iJRASET
International Journal For Research in Applied Science and Engineering Technology



INTERNATIONAL JOURNAL FOR RESEARCH

IN APPLIED SCIENCE & ENGINEERING TECHNOLOGY

Volume: 14 **Issue:** III **Month of publication:** March 2026

DOI: https://doi.org/10.22214/ijraset.2026.78677

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International Journal for Research in Applied Science & Engineering Technology (IJRASET)
ISSN: 2321-9653; IC Value: 45.98; SJ Impact Factor: 7.538
Volume 14 Issue III Mar 2026- Available at www.ijraset.com

Design and Implementation of a Smart Admission Automation System Using Salesforce CRM and Web-to-Case Integration

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Abstract: ***Educational institutions handle thousands of student admission enquiries every year through emails, phone calls, and website forms. Managing these enquiries manually leads to data inconsistency, delayed responses, and inefficient follow-ups. This research presents the design and implementation of a Smart Admission Automation System built on the Salesforce CRM platform. The proposed system uses Web-to-Case integration, Apex triggers, Record-Triggered Flows, and Lightning Web Components (LWC) to automate the admission enquiry lifecycle. When a student submits an enquiry through a web form, a Case is automatically created in Salesforce, followed by automated creation of Contact and Admission Application records. The system synchronizes admission status, generates automated email notifications, and enables administrative dashboards for tracking application progress. Experimental implementation demonstrates improved efficiency in admission data management, automated communication with applicants, and reduced manual intervention. The system provides a scalable and cloud-based solution for digital transformation in admission management processes.***

Keywords: Salesforce CRM, Admission Automation, Web-to-Case, Lightning Web Components, Workflow Automation, Cloud CRM.

I. INTRODUCTION

Educational institutions continuously face the challenge of managing large volumes of admission enquiries and applications. Traditional admission management methods rely heavily on manual processes such as spreadsheet tracking, email communication, and manual verification of student information. These processes often lead to data duplication, delayed responses to applicants, and inefficient coordination between admission counselors and administrative staff.

With the growth of cloud technologies and Customer Relationship Management (CRM) platforms, institutions can automate and streamline admission processes. Salesforce CRM provides a powerful platform for building cloud-based automation solutions through tools such as Apex programming, Lightning Web Components (LWC), Flows, and Web-to-Case integration.

This research proposes a Smart Admission Automation System built on Salesforce CRM to improve efficiency in handling student admission enquiries. The system automates the entire lifecycle from enquiry submission to admission approval. The architecture integrates web forms with Salesforce using Web-to-Case functionality, which automatically creates Case records. Additional automation creates Contact records and admission application records, ensuring proper data relationships between students and their applications.

The main objectives of this research include:

- Automating student admission enquiry processing.
- Reducing manual data entry in admission management.
- Providing real-time tracking of admission status.
- Improving communication between institutions and applicants.
- Demonstrating the use of Salesforce CRM as a cloud-based automation platform.

The system architecture incorporates both declarative automation (Flows) and programmatic automation (Apex triggers) to ensure scalability and maintainability.

II. LITERATURE REVIEW

Admission management systems have evolved significantly with the introduction of digital technologies and cloud-based platforms. Many institutions have adopted online admission portals to improve efficiency and reduce manual workload.

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Several studies highlight the importance of automation in educational administration. Traditional admission systems rely on database applications or web portals developed using conventional programming frameworks such as PHP, Java, or .NET. While these systems provide basic functionality, they often require significant development effort and infrastructure management.

Cloud-based CRM platforms such as Salesforce provide an alternative approach by offering integrated tools for workflow automation, data management, and user interface development. According to recent research in educational CRM adoption, institutions benefit from CRM platforms by improving student engagement and tracking applicant interactions throughout the admission process.

Salesforce CRM has been widely used in industries such as healthcare, finance, and customer support for automating service workflows. Its Web-to-Case feature allows external systems to create service cases automatically through web forms. This functionality can be adapted to educational institutions for handling admission enquiries.

Lightning Web Components (LWC), introduced by Salesforce, provides a modern JavaScript framework for building responsive user interfaces within the Salesforce platform. LWCs allow developers to create custom dashboards, forms, and administrative interfaces for managing admission data.

Despite the availability of CRM technologies, many educational institutions still rely on manual processes or partially automated systems. This research demonstrates how Salesforce automation features can be integrated to create a complete admission workflow.

III. SYSTEM ARCHITECTURE

The proposed Smart Admission Automation System is built on the Salesforce platform using a multi-layer architecture consisting of a User Interface Layer, Application Logic Layer, and Data Layer.

The system integrates external web forms with Salesforce CRM using Web-to-Case functionality. Automated processes ensure that each admission enquiry results in structured data records linked to student information.

The architecture ensures that all admission enquiries are automatically recorded and processed through predefined automation workflows.

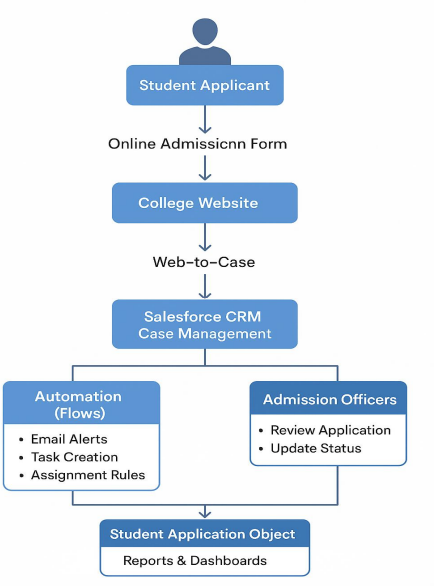


Fig. 1 Architecture Overview

IV. IMPLEMENTATION

The implementation of the Smart Admission Automation System is carried out using multiple components within the Salesforce ecosystem.

A. Web-to-Case Integration

The first step in the implementation is enabling the Web-to-Case feature in Salesforce. This feature allows external web forms to create Case records directly within the CRM system.

Students submit their admission enquiries through an HTML form hosted on a website.

The form includes fields such as:

- Student Name
- Email Address
- Phone Number
- Course Interested
- Additional Comments

Once the form is submitted, Salesforce automatically creates a Case record containing the enquiry details.

B. Apex Trigger Automation

An Apex trigger is implemented to automate the creation of student records and admission applications.
The trigger performs the following operations:

- Checks if a Contact record already exists using the student's email address.
- If the contact does not exist, a new Contact record is created.
- A new Admission_Application__c record is created and linked to the Contact.
- Default admission status is set to Pending.

This automation ensures that student information is stored in a structured relational format.

C. Record Triggered Flow

Salesforce Flow is used to automate business processes without extensive coding.
Two key flows are implemented:

- Admission Status Synchronization: When the Case status changes, the related Admission Application status is automatically updated.
- Email Notification Flow: When a new admission application is created, an automated email is sent to the student confirming that their application has been received.

D. Lightning Web Components (LWC)

Lightning Web Components are used to build custom administrative interfaces for admission management.
Key LWC components include:
Admission Dashboard – displays application statistics and status summaries.
Student Detail Viewer – shows complete student information and application status.
Document Tracker – tracks documents uploaded by students.
These components provide a modern user interface for administrators and admission counselors.

V. RESULTS AND TESTING

The system was tested in a Salesforce Developer Environment to evaluate its functionality and automation performance.

1) Test Scenario 1: Web Form Submission:

A student submits an admission enquiry through the web form.
Result:

- Case record created successfully
- Contact record created automatically
- Admission Application record generated

2) Test Scenario 2: Duplicate Student Detection

If the student submits another enquiry using the same email address:
Result:

- Existing Contact is reused
- Duplicate admission applications prevented

3) Test Scenario 3: Status Synchronization

When the Case status is updated to Closed:

Result:

- Admission status automatically changes to Approved.

4) Test Scenario 4: Email Notification

After application creation:

Result:

- Students receive confirmation emails.
- The system successfully demonstrated automated processing of admission enquiries with minimal manual intervention.

VI. CONCLUSIONS

This research presented the design and implementation of a Smart Admission Automation System using Salesforce CRM. The system integrates web-based enquiry forms with Salesforce using Web-to-Case functionality and automates admission processing using Apex triggers and Record-Triggered Flows.

The solution successfully eliminates manual data entry, reduces processing delays, and improves communication with applicants through automated notifications. The use of Lightning Web Components provides a modern administrative interface for monitoring admission activities.

The proposed architecture demonstrates how cloud-based CRM platforms can be effectively utilized for educational administration systems. The system is scalable and can be easily adapted by institutions seeking digital transformation in admission management.

VII. FUTURE SCOPE

Although the system provides a robust automation framework, several enhancements can be implemented in the future.

Potential improvements include:

- Student Portal Integration
  - Allow students to track application status online.
- Document Upload Automation
  - Enable students to upload admission documents directly.
- AI-Based Application Screening
  - Automatically evaluate applications based on predefined criteria.
- Payment Gateway Integration
  - Enable online admission fee payments.
- Advanced Analytics Dashboard
  - Provide insights into admission trends and conversion rates.

These enhancements can further improve the system's functionality and support advanced admission management capabilities.

VIII. ACKNOWLEDGMENT

The authors would like to express their sincere gratitude to all those who supported the completion of this research work titled “Design and Implementation of a Smart Admission Automation System Using Salesforce CRM and Web-to-Case Integration.”

We would like to thank our mentors and academic guides for their valuable guidance, encouragement, and constructive suggestions throughout the development of this research work. Their insights and expertise greatly contributed to improving the quality and structure of this study.

We also extend our appreciation to the Salesforce platform and its developer ecosystem, which provided the necessary tools and resources to design and implement the proposed Smart Admission Automation System. The availability of Salesforce CRM features such as Web-to-Case integration, Lightning Web Components, and automation workflows enabled the successful implementation of the system architecture described in this paper.

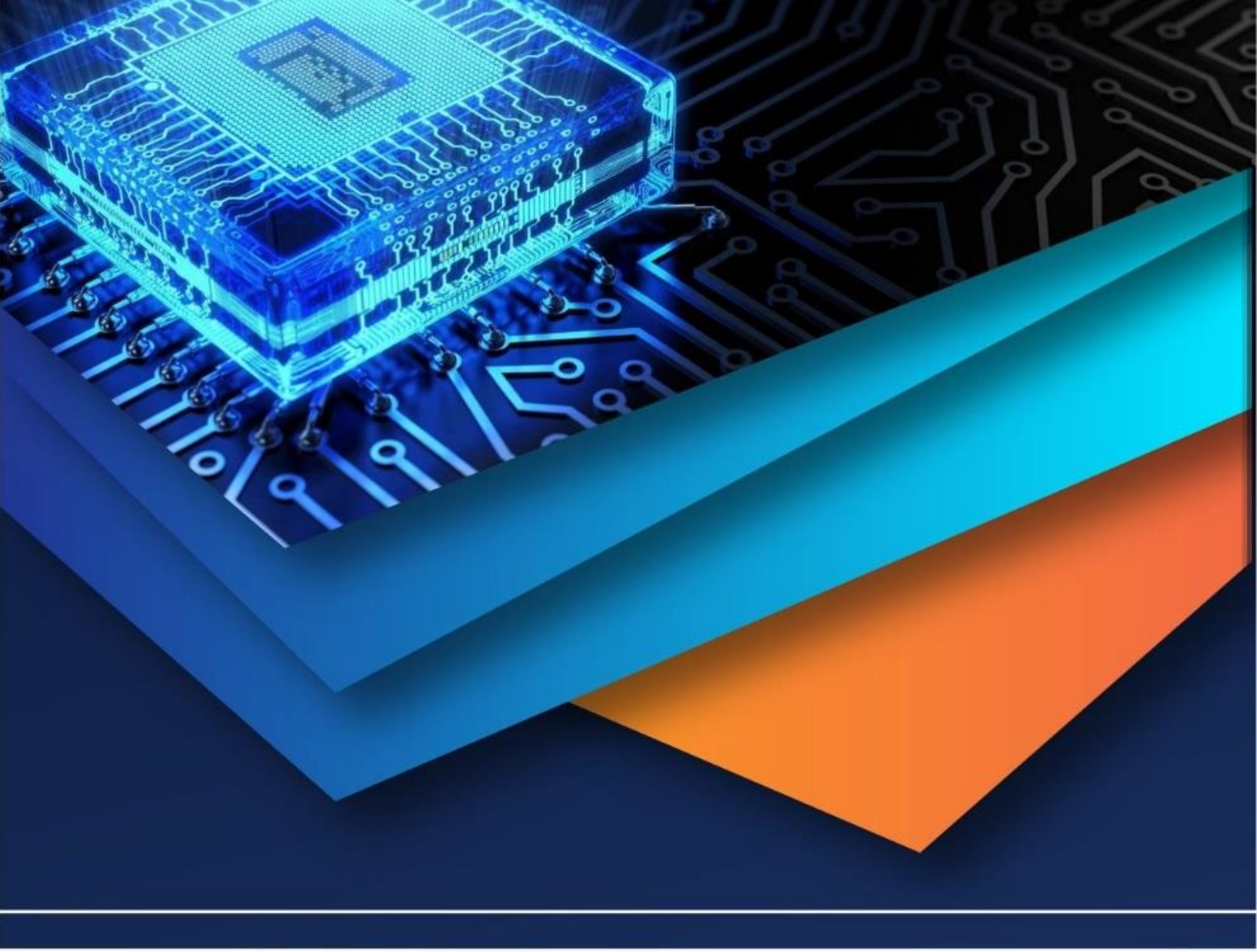
Finally, we would like to acknowledge our colleagues, friends, and family members for their continuous support, motivation, and encouragement during the research and documentation process.

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