STUDENTSTATIQ

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Abstract - "StudentStatIQ" is a comprehensive platform aimed at supporting students in tracking their academic progress and enhancing their career development. The system utilizes four years of academic data to assess student strengths and areas for improvement, providing personalized career guidance and skill development plans. By aligning academic achievements with career aspirations, StudentStatIQ helps students stay competitive in a dynamic job market. Additionally, the platform offers tools to streamline the recruitment process, including automated resume matching based on job descriptions, which reduces bias and improves the efficiency of talent identification. Through its focus on academic and professional growth, StudentStatIQ empowers students to achieve their full potential and connect with career opportunities more effectively.

Keywords- Student performance, career development, skill development, resume matching, recruitment automation.

I. INTRODUCTION

StudentStatIQ is a comprehensive student performance tracking and career development platform designed to streamline academic and placement processes for institutions. With its user-friendly interface, the platform caters to both students and administrators, providing tools to enhance career readiness and academic management. It features resources such as placement news and curated career-enhancing videos while enabling efficient student data management through functionalities like student filtering based on skill sets, bulk uploads of student details, and downloadable filtered lists. The platform's department view allows access to individual student details and resumes, while its advanced resume matcher automates recruitment by aligning bulk-uploaded resumes with job descriptions, ensuring efficient and targeted candidate selection. By integrating academic tracking, student filtering, and recruitment tools, StudentStatIQ empowers institutions to manage data effectively and equips students with the resources needed for academic and career success.

II. LITERATURE REVIEW

[1] M. Sodanil; Saranlita Chotirat; L. Poomhiran; Kanchana Viriyapant; "Guideline for Academic Support of Student Career Path Using Mining Algorithm", PROCEEDINGS OF THE 2019 3RD INTERNATIONAL CONFERENCE ON , 2019.

Higher education plays a critical role in preparing students for future careers. To align qualifications with societal and entrepreneurial expectations, institutions must support student performance effectively. This study analyzes the relationship between courses and potential career paths using the Apriori algorithm on student grade data from 25 key courses in Information Technology at Suan Sunandha Rajabhat University (2011–2019). Using Weka 3.8.3, 14 association rules were identified, revealing key courses linked to future careers. These findings provide actionable insights to enhance academic support and career readiness for students. [1]

[2] Rika Ikeda; Fathima Assilmia; Elvaretta Angelina; K. Okawa; "Job Digital Storytelling Program for University Students to Develop Career Management Competencies", PROCEEDINGS OF THE 3RD INTERNATIONAL CONFERENCE ON DIGITAL , 2019.

As technology evolves rapidly, many graduates face challenges transitioning from academia to professional life. Collaborating with IN360, a project offering career education for children aged 9–12, a digital storytelling workshop was conducted with 19 undergraduates from Hutech University in

Vietnam. Participants created 360° job storytelling videos, fostering career management competencies through in-depth interviews, collaborative video-making, and teamwork. Findings showed the program enhanced storytelling skills, technology literacy, and competencies in personal management, career exploration, and career building. [2]

[3] Joy Dhar; Asoke Kumar Jodder; "An Effective Recommendation System to Forecast The Best Educational Program Using Machine Learning Classification Algorithms", INGÉNIERIE DES SYSTÈMES D INF., 2020. (IF: 3)

After completing Class 10, students often face challenges in selecting an educational program aligned with their career goals. To address this, a recommendation system leveraging machine learning (ML) is proposed to forecast the most suitable academic path based on students' past academic performances. Using a correlation- based feature selection approach, relevant features for each program are identified. Multiple ML algorithms are applied, and the best-performing model is used to recommend the optimal academic program, guiding students toward achieving their career aspirations. [3]

[4] Markus Reiter-Haas; David Wittenbrink; Emanuel Lacic; "On The HeterogeneousInformation Needs in The Job Domain: A Unified Platform for Student Career", FOURTEENTH ACM CONFERENCE ON RECOMMENDER SYSTEMS, 2020.

Finding the right job is challenging, particularly for students with limited experience. Talto addresses this by providing a platform for Austrian university students to explore career paths through personalized recommendations for job postings, company profiles, and career-related content. Using a hybrid microservice-based recommendation system, Talto integrates Collaborative Filtering, Content-Based Filtering, and neural embedding approaches like Doc2Vec and Autoencoders to deliver real-time, context-aware recommendations tailored to user behavior and study progression. By embedding entities and concepts into a unified vector space, Talto enhances recommendation accuracy, textual search functionality, and explainability, offering students relevant, transparent career guidance.[4]

[5] Ashutosh Shankhdhar; Akash Agrawal; Deepak Sharma; Suryansh Chaturvedi; Mukesh Pushkarna; "Intelligent Decision Support System Using Decision Tree Method for Student Career",2020 INTERNATIONAL CONFERENCE ON POWER ELECTRONICS & IOT , 2020.

Choosing the right career is crucial but increasingly challenging due to the growing number of options. According to CSIR, 40% of students struggle with career selection, often leading to reduced productivity. To address this, a web application is proposed to assist students in selecting appropriate courses and careers based on personality traits, interests, and capabilities. The application also recommends suitable colleges based on locality and fee structure, leveraging analytics to guide informed decisions and improve career outcomes. [5]

[6] Tomoya Mizobuchi; Toshihiko Hamasaki; "Applicability Analysis of The Combination ofCareer Anchors and Big-Five Personality for Student Career Development", 2020 IEEE INTERNATIONAL CONFERENCE ON TEACHING, ASSESSMENT, 2020.

This study analyzes the effectiveness of combining Career Anchors (CA) and Big-Five Personality (BFP) questionnaires for career development in information sciences students. Responses from 612 CA and 341 BFP participants were evaluated using item response theory, Markov chain Monte Carlo methods, and Bayes' theorem. Statistical distributions and correlations between CA and BFP items were identified, highlighting the combined questionnaire's potential to enhance career development strategies for students. [6]

[7] Adriana Amozurrutia-Elizalde; Gibrán Sayeg-Sánchez; A. Flores-Amado; "Key Factors of Subjective Well-being Index in Engineering Students", 2020 IEEE GLOBAL ENGINEERING EDUCATION CONFERENCE (EDUCON), 2020.

This study explores the relationship between subjective well-being (SWB) and academic performance in 297 second-year engineering students. Using a Subjective Well-being Index, findings reveal that students with higher SWB scores tend to perform better academically. High SWB acts as a mediator, fostering motivation, resilience, and engagement, which are critical for academic success and career perseverance.

[8] Rana M. Amir Latif; Javed Ferzund; Muhammad Farhan; Noor Zaman; Muhammad Umer; "A Case Study of CareerCounseling for ICT", 2021.

This study addresses the need for automated career counseling due to high student-to- counselor ratios. Using a dataset reflecting diverse student mindsets, machine learning algorithms such as logistic model tree, naïve Bayes, J48, and random forest were applied to predict career options. The best-performing algorithm was identified based on accuracy, kappa statistics, and error metrics, offering a data-driven approach to enhance career guidance.

III. EXISTING SYSTEM

In traditional student performance tracking and career development processes, institutions often rely on fragmented methods such as spreadsheets, manual record-keeping, and separate tools for academic and placement activities.

Academic progress is typically monitored through periodic evaluations, while career guidance and placement efforts are handled separately, often requiring significant administrative effort. Resume matching, if conducted, is usually a manual process, leading to inefficiencies and potential biases. Similarly, student filtering for recruitment purposes often depends on manually sifting through data, which is time-consuming and prone to errors.

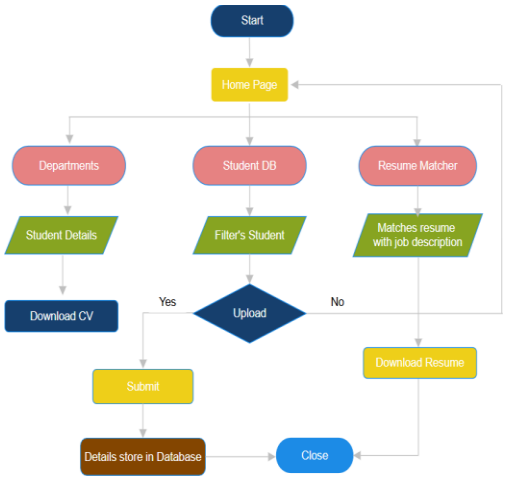
Drawbacks:

- Fragmented Systems
- Time-Intensive
- Error-Prone
- Limited Analytics
- Bias in Recruitment
- Scalability Limitations

IV. PROPOSED SYSTEM

The proposed system, StudentStatIQ, addresses the limitations of traditional student performance tracking by providing an integrated platform that combines academic progress monitoring with career development tools. Utilizing four years of educational data, it analyzes student strengths and areas for improvement, offering personalized career guidance and skill development plans tailored to individual needs. The platform automates the recruitment process through resume matching, enabling bulk uploads and unbiased filtering against job descriptions to identify suitable candidates efficiently. Additionally, it supports seamless student data management with features like bulk uploads, domain-based filtering, and downloadable lists, ensuring scalability and reducing manual errors. By aligning academic achievements with career aspirations, StudentStatIQ empowers institutions to make data-driven decisions while enhancing student career opportunities. Furthermore, the platform provides dynamic dashboards and analytics for real-time insights, encourages collaboration between academic departments and placement cells, and ensures compliance with privacy standards for secure data handling.

V. METHODOLOGY



The flowchart outlines the system workflow, starting from the home page, which serves as the central navigation hub for users. From here, users can access three primary functionalities: Departments, Student Database (DB), and Resume Matcher. The Departments section provides categorized information about students based on their respective departments, allowing users to view detailed student profiles and download CVs for purposes such as recruitment or evaluation. The Student Database (DB) feature enables users to filter students based on specific attributes like CGPA, domain, and programming language, helping to efficiently narrow down records to identify suitable candidates. Users can upload filtered details for further processing, submit them for evaluation, or securely store them in the database for future use. The Resume Matcher automates the comparison of uploaded resumes with job descriptions, assisting in

identifying profiles that best meet job requirements and allowing users to download matching resumes. If users choose to upload resumes during the workflow, the system finalizes and securely stores the data in the database for future access. Otherwise, users can end their session by closing the application. This structured workflow ensures an efficient, flexible, and user-friendly process for managing and analyzing student and resume data.

Advantages:-

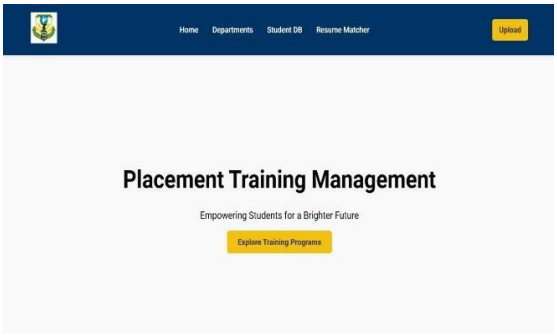
- Combines academic tracking and career tools.
- Automates recruitment and resume matching.
- Offers personalized career insights.
- Supports bulk data handling efficiently.
- Reduces bias and errors.

Disadvantages:-

- Complex initial setup.
- Dependent on accurate data.
- High development and maintenance costs.
- Requires strong technical infrastructure.
- Privacy and security concerns.

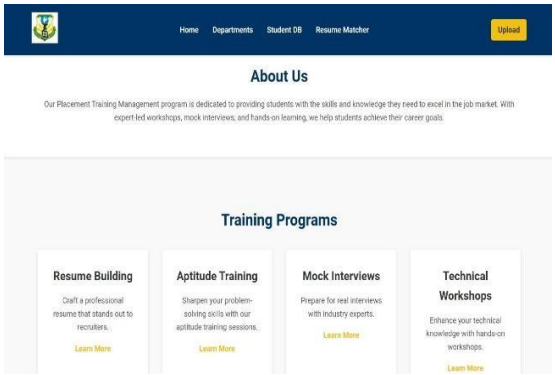
V. EXPERIMENTAL RESULT

i. Test Case 1



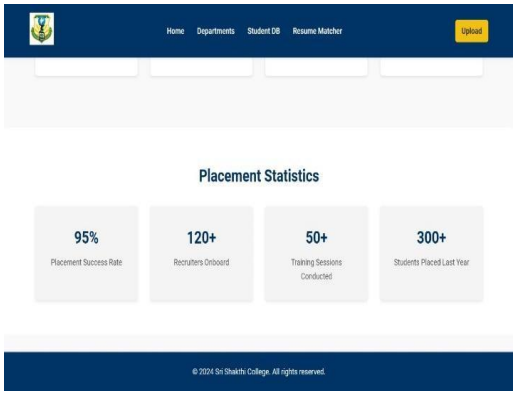
Home Page - Serves as the main landing page providing current placement news

ii. Test Case 2



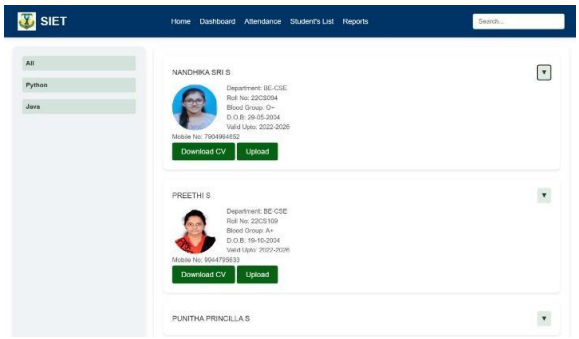
Training Program Page - Provides youtube videos related to training.

iii. Test Case 3



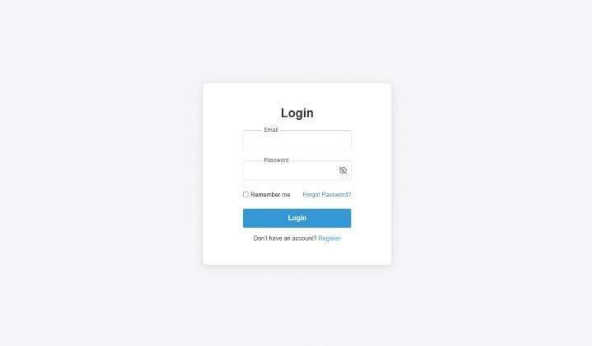
Placement Statistics Page - Serves as the main landing page providing current placement news

iv. Test Case 4



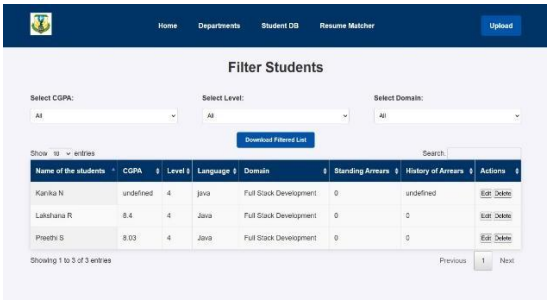
StudentDetail Page - This page displays student profiles filtered by a specific domain, including options to download their CVs.

v. Test Case 5



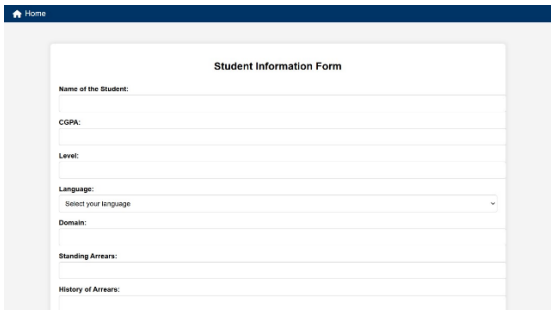
Login Page – Provide a login interface for faculties.

vi. Test Case 6



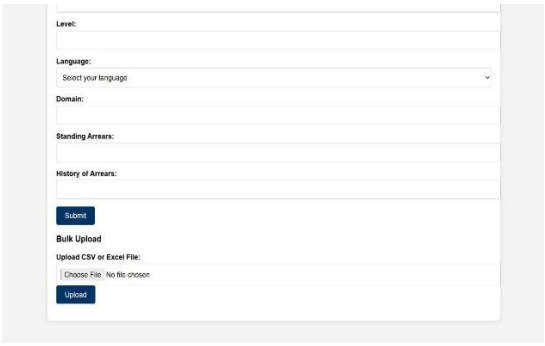
Filter Students Page - This page displays the filtered students list based on the CGPA, level and Domain.

vii. Test Case 7



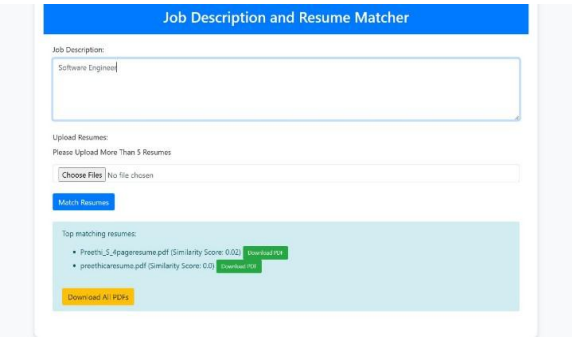
Individual Upload Form - Allows faculty to input and submit specific academic information for a student's semester.

viii. Test Case 8



Bulk Upload – This page displays the bulk upload option.

ix. Test Case 9



Resume Matcher Page - Filters the uploaded resumes based on job description.

VI. CONCLUSION

StudentStatIQ is a powerful, integrated platform designed to enhance both academic tracking and career development processes. Automating key tasks such as resume matching and student data management, streamlines operations, reduces errors, and ensures fair recruitment practices. The system's ability to provide personalized insights and align academic progress with career goals offers significant benefits for both students and institutions. While there are challenges such as initial setup complexity, the advantages of increased efficiency, scalability, and data-driven decision-making make StudentStatIQ a valuable tool for modern educational institutions seeking to improve student outcomes and streamline the recruitment process.

VII. FUTURE WORK

Future enhancements to the StudentStatIQ platform could focus on integrating advanced machine learning algorithms to provide even more personalized career guidance and predict student success in various job markets. Incorporating real-time data analytics and AI-driven insights could help students continuously adapt their skills to meet evolving industry demands. Additionally, expanding the resume matcher to include more diverse job roles and industries, along with adding multilingual support, could broaden its applicability. The platform could also benefit from deeper integration with external job portals and career services to create a seamless ecosystem for students and recruiters. Furthermore, enhanced security measures, such as blockchain technology for data privacy, could be explored to ensure the utmost protection of sensitive student information. These advancements would further strengthen StudentStatIQ's capabilities and extend its value in supporting both students and institutions.

VIII. REFERENCES

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