilities of the MERN stack and organizing new benchmarks for employability, community, and connection.

1.5 Scope of Project

The "Career Connect Narowal" project has been carefully planned to include the following factors and functionalities:

1.5.1 Learning and Skill development

Give job searchers access to lose guides in an effort to help them become greater employable inside the twenty-first-century hard work market.

1.5.2 Extra Employment Possibilities

Give job seekers get entry to a platform that offers a extensive variety of employment alternatives so they may find positions that fit them.

1.5.3 Clean Application Process

Provide job searchers the option to apply for positions from the comfort in their own homes, streamlining the software process.

1.5.4 Tailored Employment Placement

Allow users to search for employment based on their interests and schedules, ensuring that the work they be given will align with their professional objectives and availability.

1.5.5 System of User Feedback

Provide a comments mechanism so users may comment on their interactions with prospective organizations and their enjoy searching out a process. This could allow the platform to be advanced and refined.

1.6 High-level factors of the system

The " Career Connect Narowal " task is made up of some of interrelated parts that work collectively to provide an intensive and effective online employment portal. The following are the high-level system additives:

1.6.1 MERN Stack Web Application

The primary manner of touch among agencies, job seekers, and administrators is the web software. It uses the MERN stack (MongoDB, Express.js, React, and Node.js) [4] to offer a sincere and smooth-to-use interface for retaining activity listings, enrolling in courses, and searching out and applying for jobs. Employers might also publish task vacancies, evaluate applications, and get the qualified people they want, while process seekers can build profiles, hold music of applications, and improve their abilities.

1.6.2 Analytics and Reporting Engine

In-depth statistics and insights about person engagement, path completion charges, job application achievement prices, and platform overall performance are furnished through the reporting and analytics engine. With the usage of this statistics, directors can also compare the platform's overall performance and decide how nice to decorate each its usability and usability.

1.6.3 Notification Through E-mail

To keep customers knowledgeable approximately job utility statuses, direction enrollments, new job listings, and other noteworthy adjustments, the e-mail notification device makes use of in-app notifications. This feature guarantees that clients live engaged and react right away to new opportunities.

1.6.4 User management and the Admin Dashboard

Admins can get entry to to a single interface thru the admin dashboard to manipulate user accounts, job postings, course offerings, and system parameters. Enhanced controlsprovide a secure and effective platform by way of allowing administrators to set person roles andpermissions.

The purpose of the “Career Connect Narowal” program is to offer a whole and clever solution by using seamlessly combining these crucial system components. This solution uses contemporary web generation in an effort to revolutionize the recruiting and activity search methods. Enhancing employability and assisting with process matching are two of its main targets.

1.7 List of Useful Units that are Optional

The “Career Connect Narowal” venture provides a number of add-on useful units that can be used to improve the functionality and user experience of the platform

1.7.1 Data Source

To provide process searchers access to specialized publications and education programs tailor-made to current industry desires, an optional talent upgrading module may be incorporated.

1.7.2 Multi-Language

Support to accommodate job searchers from exclusive linguistic origins interior Narowal and beyond, an elective multi-language support module may be carried out for inclusiveness and consumer pleasure.

1.7.3 Advanced Analytical Framework

As non-obligatory greater, advanced analytics can also provide greater in-intensity understanding of the features of job seekers and commercial enterprise desires, facilitating greater particular and effective process placements.

1.7.4 Strengthened Security Protocols

To protect user data and transactions, this optional module could come with more safety features like data encryption and two-aspect authentication.

1.7.5 User Reviews and Ratings

To collect user feedback and make real-time platform feature improvements, an optional ratingand remarks system may be put in area.

1.8 Exclusions

The “Career Connect Narowal” initiative leaves out some industries even though its purpose is to offer Narowal groups and activity searchers a whole online task portal answer.

1.8.1 Buying and Installing Hardware

The challenge does now not include the purchase, setup, or preservation of any hardware had to get admission to the Career Connect Narowalplatform. It's far expected that customers could visit the internet site using their personal gadgets.

1.8.2 Configuring Network Infrastructure

The set up and setup of network hardware, inclusive of servers, routers, and network security measures, is past the purview of this challenge.

1.8.3 Development of AI Algorithms

Building AI algorithms for activity matching or different purposes isn't always part of the mission'sscope. It seeks to improve platform efficiency and consumer revel in with the aid of the use of existing technologies.

1.8.4 Tailored to Particular Industries

Customizations associated with a selected industry that pass beyond Career Connect Narowal simple capabilities are not covered by using this undertaking scope. Future improvements ought to take those modifications under consideration in need of sure enterprise requirements.

1.8.5 Training and Education for Users

This project does not consist of the provision of thorough user training and continuing technical assist for employers, process searchers, and administrators. While basic user manuals may be presented, in-depth coaching and aid offerings are not.

1.8.6 Integration of Legacy Structures and Data Migration

The project does not cope with current facts integration from other systems or information transfer from older systems. The employer will manipulate integration and data transfer initiatives independently.

1.8.7 Maintenance of Hardware and Software

After the project is finished, ongoing software improvements, bug patches, and hardware protection aren't covered. After release, the institution could be in charge of retaining the platform.

It's far important to remember that, although not being blanketed inside the modern venture scope, these topics can be considered for upgrades down the road or for similarly development levels, depending on the requirements and objectives of the company.

1.9 Gantt Chart

Table 1.1: Gantt Chart

Task	Dec-2023	Jan-2024	Feb-2023	Mar-2024	April-2024	May-2024	June-2024	July-2024
Idea Generation/ Proposal writing								
Requirement Gathering/Risk Assessment								
Software Architecture Design								
Development								

Unit Testing								
Integration Testing								
Report Wring								
Deployment								
Presentation Preparation								

1.10 Streamlined Job Matching and Database Interaction

Job Seekers may also register on Career Connect Narowal, a centralized line employment site, take advantage of free publications to develop new talents, and establish connections with corporations.This platform successfully oversees all database interactions and the task matching technique, guaranteeing easy operations and an improved user enjoy. The MERN stack, which includes MongoDB, express, React, and Node.js, is an effective device used by Career Connect Narowal to manage database operations and client-server interactions.

1.11 Hardware Requirements

For the "Career Connect Narowal" initiative to function at peak efficiency and accessibility, certain hardware assets are wanted. Among those resources are:

1.11.1 Infrastructure for Servers

A robust server architecture is usually recommended so that it will host the database and web utility.

A. Processors with several cores and sufficient processing capability to manage requests from multiple users straight away.

B. Sufficient RAM to guarantee responsiveness and seamless application performance.

C. Sufficient storage potential to keep the database, utility documents, and any backups.

1.11.2 Devices for Clients

"Career Connect Narowal" is out there to customers on a number of platforms, including mobile phones, tablets, laptops, and desktops.

a. For the best compatibility, use modern browsers like Google Chrome, Mozilla Firefox, Safari, or Microsoft Edge.
b. Sufficient processing power and memory on client devices to handle the web application smoothly. Storage (Secondary Storage Devices)
c. Operating System (Windows, Linux, MAC)

1.12 Software Specifications

Following are software specifications required for Career Connect Narowal

1.12.1 Web Application Framework

The "Career Connect Narowal" is built using the MERN Stack framework for efficient routing, controllers, and handling of business logic.

1.12.2 Database Management System MongoDB

The MongoDB as the database management system is used to store and manage user profiles, job listings, application data, course information and more.

1.12.3 Operating System

The server should run a stable and secure operating system. Common choices include Linux distributions (e.g., Ubuntu, CentOS) or Windows Server.

1.12.4 Web Server

A web server, such as Apache or Nginx, is required to serve the web application to users.

1.12.5 Programming Languages

1.12.5.1 React:

Used for the backend to handle server-side logic and database interactions.

1.12.5.2 Node Js

Client-side scripting using JavaScript enhances user interactions and responsiveness.

1.12.5.3 HTML

For Frontend Structure to make website

1.12.5.4 CSS3

Make Website colorful and well structure.

By integrating these technologies, Career Connect Narowal aims to provide a seamless and efficient platform for job seekers and employers in Narowal, facilitating skill enhancement, job matching, and digital transformation within the community.

1.12.6 Version Control

Version control systems like Git can be used to manage code changes, collaborate with team members, and track updates.

1.12.7 Additional Libraries and Tools

1.12.7.1 NPM

Essential for frontend build processes, package management, and JavaScript tooling within the MERN stack.

1.12.7.2 Webpack

Required for front-end build processes, package management, and JavaScript tooling.

1.12.7.3 Mongoose

Simplifies asset compilation and management in Laravel projects.

The technology stack and specifications outlined above form the foundation of Career Connect Narowal. These components collectively ensure a scalable, secure, and efficient online job portal aimed at enhancing employability and connecting job seekers with suitable employment opportunities in Narowal.

1.13 Tools and Technologies used with Reasoning

1.13.1 Web Server

A web server software, such as Apache or Nginx, is responsible for serving web pages and handling incoming requests from clients. After deployment that organization’s server will be use.

1.13.2 MongoDB

MongoDB, a NoSQL database is used for storing and managing structured data. It is often used to manipulate the storing and retrieval of facts in online applications.

1.13.3 MS Office

Word, Excel, and PowerPoint are the various productiveness equipment in the Microsoft Office suite. It can be used for such things as making and retaining spreadsheets, displays, and documents relating the ticketing device.

1.13.5 Visual Studio Code

A source code editor with many equipment for debugging and coding is called visual studio code. For growing and enhancing code in a variety of programming languages, it offers anintuitive user interface.

1.13.6 React

The frontend development of Career Connect Narowal makes use of react.js, which offers a thing-primarily based design that improves consumer interface responsiveness and code reusability. It ensures that customers of the web site, such as employers and job seekers, can have an exciting and engaged interaction.

1.13.7 Node Js

The backend operations of Career Connect Narowal are executed in a node.js runtime surroundings, which makes it viable to handle facts successfully, replace in actual time, and authenticate customers securely. Its scalable and performant occasion-driven layout helps asynchronous programming.

1.13.8 CSS

Html additives on a web page may additionally have their look and association described the use of CSS (Cascading Style Sheets), a style language. It's far frequently used with HTML and JavaScript to offer aesthetically attractive and intuitive consumer interfaces.

CHAPTER 2: CAREER CONNECT NAROWAL FEASIBILITY REPORT

2.1 Introduction

The first deliverable specializes in undertaking making plans and scheduling and contains all essential resources, along with software, to finish the assignment. The subsequent artifacts need to be blanketed in this delivery.

a. **Project Feasibility**
b. **Project Scope**
c. **Project Future Scope**
d. **Introduction To Team Member**
e. **Tasks And Member Assignment Table**
f. **Architecture**
g. **Risk List**

2.2 Project/Product Feasibility Report

An essential first step in evaluating a project's viability and chance of success is its feasibility evaluation.To verify its practicality and functionality to attain the expected dreams, “Career Connect Narowal” underwent a thorough feasibility research including several components.

2.2.1 Technical Feasibility

The “Career Connect Narowal” project's technical feasibility has been carefully assessed to ensure itis able to be created and done correctly with the assets and technology now available. Important things toconsider are:

2.2.1.1 Platform Compatibility

The platform is designed to work with a web view in current web browsers. To guarantee easy operation,compatibility testing has been achieved on a number of gadgets and browsers.

2.2.1.2 Adequacy of the Framework

The MERN stack, which consists of Node.js, React, express.js, and MongoDB, became chosen because it could manage the task's complexity. In line with the wishes of the challenge, the MERN stack presents controllers, scalable architecture, and powerful routing.

2.2.2 Operating Feasibility

Comparing whether the system can be efficiently integrated into the current operations and methods is the principle aim of operational feasibility. An operational evaluation of “Career Connect Narowal” has been carried out, overlaying the subsequent regions:

2.2.2.1 Adoption of Users

The development method has used a user-centric method to assure the interface's intuitiveness and user-friendliness. Ease of use has been verified by means of consumer acceptability checking out (UAT) with various user roles.

2.2.3 Training and Support

The feasibility assessment recognizes the necessity for user help and training inside the long term, although it's far beyond the prevailing scope. Plans for possible person help and schooling have been defined.

The thorough analysis of the “Career Connect Narowal” project's operational and technological viability suggests that it isn't always only viable however additionally well-located for a success development and implementation. The undertaking is consistent with its goals and targets way to thorough attention of factors consisting of platform compatibility, framework appropriateness, person uptake, and prospective schooling necessities. Accordingly, “Career Connect Narowal” gives itself as a possible choice to rework Narowal's employment and process-seek tactics.

2.2.4 Economic Feasibility

The “Career Connect Narowal” initiative has passed through a complete evaluation to envision its economic sustainability and possible yield on investment. The following factors were taken into consideration:

2.2.4.1 Estimating the price

An intensive cost calculation that consists of development charges, the purchase of hardware and software, employee wages, upkeep fees, and any overhead costs has been achieved. This estimate is in line with the funds and resources that are available.

2.2.4.2 ROI, or Return on Investment

We have balanced the expected advantages of “Career Connect Narowal” against the associated costs. Positive ROI projections are motivated via the machine's ability to expedite activity matching procedures, decorate user happiness, and shorten recruiting timelines.

2.2.4.3 Analysis of Cost-Benefit

A thorough cost-gain analysis has been accomplished to determine if the system's implementation would bring about more benefits than costs. The expenditure is justified by means of the study, which demonstrates the capacity for accelerated operational efficiency, less downtime, and better job matching.

The “Career Connect Narowal” challenge is financially sound and in keeping with its monetary dreams, according to the significant examination of fees, benefits, and return on investment that followed the monetary feasibility evaluation.

2.2.5 Schedule Feasibility

The “Career Connect Narowal” mission's schedule viability has been methodically evaluated to ensure that the planning and execution ranges supplement the project's targets and timetable. Essential things to think about are:

2.2.5.1 Project Timeline

A project timetable that outlines the steps of improvement, testing, excellent assurance, deployment, and viable destiny upgrades has been prepared. Time limits and milestones suit the organization's priorities.

2.2.5.2 Resources Availability

Task planning has taken into consideration the availability of experienced staff, which include builders, designers, and IT experts. The distribution of responsibilities and responsibilities has been deliberate to maximize using to be had resources.

2.2.5.3 Risk Mitigation

The evaluation of timetable feasibility also takes under consideration any risks or problems which could have an effect on the venture's timing. To assure that there are as few delays to the timetableas feasible, backup plans and hazard-reduction techniques had been advanced.

The venture stays on course to provide consequences in the allotted timeframe way to the methodical assessment of agenda viability and the inclusion of backup plans. “Career Connect Narowal” is a venture that has every risk of succeeding and could advantage Narowal a great dealin terms of operations, budget, and person experience.

2.2.6 Specification Feasibility

The “Career Connect Narowal” undertaking's specification feasibility has undergone a thorough evaluation to assure that the undertaking's necessities are specific, practicable, and in line with thedesires of the organization. The following elements were taken into consideration:

2.2.6.1 Requirement Clarity

The functions, features, and person interactions that make up the project requirements have all been properly detailed. Stakeholders have examined and proven these standards to make sure theyappropriately seize the scope of the assignment.

2.2.6.2 Technical Feasibility

The technical specifications of the undertaking had been in comparison to the sources and era which can be now to be had. It has been decided and verified that the implementation of a job portal with real-time verbal exchange, skill development guides, and user role control is feasible.

2.2.7 Motivational Feasibility

The project's ability to motivate stakeholders to commit and become excited is examined thru motivational feasibility. An evaluation of the "Career Connect Narowal" project's motivating elements has been conducted:

2.2.7.1 Alignment with Organizational Objectives

It has been decided that the project is consistent with the organization's strategic goals and objectives. The challenge is motivatedly viable because of the possible blessings of extended employability, expedited job matching, and accelerated user satisfaction.

2.2.7.2 Stakeholder Engagement

All through the venture's development stage, efforts were made to enlist the participation and assistance of stakeholders, together with employers, directors, and job seekers. Recognition organizations, ongoing conversation, and feedback loops make sure that stakeholder motivationis strong.

2.2.8 Legal and Ethical Feasibility

The "Career Connect Narowal" undertaking's viability from a prison and moral standpoint has been carefully assessed to make sure it complies with all applicable laws, guidelines, and ethical hints [6]:

2.2.8.1 Data Privacy and Security

The project's layout carries privateness, confidentiality, and protection considerations for user statistics. Adherence to statistics privateness laws has been of utmost significance.

2.2.8.2 Ethical Usage

The moral guidelines are accompanied even as the use of the platform for skill development and task matching, ensuring that person interactions are courteous and consistent with the business enterprise's beliefs.

2.2.8.3 Copyright

The undertaking avoids violating any patents, emblems, or copyrights belonging to 0.33 events and upholds intellectual property rights.

2.3 Project Scope

The "Career Connect Narowal" project's goal includes developing and launching an in depth, person-focused on-line employment portal that improves employability and hyperlinks job seekersand companies. The following is a comprehensive scope of the venture:

2.3.1 Inclusions

Below are the inclusions which might be defined:

2.3.1.1 User Authentication and Registration

a) To get secure registration to the system, users may be capable of create account and log in into the system.
b) Systems of authentication could be installed region to assure secure access to consumer accounts.

2.3.1.2 Job and Course Management

a) Users are able to apply for employment by means of providing required information.
b) Every job posting could have a unique identity given to it to permit powerful tracking and management.
c) A specialized dashboard for organizing and prioritizing job applications might be available toemployers.

2.3.1.3 Update Job Applications

a) Jobseekers may be chosen with the help of the administrator from amongst submitted applications inkeeping with their experience and the desires of the employee.
b) Employers have access to submitted programs, can see their progress, and may change them as required.
c) Job Seekers will be capable of tracking the progress of the applications they have got filed and get actual-time records.

2.3.1.4 Communication and Collaboration

a) Users have the option to add info, pose inquiries, and look for factors about their jobs progress.
b) Through email, customers may additionally add details, and askquestions about their applications progress.
c) Employers are able to have conversations with admins, about their job's progress, and ask for inaddition information.

2.3.1.5 Analytics and Reporting

a) The system will offer thorough reporting and analytics approximately job enrollments, job application's success rates, user engagement, and platform performance as a whole.
b) Those reports will be available to administrators so they will hold a watch on platform performance and make data-driven decisions.
c) These insights will make it simpler to continuously provide service delivery and strategy.

2.3.1.6 Notifications through Email

a) Email notifications regarding job applications, status updates, and responses from employers.
b) Email notifications will be used to inform Employers of new applications and important updates.

2.3.1.7 Admin Dashboard and User management

To manage user accounts, job listings, course offers, and system's configuration, administrators can login to their dashboard.

2.3.2 Exclusions

The following exclusions of Career Connect Narowal are:

2.3.2.1 Hardware Installation

The task does now not include the acquisition, setup, or protection of any hardware needed to access the Android or net applications.

2.3.2.2 Configuring Network Infrastructure

Excluded are the setup and configuration of servers, routers, and other network infrastructureadditives.

2.3.2.3 Skill Development and Course Creation

a) Although the platform offers free skill-development courses, the initiative's scope does now not include the creation of those courses. The courses come from partners and already-set up educational platforms.

b) The creation of a fully running online job portal that improves employability, streamlines task matching, and hyperlinks job seekers and organizations is covered within the scope of the “Career Connect Narowal”. At the same time as the exclusions make clear regions beyond the project's bounds, the inclusion of essential factors ensures a powerful and user-pleasant experience.

2.4 Project Future Scope

The “Career Connect Narowal” initiative establishes the framework for a flexible and ever-converting environment of job assistance. There are many guidelines which have been determined for future development and improvement as the platform grows and get more user engagement:

2.4.1 Mobile App Development

Developing a selected mobile app to enhance accessibility and engagement whilst presenting a clean person revel in on smartphones.

2.4.2 Expansion to Additional Regions

Building at the authentic implementation's fulfillment, the task aims to extend “Career Connect Narowal” to encompass extra areas and offer task alternatives to a wider target market.

2.4.3 Enhanced AI Integration

The mission's future desires consist of incorporating synthetic intelligence (ai) era greater deeply to improve skill development thru predictive analytics, tailored suggestions, and task matching.

2.4.4 Feature Enrichment

An essential thing of the task's direction is non-stop development. To fulfill changing person demands, thegadget can be improved with new capabilities and functions. This could consist of greater simplified routesfor communication, records visualization, and improved reporting opportunities.

2.4.5 System Integration with Third Party

It's far possible for “Career Connect Narowal” to be integrated with other job and education platforms, which might facilitate easy records sharing and improve the surroundings as an entire.

2.4.6 Enforcing User-Driven Feedback

The performance of the platform might be improved via actively getting and evaluating user feedback. User-driven enhancements may be important in figuring out "**Career Connect Narowal**'s" future scope.

2.4.7 Performance Optimization

Continuous efforts might be made to enhance the system's performance with a purpose to assure quick response times and easy user reviews as user volumes and data usage grows.

2.4.8 Enhanced Security Measures

Future plans involve the use of advanced security features to comfyuser data, guarantee adherence to new information protection legal guidelines, and growing user trust.

The future scope of "Career Connect Narowal" demonstrates a willpower to responsiveness, scalability, and innovation. Through the improvement of a mobile application, local growth, better ai integration, and ongoing characteristic upgrades, the project lays the foundation for an atmosphere that supports employment and is powerful, bendy, and organized for the future.

2.5 Introduction to Team Members and Their Skills

Table 2.1: Members's Skills

Member Name	Skills
Muhammad Hussain	Frontend developments, Backend development, Documentation, Server Deployment and API Integration
Muhammad Shameer	Advance Frontend development, Backend Development, Documentation
Umair Aslam	Frontend development and documentation

2.6 Task and Members Assignment Table

Table 2.2: Task and Dependencies

Task	Activity	Members	Duration (days)	Dependencies
Requirements Gathering	Define project scope and Goals		7	None
Feasibility Analysis	Evaluate technical, operational, economic, schedule, specification, motivational, legal and ethical feasibilities		10	Requirements Gathering
System Design	Plan architecture, user interfaces, and features		14	Feasibility Analysis
Front-end Development	Develop user interfaces using HTML and CSS		21	System Design
Back-end Development	Implement web application logic using React		28	Front-end Development
Database Design and Integration	Design and integrate Node.js database		14	Back-end Development

User Authentication	Implement user registration and authentication		10	Back-end Development
Job and Course Management	Develop job, applications and course tracking system		14	AI Integration, Database Design and Integration
Communication System	Implement NodeMail feature for communication		14	Back-end Development
Reporting and Analytics	Develop reporting and analytics functionalities		21	Back-end Development
User Notifications	Implement email notifications for users and employers		10	Back-end Development
Admin Dashboard	Develop admin dashboard for user and IT staff management		21	Back-end Development
Quality Assurance and Testing	Test system functionalities, identify and fix issues		14	All Development Phases
User Training	Develop training materials and resources		7	Quality Assurance and Testing, Admin Dashboard
Documentation	Prepare project documentation and user guides		14	User Training, Quality Assurance and Testing
Project Presentation	Prepare and deliver project presentation		7	Documentation

2.7 Risk List

The “Career Connect Narowal” initiative understands that there may be risks and uncertainties that would affect how well it is done. To count on and reduce these difficulties, a radical danger list has been set up and organized:

2.7.1 Technical Risks

The technological risks that Career Connect Narowal may additionally come upon are as follows:

2.7.1.1 Integration Complexity

The task time table can be delayed via technical difficulties and compatibility issues that arise from integrating special technology, including the MERN stack.

2.7.1.2 Bottlenecks in Overall Performance

As user numbers grows, scalability issues may also affect the response times and system overall performance as a whole.

2.7.1.3 Data Security

User records can be accessed without authorization or breached due to inadequate security measures.

2.7.2 Operational Risks

2.7.2.1 User Adoption

The adoption of the brand-new system may be hampered due to users resistance, requiring effective communication and training.

2.7.2.2 Staff Resistance

The IT staff's early opposition to employing workers for companies may additionally had been resulting from doubts about the correctness of the system, fear of losing job, or a fear oftaking up extra work. however, with the proper guidance and clear clarification of the benefits, productivity and user satisfaction will growth.

2.7.2.3 Customer satisfaction

Unsatisfactory person experience brought on through complex interfaces or practical holes may additionally leave customers feeling allow down.

2.7.3 Project Management Risks

The following project risks might arise while managing a project [5]:

2.7.3.1 Scope Creep

Project schedules and assets can be impacted by scope creep, that is the result of frequent changes to project requirements.

2.7.3.2 Allocation of resources

Inadequate budgetary and human resource management would possibly hinder the project's advancement.

©

2.7.3.3 Dependency Delays

Cascade delays in venture stages would possibly end result from delays in getting permissions or remarks from stakeholders.

2.7.4 External Risks

The external risks listed underneath have the ability to create issues with Career Connect Narowal:

2.7.4.1 Advances in Technology

Technology is advancing so quickly that make current solutions come to be outdated, whichcould reduce the project's usefulness.

2.7.4.2 Regulatory Compliance

Modifications in data safety laws may require enhancing the system's safety and privacy features.

2.7.4.3 Vendor Dependency

Depending on 3rd party vendors or services might leave the expose the project to vulnerabilities or service interruptions.

2.7.5 Mitigation Techniques

The risks in Career Connect Narowal may be decreased or eliminated by using the use of the following mitigation strategies:

2.7.5.1 Technical knowledge

Involve experienced developers and specialists to manage integration issues and guarantee technical execution.

2.7.5.2 Evaluation of Overall Performance

To maintain steady performance below diverse loads, enhance the system's architecture and conductthorough load testing.

2.7.5.3 Protection Strategies

To shield user records and prevent unwanted access, put strong authentication,authorization, and encryption processes in location.

2.7.5.4 User Training and Communication

Provide thorough training classes to acquaint users and IT personnel with the capabilities and applications of the new system.

2.7.5.5 User-Centric Design

To assure an smooth-to-use and fulfilling experience, constantly acquire user input and improve the user interface.

2.7.5.6 Change Management

To win the cooperation and trust of the staff, cope with theirconcerns and highlight the benefits of the new system.

2.7.5.7 Control of Scope

Reduce the risks of scope creep by means of implementing a change control procedure to assess and approve scope adjustments.

2.7.5.8 Allocation of resources

Budget and manpower wise, set aside plans to guarantee the project's timely completion.

2.7.5.9 Stakeholder Engagement

Keep open conversations with stakeholders to timely approvals and feedback.

2.7.5.10 Ongoing Learning

Stay up to the mark with new tendencies in technology, and architecture of system with flexibility in mind to permit for future improvements.

2.7.5.11 Tracking of Regulatory Compliance

Stay updated on regulatory guidelines and modify the system's guidelines and methods as essential.

2.7.5.12 Alternatives for Vendors

Determine fallback alternatives or substitutes for 3rd party vendors dependencies in an effort to lessen risks related to providers.

The “Career Connect Narowal” initiative employs nicely-defined mitigation techniques to proactively deal with these feasible risks. thru the procedure of recognizing, evaluating, and organizing for these obstacles, the task is prepared to address ambiguities and assure a good result.

CHAPTER 3: OBJECT-ORIENTED ANALYSIS

3.1 Introduction

This chapter focuses on in-depth evaluation of Career Connect Narowal's internal operations rather than the project's normal targets. This chapter delves into the practical use of cutting-edge net improvement ideas in addressing the problematic components of facts processing, user interactions,and employment portal services. The undertaking could be broken down into separate, linked components and their behaviors a good way to build a prepared, scalable, and effective machine in order to meet the requirements of a contemporary on-line employment website online. the existing chapter establishes the groundwork for a sturdy design that ensures easy user interfaces, productive task matching, and profitable skill enhancement potentialities, finally enhancing employment assistance in Narowal.

3.2 Structure for Web Applications

The “Career Connect Narowal” architecture has been painstakingly designed to assure a unified andefficient experience for admins, employers, and job searchers alike. it's miles composed of three properly-organized levels: the Presentation Tier, which incorporates the person interface; the Processing Tier, which handles information processing and business good judgment;and the records Tier, that's primarily concerned with information garage and retrieval. This modularlayout offers scalability, simplicity of preservation, and seamless interaction, laying the groundworkfor a resilient and adaptable surroundings of job portals.

3.2.1 Frontend Presentation Tier

The “Career Connect Narowal” internet application's user-going through issue is the Presentation Tier. It includes HTML and React components, which specify the UI's visual components and arrangement. thru interaction with this tier, users might also get admission to quite a number talents,together with task search, direction enrollment, application popularity tracking, and real-time updates. users are assured a unbroken enjoy throughout various gadgets way to the user-friendly UIand responsive layout.

3.2.2 Server-Side Logic/Processing Tier

Processing Tier, putting enterprise plays important role in processing user requests, and all the database tasks are carried out by this tier. This tier is built using Node.js, that deal with incoming requests and coordinate database transactions. sturdy routing features in Node.js guarantee powerful communique and make data retrieval, storing, and manipulation viable. The statistics drift among customers and the information layer is guaranteed through this residue.

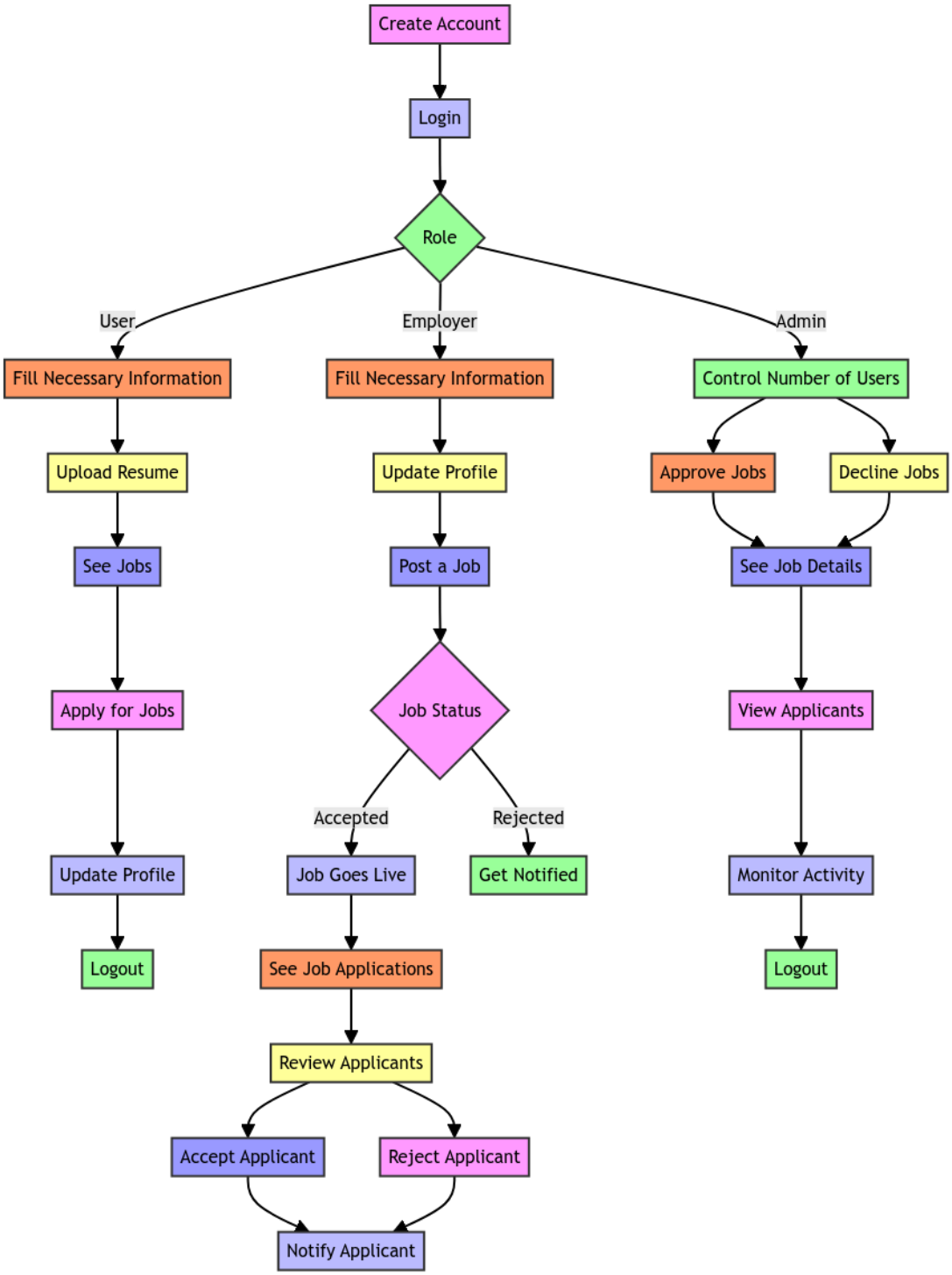
3.2.3 Database/ Data Tier

All the data associated with the “Career Connect Narowal” platform is store in one vicinity: the data Tier. It is powered by way of MongoDB, which holds user profiles, job postings, software information, course enrollments, and otherdata. so that it will attain job applications, scalability, and efficient data management.

The logic/Processing Tier communicates with the database. The capabilities of MongoDBprovide powerful data control, scalability, and data integrity.

The " Career Connect Narowal " system's robust 3-tier layout allows for precise working, which increases modularity, maintainability, and scalability. The PresentationTier employs user-friendly interfaces to captivate users, whilst the Processing Tier skillfully handles business logic and smooth verbal exchange. In addition,data tier act as a repository for essential data retrieval and storage. Together, those strategic architectural factors offer a job portal platform that is both responsive and efficient, meeting the demands of Narowal's community, job seekers, and companies.

3.3 Diagram of work flow



A

Data Flow Diagram (DFD) suggests the records go with the flow patterns in the Career Connect Narowal device graphically. This image represents a number of additives and how they interact. with the aid of the usage of the online software or mobile app, applying for jobs, signing up for courses, and accessing process listings and resources for talent improvement, users start the

glide.

Figure 3.1: Data Flow Diagram

3.4 Object-Oriented Analysis (OOA)

Determining and characterizing the primary objects and entities in the gadget is a key aspect of item-oriented analysis. Key components of Career Connect Narowal include job searchers, employers, process commercials, training programs, communication modules, and reporting engines. These things' characteristics, interactions, and behaviors have been thoroughly examined. OOA makes it feasible to recognize the needs and functions of the device in excellent detail.

3.5 Class Diagrams

Class diagrams for Career Connect Narowal display how users have interaction with the system, how to deal with job applications, how to join guides, and a way to create channels of communication. The linksamong various entities, which includes task searchers, employers, job ads, and course modules, are provenin the magnificence diagrams.

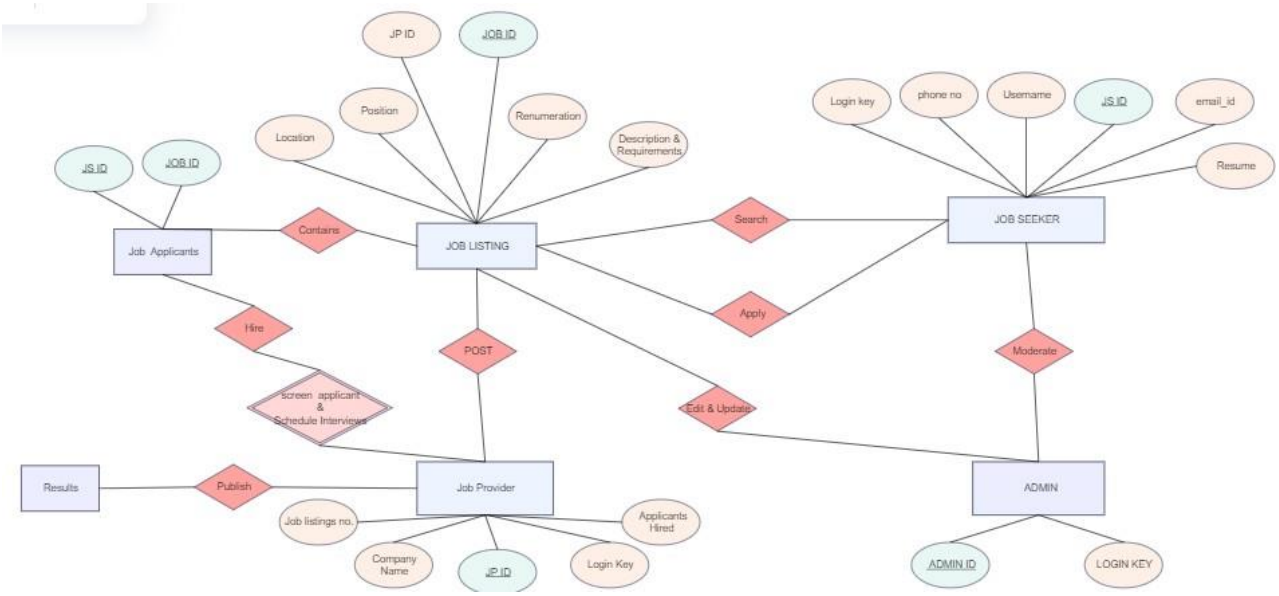


Figure 3.2: Class Diagram

3.6 ER Diagram

For the “Career Connect Narowal” undertaking, an entity-courting (ER) diagram consists of entities (which constitute actual items or thoughts) and their connections, in addition to characteristics that provide context for the entities. Figure 3.3 below suggests the Career Connect Narowal ER schematic.

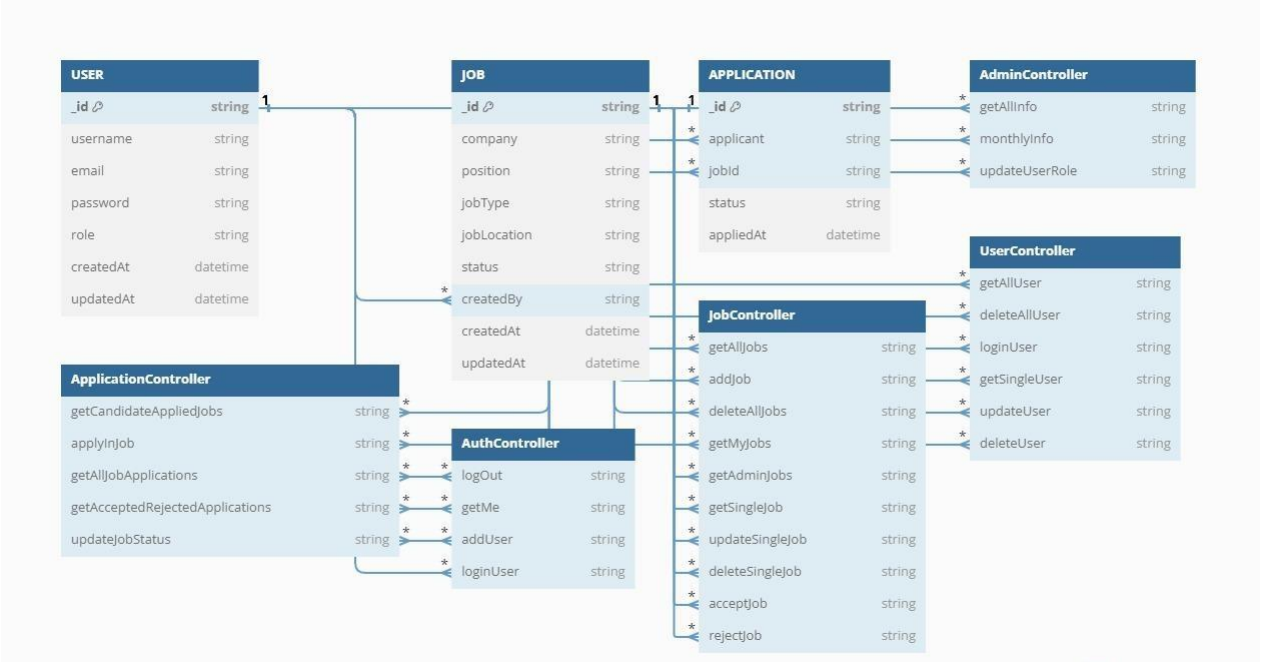


Figure 3.3: Entity Relationship Diagram

3.7 Flowchart

A flowchart is a graphic depiction or diagram that suggests how activities, steps, or techniques are prepared inside a system, protocol, or set of rules.

3.7.1 Flowchart For Job Seeker Registration and Courses

The stairs that task searchers need to take to register at the career connect Narowal platform, look foremployment, join in courses, and monitor the development of their programs are shown in this flowchart.

3.7.2 Flowchart For Employer Job Posting and Matching

An overview of the business is to put up job vacancies, enroll courses, and speak to prospective applicants through the Career Connect Narowal platform is showed in this flowchart.

Figure 3.4: enterprise Flowchart 3.8: job Seeker Flowchart

3.9 Career Connect Narowal Implementation Process

Users/ Roles	**Problem**	**Solution**
Job Seekers	They need a reliable platform to learn new skills and find job opportunities.	- Provides free skill courses to enhance their capabilities. - Allows them to directly apply for jobs. - Offers a streamlined process for connecting with potential employers. - Utilizes AI to match job seekers with suitable jobs.
Employers	They need an efficient way to find potential candidates without extensive effort.	- Facilitates the hiring process by presenting qualified candidates. - Saves time and resources by acting as a mediator. - Employers can review candidate profiles and skill assessments. - 10% commission fee on successful hires.
Admin/ Super Admin	They need an efficient system to manage job seekers and employers.	- Manages registrations and maintains the platform .- Ensures the smooth operation of the website. - Oversees the course content and job postings. - Monitors interactions between job seekers and employers.

Career Connect Narowal	Version: 1.0
Department of Computer Science - University of Narowal	Date: 11-July-2024

Staff (Support Team)	They need a system to handle queries from both job seekers and employers efficiently.	- Manages support tickets raised by users. - Communicates with users via chat and messaging systems. - Provides assistance and resolves issues. - Reviews user feedback to improve service quality.

3.10.1 The System of Applying for Jobs

Process searchers may additionally observe for jobs and speak with prospective employers more without difficulty using Career Connect Narowal's shortened software system. Process searchers may quick peruse process ads, observe, and monitor the progress in their packages during the hiring manner through the use of an intuitive interface.

The software process is computerized via the device, which classifies and ranks each one consistent with the applicant's credentials and the software's relevancy. With an emphasis on directly responding to qualified candidates and retaining well-organized statistics of all programs received, this automated process guarantees that job searchers and employers can effectively manage programs.

3.10 Sitemaps

It includes all the career connect number one capabilities.

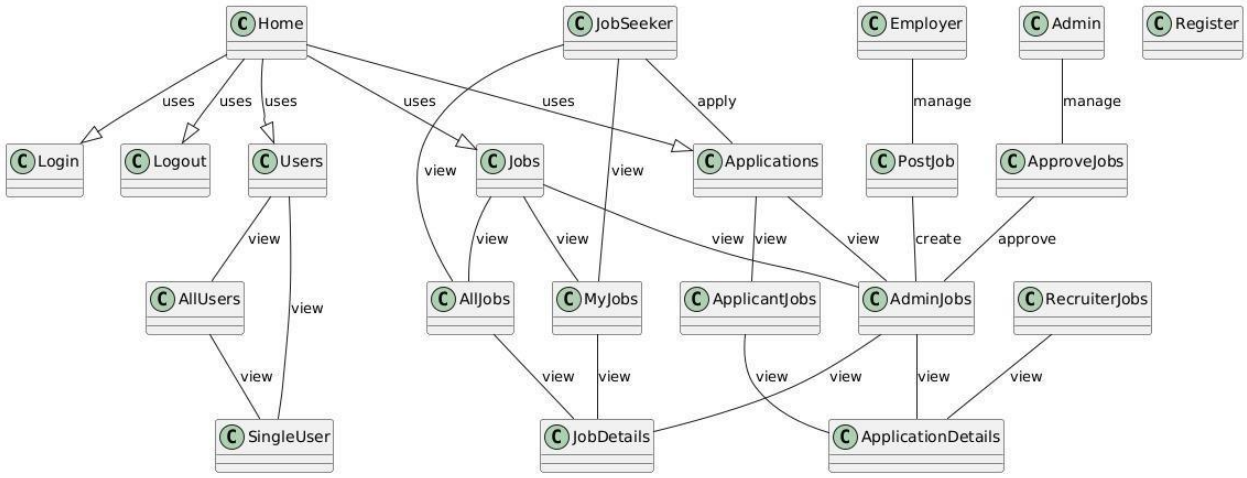


Figure 3.8: Site Map

CHAPTER 4: METHEDOLOGY

4.1 Introduction

Career connect Narowal meets the vital requirement for expedited process matching and ability upgrading possibilities in modern day competitive employment market. The combination of modern technology is tested in this bankruptcy, with a focus on the use of the MERN stack (MongoDB, Express.js, React, and Node.js) to create a sturdy online job webpage that improves performance and accessibility for each employers and process searchers.

4.2 Using Advance Technologies to Develop Career Connect Narowal

Career Connect Narowal makes use of the MERN stack to create a scalable and responsive online platform in the subject of virtual innovation. Job searchers can also browse postings, sign up in publications, and apply for possibilities with ease due to the fact to this technological stack's seamless integration of frontendand backend additives. Employers have get right of entry to an intensive dashboard that facilitates them successfully control activity ads, examine programs, and talk with prospective prospects.

4.3 MERN Generation's Advantages for Career Connect Narowal

Using the MERN stack advantages Career Connect Narowal in some of methods.

4.3.1 Better User Experience

Large quantities of data requests can be quick analyzed and interpreted by means of AI systems, which could then classify and prioritize them according to predetermined standards. This effects in a less response time in applications management, and response instances. which increases operational performance.

4.3.2 Performance and Scalability

Due to the strong server-side help provided through Node.js, the backend framework, Career ConnectNarowal is capable of control excessive user traffic levels and statistics processing efficaciously. The platform can make bigger easily in response to growing consumer demands and statistics complexity because to its scalability.

4.3.3 Control of Real-Time Information

Career Connect Narowal blessings from dynamic records management made viable through MongoDB, a versatile NOSQL database. Its record-orientated structure allows efficient storing of user profiles, processlistings, and path offers, as well as rapid updates and clean interaction with Node.js.

Four.

3.4 Environment for Integrated Development

A single development surroundings is produced by the skillful fusion of HTML for the frontend, React for interactive elements, and Node.js for backend functions. The development cycle is accelerated, overhead is reduced, and continuous integration and deployment tactics are made viable for chronic platform upgrades way to this synergy.

4.3.5 Strengthening the Digitalization in Narowal

Career Connect Narowal plays an important position in increasing the virtual environment of Narowal by supplying a platform for activity searchers to sign up and get admission to materials aimed at boostingtheir careers. By matching amazing humans with suitable paintings opportunities, the platform's emphasison college and college students stimulates skill development, improves employability, and boosts the neighborhood economy.

Career connect Narowal's strategic use of the MERN stack not only makes it less complicated for peopleto suit jobs and enhance their abilities, however it additionally facilitates Narowal end up extra digitally empowered through aligning with developments in staff development and digital transformation.

4.4 Job Seekers Interaction with Career Connect Narowal

Task searchers begin the manner through registering on Career Connect Narowal in search of career possibilities and talent improvement.

4.4.1 The Reason of job Seekers in Creating Profiles

Which will create their profiles on career connect Narowal, job seekers are critical. To make certain that their credentials and career dreams are competently conveyed to prospective employers, their involvementis critical.

4.4.2 Creating a Detailed Profile

It's far the job applicant's duty to provide thorough statistics about their education, credentials, professional heritage, and dreams for his or her career. This includes creating a detailed profile that emphasizes their qualifications and areas of understanding. As an instance, to make their profile greater attractive to employers, they have to provide detailed information about they have got which can be related to the roles they are applying for on the platform.

4.4.3 Including Corresponding Documents

Job applicants have the choice to upload other documents, such as portfolios, cover letters, and resumes,in addition to their profile information. These information offer greater info on their credentials and accomplishments, supporting informed decisions throughout the employment hiring method.

4.4.4 Applying for Open Positions

After completing their profile, job seekers might also use Career Connect Narowal to search job postings and observe to openings that match their goals and talent set. Commonly, the processconsist of sending their profile for evaluation and, in some conditions, providing further information that employers require.

Job seekers are essential in starting up the job application process by means of actively collaborating on thisfirst communique with Career Connect Narowal and giving thorough data approximately their enjoy and professional dreams. Employers may additionally successfully take a look at, evaluate, and probable choose people based totally on their recommendation, which in the long run makes the hiring and task search manner more efficient and effective.

Job seekers might also growth their visibility and attractiveness to groups on Career Connect Narowal via developing effective profiles and attractive in proactive methods. This may increase their probabilities of get hired their dream jobs and progressing their careers.

4.5 Limitations and Things to Consider

A number of problems and factors got here up at some point of the improvement of Career Connect Narowal that required close interest:

A. **Safeguarding User Information:** It's far vital to guarantee the confidentiality and integrity of users records. To establish and preserve user data, secure data storage methods, transparent data handling conversation coping with methods, and compliance with information safety legal guidelines are critical.

B. **Ethical Use of technology:** Career Connect Narowal uses technology to attach companies and job seekers, therefore ethical use of AI is crucial. On the way to make certain that AI algorithms do no longer discriminate and sell fairness in job matching techniques, it is imperative that their workings continue to be transparent.

C. Balancing Technology and Human knowledge: Although technology simplifies methods, human supervision remains crucial. The need of human judgment in matching applicants, resolving complicated troubles, and ensuring ethical hiring procedures is emphasized by means of Career Connect Narowal.

D**. Complexity of Integration:** Career Connect Narowal's infrastructure should be carefully planned and expertly incorporated with a spread of technologies, such as the MERN stack (MongoDB, Express, React, and Node.js). For the duration of implementation, it's far crucial to take compatibility concerns, scalability, and early setup expenses into consideration.

E. **Continuous Development:** Career Connect Narowal is devoted to non-stop training and technological element upkeep in an effort to preserve maximum overall performance. Through the years, accuracy, performance,and consumer happiness are guaranteed through common updates and upgrades to user interfaces and algorithms.

4.6 Summarization

In summary, “Career Connect Narowal” is a modern application designed to enhance employability and provide smooth get entry to for job seekers and businesses in Narowal. The task ambitions to transform the hiring and task seek procedure with the aid of the use of modern-day era and a user-centric method, in the end contributing to the virtual empowerment of Narowal town.

4.6.1 Future Prospects

Career Connect Narowal has shiny future ability in advance of it:

Technological Advancements: As on-line technologies keep to improve, the platform's usability and functionality will also be optimized, making sure that each employers and job seekers can take gain of the most modern developments.

B. **Expansion:** to enhance the consumer experience overall, future iterations might also include extra functions consisting of networking possibilities, gear for interview coaching, and individualized profession counseling.

C. **Advanced user Engagement:** The platform will adapt to better apprehend and fulfill the changing needs of employers and jobs searchers via the use of statistics analytics and user enter. This can enhance user experience and ease.

D. **Community Impact:** Career Connect Narowal seeks to make a main contribution to the socioeconomic boom of Narowal city by using cultivating a capable team of workers and promoting local activity possibilities.

4.6.2 Conclusions

The proper use of technology continues to be vital as we pass ahead. It will usually be critical to protect consumer statistics, maintain it secure, and utilize it ethically. Career Connect Narowal's potential to strikea balance between human-targeted help and technical innovation positions it to offer long-term benefits to both customers and stakeholders.

With these projects, Career Connect Narowal hopes to raise the bar for online job portals and offer humans with the assets and probabilities they want to be triumphant in the cutthroat job marketplace of these days.

CHAPTER 5: USER INTERFACE

5.1 Introduction:

This is the user interface design of the web application of outcome-based education assessment. It consists of different page and components which performs different operations [9].

5.2 Landing / Home Page

Here landing page of web application.

5.2.1 Homepage

This page contains three sections the 1st section contains the registration or sign in options as shown in Fig 5.1, 2nd section contain the objective and feedback of the clients and 3rd section contain the bottom section of the web application as shown in Fig 5.1. The following picture show the view of web application on both website and Mobile.

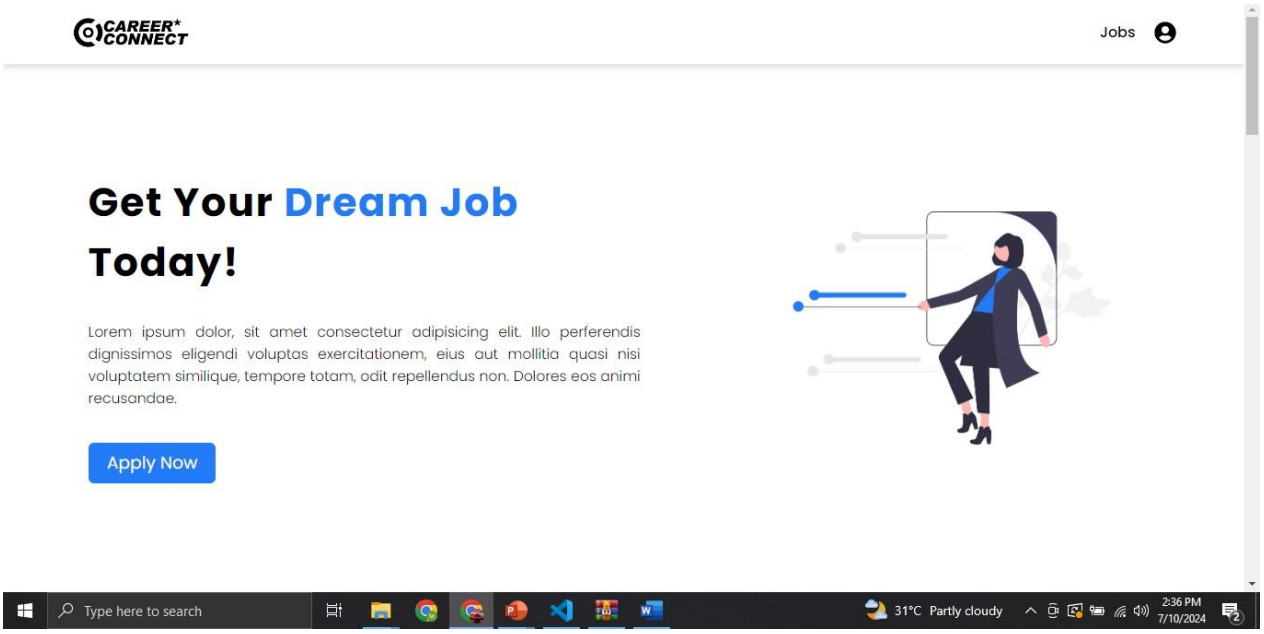
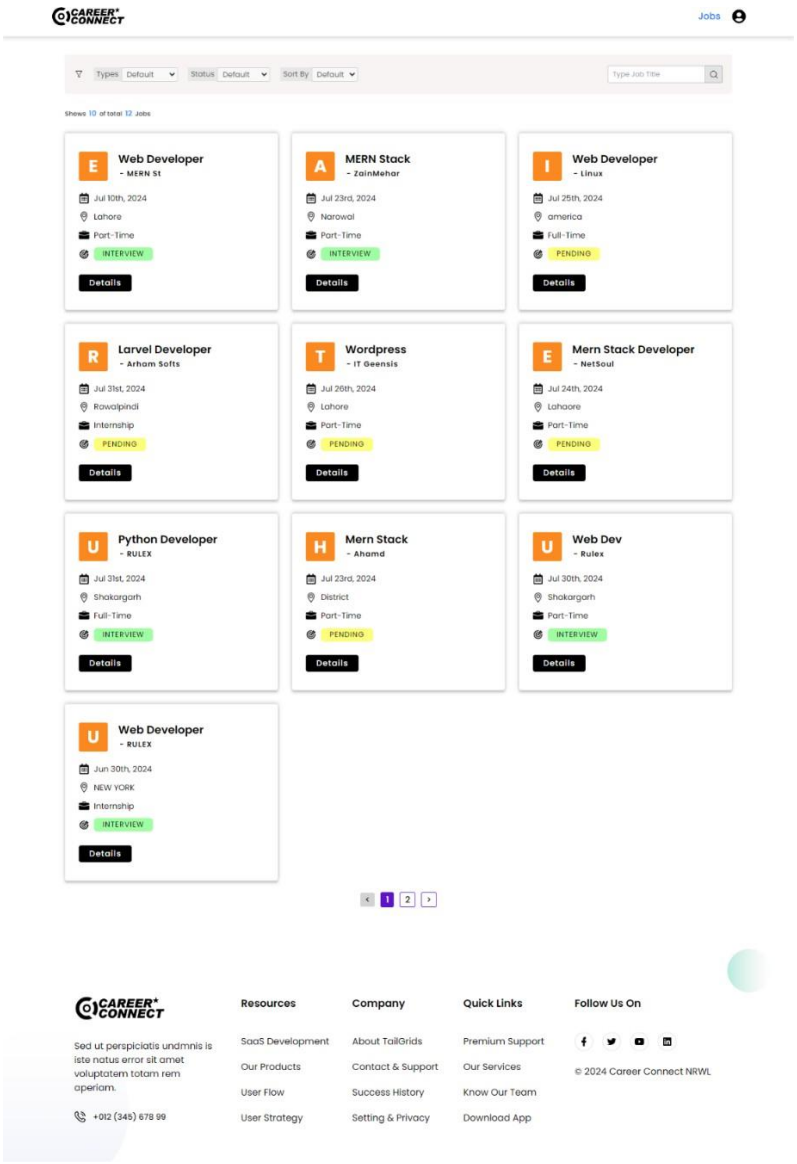


Figure 5.1: Homepage(a)

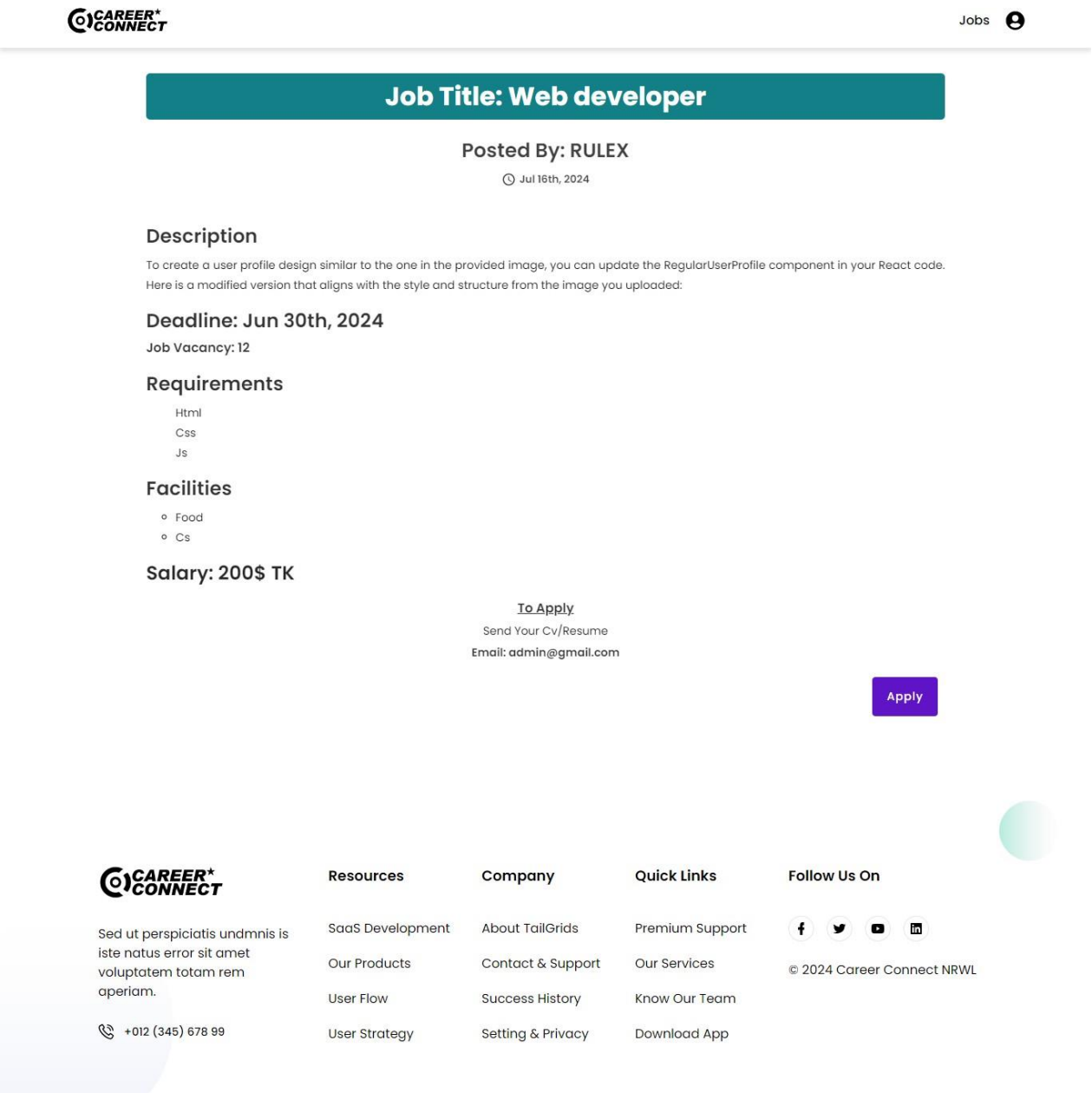
5.2.2 Job Page

This page containing the information of Job, when any user need for help than they can directly contact with team throw the given details given in this page as shown in Fig 5.4.


CAREER CONNECT
Jobs
Types Default
Status Default
Sort By Default
Type Job Title
Shows 10 of total 12 Jobs
E
Web Developer
- MERN St
Jul 10th, 2024
Lahore
Part-Time
INTERVIEW
Details
A
MERN Stack
- ZainMehar
Jul 23rd, 2024
Narowal
Part-Time
INTERVIEW
Details
I
Web Developer
- Linux
Jul 25th, 2024
america
Full-Time
PENDING
Details
R
Larvel Developer
- Arham Softs
Jul 31st, 2024
Rawalpindi
Internship
PENDING
Details
T
Wordpress
- IT Geensis
Jul 26th, 2024
Lahore
Part-Time
PENDING
Details
E
Mern Stack Developer
- NetSoul
Jul 24th, 2024
Lahaore
Part-Time
PENDING
Details
U
Python Developer
- RULEX
Jul 31st, 2024
Shakargarh
Full-Time
INTERVIEW
Details
H
Mern Stack
- Ahamd
Jul 23rd, 2024
District
Part-Time
PENDING
Details
U
Web Dev
- Rulex
Jul 30th, 2024
Shakargarh
Part-Time
INTERVIEW
Details
U
Web Developer
- RULEX
Jun 30th, 2024
NEW YORK
Internship
INTERVIEW
Details
1
2
CAREER CONNECT
Sed ut perspiciatis undmnis is iste natus error sit amet voluptatem totam rem operiam.
+012 (345) 678 99
Resources
SaaS Development
Our Products
User Flow
User Strategy
Company
About TailGrids
Contact & Support
Success History
Setting & Privacy
Quick Links
Premium Support
Our Services
Know Our Team
Download App
Follow Us On
© 2024 Career Connect NRWL

Job Detail Page

This page containing the information of Job, when any user need for help than they can directly contactwith team throw the given details given in this page as shown in Fig 5.4.



Registration

This page use to register the users on web application. This page required the user details to register yourself on web. If the user has already registered yourself than they can Sign In to directly open their profile as shown in Fig 5.5.

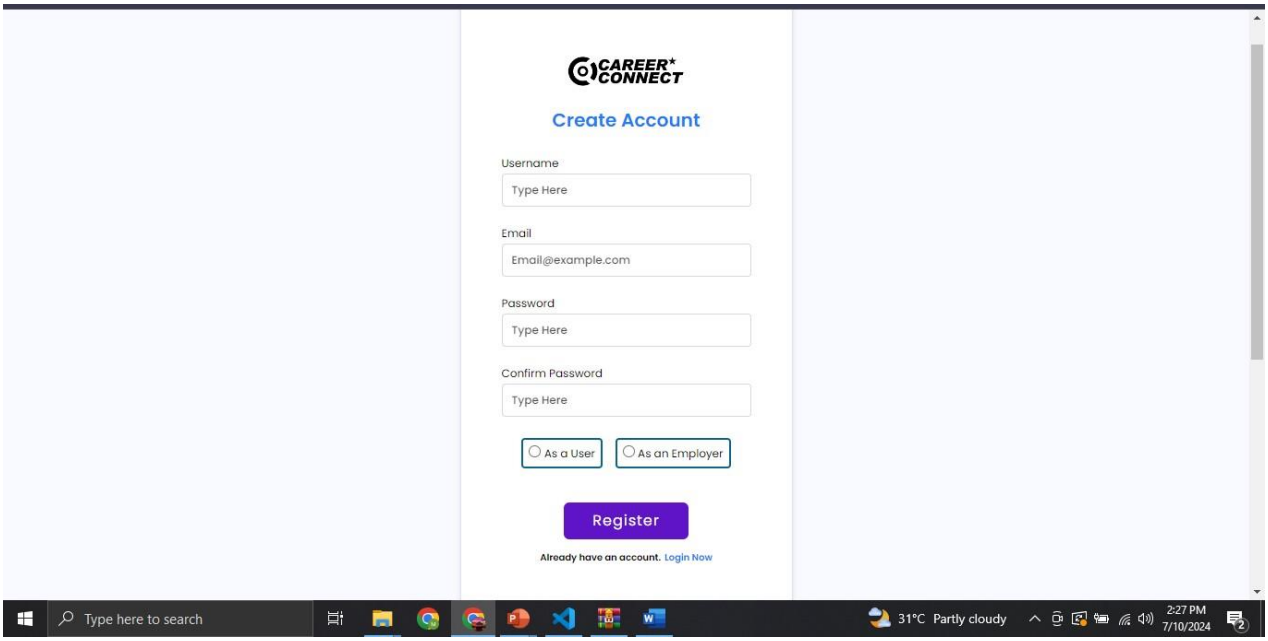


Figure 5.3: Register/ Sign Up

5.4 Sign In

If the user has already registered than this page containing the Email and Password of the user that is use during registration. The user enters their Email and Password according to their position as shown

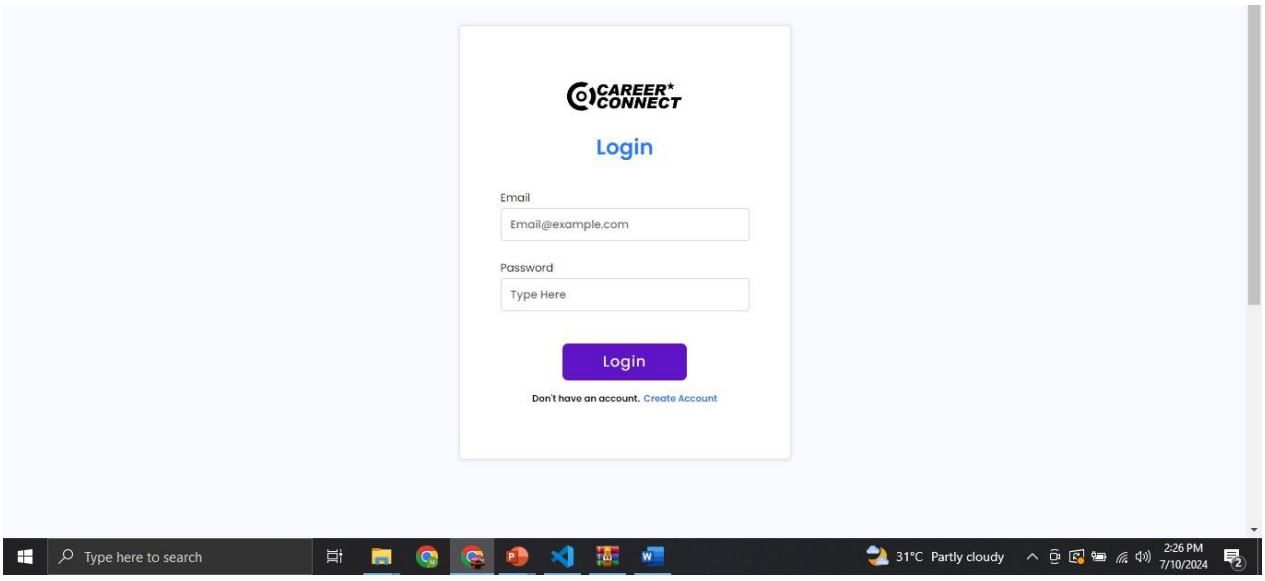


Figure 5.4: Sign in Page

5.5 Job Seaker Dashboard

This is the Job Seeker dashboard Fig 5.7. When clients click on any of these three sections, they can directly access that section.

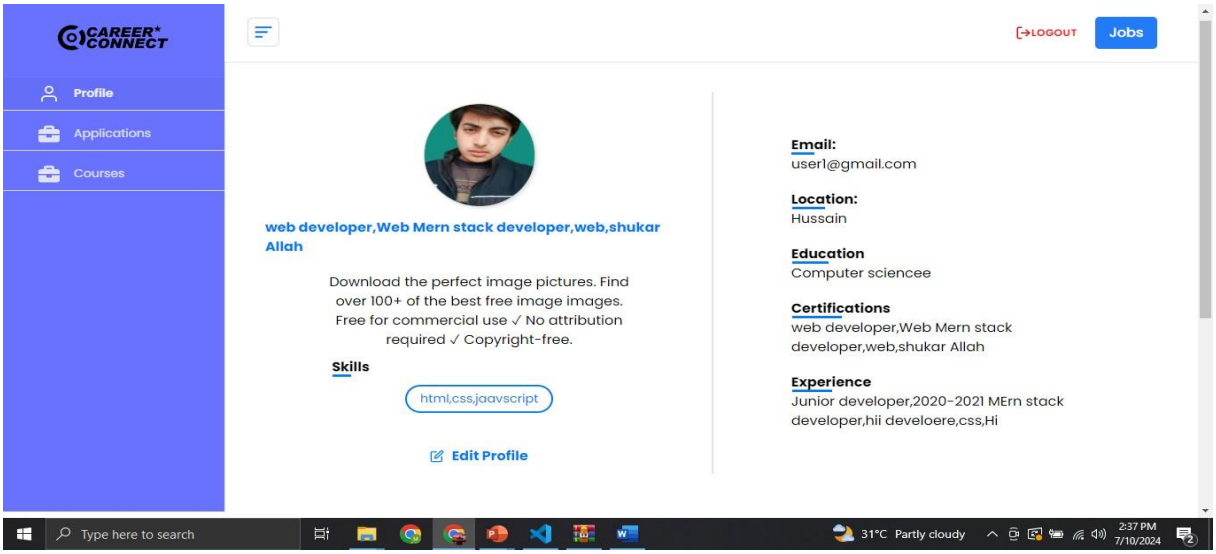


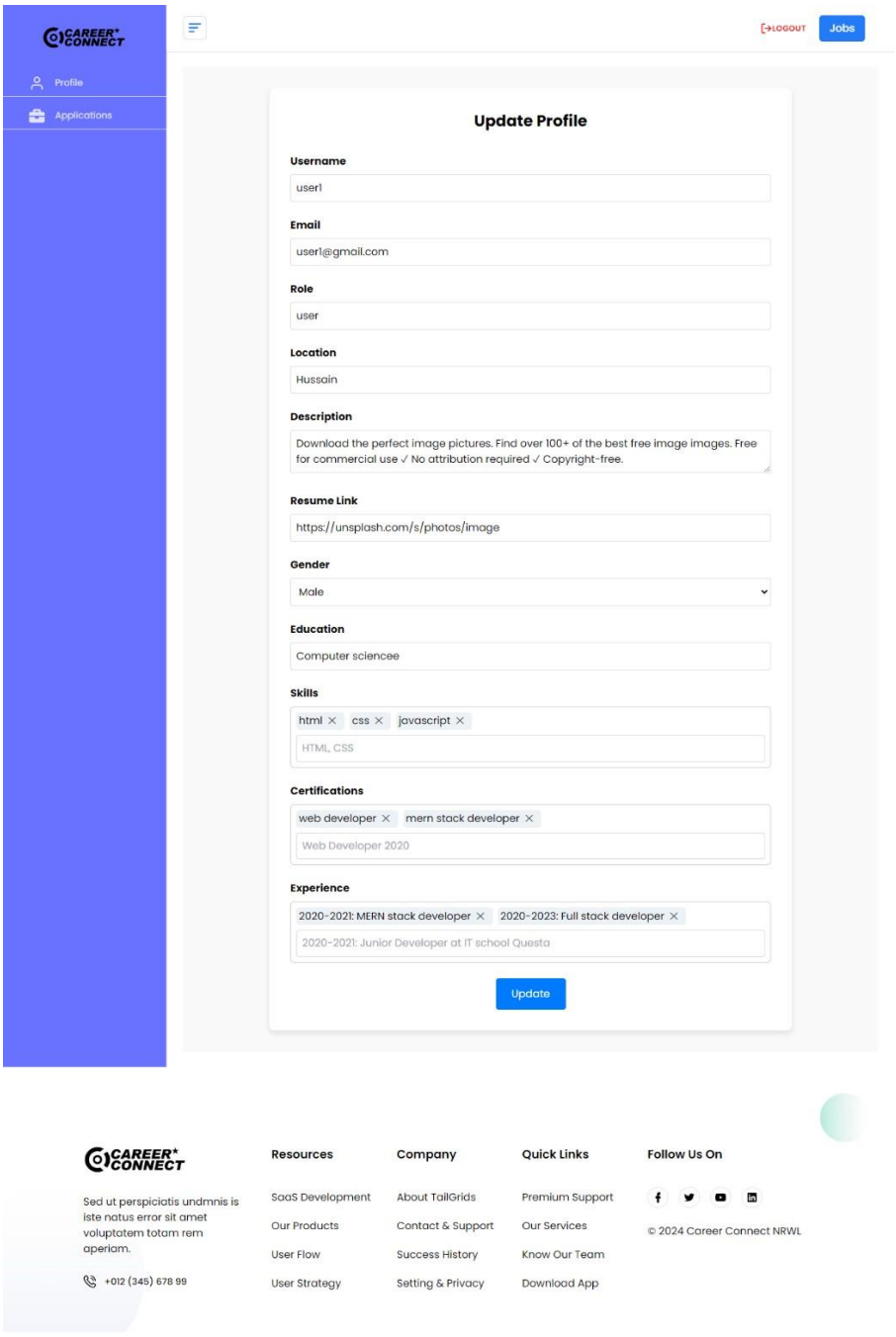
Figure 5.5: Job Seaker Dashboard

Job Seeker Update Profile

This is the Job Seaker dashboard. as shown in Fig

5.7. When clients click on any of these three sections, they can directly access that section.

5.5.1 Job Seaker Applications



This page is used by Employers to see the applications received. These application page is as shown in Fig 5.8.

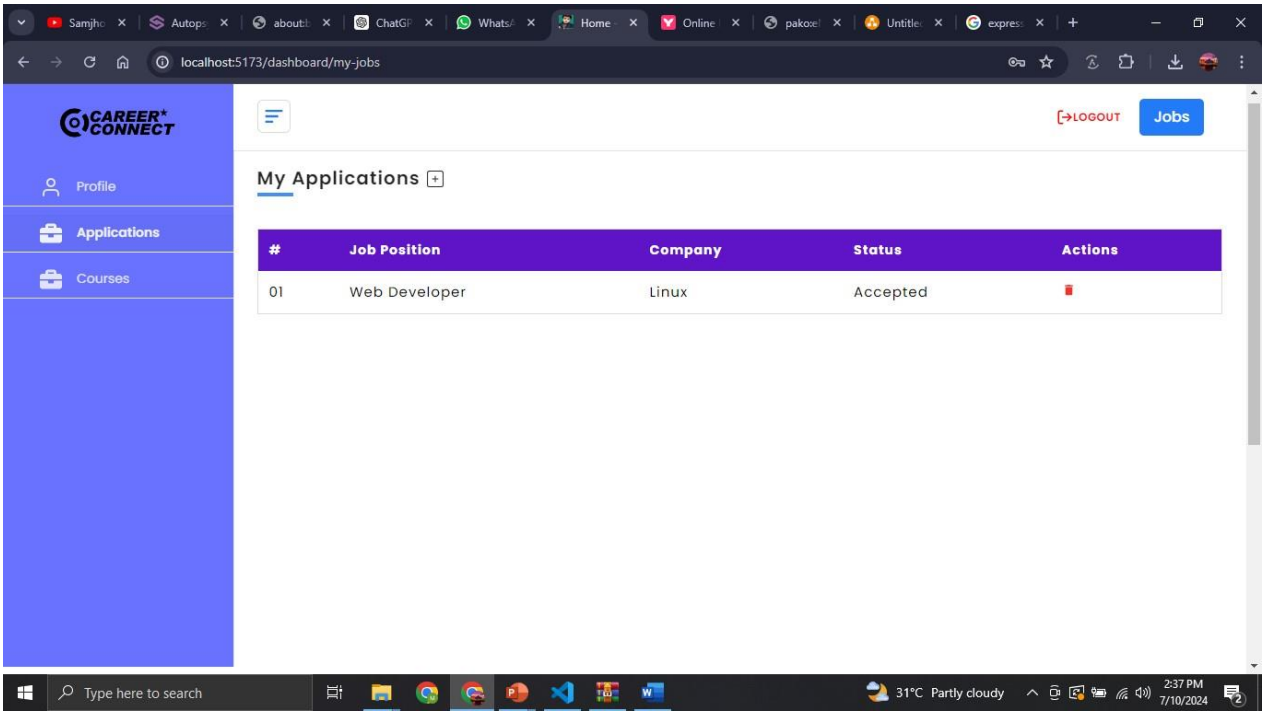


Figure 5.6: Job Seaker Applications

Recruiter Job Post Page

The recruiter job post page allows recruiters to post new job listings. It includes fields for job title, description, requirements, and other relevant information to create a job post that will be visible to job seekers.

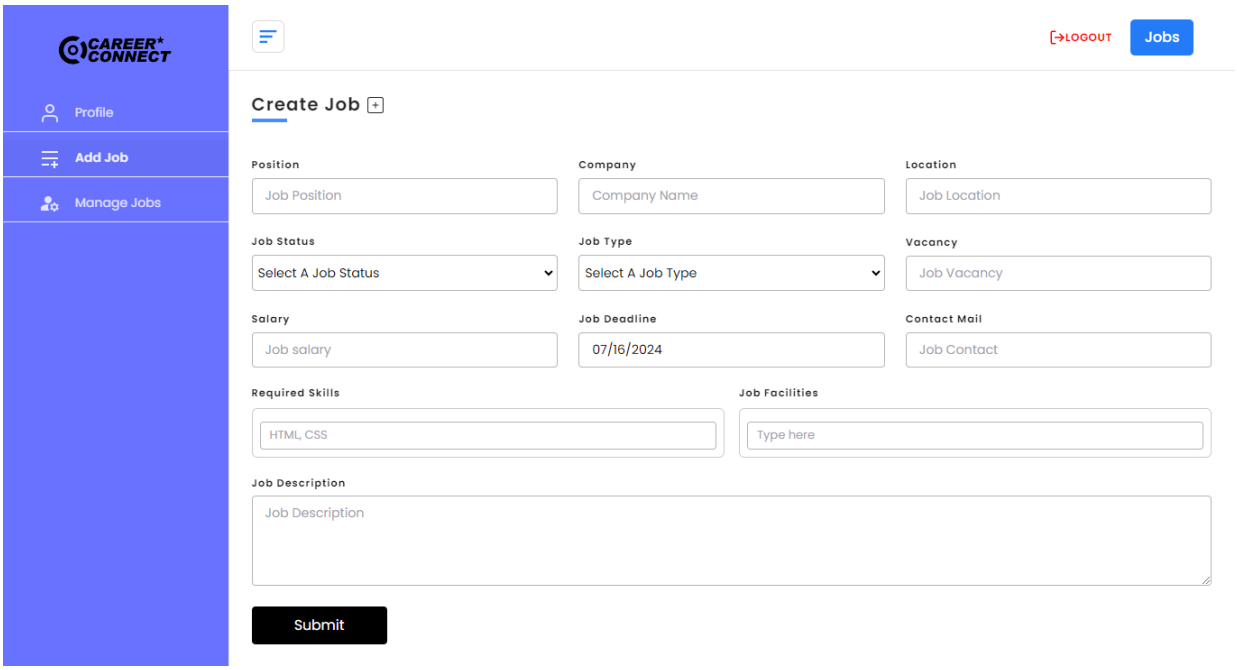


Figure 5.7: ***Employer Job Post Page***

Recruiter Job Manage Page

Recruiters might also manage their task posts the usage of this internet site. Recruiters have the capacity to screen the popularity of incoming applications and regulate, replace, or delete activity postings.

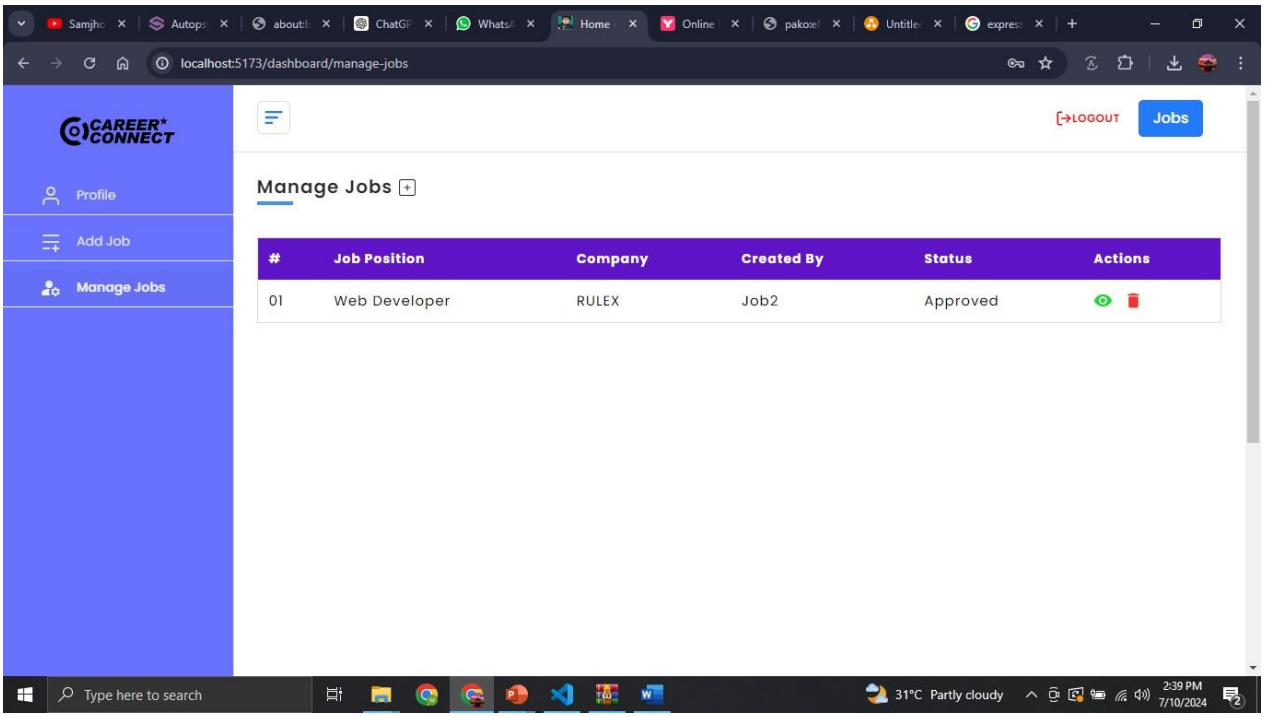


Figure 5.8: Manage Job

Admin Statistics Page

The platform's important metrics and performance indicators are shown in detail on the admin data page. administrators can reveal and examine platform sports with the useful resource of its various records visualizations and reviews. the quantity of active users, job posts, programs submitted, approval prices, and different pertinent facts points are examples of key records. The motive of this page is to provide directors with a quick overview of the platform's health and use styles so they can monitor their progress and make informed decisions.

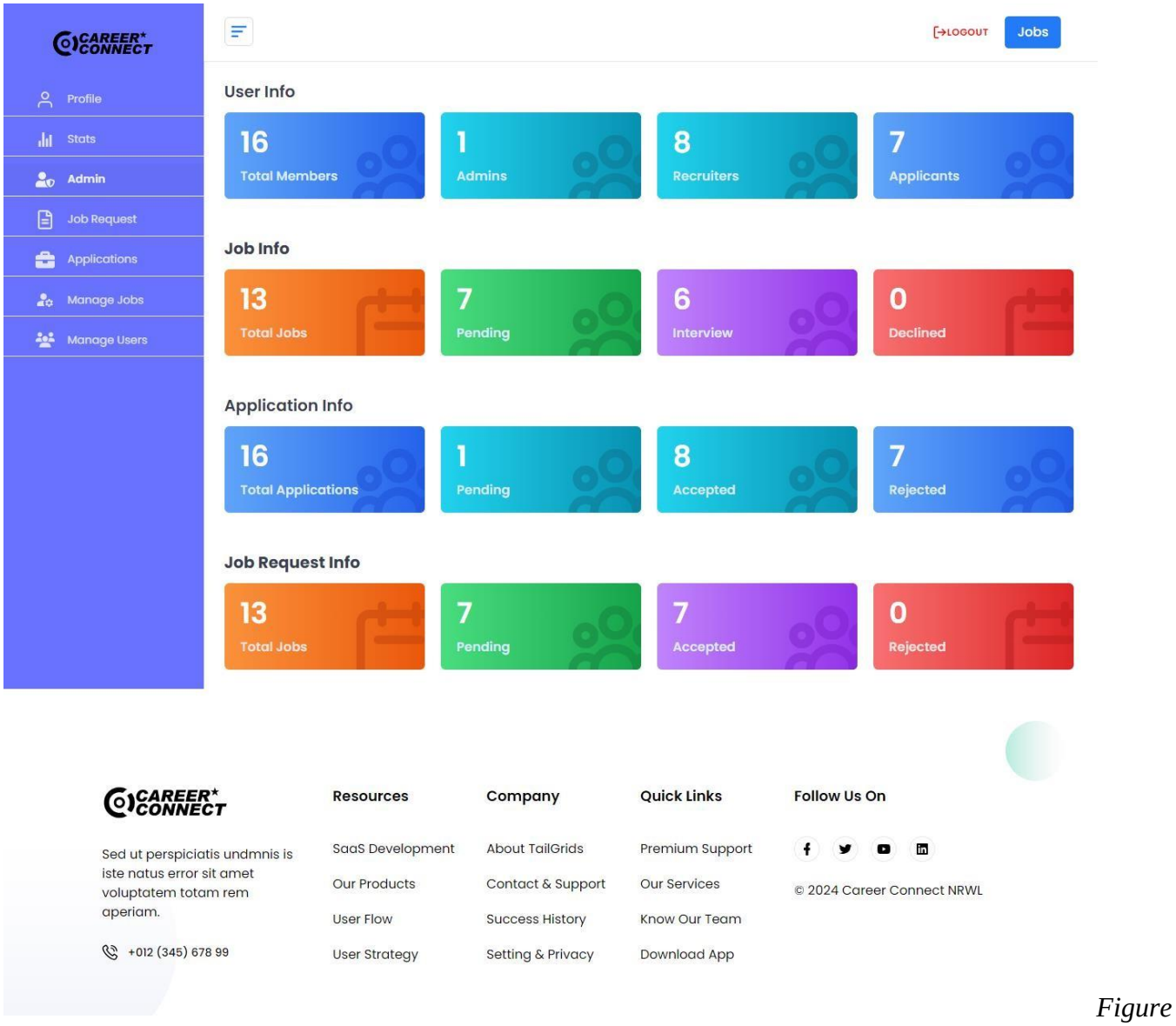
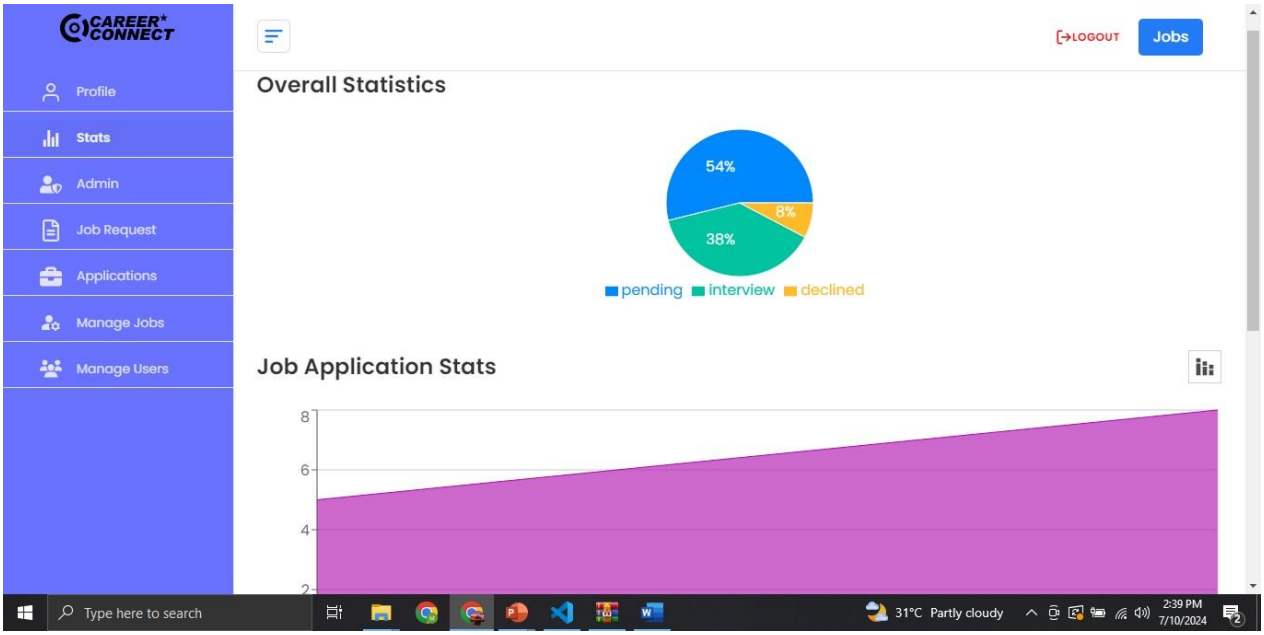


*Figure 5.8:**Admin Stat**s*



Admin Applications Management Page

This page allows administrators to oversee all job applications submitted by job seekers. Admins can review, approve, or reject applications and ensure a smooth hiring process.

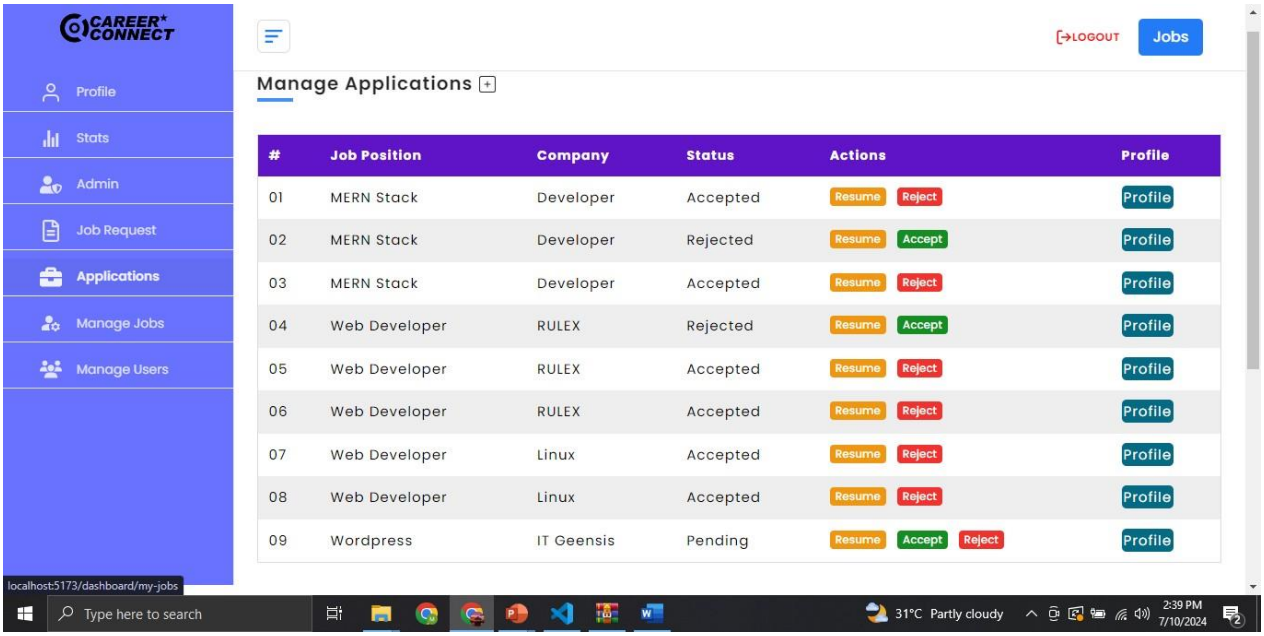


Figure 5.9: ***Admin Manage Applications***

Admin Job Request Management Page

Recruiters send activity requests, which administrators may additionally take delivery of or reject the use of the admin activity request management web page. It makes it easier for directors to handle all pending challenge requests via giving them a complete picture of them.

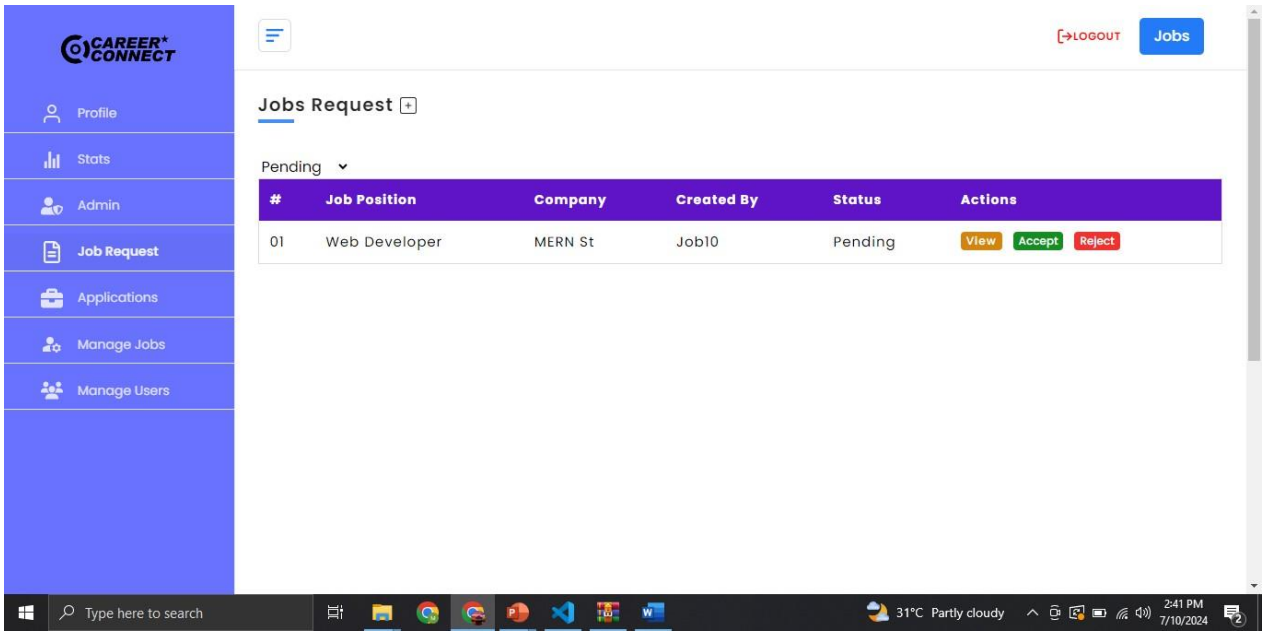


Figure 5.11: ***Admin Manage Applications***

Admin Manage Jobs Page

A consolidated interface for handling all job listings at the site is obtainable via the admin manage jobs page. Admins have the capability to study, alter, or dispose of job postings and keep song of any interest related to them.

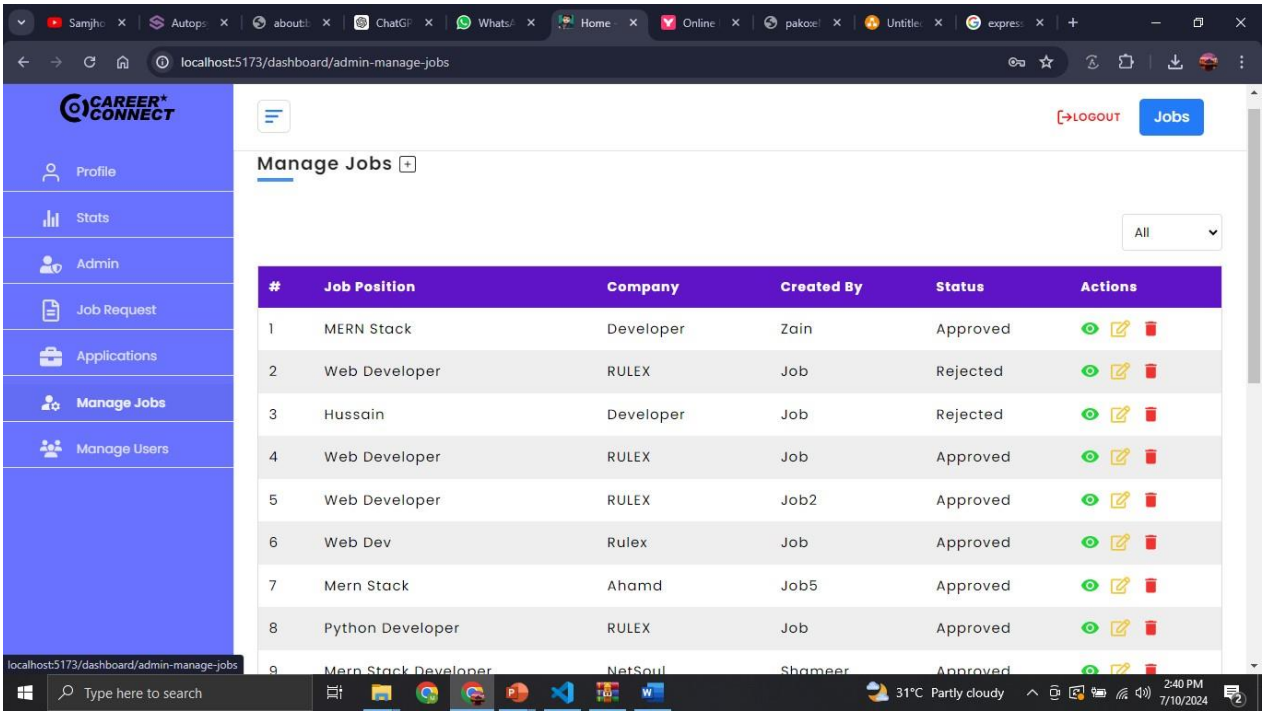


Figure 5.12: ***Admin Manage Jobs***

Admin Manage Users Page

This page enables administrators to manage user accounts on the platform. Admins can add, edit, orremove user accounts and monitor user activity to ensure compliance with platform policies.

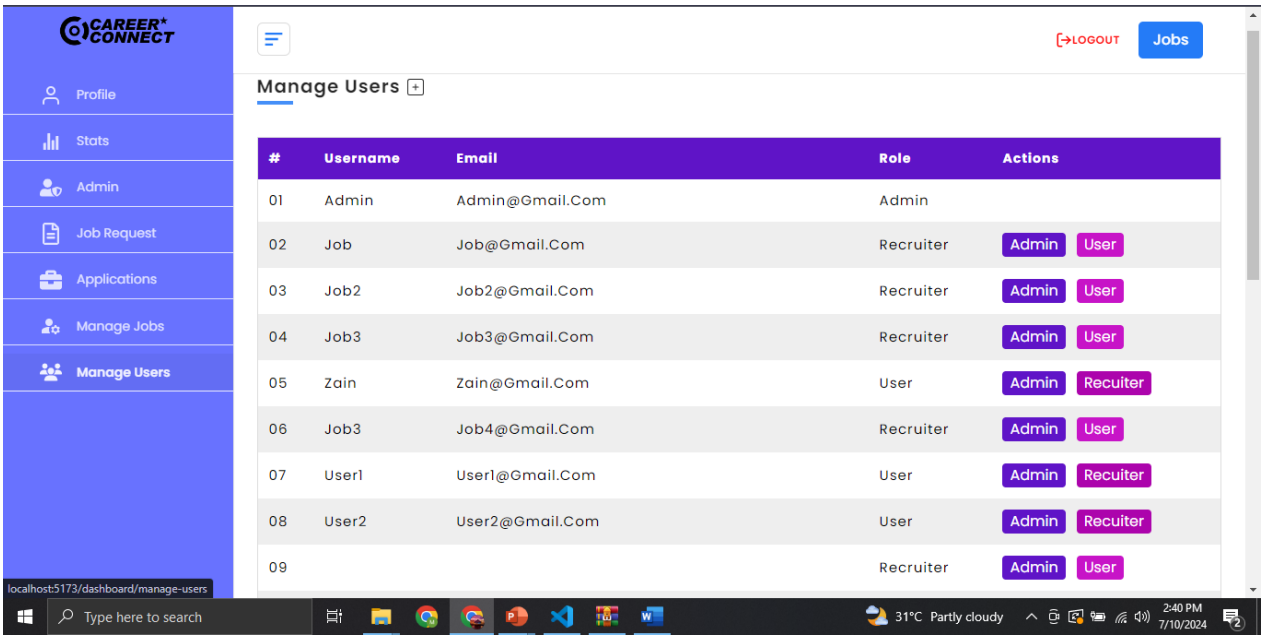


Figure 5.10: ***Admin Manage Users***

CHAPTER 6: SOFTWARE TESTING

6.1 Introduction

The IEEE SOFTWARE TEST DOCUMENTATION Std 829-1998, which is the standard for software testing used by the IEEE, is followed in this area of the deliverable. The execution of processes and code, which are crucial to the dynamic features of software testing, is outlined in this standard as a full collection of necessary test papers. The purpose, structure, and content of each fundamental document are defined within this standard. While these documents primarily focus on dynamic testing, some can find relevance in other testing activities as well, such as the application of the test plan and test incident report during design and code reviews [10].

The IEEE standard is adaptable to a wide spectrum of software domains – commercial, scientific, and military – regardless of the software's scale, intricacy, or criticality. The standard does not limit its applicability to any specific category of software, allowing organizations to apply it as per their requirements. It encompasses both initial development testing and subsequent software release testing. It can be effectively utilized throughout various testing phases, starting from module testing to user acceptance. However, the standard acknowledges that not all basic test documents may be suitable for every test phase, and therefore, it leaves the selection of appropriate documents to the discretion of the organization.

It's essential to note that the IEEE standard does not prescribe particular testing methodologies, approaches, techniques, [11] facilities, or tools. Neither does it stipulate documentation for their usage. Depending on the specific testing methodologies employed, additional documentation – like code inspection checklists and reports – might be necessary. Furthermore, the standard refrains from mandating specific methodologies for documentation control, configuration management, or quality assurance. Depending on the chosen methodologies, supplementary documentation, such as a quality assurance plan, may be deemed necessary.

The following list enumerates the standard artifacts that are integral to this deliverable, each of which plays a distinct role in the comprehensive software testing process: a. Test Plan

b. Test Design Specification
c. Test Case Specification
d. Test Procedure Specification
e. Test Item Transmittal Report
f. Test Log
g. Test Incident Report
h. Test Summary Report

These standardized artifacts form the backbone of the software testing process and collectively ensure the systematic evaluation, verification, and validation of the software's capabilities, thus contributing to the achievement of a reliable and effective software solution.

6.1 Test Plan

The Test Plan for the “Career Connect Narowal” project outlines a comprehensive approach to validate the system's functionalities, features, and performance. It defines the scope, objectives, test environment, resources, and schedule for the testing phase.

6.1.1 Purpose

The test Plan's goal is to provide the “Career Connect Narowal” assignment's testing operations an organized road map. It outlines the method, strategies, and tools required to guarantee that the system's dependability, performance, and functionality are fully verified.

6.1.2 Range

The whole “Career Connect Narowal” application is included inside the testing effort's scope:

a. **Web-based user Interface:** inspecting the internet application's responsiveness, usability, and navigationthat was created using HTML because the frontend.

b. **Backend:** Checking the effectiveness and functionality of React backend operations.

c. **Database Interactions:** ensuring that the Node.js database for storing and retrieving user and processfacts plays flawlessly and integrates seamlessly.

d. **User Experience:** Assessing the complete process, inclusive of registration, process search, utilitysubmission, and conversation features, for each employers and job seekers.

e. **Administrative Functionalities:** examining the system setups, user accounts, and jobs postings administrative gear.

6.1.3 Goals for Testing

The following are the Career Connect Narowal undertaking's checking out goals:

a. Examine the efficacy and precision of applicant suggestions and activity matching algorithms.

b. Assure easy application submission, profile upkeep, and user registration procedures.

c. Test the performance of the channels of contact utilized by companies and job seekers.

d. Compare the platform's functionality under unique user masses to ensure it's far dependable and scalable.

e. Confirm the safety controls put in vicinity to shield person data and hold machine integrity.

f. Examine the consumer interface's responsiveness, accessibility, and intuitiveness on diverse gadgets.

g. Affirm adherence to the norms and guidelines to guarantee the platform's balance and dependability.

6.1.4 Test Environment

The testing environment consists of the following components:

a. Web application [8] developed using the MERN stack (MongoDB, Express.js, React, and Node.js) for both frontend and backend functionalities.
b. MongoDB database for storing user profiles, job listings, employer details, and transaction records.
c. Testing servers and workstations equipped with necessary software tools for performance testing, security testing, and user interface testing.
d. Web browsers and mobile device simulators for cross-platform compatibility testing and user experience assessment.

6.1.5 Testing Approach

The testing approach for the "Career Connect Narowal" project follows a systematic process:

6.2.5.1 Unit Testing

Individual components, modules, and AI models are tested in isolation.

6.2.5.2 Integration Testing

Integrated components are tested to ensure seamless interactions.

6.2.5.3 Functional Testing

Each functionality is tested to validate its accuracy and correctness.

6.2.5.4 User Acceptance Testing

Real users simulate scenarios to validate system usability.[9] [10]

6.2.5.5 Performance Testing

Load and stress testing assess the system's performance.

6.2.5.6 Security Testing

Vulnerabilities and security mechanisms are evaluated.

6.2.5.7 Regression Testing

Ensuring new updates do not negatively impact existing features.

6.1.6 Testing Schedule

The testing schedule is outlined as follows:

a. Unit and Integration Testing: 2 weeks.
b. Functional and User Acceptance Testing: 3 weeks.
c. Performance and Security Testing: 2 weeks.
d. Regression Testing: Ongoing throughout the development and testing phases.

6.1.7 Resources

6.2.7.1 Testing tools

Testing frameworks, load testing tools, security testing tools

6.2.7.2 Test data

Realistic user scenarios, AI model training data

6.1.8 Deliverables

a. Test cases for each testing phase.
b. Test execution results, including pass/fail status and issues.
c. Performance testing reports.
d. Security testing reports.
e. Test summary report.

6.1.9 Risks and Mitigation

Identified risks associated with the "Career Connect Narowal" project include scalability challenges during periods of high user traffic, potential data security vulnerabilities, and ensuring continuous platform availability. Mitigation strategies involve implementing robust scalability solutions, conducting regular security audits and updates, and leveraging cloud-based infrastructure for enhanced reliability and performance.[7]

6.2 Test Cases

This Test Plan for the "Career Connect Narowal" project outlines systematic and comprehensive testing methodologies to ensure the reliability and functionality of the online job portal. The plan includes test cases for user registration, job search and application processes, course enrollment, and administrative functionalities.

6.2.1 Test Case: User Login

Table 6.1: User Login Test

Test Case ID	**TC001**
Test Case Title	User User
Test Area	Authentication
Test Description	This test verifies whether users can successfully log in with valid credentials and are denied access with invalid credentials.
Preconditions	User registration is complete.
Test Steps	1. Navigate to the login page of the Career Connect Narowal.
	2. Enter valid username and password.
	3. Click on the "Login" button.
	4. Observe the system's response.
Expected Result	User is successfully logged in and redirected to their dashboard.
Actual Result	As per the expected result.
Pass/Fail	Pass

Test Steps	1. Navigate to the login page of the Career Connect Narowal.
	2. Enter invalid username and password.
	3. Click on the "Login" button.
	4. Observe the system's response.
Expected Result	User is denied access and shown an error message indicating invalid credentials.
Actual Result	As per the expected result.
Pass/Fail	Pass

This test case, identified by the Test Case ID "TC001," focuses on testing the login functionality of the Career Connect Narowal. It includes two scenarios: one with valid credentials and one with invalid credentials. For each scenario, the test steps, expected result, actual result, and pass/fail status are documented. The "Preconditions" section specifies that user registration must be complete before performing the test.

6.2.2 Test Case: Register User

Table 6.2: User Register Test

Test Case ID	**TC002**
Test Case Title	User Register
Test Area	User Registration
Test Description	This test verifies whether users can successfully register with accurate and valid information and whether registration fails with incomplete or invalid data.
Preconditions	None
Test Steps	1. Navigate to the registration page of the Career Connect Narowal.
	2. Enter valid information in all required fields: full name, email, password, and confirm password.
	3. Click on the "Register" button.
	4. Observe the system's response.
Expected Result	User is successfully registered and redirected to the homepage and show message request sent to admin for approval.
Actual Result	As per the expected result.
Pass/Fail	Pass
Test Steps	1. Navigate to the registration page of the Career Connect Narowal.
	2. Leave one or more required fields empty.
	3. Click on the "Register" button.
	4. Observe the system's response.
Expected Result	User registration fails, and appropriate error messages are displayed for each missing field.
Actual Result	As per the expected result.
Pass/Fail	Pass

Test Steps	1. Navigate to the registration page of the Career Connect Narowal.
	2. Enter valid information in all required fields.
	3. Enter a password that does not match the confirm password.
	4. Click on the "Register" button.
	5. Observe the system's response.
Expected Result	User registration fails, and an error message indicates that passwords do not match.
Actual Result	As per the expected result.
Pass/Fail	Pass

This test case, identified by the Test Case ID "TC002," focuses on testing the user registration functionality of the Career Connect Narowal. It includes three scenarios: successful registration with accurate data, registration failure due to missing data, and registration failure due to password mismatch. For each scenario, the test steps, expected result, actual result, and pass/fail status are documented.

6.2.3 Test Case: Job Application Creation and Processing

Table 6.3: Job Application Creation and Processing Test

Test Case ID	**TC003**
Test Case Title	Job Application Creation and Processing
Test Area	Job Application Management
Test Description	This test verifies the end-to-end job application creation and processing process, including job assignment, application type classification, priority assignment, and AI response generation.
Preconditions	User is logged into the Career Connect Narowal platform.
Test Steps	1. Navigate to the job application creation page within Career Connect Narowal.
	2. Fill in all required fields accurately: Job Title, Description.
	3. Click on the "Submit Application".
	. Observe the system's response and application confirmation.
Expected Result	Application is successfully created and assigned to the appropriate employer.
Actual Result	As per the expected result.
Pass/Fail	Pass
Test Steps	1. Navigate to the job application creation page within Career Connect Narowal.
	2. Leave one or more required fields empty.
	3. Click on the "Submit Application" button

	4. Observe the system's response.
Expected Result	Application creation fails, and appropriate error messages are displayed for missing fields.
Actual Result	As per the expected result.
Pass/Fail	Pass
Test Steps	1. Create an application with valid information.
	2. Observe the assignment of the application to the correct employer.
	3. Verify that the assigned employer matches the category of the job.
Expected Result	Application is assigned to the right employer based on their expertise.
Actual Result	As per the expected result.
Pass/Fail	Pass
Test Steps	1. Create an application with valid information.
	2. Verify the AI-generated application type classification
Expected Result	AI classification accurately identifies the application type based on the job description.
Actual Result	As per the expected result.
Pass/Fail	Pass
Test Steps	1. Create an application with valid information.
	2. Observe the AI-generated response to the application.
Expected Result	AI response accurately addresses the application and provides relevant guidance.
Actual Result	As per the expected result.
Pass/Fail	Pass

This comprehensive test case covers multiple critical functionalities of the “Career Connect Narowal” online job portal, ensuring robustness and reliability in operations. The test scenarios encompass various aspects such as user registration, job posting, candidate application, skill enhancement through courses, and commission calculation. Each test case includes detailed steps, expected outcomes, actual results, and a pass/fail status, guaranteeing the accuracy and effectiveness of the portal's core functionalities.

Test Case ID	**TC004**	
Test Case Title	Job Application Submission by Job Seekers	
Career Connect N	rowal	Version: 1.0
Test Area	Job Application Management	Date: 11-July-2024
Test Description	This test verifies the end-to-end process of job seekers applying for job openings, including job application submission, form validation, and confirmation notifications.	
Preconditions	Job seeker is logged into the Career Connect Narowal platform.	
Test Steps	1. Navigate to the job openings page within Career Connect Narowal.	
	2. Select a job opening	
	3. Click on the "Apply Now" button.	
	4. Fill in all required fields accurately: Resume, Cover Letter, Contact Information.	
	5. Click on the "Submit Application" button.	
	6. Observe the system's response and application confirmation.	
Expected Result	Application is successfully submitted, and the job seeker receives a confirmation notification.	
Actual Result	As per the expected result.	
Pass/Fail	Pass	
Test Steps	1. Navigate to the job openings page within Career Connect Narowal.	
	2. Select a job opening.	
	3. Click on the "Apply Now" button.	
	4. Leave one or more required fields empty	
	5. Click on the "Submit Application" button.	
	6. Observe the system's response.	
Expected Result	Application submission fails, and appropriate error messages are displayed for missing fields.	
Actual Result	As per the expected result.	
Pass/Fail	Pass	
Test Steps	1. Navigate to the job openings page within Career Connect Narowal.	

	2. Select a job opening.
	3. Click on the "Apply Now" button.
	4. Fill in all required fields accurately: Resume, Cover Letter, Contact Information.
	5. Click on the "Submit Application" button.
	6. Verify the application is listed under the "My Applications" section of the job seeker's profile.
Expected Result	Application is listed under "My Applications" with the correct job details.
Actual Result	As per the expected result.
Pass/Fail	Pass
Test Steps	1. Navigate to the job openings page within Career Connect Narowal.
	2. Select a job opening.
	3. Click on the "Apply Now" button.
	4. Fill in all required fields accurately: Resume, Cover Letter, Contact Information.
	5. Click on the "Submit Application" button.
	6. Observe the system's AI-generated confirmation message
Expected Result	A confirmation message accurately acknowledges the application submission and provides next steps. As per the expected result.
Pass/Fail	Pass

6.2.4 Test Case: Job Application Submission

Table 6.4: Job Application Submission Test

This test verifies the end-to-end process of job seekers applying for job openings on the Career Connect Narowal platform. The test includes job application submission, form validation, and confirmation notifications. The goal is to ensure that job seekers can successfully apply for job openings, fill out the application form accurately, and receive proper confirmation of their application submission. This test also verifies that the system handles incomplete applications correctly by displaying appropriate error messages. Additionally, it checks that submitted applications are tracked and listed under the job seeker's profile. The AI-generated confirmation messages are also tested to ensure they provide accurate and helpful information to the job seeker.

6.2.5 Test Case: Application Status Updates Functionality

Table 6.5: Application Status Update Functionality

Test Case ID	**TC005**
Test Case Title	Application Status Update
Test Area	Job Application Management
Test Description	This test verifies the process of updating the status of job applications, including status changes by employers and notifications sent to job seekers.
Preconditions	Job seeker and employer are logged into the Career Connect Narowal platform.
Test Steps	1. Employer navigates to the job application management page.
	2. Employer selects a job application.
	3. Employer updates the status of the application (e.g., from "Under Review" to "Interview Scheduled").
	4. Click on the "Update Status" button.
	5. Observe the system's response and confirmation message.
	6. Click on the "Update" button or equivalent action to save changes.
	7. Observe the system's response and confirmation of updates.
Expected Result	Application status is successfully updated, and the job seeker receives a notification about the status change.
Actual Result	As per the expected result.
Pass/Fail	Pass
Test Steps	1. Employer navigates to the job application management page.
	2. Employer selects a job application.
	3. Employer attempts to update the status with invalid data (e.g., leaving the status field blank).
	4. Click on the "Update Status" button.
	5. Observe the system's response.
Expected Result	Status update fails, and appropriate error messages are displayed for invalid data.

Actual Result	As per the expected result.
Pass/Fail	Pass

This test verifies the process of updating the status of job applications on the Career Connect Narowal platform. It involves employers changing the status of job applications at various stages (e.g., from "Under Review" to "Interview Scheduled," "Rejected," or "Hired") and ensuring that these changes are correctly reflected in the system. The test also checks if appropriate notifications are sent to job seekers to keep them informed about the status of their applications.

6.2.6 Test Case: Profile Update Functionality

Table 6.6: Profile Update Functionality Test

Test Case ID	**TC006**
Test Case Title	Profile Update Functionality
Test Area	User Profile
Test Description	This test verifies whether users can successfully update their name, email, and profile picture, ensuring that changes are reflected accurately in the user's profile.
Preconditions	User is logged into the Career Connect Narowal.
Test Steps	1. Navigate to the user's profile settings within the Career Connect Narowal.
	2. Edit the user's name to a different value.
	3. Edit the user's email to a different valid email address.
	4. Upload a profile picture with a file size of a few kilobytes.
	5. Click on the "Save Changes" button or equivalent action.
	6. Observe the system's response and confirmation of updates.
Expected Result	User's name, email, and profile picture are successfully updated and accurately reflected in the user's profile.
Actual Result	As per the expected result.
Pass/Fail	Pass
Test Steps	1. Navigate to the user's profile settings within the Career Connect Narowal.
	2. Attempt to update the user's name to an empty value.
	3. Click on the "Save Changes" button or equivalent action.
	4. Observe the system's response.
Expected Result	Update fails, and an appropriate error message indicates that the name field cannot be empty.
Actual Result	As per the expected result.

Pass/Fail	Pass
Test Steps	1. Navigate to the user's profile settings within the Career Connect Narowal.
	2. Attempt to update the user's email to an invalid format (e.g., "invalidemail").
	3. Click on the "Save Changes" button or equivalent action.
	4. Observe the system's response.
Expected Result	Update fails, and an appropriate error message indicates that the email format is invalid.

Career Connect Narowal	Version: 1.0
Department of Computer Science - University of Narowal	Date: 11-July-2024

Actual Result	As per the expected result.
Pass/Fail	Pass

Its core objective is to ascertain the seamless user ability to modify vital details, such as name, email, and profile picture. The test case adeptly handles diverse scenarios including instances of vacant name fields, incorrect email formats, and triumphant updates. By meticulously outlining test steps, anticipated outcomes, observed results, and the consequential pass/fail status for each distinct scenario, this evaluation ensures the robustness of the profile update feature, thus fortifying the user experience and system reliability.

6.2.7 Test Case: Password Change Functionality

Table 6.7: Password Change Functionality Test

Test Case ID	**TC007**
Test Case Title	Password Change Functionality
Test Area	User Profile
Test Description	This test verifies whether users can successfully change their password, ensuring that the new password is updated and functional for subsequent logins.
Preconditions	User is logged into the Career Connect Narowal.
Test Steps	1. Navigate to the user's profile settings within the Career Connect Narowal.
	2. Enter the current password, a new password, and confirm the new password.
	3. Click on the "Change Password" button or equivalent action.
	4. Observe the system's response and confirmation of the password change.

Expected Result	User's password is successfully changed, and the new password is functional for subsequent logins.
Actual Result	As per the expected result.
Pass/Fail	Pass
Test Steps	1. Navigate to the user's profile settings within the Career Connect Narowal.
	2. Enter an incorrect current password, a new password, and confirm the new password.
	3. Click on the "Change Password" button or equivalent action.
	4. Observe the system's response.
Expected Result	Password change fails, and an appropriate error message indicates that the current password is incorrect.
Actual Result	As per the expected result.
Pass/Fail	Pass
Test Steps	1. Navigate to the user's profile settings within the Career Connect Narowal.
	2. Enter the current password, a new password, and confirm a different new password.
	3. Click on the "Change Password" button or equivalent action.
	4. Observe the system's response.
Expected Result	Password change fails, and an appropriate error message indicates that the new passwords do not match.
Actual Result	As per the expected result.
Pass/Fail	Pass

Test Case ID	**TC008**
Test Case Title	New User Registration by Administrator
Test Area	User Management
Test Description	This test verifies whether administrators can successfully register new users, ensuring that the email provided is unique and that the data entered is valid.
Preconditions	Administrator is logged into the Career Connect Narowal.
Test Steps	1. Navigate to the user management section within the Career Connect Narowal.
	2. Click on the "Add New User" or equivalent action.
	3. Enter valid data including a unique email, name, and role (client, staff, etc.).
	4. Click on the "Register User" button or equivalent action.
	5. Observe the system's response and confirmation of user registration.
Expected Result	New user is successfully registered, and their data is accurately stored in the system.
Actual Result	As per the expected result.
Pass/Fail	Pass
Test Steps	1. Navigate to the user management section within the Career Connect Narowal.
	2. Attempt to register a new user with an email that already exists in the system.
	3. Click on the "Register User" button or equivalent action.
	4. Observe the system's response.
Expected Result	User registration fails, and an appropriate error message indicates that the email is already in use.
Actual Result	As per the expected result.
Pass/Fail	Pass
Test Steps	1. Navigate to the user management section within the Career Connect Narowal.
	2. Enter invalid data or leave required fields empty (e.g., missing name or role).
	3. Click on the "Register User" button or equivalent action.

This test case covers the password change functionality, ensuring that users can successfully update their password and that the new password functions correctly for subsequent logins. The scenarios include successful password change, incorrect current password, and mismatched new passwords. As always, the test case includes test steps, expected results, actual results, and pass/fail status for each scenario.

6.2.8 Test Case: New User Registration by Administrator

This test case covers the reports generation functionality, ensuring that users can successfully generate reports in different formats while applying filters based on staff, date, status, and priority. The scenarios include successful report generation, mandatory filter check, and empty report generation due to non-matching filters. As always, the test case includes test steps, expected results, actual results, and pass/fail status for each scenario.

6.3.10 Test Case: Email Functionality

Table 6.9: Email Functionality Test

Test Case ID	**TC011**
Test Case Title	Email Functionality
Test Area	Communication
Test Description	This test verifies whether emails are correctly sent to relevant individuals for various actions performed in the Career Connect Narowal, such as applying on job, posting new jobs, new user registration requests, and more.
Preconditions	The Career Connect Narowal is operational. Users and administrators have valid email addresses associated with their accounts.
Test Steps	1. Perform an action that triggers an email notification, such as such as applying on job, posting new jobs, new user registration requests, and more.
	2. Check the recipient's email inbox for the expected email notification.
Expected Result	An email notification is received by the relevant individuals for the action performed.
Actual Result	As per the expected result.
Pass/Fail	Pass

This test case covers the email functionality, ensuring that emails are correctly sent to relevant individuals for various actions in the Career Connect Narowal. The scenarios include actions like commenting on a service and new user registration requests, where email notifications should be triggered. The test case includes test steps, expected results, actual results, and pass/fail status.

6.3.13 Test Case: Responsiveness

Table 6.13: Responsiveness Test

Test Case ID	**TC014**
Test Case Title	Responsiveness
Test Area	User Experience
Test Description	This test verifies whether the “Career Connect Narowal” web application is responsive and functions properly across various devices and screen sizes.

Preconditions	The Career Connect Narowal web application is accessible through different devices (desktop, tablet, mobile) and browsers.
Test Steps	1. Access the Career Connect Narowal web application using different devices (desktop, tablet, mobile).
	2. Navigate through different sections of the application, including login, Job management, profile settings, and more.
	3. Perform various actions within the application on each device.
	4. Observe the layout, design, and behavior of the application across different screen sizes.
Expected Result	The "Career Connect Narowal" web application should be responsive, and its layout and functionality should adapt smoothly to different devices and screen sizes, ensuring a consistent user experience.
Actual Result	As per the expected result.
Pass/Fail	Pass

This test case covers the responsiveness of the "Career Connect Narowal" web application, ensuring that it provides a consistent and user-friendly experience across various devices and screen sizes. The test case includes test steps, expected results, actual results, and pass/fail status.

REFERENCES

[1]. Smith, J. (2021). *The Role of Online Job Portals in Modern Employment*. Journal of Employment Studies

[2]. Chege, Samwel (2019) Information technology innovation and its impact on job creation by SMEs in developing countries: an analysis of the literature review

[3]. Impact of Technological Advancements on Work and Employment Patterns. DO - 10.47941/jas.1856. JO- Journal of Advanced Sociology

[4]. Journeying through Query Verse: A MERN-Stack Implementation for Dynamic Web-based Inquiry. DO - 10.22214/ijraset.2024.58264.

[5]. Tengan, Callistus & Aigbavboa, Clinton & Thwala, Wellington. (2021). Project management. 10.1201/9781003137979-1.

[6]. Bause, Katharina & Radimersky, Aline & Iwanicki, Marinette & Albers, Albert. (2014). Feasibility Studies in the Product Development Process. Procedia CIRP. 21. 473-478. 10.1016/j.procir.2014.03.128.

[7]. Valério, Karollay & Silva, Carlos & Neves, Sandra. (2020). Risk Management in Software Development Projects: Systematic Review of the State of the Art Literature. International Journal of Open Source Software and Processes. 11. 1-22. 10.4018/IJOSSP.2020010101.

[8]. Mukhiya, Suresh & Hung, Hoang. (2018). An Architectural Style for Single Page Scalable Modern Web Application. 5. 6-13.

[9]. Joel Omonigho, Toje. (2023). The Importance of Usability and User-Centered Design in Web Applications: A Critical Review of Literature. 10.13140/RG.2.2.19014.04160.

[10]. Ghasemifard, Najmeh. (2015). A New View at Usability Test Methods of Interfaces for Human Computer Interaction. Global Journal of C omp uter S cience and T echnology. XV.

[11]. Kumar, Vaibhav & L., M.. (2018). Predictive Analytics: A Review of Trends and Techniques. International Journal of Computer Applications. 182. 31-37. 10.5120/ijca2018917434.

[12] Navaratnam, Lakshija & Edirisooriya, Waruni. (2023). A Study of Job Seekers' Perceptions of the Job Portals in Sri Lanka: With Special Reference to "Millennials" and Generation "Z".

Career Connect Narowal - Umair Aslam.docx

by Usama Imran

Submission date: 23-Jul-2024 05:15AM (UTC-0700)
Submission ID: 2421282136
File name: Career_Connect_Narowal_-_Umair_Aslam.docx (2.17M)
Word count: 15057
Character count: 88429

Career Connect Narowal - Umair Aslam.docx

ORIGINALITY REPORT

9%	5%	1%	8%
SIMILARITY INDEX	INTERNET SOURCES	PUBLICATIONS	STUDENT PAPERS

PRIMARY SOURCES

1	Submitted to Higher Education Commission Pakistan Student Paper	3%
2	Submitted to Bossier Parish School Board Student Paper	1%
3	Submitted to National School of Business Management NSBM, Sri Lanka Student Paper	<1%
4	Submitted to Chulalongkorn University Student Paper	<1%
5	Submitted to Colorado Technical University Student Paper	<1%
6	Submitted to University of North Carolina, Greensboro Student Paper	<1%
7	docplayer.net Internet Source	<1%
8	Submitted to Birkbeck College Student Paper	<1%

9	Submitted to Federation University Student Paper	<1%
10	www.coursehero.com Internet Source	<1%
11	Submitted to University of Leicester Student Paper	<1%
12	Submitted to University of Greenwich Student Paper	<1%
13	www.toptal.com Internet Source	<1%
14	Submitted to Polytechnic Institute Australia Student Paper	<1%
15	aronwebsolutions.com Internet Source	<1%
16	Submitted to University of Bradford Student Paper	<1%
17	Submitted to Informatics Education Limited Student Paper	<1%
18	Submitted to North East Surrey College of Technology, Surrey Student Paper	<1%
19	Submitted to University of College Cork Student Paper	<1%

20	Submitted to Letterkenny Institute of Technology Student Paper	<1%
21	Submitted to Taylor's Education Group Student Paper	<1%
22	github.com Internet Source	<1%
23	Submitted to Middlesex University Student Paper	<1%
24	Submitted to Harrisburg University of Science and Technology Student Paper	<1%
25	Submitted to Universiti Teknikal Malaysia Melaka Student Paper	<1%
26	irigs.iiu.edu.pk:64447 Internet Source	<1%
27	Submitted to Colorado State University Fort Collins Student Paper	<1%
28	www.freshersworld.com Internet Source	<1%
29	Submitted to Johnson and Wales University Student Paper	<1%

30	"Advances in Visual Informatics", Springer Science and Business Media LLC, 2019 Publication	<1%
31	Chamalla Sravani, Pudi Kumar, Sanapala Priya, Sujith Kumar Yadav, Madina Jayanthi Rao, Urlam Devi Prasan. "Constructing a Study Buddy Using MERN (MongoDB, Express.js, React, Node.js) Stack Technologies", IPDIMS 2023, 2024 Publication	<1%
32	Submitted to Sir George Monoux College Student Paper	<1%
33	Submitted to Southern New Hampshire University - Continuing Education Student Paper	<1%
34	Submitted to Stanmore College Student Paper	<1%
35	www.schoolandcollegelistings.com Internet Source	<1%
36	Submitted to Bahrain Polytechnic Student Paper	<1%
37	Submitted to Segi University College Student Paper	<1%
38	www.geeksforgeeks.org Internet Source	<1%

39	scholar.mzumbe.ac.tz Internet Source	<1%
40	Submitted to Blue Mountain Hotel School Student Paper	<1%
41	Submitted to Universiti Teknologi Malaysia Student Paper	<1%
42	etd.aau.edu.et Internet Source	<1%
43	standards.ieee.org Internet Source	<1%
44	www.cctvcameraworld.com Internet Source	<1%
45	www.phoenix.gov Internet Source	<1%
46	www.researchgate.net Internet Source	<1%
47	Submitted to QA Learning Student Paper	<1%
48	fastercapital.com Internet Source	<1%
49	technodocbox.com Internet Source	<1%
50	Tchamdjeu, Rosine Mouchou. "Retention of Engineering Students in a South African	<1%

Exclude matches Off