

THUB CERTIFICATION ANALYTICS

A Summer Internship Report submitted in partial fulfillment of the requirements for the award of degree of

BACHELOR OF TECHNOLOGY

Submitted by:

21A91A04P2

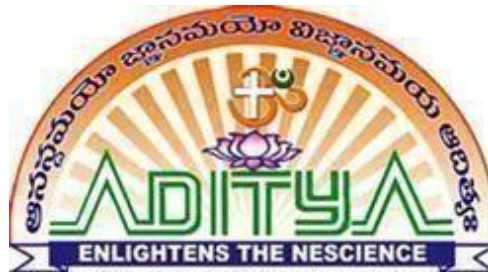
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ADITYA ENGINEERING COLLEGE (A)

Approved by AICTE, Permanently affiliated to JNTUK & Accredited by NAAC with 'A' Grade

Recognized by UGC under the sections 2(f) and 12(B) of the UGC act 1956

Aditya Nagar, ADB Road – Surampalem 533437, E.G. Dist., A.P.,

2023-2024.

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CERTIFICATE

This is to certify that the Internship report entitled “**THUB CERTIFICATION ANALYTICS**” is being submitted by

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In partial fulfillment of the requirements for award of the B.Tech degree in Electronics and Communication Engineering for the academic year 2022-2023.

Internship Coordinator

Guide Name, Qualification

Designation

Department of CSE

Head of the Department

Dr. Sanjeev Kumar

Associate Professor

Department of ECE

DECLARATION

We hereby declare that the project entitled “**THUB CERTIFICATION ANALYTICS**” is a genuine project. This work has been submitted to the **ADITYA ENGINEERING COLLEGE**, Surampalem, permanently affiliated to **JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY, KAKINADA** in partial fulfillment of the **B.Tech** degree. We further declare that this project work has not been submitted in full or part of the award of any degree of this or any other educational institutions.

By

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Our deepest thanks to **Dr. Sanjeev Kumar, Associate Professor & Head of the Department** for inspiring us all the way and for arranging all the facilities and resources needed for our project.

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Abstract

The Technical Hub Certification Analytics project leverages Salesforce to manage and analyze student data from Technical Hub, an organization dedicated to training students across three campuses—AEC, ACOE, and ACET—in various software technologies including Salesforce, Full Stack Development, Python, Azure DevOps, Google DevOps, AWS, UI/UX, Pega, and others.

This project aims to provide actionable insights and support mechanisms for students, particularly those who struggle with certification exams. Key activities involved in the project include:

1. **Data Importation:** Student data from Technical Hub was systematically imported into the Salesforce platform using Salesforce's Data Import Wizard. This data encompassed student demographics, enrollment information, course participation, and certification exam results.
2. **Data Analysis and Reporting:** Comprehensive reports were generated to evaluate student performance across different courses and campuses. These reports highlighted critical metrics such as pass/fail rates, course completion rates, and the distribution of students across various technologies.
3. **Dashboard Creation:** Interactive dashboards were developed to provide visual representations of the data. These dashboards offered a quick and intuitive way to understand trends, identify areas needing attention, and make data-driven decisions. Metrics visualized included enrollment numbers by campus and department, course adoption rates, and certification success rates.
4. **Student Support and Remediation:** By identifying students who failed certification exams, the system enabled targeted intervention strategies. Additional class hours and practice exams were scheduled for these students to improve their chances of passing subsequent certification attempts.
5. **Organizational Insights:** The project provided THub with valuable insights into the training preferences and performance of students from different campuses and departments. This data was crucial for optimizing resource allocation, improving training programs, and tailoring courses to better meet student needs.

Overall, the Technical Hub Certification Analytics project successfully demonstrated how Salesforce can be utilized to enhance educational outcomes and operational efficiency within a technical training organization. The integration of data importation, analytical reporting, and supportive interventions created a robust system for fostering student success and organizational growth.

Learning Objectives/Internship Objectives

- Internships are generally thought of to be reserved for college students looking to gain experience in a particular field. However, a wide array of people can benefit from Training Internships in order to receive real world experience and develop their skills.
- An objective for this position should emphasize the skills you already possess in the area and your interest in learning more
- Internships are utilized in a number of different career fields, including architecture, engineering, healthcare, economics, advertising and many more.
- Some internships are used to allow individuals to perform scientific research while others are specifically designed to allow people to gain first-hand experience working.
- Utilizing internships is a great way to build your resume and develop skills that can be emphasized in your resume for future jobs. When you are applying for a Training Internship, make sure to highlight any special skills or talents that can make you stand apart from the rest of the applicants so that you have an improved chance of landing the position.

WEEKLY OVERVIEW OF INTERNSHIP ACTIVITIES

1st WEEK	DATE	DAY	NAME OF THE TOPIC/MODULE COMPLETED
	3/6/24	Monday	Introduction to Salesforce
	4/6/24	Tuesday	Getting Started with Salesforce
	5/6/24	Wednesday	Salesforce Data Model
	6/5/24	Thursday	Data Management
	7/6/24	Friday	Security and Access
	8/6/24	Saturday	Review

2nd WEEK	DATE	DAY	NAME OF THE TOPIC/MODULE COMPLETED
	10/6/24	Monday	Data Relationships
	11/6/24	Tuesday	Workflow and Process Builder
	12/6/24	Wednesday	Validation and Formulas
	13/6/24	Thursday	Reports and Dashboards
	14/6/24	Friday	Data Management Tools
	15/6/24	Saturday	Review

3rd WEEK	DATE	DAY	NAME OF THE TOPIC/MODULE COMPLETED
	17/6/24	Monday	Page Layouts and Record Types
	18/6/24	Tuesday	Apps and Tabs
	19/6/24	Wednesday	Lightning Experience Customization
	20/6/24	Thursday	Mobile Administration
	21/6/24	Friday	Chatter and Collaboration
	22/6/24	Saturday	Teach back Sessions

4th WEEK	DATE	DAY	NAME OF THE TOPIC/MODULE COMPLETED
	31/6/19	Monday	Integration Basics
	1/6/19	Tuesday	Introduction to APIs
	2/6/19	Wednesday	Governance and Change Management
	3/6/19	Thursday	Reviewing real world use cases
	4/6/19	Friday	Assigning Projects
	5/6/19	Saturday	Implementation of Project
	6/6/19	Monday	Implementation of Project
	7/6/19	Tuesday	Project Presentation
	8/6/19	Wednesday	Project Presentation

INDEX

S.No.	Contents	Page
1.	Introduction	1
2.		2
3.	Declaration	3
4.	Acknowledgement	4
5.	Abstract	5
6.	Learning Objectives/Internship Objectives	6
7.	Weekly Overview Of Internship Activities	7,8
8.	Index	1
9.	Introduction to Salesforce	2,3
10.	Core Salesforce Concepts	4,5
11.	Project Introduction	6
12.	Executive Summary	7
13.	Project Scope	8
14.	Understanding Salesforce	15
	➤ What is Salesforce	
	➤ Key Features of salesforce	
	➤ Methodology	
	➤ Data Analysis	
	➤ Reports and Dashboards	
	➤ Realtime Use Cases	
	➤ Charts and Vizualization	
15.	Conclusion and Recommendations	15

Introduction to Salesforce

Salesforce is a leading cloud-based Customer Relationship Management (CRM) platform that empowers businesses to manage their customer interactions, streamline their processes, and enhance their business relationships. It offers a wide range of services and tools designed to help companies improve their sales, service, marketing, and overall business operations.

Key Aspects of Salesforce:

1. Cloud-Based Platform:

- **Accessibility:** Salesforce is entirely cloud-based, meaning users can access the platform from anywhere with an internet connection.
- **Scalability:** It can scale to accommodate businesses of all sizes, from small startups to large enterprises.

2. CRM Capabilities:

- **Customer Data Management:** Centralizes customer data, providing a complete view of customer interactions and history.
- **Sales Automation:** Streamlines sales processes, manages leads, and tracks opportunities to close deals more effectively.
- **Service Automation:** Enhances customer service with case management, knowledge base, and support automation.
- **Marketing Automation:** Facilitates targeted marketing campaigns, customer segmentation, and analytics.

3. Customization and Flexibility:

- **Custom Objects and Fields:** Allows the creation of custom objects and fields to tailor the CRM to specific business needs.
- **Customizable User Interface:** Users can customize page layouts, record types, and dashboards.
- **AppExchange:** A marketplace for third-party applications and integrations that extend Salesforce's functionality.

4. Automation Tools:

- **Workflow Rules:** Automates business processes and tasks based on specific criteria.
- **Process Builder:** Provides a visual interface to create complex business processes with multiple steps.
- **Flows:** Automates guided processes and complex workflows.

5. Integration Capabilities:

- **APIs:** Robust APIs allow integration with external systems, enabling seamless data flow between Salesforce and other applications.
- **AppExchange:** Offers a variety of pre-built integrations with popular third-party applications and services.

6. Analytics and Reporting:

- **Custom Reports:** Users can create detailed reports to analyze data and track key performance indicators (KPIs).
- **Dashboards:** Visual representations of data, providing real-time insights into business performance.
- **Einstein Analytics:** Advanced analytics and artificial intelligence capabilities for predictive insights and recommendations.

7. Mobile Accessibility:

- **Salesforce Mobile App:** Provides access to Salesforce data on-the-go, ensuring users can stay productive from anywhere.
- **Responsive Design:** Ensures that Salesforce interfaces are mobile-friendly and accessible from any device.

8. Security and Compliance:

- **Role-Based Access Control:** Manages user access and permissions based on roles and profiles.
- **Data Security:** Offers encryption, data masking, and secure login options to protect sensitive information.
- **Compliance:** Complies with various industry standards and regulations, such as GDPR, HIPAA, and more.

9. Community and Collaboration:

- **Chatter:** An internal social network for team collaboration and communication within Salesforce.
- **Communities:** Online portals for customers, partners, and employees to interact and share information.

10. Continuous Innovation:

- **Regular Updates:** Salesforce regularly releases updates and new features to improve functionality and user experience.
- **Trailhead:** An online learning platform offering tutorials, courses, and certifications to help users get the most out of Salesforce.

Benefits of Using Salesforce:

- **Enhanced Customer Relationships:** Centralizes and streamlines customer interactions, leading to improved customer satisfaction and loyalty.
- **Increased Productivity:** Automates routine tasks, freeing up time for employees to focus on higher-value activities.
- **Data-Driven Decision Making:** Provides real-time insights and analytics to inform strategic business decisions.
- **Improved Collaboration:** Facilitates communication and collaboration within teams and with external stakeholders.
- **Scalability and Flexibility:** Grows with your business and adapts to changing needs and requirements.

Salesforce's comprehensive suite of tools and its cloud-based architecture make it a powerful platform for managing customer relationships, driving sales, and enhancing overall business operations.

Core Salesforce Concepts

1. Objects and Fields

Objects:

- **Standard Objects:** Predefined objects provided by Salesforce that are essential for CRM functionality. Examples include:
 - **Account:** Stores information about individual customers or organizations.
 - **Contact:** Stores information about individuals associated with an account.
 - **Lead:** Stores information about potential sales prospects.
 - **Opportunity:** Tracks sales and potential revenue.
 - **Case:** Manages customer issues and support requests.
 - **Campaign:** Tracks marketing campaigns and their performance.
- **Custom Objects:** Objects created by users to store information unique to their business. These can be tailored to fit specific business processes and needs.

Fields:

- **Standard Fields:** Predefined fields that come with standard objects. Examples include Name, Owner, Created Date, etc.
- **Custom Fields:** Fields added by users to store additional information. Custom fields can be of various data types such as:
 - **Text:** For short text entries.
 - **Number:** For numeric values.
 - **Date/Time:** For date and time entries.
 - **Picklist:** For predefined values.
 - **Checkbox:** For true/false values.
 - **Formula:** For calculations based on other fields.

2. Records

- Each entry in an object is called a record. For example, a single customer in the Account object or a single sales opportunity in the Opportunity object.

3. Data Relationships

- **Lookup Relationship:** Links two objects together loosely. For example, linking a Contact to an Account.
- **Master-Detail Relationship:** Creates a parent-child relationship between two objects. The child record (detail) must have a parent record (master). Deleting the parent will delete the child records.
- **Many-to-Many Relationship:** Implemented using a junction object. For example, a Course object and a Student object can be linked via an Enrollment junction object.

4. Schema Builder

- **Schema Builder:** A drag-and-drop tool that visually displays your data model. You can create and modify objects, fields, and relationships using this tool.

5. Security and Access

- **Profiles:** Define what users can do within Salesforce, including permissions to objects, fields, and features.
- **Roles:** Determine what data users can see based on their role in the hierarchy. Roles work with sharing rules to ensure proper data access.
- **Permission Sets:** Grant additional permissions to users without changing their profiles. Useful for extending access temporarily or for specific tasks.
- **Organization-Wide Defaults (OWD):** Define the baseline level of access for records within an organization. Settings include Private, Public Read Only, and Public Read/Write.

6. Data Management

- **Data Import Wizard:** An easy-to-use tool for importing data for standard and custom objects. Ideal for small data sets.
- **Data Loader:** A powerful tool for bulk importing, updating, deleting, and exporting data. Suitable for large data sets and more complex data operations.
- **Validation Rules:** Ensure data integrity by enforcing specific criteria when data is entered or updated. For example, ensuring an email field contains a valid email format.

7. Automation

- **Workflow Rules:** Automate standard internal procedures and processes by triggering actions such as field updates, email alerts, tasks, and outbound messages based on criteria.
- **Process Builder:** A point-and-click tool for automating business processes. It allows creating complex, multi-step processes with criteria and actions.
- **Flows:** Automate guided processes and more complex workflows. Flows can be screen flows (user interaction required) or autolaunched flows (no user interaction).
- **Approval Processes:** Automate the approval of records. Define the steps, approvers, and actions for the approval process.

8. Reports and Dashboards

- **Reports:** Lists of data that meet specific criteria. Salesforce provides a report builder to create custom reports. Reports can be tabular, summary, matrix, or joined.
- **Dashboards:** Visual representations of report data. Dashboards consist of components such as charts, graphs, tables, and gauges, providing insights at a glance.

9. Chatter

- **Chatter:** Salesforce's internal social network for business. It allows users to collaborate, share files, post updates, and follow records or people to get real-time updates.

10. AppExchange

- **AppExchange:** Salesforce's marketplace for third-party applications and integrations. Users can find and install apps to extend Salesforce's functionality, such as productivity tools, data integration apps, and industry-specific solutions.

11. Lightning Experience

- **Lightning Experience:** A modern, advanced user interface for Salesforce, providing a more interactive and visual experience. It includes:
 - **Lightning App Builder:** A tool to build custom user interfaces with drag-and-drop components.
 - **Lightning Components:** Reusable building blocks for creating custom pages and apps.

12. Apex

- **Apex:** Salesforce's proprietary programming language, similar to Java. Used to write custom business logic, such as triggers (automated actions on data changes) and classes (reusable code).

13. Visualforce

- **Visualforce:** A framework for building custom user interfaces in Salesforce. It includes a tag-based markup language and a set of server-side standard controllers.

14. API and Integrations

- **APIs:** Salesforce provides various APIs for integration, including:
 - **REST API:** Simple and lightweight, ideal for mobile and web applications.
 - **SOAP API:** Powerful and flexible, suitable for integrating with enterprise applications.
 - **Bulk API:** Designed for loading large volumes of data.
 - **Streaming API:** Allows receiving real-time notifications of changes in Salesforce data.

15. Salesforce Mobile App

- **Salesforce Mobile App:** Provides access to Salesforce data and functionality on mobile devices, ensuring productivity on the go. It supports most of the core functionalities available in the desktop version.

These core concepts form the foundation of Salesforce, providing a comprehensive toolkit for managing customer relationships, automating business processes, and integrating with other systems. By leveraging these concepts, businesses can enhance their efficiency, improve customer satisfaction, and drive growth.

Project Introduction

PROJECT DESCRIPTION

The Technical Hub Certification Analysis Project aims to evaluate and improve the certification completion rates of students enrolled in various technology courses at Technical Hub, covering campuses AEC, ACOE, and ACET. By utilizing Salesforce for data management, reporting, and dashboard creation, the project involves collecting and cleaning student data, importing it into Salesforce using the Data Loader tool, and analyzing certification trends across courses like Salesforce, Flutter, Azure Cloud, Data Analytics, Digital Marketing, Gaming, Pega, UI/UX, AWS, Google Cloud, Full Stack, and Google DevOps. The goal is to identify students who are lagging behind and provide them with targeted support, as well as to create comprehensive reports and interactive dashboards for real-time insights. Ultimately, this project seeks to enhance the effectiveness of Technical Hub's training programs, ensuring higher certification completion rates and better preparation for students' professional careers.

PROJECT OVERVIEW

The Technical Hub Certification Analysis Project evaluates the certification completion rates and enrollment trends of students in various technology courses at Technical Hub, spanning campuses AEC, ACOE, and ACET. The project aims to identify trends, highlight areas for improvement, and provide additional support to students who may be falling behind.

OBJECTIVES

- Analyze certification completion rates across different technology courses and campuses.
- Identify trends in course enrollments by department and campus.
- Highlight students who are lagging in their certification progress and provide actionable insights for additional support.
- Develop reports and dashboards in Salesforce to visualize data and facilitate real-time monitoring.

EXECUTIVE SUMMARY

The Technical Hub Certification Analytics project was designed to utilize Salesforce for managing and analyzing student data from Technical Hub, an organization that trains students from three campuses— AEC, ACOE, and ACET—in various software technologies such as Salesforce, Full Stack Development, Python, Azure DevOps, Google DevOps, AWS, UI/UX, and Pega.

Objectives:

1. To import and organize student data within Salesforce.
2. To generate detailed reports and dashboards for performance analysis.
3. To identify students who failed certification exams and provide them with additional support.
4. To offer Technical Hub insights into course enrollments and trends across different campuses and departments.

Key Activities:

1. **Data Importation:** Student data, including demographics, enrollment details, course participation, and certification results, was imported into Salesforce using the Data Import Wizard.
2. **Report Generation:** Comprehensive reports were created to assess student performance, showing metrics such as pass/fail rates and course completion rates.
3. **Dashboard Development:** Interactive dashboards were built to visualize data, providing a clear overview of enrollment statistics, certification outcomes, and course adoption rates.
4. **Student Support Interventions:** Students who failed certification exams were identified, and additional class hours and practice exams were scheduled to help them improve and succeed in subsequent attempts.
5. **Organizational Insights:** The data analysis provided THub with valuable insights into student preferences and performance, aiding in resource optimization and course tailoring.

Outcomes:

- Improved ability to track and support students through targeted interventions.
- Enhanced visibility into student performance and course effectiveness.
- Data-driven decision-making for optimizing training programs and resource allocation.
- Better understanding of enrollment patterns and trends across campuses and departments.

The project successfully demonstrated the power of Salesforce in enhancing educational outcomes and operational efficiency within a technical training organization, offering a model for future data-driven educational initiatives

PROJECT SCOPE

TECHNOLOGIES USED

- **Salesforce:** Salesforce is a cloud-based customer relationship management (CRM) platform that helps businesses manage customer interactions, streamline workflows, and automate tasks. It offers tools for sales, marketing, and customer service, along with powerful analytics and real-time reporting capabilities. Salesforce's customizable and integrative features enable organizations to improve efficiency, enhance customer relationships, and make informed decisions.
- **Data Loader:** Data Loader is a powerful tool used in Salesforce for the bulk import, export, update, and deletion of data. It enables users to efficiently handle large volumes of data by providing a simple interface to map data fields from source files to Salesforce objects. Data Loader is commonly used for tasks such as migrating data from legacy systems, performing large-scale data updates, and ensuring data integrity during transfers. Its ease of use and ability to handle complex data operations make it an essential tool for managing Salesforce data effectively.
- **Excel/Google Sheets:** Excel and Google Sheets are versatile spreadsheet applications used for data organization, analysis, and manipulation. They provide a range of functions and tools for sorting, filtering, and calculating data, making them essential for data cleaning and preprocessing. Their user-friendly interfaces and collaborative features (especially in Google Sheets) allow multiple users to work on data simultaneously, ensuring accuracy and efficiency in data management tasks.
- **CSV Files:** CSV (Comma-Separated Values) files are simple text files that store tabular data in a plain-text format, with each line representing a data record and each field separated by a comma. In Salesforce, CSV files are commonly used for importing data due to their compatibility and ease of use. When importing data into Salesforce, CSV files allow users to efficiently map and transfer large datasets into the platform using tools like Data Loader. This process facilitates data migration, bulk updates, and the integration of external data into Salesforce, ensuring that information is accurately and quickly populated in the system.

DATA SOURCES

- Student enrollment and course completion data from Technical Hub's databases.
- Data segmented by college campuses: AEC, ACOE, and ACET.
- Department-wise enrollment data for CSE, ECE, IT, AIMLCS, ME, and EEE.

UNDERSTANDING SALESFORCE

WHAT IS SALESFORCE?

Salesforce is a cloud-based customer relationship management (CRM) platform designed to help businesses manage their customer interactions, sales processes, and business operations more effectively. It provides a range of tools to support various functions, including sales automation, customer service, marketing automation, and analytics. By centralizing customer data, Salesforce enables organizations to gain a 360-degree view of their customers, which helps in delivering personalized experiences and improving customer satisfaction.

One of the key features of Salesforce is its customizability. Businesses can tailor the platform to fit their specific needs by creating custom objects, fields, and workflows. This flexibility ensures that Salesforce can adapt to the unique requirements of different industries and business models. Additionally, Salesforce's AppExchange marketplace offers thousands of third-party applications and integrations, further extending the platform's capabilities.

Salesforce's automation tools, such as workflow rules and process builder, allow businesses to automate repetitive tasks and streamline their operations. This not only increases efficiency but also reduces the likelihood of errors. The platform also includes powerful analytics and reporting tools that provide deep insights into business performance. Users can create detailed reports to track key metrics, identify trends, and make data-driven decisions.

Reports and dashboards are particularly valuable features in Salesforce. Reports allow users to organize and analyze their data in various formats, such as tabular, summary, and matrix reports. Dashboards provide a visual representation of this data, using components like charts, graphs, and tables to display real-time information. These tools enable users to monitor business performance at a glance, track progress towards goals, and identify areas for improvement, making Salesforce an indispensable tool for strategic planning and decision-making.

KEY FEATURES OF SALESFORCE

- **Data Management:** Data management in the Salesforce platform is crucial for businesses to effectively collect, store, organize, and utilize their data. Salesforce offers a comprehensive set of tools and features to manage data efficiently, ensuring data accuracy, consistency, and security. From data import and export to data quality and cleansing, Salesforce provides robust capabilities to maintain clean and accurate data. Additionally, Salesforce offers robust security measures, seamless data integration, and powerful analytics and reporting tools to help businesses gain insights and make informed decisions. Overall, Salesforce's data management capabilities empower organizations to drive business growth, enhance customer experiences, and ensure compliance with regulatory requirements

- **Automation:** Automation in the Salesforce platform is a powerful capability that allows businesses to streamline their processes, increase efficiency, and drive productivity. With Salesforce automation tools, repetitive and manual tasks can be automated, freeing up time for employees to focus on more strategic activities. Salesforce offers a range of automation features, including workflow rules, process builder, and Flow Builder, which enable businesses to automate various tasks across the sales, marketing, and customer service functions. For example, workflow rules can automatically trigger actions, such as sending email alerts or updating record fields, based on predefined criteria. Process Builder allows businesses to create complex automated processes with point-and-click simplicity, while Flow Builder enables the creation of custom workflows to automate business processes and guide users through complex tasks. By leveraging automation in Salesforce, businesses can increase operational efficiency, improve consistency, and deliver a better experience for both employees and customers.

- **Analytics and Reporting:** Analytics and reporting in the Salesforce platform provide businesses with powerful tools to gain insights from their data, track key performance indicators, and make data-driven decisions. Salesforce offers a user-friendly interface to create custom reports and dashboards tailored to specific business needs. Users can visualize data using various chart types, tables, and graphs to track metrics such as sales performance, customer engagement, and marketing effectiveness. With Salesforce's analytics capabilities, businesses can identify trends, spot opportunities, and address challenges more effectively. The platform's real-time reporting ensures that users have access to up-to-date information, enabling them to make timely and informed decisions. Overall, Salesforce analytics and reporting empower businesses to drive growth, optimize processes, and deliver exceptional customer experiences.

- **Customizability:** Customizability is a fundamental aspect of the Salesforce platform, allowing businesses to adapt the system to their specific needs and requirements. Salesforce offers extensive customization options across various aspects of the platform, including data architecture, user interface, and business processes. With Salesforce, organizations can create custom objects, fields, and relationships to accommodate unique data requirements, while also tailoring page layouts, record types, and app navigation to match specific workflow preferences. Moreover, businesses can automate and customize complex business processes using tools like workflow rules, process builder, and Flow Builder, ensuring that the platform aligns closely with their business operations. This flexibility empowers businesses to create a personalized and intuitive CRM solution that supports their unique business objectives and workflows.

- **Integration:** Integrability is a key feature of the Salesforce platform, enabling seamless connectivity with a wide range of third-party applications and systems. With robust integration capabilities and a vast ecosystem of pre-built connectors in the Salesforce AppExchange marketplace, businesses can easily integrate Salesforce with other software solutions, databases, and external services. This allows organizations to streamline their business processes, improve data consistency, and enhance productivity by connecting Salesforce with essential systems such as ERP, marketing automation, and customer service platforms. Overall, Salesforce's integrability empowers businesses to leverage the full potential of their technology stack, driving efficiency and enabling a unified view of their operations and customer data.

METHODOLOGY

DATA IMPORTATION

- **Data Collection:** Gather data on students, courses, and certifications from Technical Hub databases. Ensure the data includes all relevant fields such as student ID, course name, enrollment date, and certification status.
- **Data Cleaning:** Use Excel or Google Sheets to clean the data. This involves removing duplicates, correcting errors, and filling in missing values to ensure the dataset is accurate and complete.
- **Data Loader:** Utilize the Data Loader tool to import the cleaned data into Salesforce. Properly map data fields from the source to the destination in Salesforce to maintain data integrity.

TOOLS AND PLATFORMS

- **Salesforce:** Utilized for creating detailed reports and interactive dashboards that visualize the certification completion data.
- **Data Loader:** A key tool for efficiently importing large volumes of data into Salesforce, enabling bulk data operations.
- **Excel/Google Sheets:** Essential for preprocessing and ensuring data quality before import.

DATA ANALYSIS

CERTIFICATION COMPLETION REPORTS

- Generate reports in Salesforce to show which students have completed certifications in each technology course.
- Breakdown by department to identify trends and completion rates within specific technologies (e.g., Salesforce, Pega, UI/UX, etc.).

COLLEGE-WISE ANALYSIS

- Create comparative reports to analyze certification completion rates across the three campuses: AEC, ACOE, and ACET.
 - Identify patterns and differences in completion rates among the campuses, providing insights into which campus may need more support

REPORTS AND DASHBOARDS IN SALESFORCE

CREATING REPORTS

• **Report Builder:** The Report Builder in Salesforce is a powerful tool that allows users to create customized reports to analyze data stored in the Salesforce platform. With the Report Builder, users can easily generate reports to gain insights into various aspects of their business, including sales performance, customer engagement, and marketing effectiveness.

Key features of the Report Builder include:

1. **Customizable Report Types:** Users can create custom report types by selecting the primary object and related objects they want to include in the report. This flexibility enables users to tailor reports to their specific needs and business requirements.
2. **Drag-and-Drop Interface:** The Report Builder provides a user-friendly, drag-and-drop interface, making it easy for users to add and arrange report components such as fields, filters, and groupings. This intuitive interface allows users to quickly design and customize reports without the need for complex coding or technical expertise.
3. **Filtering and Grouping Options:** Users can apply filters and group data to segment and analyze information based on specific criteria. This allows users to focus on relevant data and gain deeper insights into trends and patterns within their organization.
4. **Summary and Matrix Reports:** The Report Builder supports different report formats, including summary and matrix reports. Summary reports provide a high-level overview of data, while matrix reports allow users to view data in a cross-tabular format, making it easy to compare and analyze data across different dimensions.
5. **Charting and Visualization:** Users can create visualizations such as charts and graphs to represent data in a more visually appealing and easy-to-understand format. The Report Builder offers various chart types, including bar charts, pie charts, and line charts, allowing users to choose the best visualization for their data.
6. **Exporting and Sharing:** Once reports are created, users can easily export them in various formats, including Excel, CSV, and PDF. Additionally, users can schedule reports to be automatically generated and emailed to stakeholders on a regular basis, ensuring that key insights are shared with the relevant parties in a timely manner.

• **Types of Reports:** In Salesforce, there are several types of reports that users can create to analyze and visualize data. Each type of report serves a specific purpose and offers different ways to view and interpret data. Here are some key types of reports in Salesforce:

1. Tabular Reports: Tabular reports present data in a simple, table-based format. Each row represents a record, and columns display various fields of the records. Tabular reports are useful for displaying detailed data and are often used for data listing and quick reference.

2. Summary Reports: Summary reports provide a summary of data grouped by a specified field. They include subtotals and totals, making it easier to see aggregate data and trends. Summary reports are useful for analyzing data at a higher level and are often used for reporting on metrics such as sales totals by region or department.

3. Matrix Reports: Matrix reports allow users to group data both by rows and columns, providing a cross-tabular view of data. This type of report is useful for comparing data across multiple categories and is often used to analyze data with two different sets of grouping criteria.

4. Joined Reports: Joined reports allow users to create multiple blocks of data, each with its own set of columns and filters, and then display them together in a single report. This type of report is useful for comparing related data from different sources or objects within Salesforce.

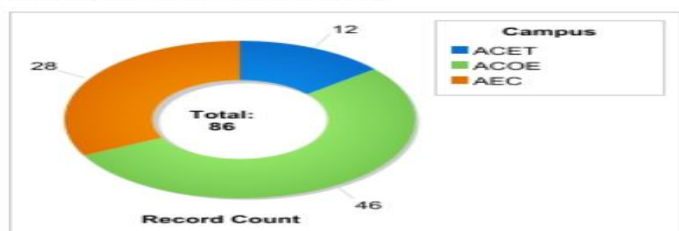
5. Dashboard Reports: Dashboard reports are visual representations of data from underlying reports and datasets. Users can create interactive dashboards by adding various components such as charts, graphs, and tables. Dashboard reports provide a consolidated view of key metrics and KPIs, allowing users to monitor business performance at a glance.

6. Historical Trend Reports: Historical trend reports show data trends over a specified period, allowing users to track changes and analyze historical data. This type of report is useful for identifying patterns and forecasting future trends based on past performance.

7. Forecast Reports: Forecast reports help users predict future sales and revenue based on historical data and current trends. Salesforce's forecasting features allow users to create forecast reports that take into account factors such as pipeline opportunities, quota attainment, and historical performance.

8. Cross-Tab Reports: Cross-tab reports, also known as pivot tables, provide a multi-dimensional view of data by summarizing information in rows and columns. Users can analyze data from different perspectives and easily identify correlations and trends.

Semester Detail Report



Based On Year

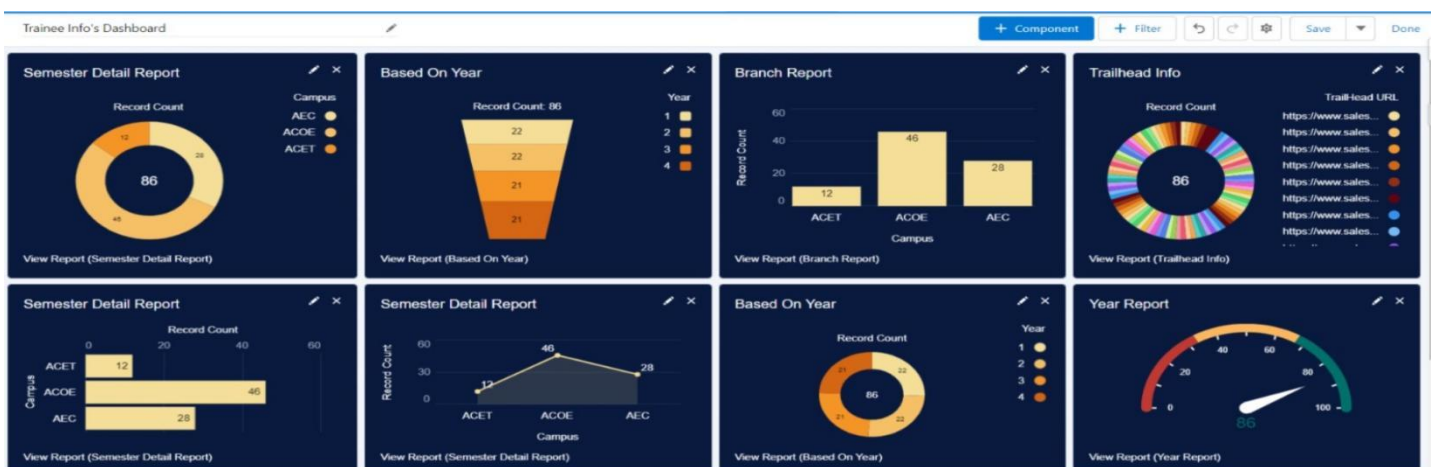


BUILDING DASHBOARDS

• **Dashboard Builder:** The Dashboard Builder in Salesforce is a powerful tool that allows users to create interactive dashboards to visualize and analyze data from underlying reports and datasets. With the Dashboard Builder, users can compile key metrics and key performance indicators (KPIs) into a single, consolidated view, providing a comprehensive snapshot of business performance.

Key Features of the Dashboard Builder:

1. **Drag-and-Drop Interface:** The Dashboard Builder offers an intuitive, drag-and-drop interface, making it easy for users to add and arrange components such as charts, graphs, tables, and metrics onto the dashboard canvas.
2. **Customizable Layouts:** Users can create customized dashboard layouts to organize and present data in a way that best suits their needs. The Dashboard Builder provides flexible layout options, allowing users to arrange components in rows, columns, or even in a grid layout.
3. **Dynamic Filtering:** Dashboard components can be configured to dynamically filter data based on user selections. This allows users to interactively drill down into specific data subsets and view the most relevant information.
4. **Real-Time Data Updates:** Dashboards in Salesforce are updated in real-time, ensuring that users always have access to the most current data and insights. This enables users to make timely decisions based on up-to-date information.
5. **Customizable Charts and Graphs:** The Dashboard Builder offers a variety of chart types, including bar charts, pie charts, line charts, and gauges, to visualize data in different ways. Users can customize the appearance and formatting of these charts to match their preferences.
6. **Component Linking:** Users can link dashboard components together to create dynamic interactions between different parts of the dashboard. For example, clicking on a data point in one chart can update the data displayed in other related charts on the dashboard.
7. **Scheduled Refresh:** Dashboards can be configured to automatically refresh at regular intervals, ensuring that users always have access to the latest data without manual intervention.
8. **Collaboration and Sharing:** Salesforce allows users to collaborate and share dashboards with team members, groups, or even external stakeholders. Users can control access permissions to ensure that sensitive data is only shared with authorized users.



- **Real-Time Data:** Real-time data in the Salesforce platform refers to the ability to access and analyze data as it is updated in real-time, providing users with the most current information available. This feature ensures that users have access to up-to-date insights and metrics, allowing for timely decision-making and action.

Key Aspects of Real-Time Data in Salesforce:

1. **Instant Data Updates:** Salesforce updates data in real-time, meaning that any changes made to records or datasets are immediately reflected in reports, dashboards, and other data visualizations. This ensures that users always have access to the most current information without any delay.
2. **Dynamic Dashboards:** Real-time data enables the creation of dynamic dashboards in Salesforce. As data is updated in the underlying reports, the dashboard components are automatically refreshed to reflect the latest information. This allows users to monitor key metrics and KPIs in real-time and respond quickly to changing business conditions.
3. **Interactive Reports:** With real-time data, users can interact with reports and dynamically filter, drill down, or modify data views to explore the most current information. This interactivity enhances the analysis process and enables users to gain deeper insights into their data.
4. **Live Collaboration:** Real-time data facilitates live collaboration among team members. Since everyone has access to the most up-to-date data, teams can work together in real-time, share insights, and collaborate on decision-making processes, leading to improved efficiency and productivity.
5. **Immediate Notifications:** Salesforce can be configured to send immediate notifications or alerts based on real-time data changes. This ensures that relevant stakeholders are notified instantly when specific events or conditions occur, allowing for prompt action or follow-up.

REAL-TIME USE CASES

- **Monitoring Progress:** Track the real-time progress of students' certification completions.
- **Identifying Trends:** Spot trends and patterns as they develop, allowing for timely interventions.
- **Decision Making:** Provide administrators and educators with the data they need to make informed decisions quickly.

DEPARTMENT AND ENROLLMENT ANALYSIS

- **New Trainee Data Dashboards:** Created dashboards to show which department members (CSE, ECE, IT, AIMLCS, ME, EEE) are enrolled in which technology courses.
- **College and Department Enrollment Trends:** Included components that display data on which college and department students are enrolling in various courses, helping to track student interest and engagement.

CHARTS AND VIZUALIZATION

Charts and visualization tools in the Salesforce platform provide users with powerful ways to analyze and present data in a visually compelling format. These tools enable users to gain insights, identify trends, and communicate information effectively. Here's an overview of charts and visualization in the Salesforce platform:

1. Chart Types: Salesforce offers a variety of chart types to visualize data, including:

- Bar Charts
- Line Charts
- Pie Charts
- Donut Charts
- Area Charts
- Scatter Plots
- Gauge Charts
- Funnel Charts
- Heat Maps
- Radar Charts
- Polar Charts



2. Customization: Users can customize the appearance and formatting of charts to suit their specific needs. They can adjust colors, fonts, labels, and other visual elements to create a personalized and professional look for their charts.

3. Interactive Features: Charts in Salesforce are interactive, allowing users to explore data dynamically. Users can hover over data points to view details, drill down into specific data subsets, and filter data by clicking on chart elements.

4. Dashboard Components: Charts can be added as components to Salesforce dashboards, allowing users to create visually rich and informative dashboard layouts. Users can combine multiple charts, tables, and metrics on a single dashboard to provide a comprehensive view of key performance indicators (KPIs).

5. Real-Time Data Updates: Charts in Salesforce are updated in real-time, ensuring that users always have access to the most current data. As underlying data changes, the charts are automatically refreshed to reflect the latest information.

6. Mobile Responsiveness: Salesforce charts are mobile-responsive, meaning they can be viewed and interacted with on various devices, including desktops, laptops, tablets, and smartphones. This ensures that users can access and analyze data on the go.

7. Integration with Reports: Charts can be created directly from Salesforce reports, allowing users to visualize report data in a graphical format. Users can choose from a wide range of chart types and customize the chart settings to meet their specific reporting needs.

8. Data Grouping and Aggregation: Charts in Salesforce support data grouping and aggregation, allowing users to summarize and visualize large datasets. Users can group data by different dimensions and aggregate values using functions such as sum, average, count, and min/max.

9. Trend Analysis: Salesforce charts enable users to perform trend analysis by visualizing historical data over time. Users can identify patterns, trends, and outliers in the data, helping them make informed decisions and predictions.

10. Export and Sharing: Users can export charts from Salesforce in various formats, including image files (PNG, JPEG) and PDF documents. Charts can also be shared with colleagues and stakeholders by embedding them in emails, presentations, or documents.

RESULTS

CERTIFICATION TRENDS

- Summarize findings on which courses have the highest and lowest completion rates.
- Highlight any significant differences between campuses and departments.

IDENTIFYING BACKWARD STUDENTS

- Identify students who are behind in their certification progress.
- Analyze potential reasons for lagging behind, such as course difficulty, student engagement, or other factors.
- Provide actionable insights on how to support these students, such as recommending extra classes, mentoring, or additional resources.

CONCLUSIONS AND RECOMMENDATIONS

SUMMARY OF FINDINGS

- Present the key insights from the data analysis, such as overall performance trends and specific areas that need improvement.
- Discuss the implications of these findings for student support and curriculum development.

RECOMMENDATIONS AND IMPROVEMENT

- Suggest strategies to help students who are behind, such as personalized mentoring, targeted extra classes, and improved resource allocation.
 - Recommend changes to the curriculum or support systems to enhance overall certification completion
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