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COUNSELLING MANAGEMENT SYSTEM

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ABSTRACT :

Counselling Management System is a Java web application intended to automate college admission counselling for students and minimize administrative work. It combines Java Servlets, JSP, and JDBC with MySQL in the backend to offer secure student registration, college navigation, and administrative management features. The front-end makes use of HTML, CSS (Bootstrap), and JavaScript (jQuery) to maintain a responsive interface. This project shows the real-world application of web development and database integration concepts for improved transparency, efficiency, and accessibility in college admissions.

Keywords: Counselling System, Web Application, Java Servlets, JSP, JDBC, MySQL, College Admissions

1. INTRODUCTION

The traditional Indian college admission procedure is often plagued by manual inefficiencies, non-real-time data, and inadequate transparency, posing serious challenges to both the students and the administrators. To overcome these difficulties, the Counselling Management System (CMS) has been designed as a secure, robust, and user-friendly web-based application. Based on Java Servlets, JSP, and a MySQL database, the main intention behind this project is to computerize and automate the counselling process.

The system has separate portals for students and administrators. Students are able to create a authenticated account, sign in to a sleek dashboard, and get individual college recommendations based on their HSC scores against institutional cut-off parameters. The dashboard comes with dynamic search and sort features to allow users to search through a long list of colleges. The most important feature is that students can choose several colleges at once and enter their choices, and then they can see a confirmation of their applications.

For managers, the system provides a secure dashboard with complete CRUD (Create, Read, Update, Delete) for college management data, such as location, grades, and cutoff scores. It also supplies student user account management tools. By automating these fundamentals, the CMS increases efficiency, enhances accuracy, and offers an open, centralized platform empowering students to make educated choices while streamlining administrative burdens.

2. METHODOLOGY

The creation of the Counselling Management System was a systematic software engineering process, starting with requirement analysis and system study. Main requirements were determined for two primary user roles: students and administrators.

For students, the functionalities involved registration, login, and viewing college information. For administrators, the system provided secure login, adding colleges, and handling institutional information.

The design was done using Data Flow Diagrams (DFD) and Entity Relationship (ER) diagrams. Modular development with presentation (JSP, HTML, CSS), business logic (Servlets), and data access (JDBC) separation was the focus of the architecture.

3. IMPLEMENTATION DETAILS

The system was a Java-based full-stack web application.

The technology stack was:

- Backend: Java Servlets, JSP, JDBC
- Frontend: HTML5, CSS3 (Bootstrap), JavaScript (jQuery)
- Database: MySQL
- IDE: NetBeans
- Application Server: GlassFish

Modules created are:

1. User Authentication & Session Management
2. Multi-Step Student Registration (document upload and payment)
3. Admin College Management
4. Student College Selection and tracking
5. Interaction with Database using a reusable JDBC utility class

The front-end was made responsive using Bootstrap and interactive using jQuery. The application used input validation and secure session handling to enhance reliability.

4. RESULTS

The Counselling Management System effectively deployed a working web platform that solved the problem of ineffective counselling processes as previously identified. Results are:

- Student registration and college browsing simplified.
- Enhanced transparency through college information centralization.
- Administrative effort minimized through automated data control.
- Responsive design to support usability across devices.

Outputs:

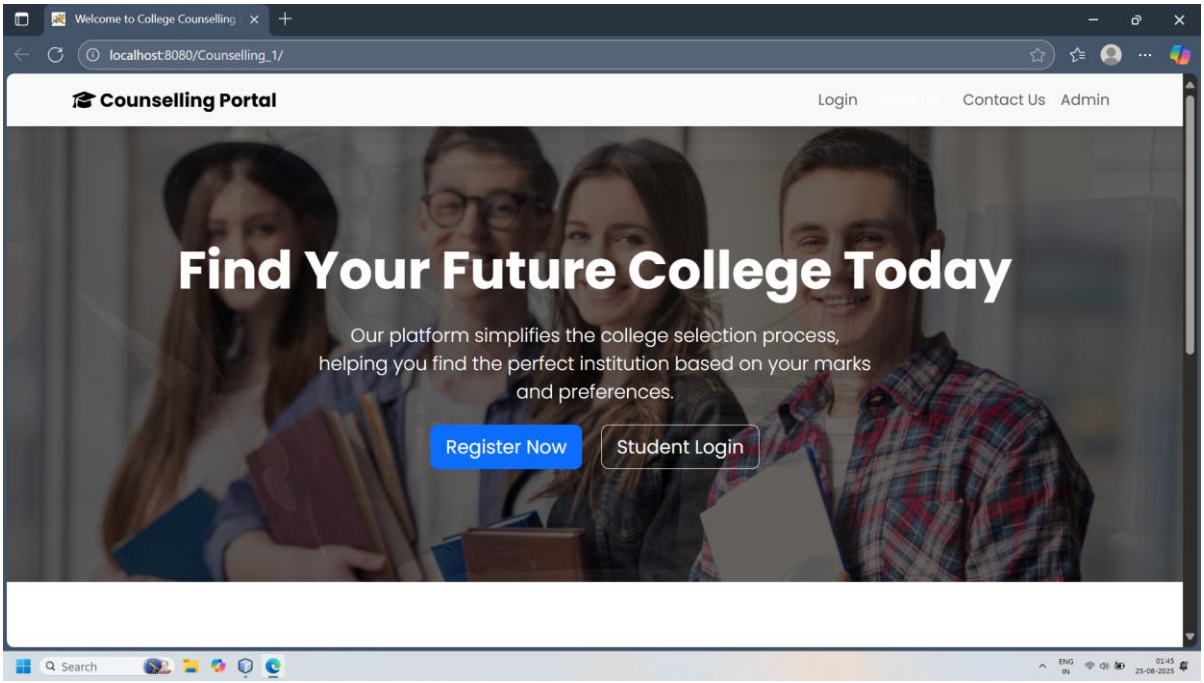

Fig.4.1:Welcome page

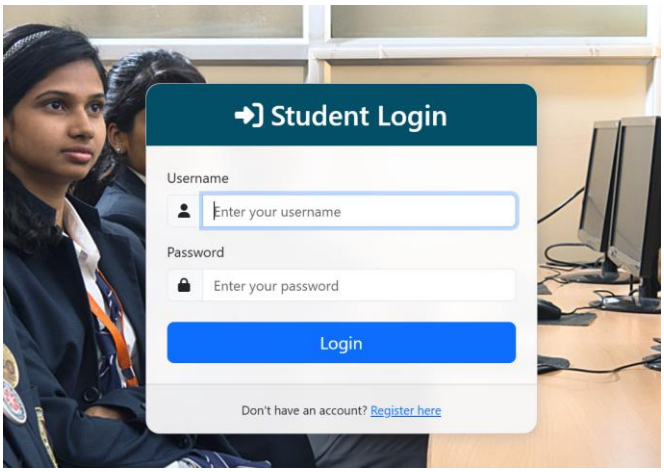

Fig.4.2:Student Login page

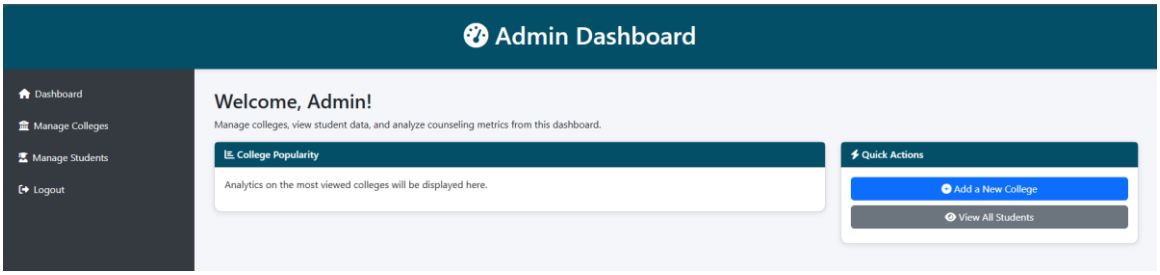

Fig.4.3:Admin dashboard

Testing included functional verification of login, registration, and college management, as well as usability testing to ensure intuitive navigation. Security was provided through authentication and session management.

5. LEARNING OUTCOMES

This project went a long way in improving technical and soft skills. Technical skills acquired include Java Servlets mastery, JSP, JDBC, designing database schema, and frontend-backend integration. Practical deployment on GlassFish enhanced knowledge of application servers. Soft skills developed include debugging, problem-solving, time management, and communication by virtue of frequent communication with the mentors.

6. CONCLUSION AND FUTURE SCOPE

The Counselling Management System showcases the capability of web technologies for streamlining the college counselling process. With an efficient and transparent interface, it lowers manual labor and improves student experience.
Future development includes real-time seat updating through WebSockets, payment gateway integration, stronger security through password hashing and input sanitizing, advanced analytics on student preferences, and cloud hosting to ensure scalability.

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