

# **Salesforce project**

## **Bike Rental Management System**

Small rental businesses often struggle to manage bookings, customer interactions, and fleet availability due to reliance on manual processes, phone calls, or spreadsheets. This leads to issues such as double-bookings, delayed maintenance, missed payments, and poor customer experiences. For small businesses and startups, these inefficiencies result in reduced profitability and lower customer satisfaction.

To address this, there is a need for a Salesforce-based Bike Rental Management System that extends standard Salesforce objects, automates booking confirmations and reminders, and leverages Salesforce Reports and Dashboards to provide visibility into rental trends, fleet usage, and customer engagement all at an affordable cost.

## **Phase1: Problem understanding & industry analysis**

### **1. Requirement Gathering (What to Track):**

#### **Bikes (Inventory Management):**

- Bike ID / Serial Number
- Bike Type (Mountain, Road, Electric, Scooter, etc.)
- Availability Status (Available, Booked, Under Maintenance)
- Rental Rate (per hour/day/week)
- Maintenance Due Date

#### **Customers (Renter Records):**

- Customer Name & Contact Info
- ID Proof Details (License/ID Card)
- Rental History (previous bookings, payment status)

#### **Bookings/Reservations:**

- Booking ID
- Bike Selected
- Rental Duration (start & end date/time)
- Payment Status (Pending, Paid, Overdue)

- Linked Record (Customer Account/Contact)

### **Reporting & Dashboards:**

- Active Rentals (current bookings)
- Bike Utilization Rate (available vs rented)
- Revenue by Bike Type or Time Period
- Overdue Returns & Payments
- Top Customers (frequent renters)

### **Automations (Workflow Rules/Flows):**

- Auto-confirmation email/SMS after booking creation
- Reminder 24 hours before bike return deadline
- Notification for overdue returns/payments
- Auto-creation of maintenance tasks after certain rental cycles

## **2. Stakeholder Analysis**

- **Customer (Bike Renter):** Needs a smooth booking process, timely confirmations, and return reminders.
- **Rental Staff (End Users):** Requires an easy interface to create/update bookings, check availability, and collect payments.
- **Manager/Owner:** Needs dashboards to track rentals, revenue, and overdue returns for better decision-making.
- **Admin:** Configures custom fields, sets up flows for automations, and manages fleet/booking data.

## **3. Business Process Mapping**

- **Booking Creation:** Rental staff/customer creates booking linked to a bike and a customer record.
- **Availability Check:** System ensures bike is not double-booked.
- **Confirmation & Payment:** Booking confirmation sent; payment marked (Pending/Paid).
- **Rental Execution:** Bike handed over, status changed to “Rented.”
- **Return & Closure:** Upon return, staff updates status, records payment, and schedules maintenance if needed.
- **Reporting & Insights:** Dashboards show revenue, fleet usage, overdue returns, and top-performing bikes/customers.

## 4. Industry-Specific Use Case Analysis

- **Local Bike Rental Shops:** Centralizes booking and customer management, reducing manual work.
- **Tour Operators:** Tracks group rentals, payment status, and customer engagement.
- **Corporate Rentals:** Supports companies offering employee bike rentals with usage reports and cost tracking.

## 5. AppExchange Exploration

Explore Salesforce AppExchange apps like:

- **Rental Management Solutions (3rd-party apps):** End-to-end rental lifecycle tools.
- **Field Service Lightning:** To track maintenance schedules and technician assignments.
- **Conga Composer:** For generating rental agreements and invoices.
- **Payment Gateway Integrations (Stripe, PayPal):** For online payments. **Why Simple & Affordable?**
- **Low Complexity:** Uses standard Salesforce objects (Accounts, Contacts, Opportunities, Assets) with minimal customization.
- **Cost-Effective:** Built using Flows, Workflow Rules, and Reports/Dashboards, compatible with Salesforce Essentials or Lightning Professional editions.
- **Scalable for Small Businesses:** Designed for rental shops with 5–100 bikes and users, providing essential functionality without expensive addons.

## Phase 2: Org Setup & Configuration

**Purpose:** Configure Salesforce org for **Bike Rental Management System** to ensure users, profiles, roles, and security settings are correctly aligned with rental, support, and maintenance operations.

1. **Salesforce Edition:** Developer Edition
2. **Company Profile Setup:**
  - Company Name, Address
  - Timezone → Asia/Kolkata (IST)

SETUP

Company Information

Company Information

MAHARAJ VIJAYARAM GAJAPATHI RAJ COLLEGE OF ENGINEERING

The organization's profile is below.

[User Licenses \(10+\)](#) | [Permission Set Licenses \(10+\)](#) | [Feature Licenses \(11\)](#) | [Usage-based Entitlements \(10+\)](#)

Organization Detail

Edit

Organization Name	MAHARAJ VIJAYARAM GAJAPATHI RAJ COLLEGE OF ENGINEERING	Phone	
Primary Contact	OrgFarm EPIC	Fax	
Division		Default Locale	English (United States)
Address	United States	Default Language	English
Fiscal Year Starts In	January	Default Time Zone	(GMT-07:00) Pacific Daylight Time (America/Los_Angeles)
Activate Multiple Currencies	<input type="checkbox"/>	Currency Locale	English (United States) - USD
Enable Data Translation	<input type="checkbox"/>	Used Data Space	342 KB (7%) <a href="#">View</a>
Newsletter	<input checked="" type="checkbox"/>	Used File Space	17 KB (0%) <a href="#">View</a>
Admin Newsletter	<input checked="" type="checkbox"/>	API Requests, Last 24 Hours	382 (15,000 max)
Hide Notices About System Maintenance	<input type="checkbox"/>	Streaming API Events, Last 24 Hours	0 (10,000 max)
Hide Notices About System Downtime	<input type="checkbox"/>	Restricted Logins, Current Month	0 (0 max)
Locale Formats	ICU	Salesforce.com Organization ID	00DgL00000CuzZR
		Organization Edition	Developer Edition
		Instance	CAN98

Created By

OrgFarm EPIC, 9/26/2025, 8:01 AM

Modified By

OrgFarm EPIC, 10/3/2025, 9:55 PM

Edit

### 3. Business Hours & Holidays:

- Rental Operations: Mon–Sun, 6 AM – 11 PM
- Customer Support (Refunds/Complaints): 9 AM – 8 PM
- Add Regional Public Holidays for SLA & Follow-up Management

### 4. Fiscal Year: Standard

### 5. User Setup & Licenses – Create Sample Users:

- **Admin:** Full access to all rental data, refund workflows & dashboards
- **Rental Manager:** Manages bike inventory, approves booking overrides
- **Support Agent (Customer Care):** Handles refund requests and customer complaints
- **Role:** Owner
- **User License:** Salesforce
- **Profile:** Standard User

Click to go back, hold to see history

Search Setup

Setup

Home

Object Manager

Users

Users

Permission Set Groups

Permission Sets

Profiles

Public Groups

Queues

Roles

User Management Settings

Users

Feature Settings

Data.com

Prospector Users

Service

Embedded Service

Messaging for In-App and Web User Verification

User Interface

Action Link Templates

SETUP

Users

User

person 1

[Permission Set Assignments \(0\)](#) | [Permission Set Assignments: Activation Required \(0\)](#) | [Permission Set Group Assignments \(0\)](#) | [Permission Set License Assignments \(0\)](#) | [Personal Groups \(0\)](#) | [Public Group Membership \(0\)](#) | [Queue Membership \(0\)](#) | [Teams \(0\)](#) | [Managers in the Role Hierarchy \(0\)](#) | [OAuth Apps \(0\)](#) | [Third-Party Account Links \(0\)](#) | [Built-in Authenticators \(0\)](#) | [Installed Mobile Apps \(0\)](#) | [Authentication Settings for External Systems \(0\)](#) | [Login History \(0\)](#) | [User Provisioning Accounts \(0\)](#)

User Detail

Edit

Sharing

Reset Password


Freeze

View Summary

Name	person 1	Role	owner
Alias	p1	User License	Salesforce
Email	donkacasmitha@gmail.com <a href="#">Verify</a>	Profile	Standard User
Username	d_lakky@gmail.com	Active	<input checked="" type="checkbox"/>
Nickname	User17595610759052512461 <a href="#">Edit</a>	Marketing User	<input type="checkbox"/>
Title		Offline User	<input type="checkbox"/>
Company	MAHARAJ VIJAYARAM GAJAPATHI RAJ COLLEGE OF ENGINEERING	Knowledge User	<input type="checkbox"/>
Department		Flow User	<input type="checkbox"/>
Division		Service Cloud User	<input type="checkbox"/>
Address	Vizianagaram 535101	Site.com Contributor User	<input type="checkbox"/>
Time Zone	India	Site.com Publisher User	<input type="checkbox"/>
Locale	(GMT-07:00) Pacific Daylight Time (America/Los_Angeles)	WDC User	<input type="checkbox"/>
Language	English	Mobile Push Registrations	<a href="#">View</a>
Delegated Approver		Data.com User Type	<a href="#">Edit</a>
Manager		Accessibility Mode (Classic Only)	<input type="checkbox"/> <a href="#">Edit</a>
Receive Approval Request Emails	Only if I am an approver	Debug Mode	<input type="checkbox"/> <a href="#">Edit</a>
Federation ID		High-Contrast Palette on Charts	<input type="checkbox"/> <a href="#">Edit</a>

## 6. Profiles:

- **Admin:** Full access to all rental, refund, and maintenance objects
- **Rental Manager:** Edit/View bikes, bookings, and refunds
- **Support Agent:** Edit/View bookings and refund requests only
- **Technician (Optional):** Edit/View bike maintenance logs only
- **Receptionist (Optional):** Create/View booking records only

 **SETUP**  
**Profiles**

Profile  
**bikes owner**

Users with this profile have the permissions and page layouts listed below. Administrators can change a user's profile by editing that user's personal information.

If your organization uses Record Types, use the Edit links in the Record Type Settings section below to make one or more record types available to users with this profile.


Login IP Ranges (0) | Enabled Apex Class Access (2) | Enabled Visualforce Page Access (0) | Enabled External Data Source Access (0) | Enabled Named Credential Access (0) | Enabled External Credential Principal Access (0) | Enabled Custom Metadata Type Access (0) | Enabled Custom Setting Definitions Access (0) | Enabled Flow Access (0) | Enabled Service Presence Status Access (0) | Enabled Custom Permissions (0)

**Profile Detail** [Edit](#) [Clone](#) [Delete](#) [View Users](#)

Name	bikes owner	Custom Profile	✓
User License	Salesforce		
Description			
Created By	Donkapalli Likhitha Likhitha, 10/4/2025, 4:21 AM	Modified By	Donkapalli Likhitha Likhitha, 10/4/2025, 4:23 AM

**Page Layouts**

<b>Standard Object Layouts</b>			
Global	<a href="#">Global Layout</a> [ View Assignment ]	Location Group Assignment	<a href="#">Location Group Assignment Layout</a> [ View Assignment ]
Email Application	Not Assigned [ View Assignment ]	Macro	<a href="#">Macro Layout</a> [ View Assignment ]
Home Page Layout	<a href="#">Home Page Default</a> [ View Assignment ]	Object Milestone	<a href="#">Object Milestone Layout</a> [ View Assignment ]
Account	<a href="#">Account Layout</a> [ View Assignment ]	Operating Hours	<a href="#">Operating Hours Layout</a> [ View Assignment ]
Alternative Payment Method	<a href="#">Alternative Payment Method Layout</a> [ View Assignment ]	Opportunity	<a href="#">Opportunity Layout</a> [ View Assignment ]
Appointment Invitation	<a href="#">Appointment Invitation Layout</a> [ View Assignment ]	Opportunity Product	<a href="#">Opportunity Product Layout</a> [ View Assignment ]

 **SETUP**  
**Profiles**

Profile  
**bike agents**

Users with this profile have the permissions and page layouts listed below. Administrators can change a user's profile by editing that user's personal information.

If your organization uses Record Types, use the Edit links in the Record Type Settings section below to make one or more record types available to users with this profile.

Login IP Ranges (0) | Enabled Apex Class Access (2) | Enabled Visualforce Page Access (0) | Enabled External Data Source Access (0) | Enabled Named Credential Access (0) | Enabled External Credential Principal Access (0) | Enabled Custom Metadata Type Access (0) | Enabled Custom Setting Definitions Access (0) | Enabled Flow Access (0) | Enabled Service Presence Status Access (0) | Enabled Custom Permissions (0)

**Profile Detail** [Edit](#) [Clone](#) [Delete](#) [View Users](#)

Name	bike agents	Custom Profile	✓
User License	Salesforce Platform		
Description			
Created By	Donkapalli Likhitha Likhitha, 10/4/2025, 4:25 AM	Modified By	Donkapalli Likhitha Likhitha, 10/4/2025, 4:25 AM

**Page Layouts**

<b>Standard Object Layouts</b>			
Global	<a href="#">Global Layout</a> [ View Assignment ]	Lead	<a href="#">Lead Layout</a> [ View Assignment ]
Email Application	Not Assigned [ View Assignment ]	Location	<a href="#">Location Layout</a> [ View Assignment ]
Home Page Layout	<a href="#">Home Page Default</a> [ View Assignment ]	Location Group	<a href="#">Location Group Layout</a> [ View Assignment ]
Account	<a href="#">Account Layout</a> [ View Assignment ]	Location Group Assignment	<a href="#">Location Group Assignment Layout</a> [ View Assignment ]
Alternative Payment Method	<a href="#">Alternative Payment Method Layout</a> [ View Assignment ]	Object Milestone	<a href="#">Object Milestone Layout</a> [ View Assignment ]
Appointment Invitation	<a href="#">Appointment Invitation Layout</a> [ View Assignment ]	Operating Hours	<a href="#">Operating Hours Layout</a> [ View Assignment ]

## 7. Roles (Hierarchy Structure):

### Sample structure:

Admin > Rental Manager > Support Agent / Technician > Receptionist

## Created Structure :

Company > CEO > Bike owner > Bike agents > users

The screenshot shows the 'Roles' setup page in Salesforce. At the top, there's a 'SETUP Roles' header. Below it, the section 'Creating the Role Hierarchy' explains that users can build on the existing hierarchy and insert new roles by clicking 'Add Role'. The main part of the page displays 'Your Organization's Role Hierarchy' for 'MAHARAJ VIJAYARAM GAJAPATHI RAJ COLLEGE OF ENGINEERING'. The hierarchy is a tree structure starting with 'MAHARAJ VIJAYARAM GAJAPATHI RAJ COLLEGE OF ENGINEERING' at the top. Below it are several roles: 'CEO', 'bike owner', 'bike agents', 'CFO', 'COO', 'owner', 'agent', 'SVP, Customer Service & Support', 'Customer Support, International', and 'Customer Support, North America'. Each role has an 'Add Role' link below it, and some roles have 'Edit', 'Del', and 'Assign' links next to them. The URL at the bottom of the page is 'https://lightning/setup/.../home'.

**8. Permission Sets:** Assign report and dashboard access to Rental Managers & Support Agents

**9. OWD & Sharing Rules:**

- **Customers / Contacts:** Private
- **Bookings / Rentals:** Private
- **Refund Requests:** Private
- **Sharing Rule:** Share each booking and refund only with assigned Support Agent or Manager

**10. Login Access Policies:** Admin can login as any user

**11. Sandbox Usage & Deployment Basics:**

Optional used for testing refund workflows and automation setup before moving to production

# Phase 3: Data Modeling & Relationships

- **Purpose:** Design Salesforce objects and relationships for managing customers, bike rentals, payments, refunds, and maintenance data within the Bike Rental Management System.

## 1. Custom Objects:

- Bike bookings

The screenshot shows the Salesforce Object Manager interface for a custom object named 'bike booking'. The left sidebar contains a list of configuration options: Details, Fields & Relationships, Page Layouts, Lightning Record Pages, Buttons, Links, and Actions, Compact Layouts, Field Sets, Object Limits, Record Types, Related Lookup Filters, Search Layouts, List View Button Layout, Restriction Rules, and Scoping Rules. The main area displays the 'Details' configuration for the 'bike booking' object. The API Name is 'bike\_booking\_\_c', the Custom checkbox is checked, the Singular Label is 'bike booking', and the Plural Label is 'bike bookings'. On the right, the 'Enable Reports' checkbox is checked, 'Track Activities' and 'Track Field History' are also checked, the 'Deployment Status' is 'Deployed', and the 'Help Settings' are set to 'Standard salesforce.com Help Window'. 'Edit' and 'Delete' buttons are visible in the top right corner.

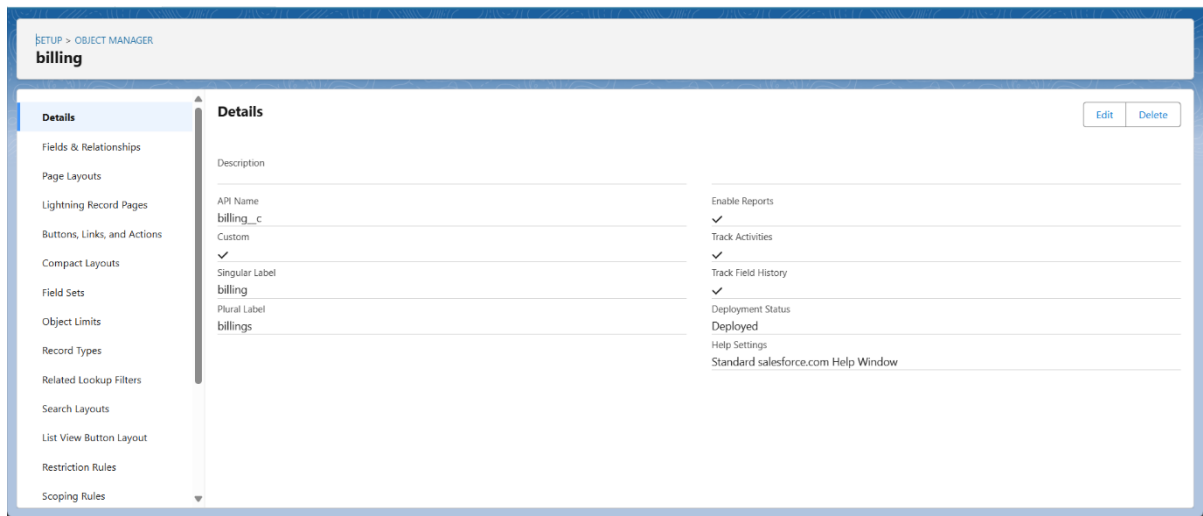
Field	Value
Description	
API Name	bike_booking__c
Custom	<input checked="" type="checkbox"/>
Singular Label	bike booking
Plural Label	bike bookings
Enable Reports	<input checked="" type="checkbox"/>
Track Activities	<input checked="" type="checkbox"/>
Track Field History	<input checked="" type="checkbox"/>
Deployment Status	Deployed
Help Settings	Standard salesforce.com Help Window

- Total bikes

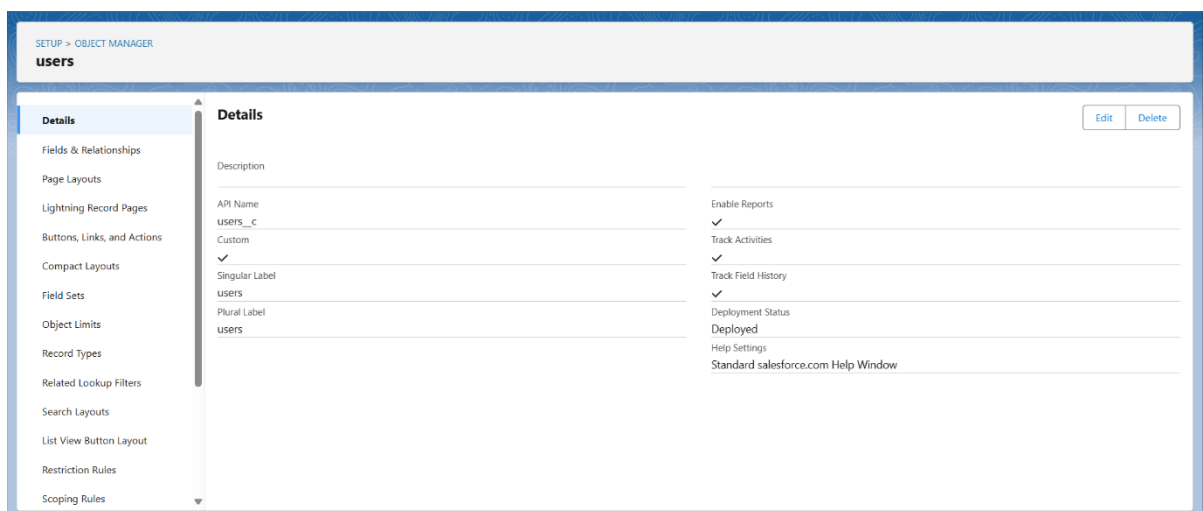
The screenshot shows the Salesforce Object Manager interface for a custom object named 'total bikes'. The left sidebar contains a list of configuration options: Details, Fields & Relationships, Page Layouts, Lightning Record Pages, Buttons, Links, and Actions, Compact Layouts, Field Sets, Object Limits, Record Types, Related Lookup Filters, Search Layouts, List View Button Layout, Restriction Rules, and Scoping Rules. The main area displays the 'Details' configuration for the 'total bikes' object. The API Name is 'total\_bikes\_\_c', the Custom checkbox is checked, the Singular Label is 'total bikes', and the Plural Label is 'total bikes'. On the right, the 'Enable Reports' checkbox is checked, 'Track Activities' and 'Track Field History' are also checked, the 'Deployment Status' is 'Deployed', and the 'Help Settings' are set to 'Standard salesforce.com Help Window'. 'Edit' and 'Delete' buttons are visible in the top right corner.

Field	Value
Description	
API Name	total_bikes__c
Custom	<input checked="" type="checkbox"/>
Singular Label	total bikes
Plural Label	total bikes
Enable Reports	<input checked="" type="checkbox"/>
Track Activities	<input checked="" type="checkbox"/>
Track Field History	<input checked="" type="checkbox"/>
Deployment Status	Deployed
Help Settings	Standard salesforce.com Help Window

- Billing process



- Users



## 2. Fields and relationships

- **Bike booking**

Amount

Bikes available

Bike booking names

Bike names

Email

How many days

Total no of bikes



SETUP > OBJECT MANAGER

**bike booking**

Details	<b>Fields &amp; Relationships</b> 10 Items, Sorted by Field Label					<input type="text" value="Quick Find"/>	<a href="#">New</a> <a href="#">Deleted Fields</a> <a href="#">Field Dependencies</a> <a href="#">Set History Tracking</a>
<b>Fields &amp; Relationships</b>	<b>FIELD LABEL</b>	<b>FIELD NAME</b>	<b>DATA TYPE</b>	<b>CONTROLLING FIELD</b>	<b>INDEXED</b>		
Page Layouts	amount	amount__c	Currency(18, 0)				
Lightning Record Pages	bike available	bike_available__c	Formula (Number)				
Buttons, Links, and Actions	bike booking Name	Name	Text(80)		✓		
Compact Layouts	bike names	bike_names__c	Picklist				
Field Sets	Created By	CreatedById	Lookup(User)				
Object Limits	email	email__c	Email				
Record Types	how many days	how_many_days__c	Picklist				
Related Lookup Filters	Last Modified By	LastModifiedById	Lookup(User)				
Search Layouts	total no of bikes	total_no_of_bikes__c	Master-Detail(total bikes)		✓		
List View Button Layout							
Restriction Rules							
Scoping Rules							

Ukhitha - Chrome

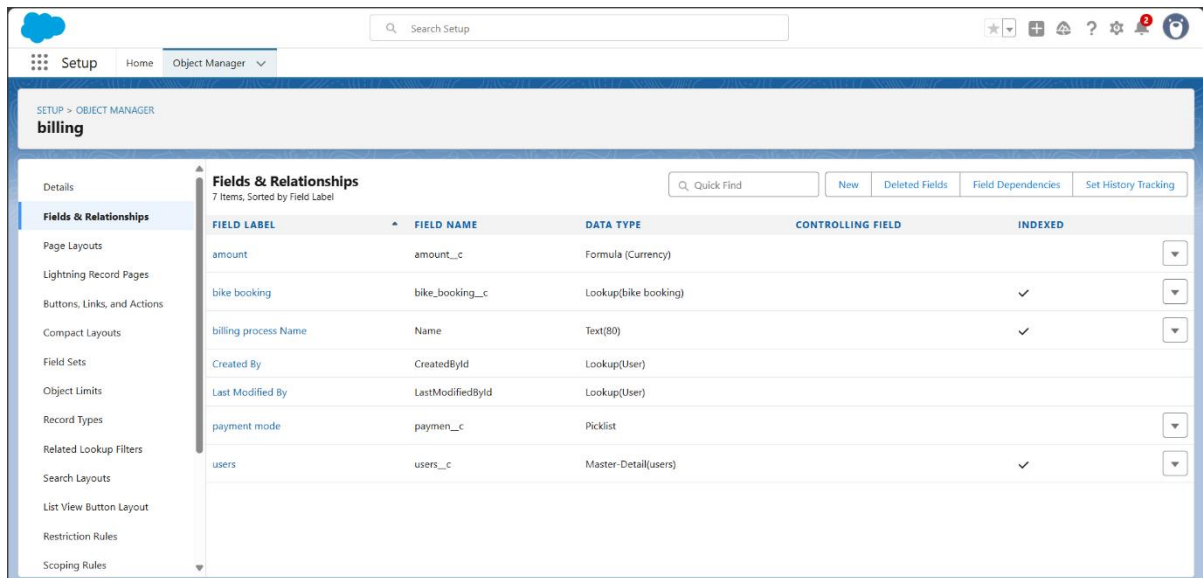
- **Total bikes**
- Bike available
- Bike delivered
- Owner
- Total bikes

SETUP > OBJECT MANAGER

**total bikes**

Details	<b>Fields &amp; Relationships</b> 6 Items, Sorted by Field Label					<input type="text" value="Quick Find"/>	<a href="#">New</a> <a href="#">Deleted Fields</a> <a href="#">Field Dependencies</a> <a href="#">Set History Tracking</a>
<b>Fields &amp; Relationships</b>	<b>FIELD LABEL</b>	<b>FIELD NAME</b>	<b>DATA TYPE</b>	<b>CONTROLLING FIELD</b>	<b>INDEXED</b>		
Page Layouts	bike available	bike_available__c	Formula (Number)				
Lightning Record Pages	bike delivered	bike_delivered__c	Roll-Up Summary (COUNT bike booking)				
Buttons, Links, and Actions	Created By	CreatedById	Lookup(User)				
Compact Layouts	Last Modified By	LastModifiedById	Lookup(User)				
Field Sets	Owner	OwnerId	Lookup(User,Group)		✓		
Object Limits	total bikes Name	Name	Text(80)		✓		
Record Types							
Related Lookup Filters							
Search Layouts							
List View Button Layout							
Restriction Rules							
Scoping Rules							

- **Billing**
- Amount
- Bike booking
- Billing number
- users



Setup > OBJECT MANAGER  
**billing**

Details

**Fields & Relationships**  
7 Items, Sorted by Field Label

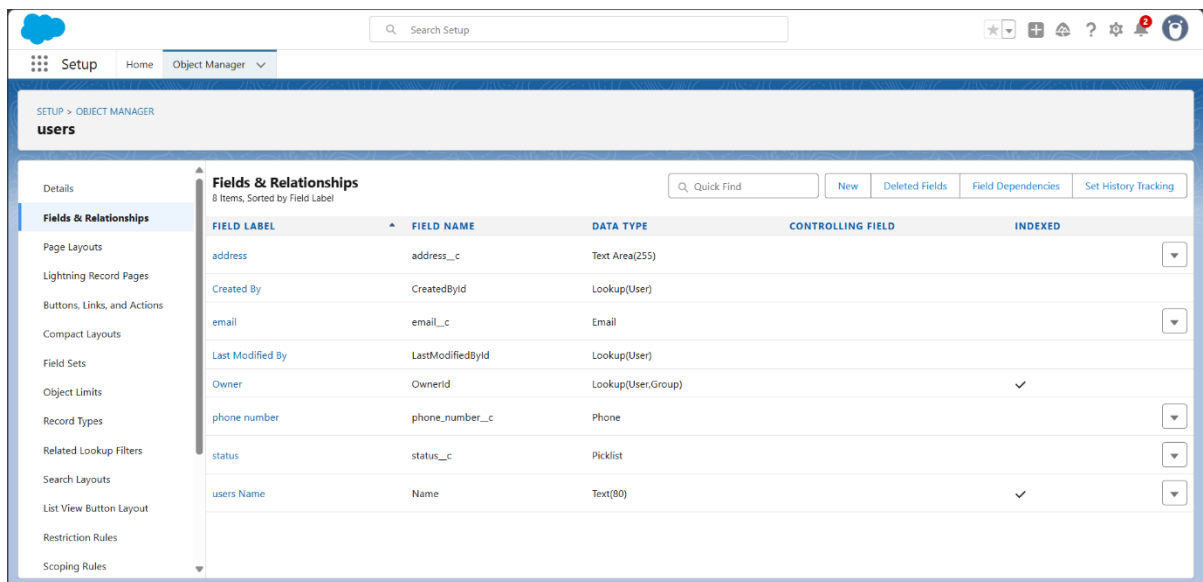
Q Quick Find

New Deleted Fields Field Dependencies Set History Tracking

FIELD LABEL	FIELD NAME	DATA TYPE	CONTROLLING FIELD	INDEXED
amount	amount__c	Formula (Currency)		
bike booking	bike_booking__c	Lookup(bike booking)		✓
billing process Name	Name	Text(80)		✓
Created By	CreatedById	Lookup(User)		
Last Modified By	LastModifiedById	Lookup(User)		
payment mode	payment__c	Picklist		
users	users__c	Master-Detail(users)		✓

Page Layouts  
Lightning Record Pages  
Buttons, Links, and Actions  
Compact Layouts  
Field Sets  
Object Limits  
Record Types  
Related Lookup Filters  
Search Layouts  
List View Button Layout  
Restriction Rules  
Scoping Rules

- **Users**
- Email
- Owner
- Phone number
- Users
- Address
- Status



Setup > OBJECT MANAGER  
**users**

Details

**Fields & Relationships**  
8 Items, Sorted by Field Label

Q Quick Find

New Deleted Fields Field Dependencies Set History Tracking

FIELD LABEL	FIELD NAME	DATA TYPE	CONTROLLING FIELD	INDEXED
address	address__c	Text Area(255)		
Created By	CreatedById	Lookup(User)		
email	email__c	Email		
Last Modified By	LastModifiedById	Lookup(User)		
Owner	OwnerId	Lookup(User.Group)		✓
phone number	phone_number__c	Phone		
status	status__c	Picklist		
users Name	Name	Text(80)		✓

Page Layouts  
Lightning Record Pages  
Buttons, Links, and Actions  
Compact Layouts  
Field Sets  
Object Limits  
Record Types  
Related Lookup Filters  
Search Layouts  
List View Button Layout  
Restriction Rules  
Scoping Rules

### 3. Record Types

- Record types would typically be used if different business processes or page layouts are needed per object based on values like status or type (e.g., different layouts or picklist values for gear vs non-gear bikes).

- Currently, it appears only default record types are implemented for these objects.

#### **4. Page Layouts**

Page layouts control the arrangement of fields, sections, related lists on the record detail page for users.

1. Bike Booking layout would likely show:

- Fields: bike booking Name, amount, bike available formula, bike names, how many days, email.
- Related lists: total no of bikes (Master-Detail related list)

2. Billing layout would show:

- Billing process Name, amount formula, bike booking lookup, payment mode, users master-detail.
- Lookup and related user and bike booking details.

3. Total Bikes layout might Include:

- Total bikes Name, bike available formula, bike delivered roll-up summary
- Owner and audit info

4. Users layout includes:

- Ownership and audit fields
- Users Name, address, email, phone number, status

#### **5. Compact layouts**

Compact layouts define key fields displayed in record highlights and mobile cards.

- Bike Booking compact layout might show key Identifiers such as:
  - Bike booking Name, status (if available), bike names, how many days
- Billing compact layout likely shows:
  - Billing process Name, amount, payment mode
- Total Bikes compact layout would show.
  - Total bikes Name, bike available number, bike delivered count
- Users compact layout likely Includes:
  - Users Name, status, phone number or email for quick reference

#### **6. Schema Builder**

The Schema Builder in Salesforce is a visual tool that lets administrators

and developers design, view, and manage the data model for both standard and custom objects, including their fields and relationships.

- Create and modify custom objects and fields
- Define relationships (Master-Detail, Lookup)
- Visualize how objects connect for a clear data architecture

**Example (Bike Booking System):**

The Schema Builder visually displays links between objects like:

- **Bike Booking**
- **Billing**
- **Users**
- **Total Bikes**

## 7. Lookup vs Master-Detail vs Hierarchical Relationships

Type	Description	Example in Your System	Features
<b>Lookup</b>	Loose reference — child record can exist independently	<i>Billing</i> → <i>Bike Booking</i> , <i>Bike Booking</i> → <i>Total Bikes</i>	No sharing/deletion dependency; parent optional
<b>Master-Detail</b>	Strong ownership — child depends on parent	<i>Total Bikes</i> → <i>Bike Booking</i> , <i>Billing</i> → <i>Users</i>	Parent controls sharing, deletion; supports roll-up summary
<b>Hierarchical</b>	Used only on User object to define manager-subordinate relations	Not shown in screenshots	Used to model reporting/management hierarchy

**Relationships in your system:**

- **Master-Detail:** Total Bikes ↔ Bike Booking; Billing ↔ Users
- **Lookup:** Billing ↔ Bike Booking
- **Hierarchical:** None configured

## 8. Junction Objects

A junction object is a custom object that has two Master-Detail relationships to create a many-to-many relationship between two other objects.

## 9. External Objects

External Objects represent data stored outside Salesforce (like ERP or external databases) but made available inside Salesforce through Salesforce Connect.

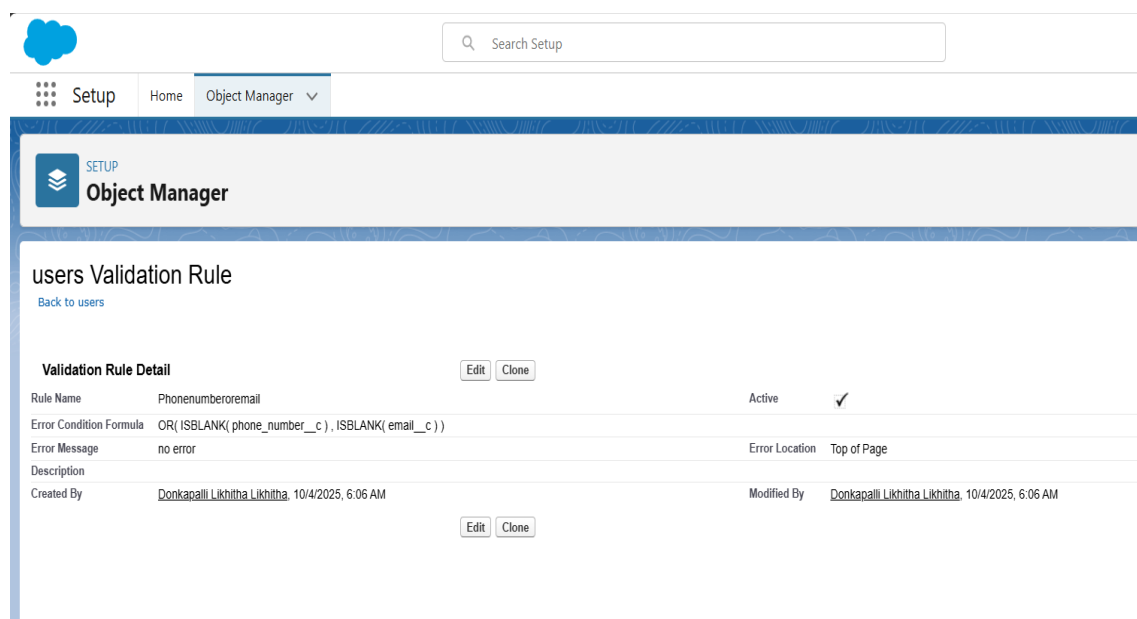
- Data is not stored in Salesforce (accessed in real time)
- Useful for integration and reporting across systems

## Phase 4: Process Automation (Admin)

**Purpose:** Automate repetitive tasks, notifications, and follow-ups for bike rentals, returns, maintenance, and customer engagement.

### 1. Validation Rules:

- Ensure Return Date  $\geq$  Rental Start Date
- Ensure Bike Availability = Yes before booking
- Ensure Customer Age  $\geq$  18 for bike rental



The screenshot shows the Salesforce Object Manager interface for a Validation Rule. The breadcrumb trail is Setup > Home > Object Manager. The page title is "users Validation Rule" with a "Back to users" link. The "Validation Rule Detail" section includes a table with the following information:

Validation Rule Detail		Edit		Clone	
Rule Name	Phonenumberoremail	Active	<input checked="" type="checkbox"/>		
Error Condition Formula	OR( ISBLANK( phone_number__c ), ISBLANK( email__c ) )				
Error Message	no error	Error Location	Top of Page		
Description					
Created By	Donkapalli Likhitha Likhitha, 10/4/2025, 6:06 AM		Modified By	Donkapalli Likhitha Likhitha, 10/4/2025, 6:06 AM	

At the bottom of the table, there are "Edit" and "Clone" buttons.

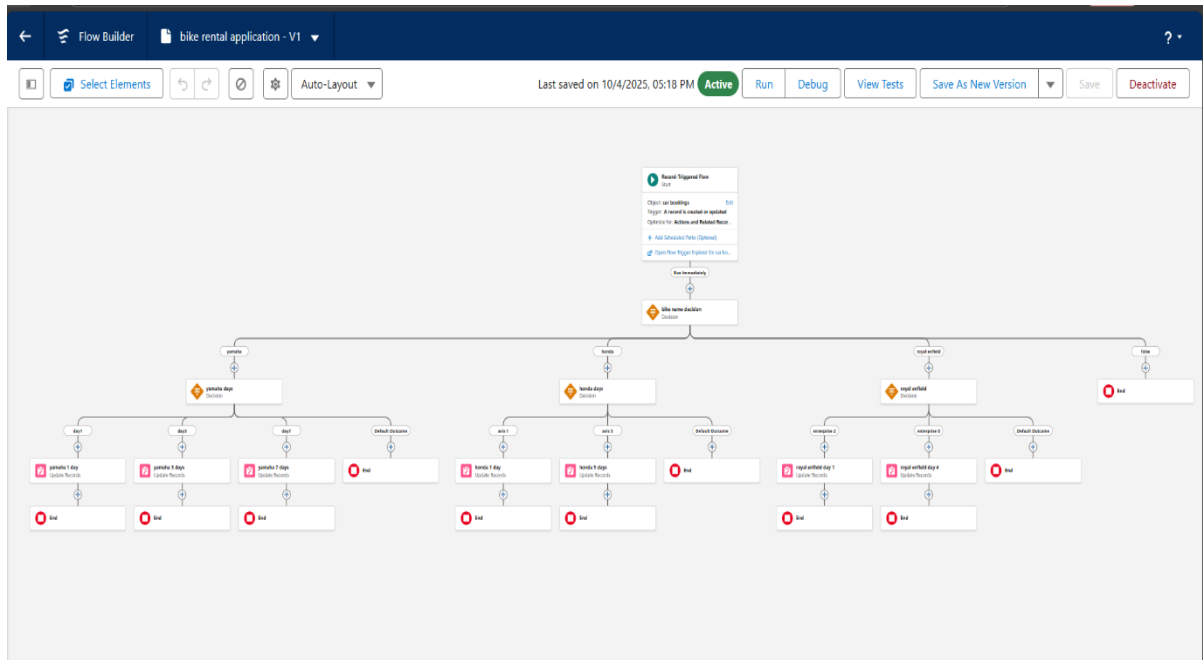
### 2. Workflow / Process Builder:

- **Notify Admin / Support Agent** when a bike is booked or returned late
- **Auto-assign a default rental plan** if the customer doesn't select a plan (e.g., hourly, daily, weekly)
- **Flag overdue rentals** automatically if the bike is not returned on time

### 3. Flow Builder:

- **Auto-create "Active Rentals" report** showing all ongoing rentals

- **Automate maintenance reminders** when a bike reaches a certain usage threshold
- **Automate notifications to customers** for upcoming rental end or overdue returns



#### 4. Email Alerts / Custom Notifications:

- **Notify customers** about booking confirmation, rental expiration, or overdue bikes
- **Notify support/maintenance team** when a bike requires servicing or is flagged as overdue
- **Notify customers** of promotions or loyalty offers

#### Purpose:

Automatically maintain data consistency and save manual work.

#### Examples in Bike Rental System:

Use Case	Trigger Condition	Field Updated	Result
Mark bike as “Booked”	When a new booking is created	<i>Total_Bikes__c.Availability__c</i> → “Booked”	Prevents double-booking
Mark booking as “Completed”	When return date ≤ Today	<i>Bike_Booking__c.Status__c</i> → “Completed”	Keeps records up to date

Update payment status	When Billing record is saved	<i>Billing__c.Payment_Status__c</i> → “Paid”	Reflects successful transactions
Set maintenance flag	When bike reaches usage threshold	<i>Total_Bikes__c.Maintenance_Status__c</i> → “Due”	Alerts technicians automatically

### Where to Create:

→ Setup → Workflow Rules / Flows → Add Action → **Field Update**

### 5. Tasks:

Tasks in Salesforce are activities or reminders automatically assigned to users.

They help ensure follow-ups or actions are not missed.

**Purpose:** Automate reminders for staff or managers — crucial for customer returns and maintenance schedules.

Use Case	Trigger Condition	Task Assigned To	Task Description
Bike Return Reminder	24 hours before return date	Support Agent	“Follow up with customer for bike return.”
Maintenance Task	When bike status = “Under Maintenance”	Technician	“Inspect and service the bike.”
Payment Follow-up	When payment is overdue	Rental Manager	“Call customer to clear pending payment.”
Customer Feedback	After rental completion	Support Agent	“Send feedback form to customer.”

### Where to Create:

→ Setup → Workflow Rules / Process Builder / Flow → Add Action → **New Task**

### 6. Custom Notifications

**Custom Notifications** send alerts directly inside Salesforce (web or mobile) instead of just email or SMS. They appear as bell notifications on the Salesforce UI.

**Purpose:** Provide **real-time alerts** to users without leaving Salesforce.

Use Case	Trigger Condition	Recipient	Message Example
Overdue Rental Alert	Bike not returned by due date	Admin / Support Agent	“Rental #BK-1023 is overdue. Please follow up.”

Maintenance Needed	Bike flagged for servicing	Technician	“Bike #B-45 requires maintenance.”
New Booking Confirmed	Booking created successfully	Customer (via in-app or push)	“Your booking is confirmed!”
Payment Received	Billing status updated to Paid	Rental Manager	“Payment received for Booking #BK-1040.”

#### Setup Steps:

- Go to **Setup** → **Notification Builder** → **Custom Notifications**
- Click **New Notification Type**
- Assign to **Desktop / Mobile**
- Use this in **Flow or Process Builder** → *Action Type*: “Send Custom Notification”

## Phase 5: Apex Programming (Developer)

**Purpose:** Use Apex code for advanced automation based on bike rental status, customer activity, and maintenance needs.

### 1. Triggers:

- **Rental Booking Insert** → Automatically assign default rental plan or discount if none is selected
- **Rental Status Update** → Notify admin/support agent via email if bike is overdue or damaged
- **Maintenance Record Insert/Update** → Trigger notification to maintenance team if bike requires servicing

### 2. Helper Classes:

- **Calculate Rental Status** (Active, Completed, Overdue)
- **Determine Maintenance Priority** based on usage hours or mileage
- **Calculate Customer Loyalty Points / Discounts** based on rental history

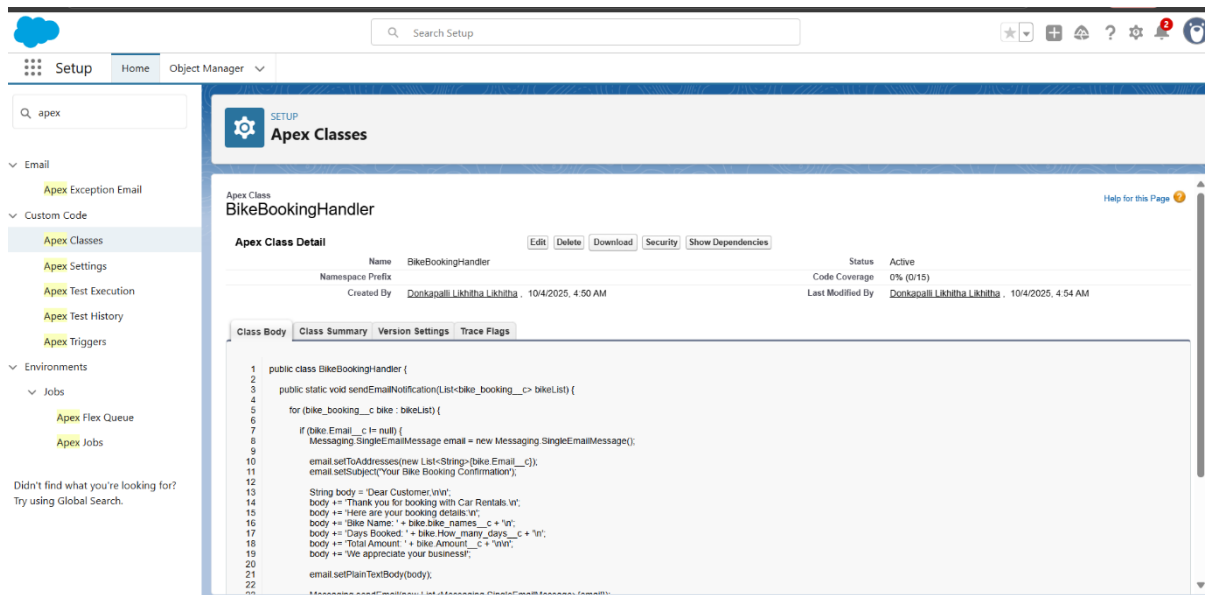
### 3. Batch Apex / Queueable Apex:

- **Bulk update active rentals** and send overdue notifications to customers
- **Bulk generate monthly rental reports** for admin
- **Queueable process** to assign maintenance schedules for multiple bikes automatically

### 4. Test Classes:

- For triggers, helper classes, and batch/queueable processes to **ensure proper execution and meet Salesforce deployment requirements**
- Validate scenarios like overdue rentals, new bookings, and maintenance alerts



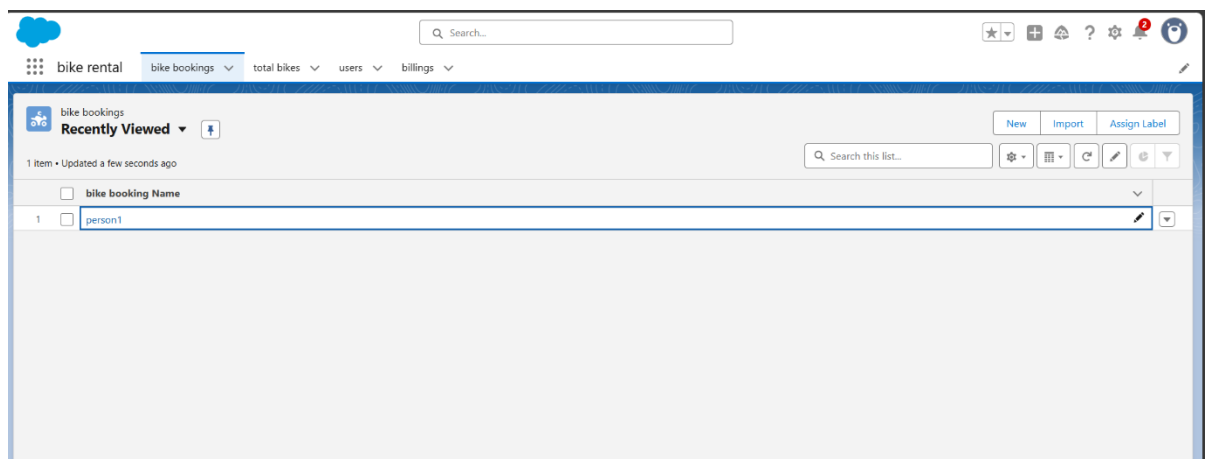


## Phase 6: User Interface Development – Bike Rental Management System

**Purpose:** Create a user-friendly experience for admins, support agents, and customers.

### 1. Create Bike Rental App in Lightning App Builder

- Name the app: “**Bike Rental Management**”
- Include branding/logo for easier recognition



### 2. Add Tabs:

- **Bikes** – List of all available bikes and their status
- **Customers** – Customer records and rental history
- **Bookings / Rentals** – Active, completed, and overdue rentals
- **Maintenance** – Bikes needing servicing

- **Reports** – Rental trends, overdue rentals, revenue
- **Dashboards** – Visual overview of rentals, maintenance workload, and customer activity
- **Promotions / Offers** – Optional tab for ongoing offers or loyalty programs

### 3. Customize Record Pages:

- **Customer Record Page:** Show rental history, active bookings, loyalty points, and overdue rentals
- **Bike Record Page:** Show availability, maintenance history, and current booking status
- **Booking Record Page:** Show booking details, customer info, rental duration, and payment status

### 4. Home Page Layouts:

- **Dashboard Components:**
  - Number of active rentals, overdue returns, and upcoming bookings
  - Bikes due for maintenance
  - Customer loyalty and rental trends
  - Support agent workload (pending approvals, overdue follow-ups)

### 5. Optional – Lightning Web Components (LWC):

- **Customer Search Component:** Quickly find customers and their active bookings
- **Rental Status Overview:** Show bikes by availability, overdue, and maintenance needed
- **Promotions / Retention Actions Tracker:** Track discounts, offers, or reminders for frequent renters

## Phase 7: Integration & External Access – Bike Rental Management System

**Purpose:** Connect Salesforce with external systems to enhance bike rental management, notifications, and customer engagement.

### 1. Named Credentials:

- **Connect with third-party APIs:**
  - **Email services** – Send booking confirmations, overdue alerts, and promotional offers

- **SMS gateways** – Notify customers about upcoming rentals, late returns, or maintenance schedules
- **Payment gateways** – Integrate for rental payments and refunds
- **Marketing platforms** – Sync customer data for loyalty programs and offers

## 2. Platform Events:

- **Notify support or admin agents:**
  - When a rental becomes overdue
  - When a bike is flagged for maintenance
  - When a customer makes multiple bookings or frequent cancellations (to trigger loyalty or retention actions)

## 3. Remote Site Settings:

- **Allow external API access for:**
  - Sending notifications via email or SMS
  - Fetching customer engagement or usage data from mobile apps
  - Integrating with bike tracking systems (GPS or IoT-based bike availability updates)

**SETUP** Remote Site Settings

Remote Site Details [Help for this Page](#)

**Remote Site Detail** [Edit](#) [Delete](#) [Clone](#)

Remote Site Name	ApexDevNet	Modified By	OrgFarm.EPIC, 9/26/2025, 8:01 AM
Remote Site URL	http://www.apexdevnet.com		
Disable Protocol Security	<input type="checkbox"/>		
Description			
Active	<input checked="" type="checkbox"/>		
Created By	OrgFarm.EPIC, 9/26/2025, 8:01 AM		

[Edit](#) [Delete](#) [Clone](#)

# Phase 8: Data Management & Deployment – Bike Rental Management System

**Purpose:** Ensure data integrity, smooth migrations, and secure management of bikes, customers, rentals, and maintenance data.

## 1. Data Import Wizard (UI-based import)

- **Use Case:** Upload small datasets like sample Customers, Bikes, Bookings, or Maintenance records for testing.

- **Steps:**

1. Go to App Launcher → search Data Import Wizard.
2. Scroll down to Custom Objects → Select Customer, Bike, or Booking.
3. Click Launch Wizard.
4. Upload CSV (e.g., Customer Name, Email, Bike ID, Rental Start/End Date, Status).
5. Map fields → Click Start Import → Records uploaded.

## **2. Data Loader (Bulk Import/Export)**

- **Use Case:** Upload large datasets (e.g., 500+ Customers or Bookings at once) or perform updates.

- **Steps:**

1. Setup → search Data Loader → Download & Install.
2. Open → Log in with Salesforce credentials.
3. Choose operation: Insert, Update, Upsert, Delete, Export.
4. Example: Insert → Customer or Booking object → Upload CSV → Map fields → Run.

## **3. Duplicate Rules (Data Quality Control)**

- **Use Case:** Prevent duplicate customer or bike records (same email, phone, or bike ID).

- **Steps:**

1. Setup → search Duplicate Rules → New Rule → Select Customer or Bike.
2. Define rule: Check Email, Phone, or Bike ID.
3. Action: Alert or Block → Save & Activate.

## **4. Change Sets / Deployment**

- **Use Case:** Move Customers, Bikes, Bookings, Maintenance Records, Reports, Dashboards from sandbox → production.

- **Steps:**

1. Setup → search Outbound Change Sets → Create new → Name: “Bike Rental Deployment”.
2. Add Components → Upload → Target Org → Approve & Deploy.

## **5. Export / Backup**

- **Use Case:** Monthly backup of Customers, Bikes, Bookings, and Maintenance data.

- **Steps:**

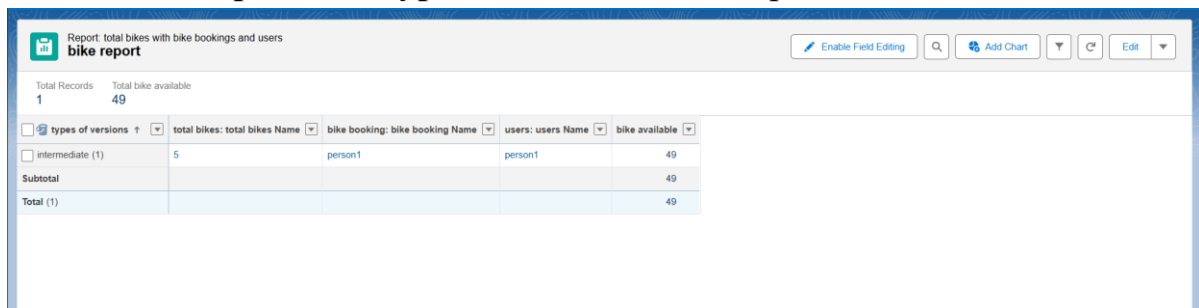
1. Setup → search Data Export → Select Customers, Bikes, Bookings, Maintenance.
2. Frequency: Monthly → Salesforce generates ZIP with CSVs → Download.

## Phase 9: Reporting, Dashboards & Security Review – Bike Rental Management System

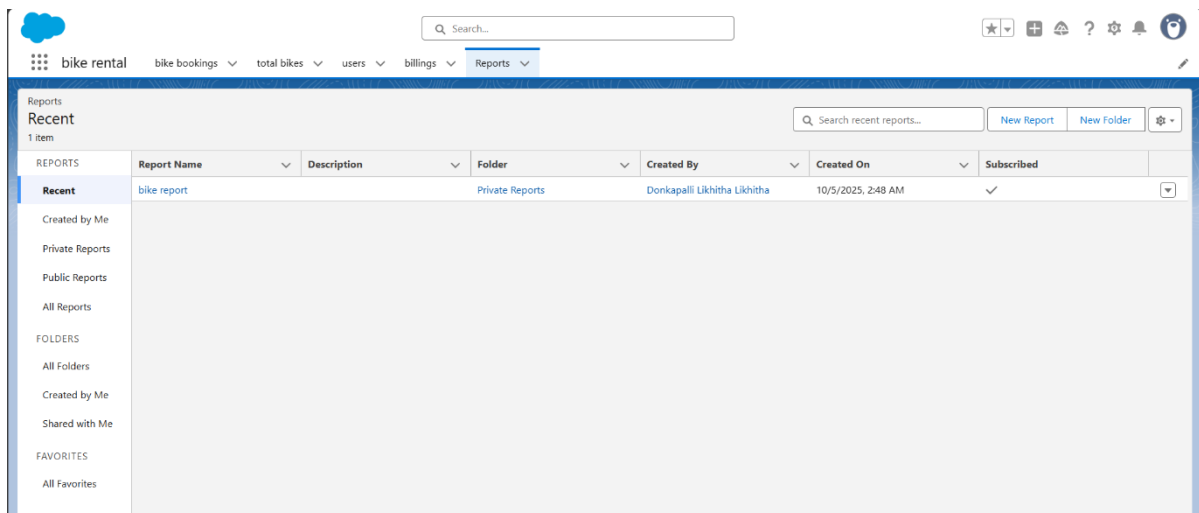
**Purpose:** Track bike usage, rental performance, maintenance status, and team efficiency.

### Reports:

- **Active / Overdue Rentals by Status** – Summary or Matrix report
- **Maintenance Tasks Completed by Support/Maintenance Agent** – Summary
- **Rentals per Bike Type or Plan** – Tabular report



types of versions	total bikes: total bikes Name	bike booking: bike booking Name	users: users Name	bike available
intermediate (1)	5	person1	person1	49
Subtotal				49
Total (1)				49

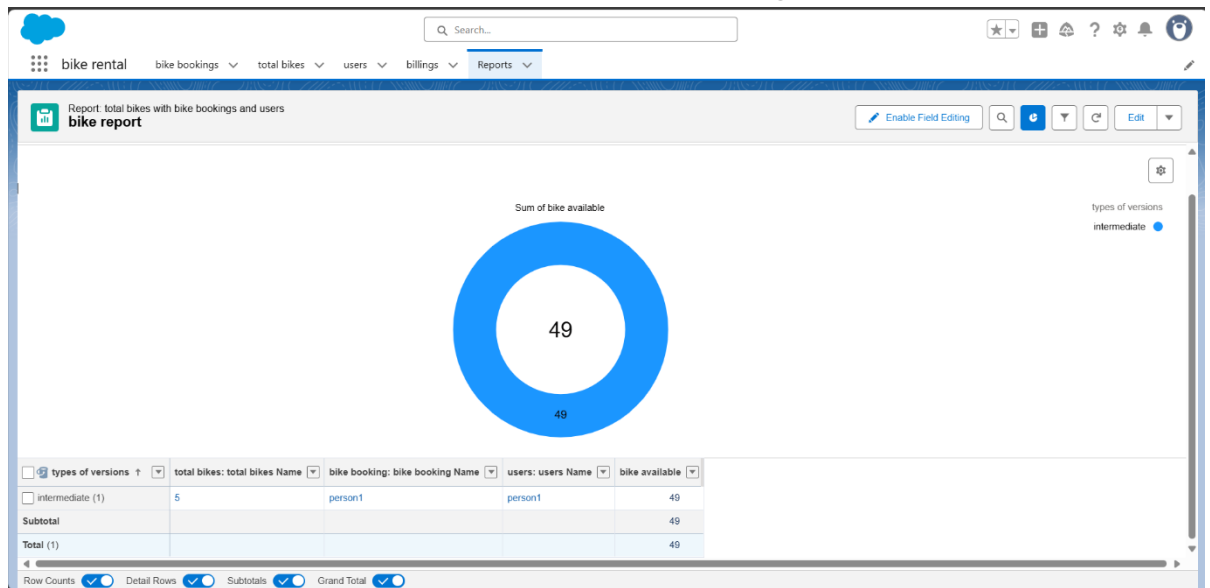


REPORTS	Report Name	Description	Folder	Created By	Created On	Subscribed
Recent	bike report		Private Reports	Donkapalli Likhitha Likhitha	10/5/2025, 2:48 AM	✓

### Dashboards:

- **Donut Chart** → Active vs Overdue vs Completed Rentals
- **Bar Chart** → Rentals handled per support/maintenance agent

- **Line/Trend Chart** → Rental revenue or usage trends over time



### Security:

- **Field-Level Security** for sensitive data (Customer Email, Payment Details)
- **Sharing Rules** for role-based access (Admin > Support Agent > Assistant)
- **Audit Trail** for changes in Rental Records, Maintenance Updates, and Customer Details

## Phase 10: Final Presentation & Demo Day – Bike Rental Management System

**Purpose:** Showcase the project and demonstrate Salesforce-enabled bike rental features.

### Pitch:

- Explain bike rental challenges (overdue returns, maintenance tracking, customer engagement)
- Present your Salesforce solution: automated rentals, notifications, dashboards, and maintenance alerts

### Demo Walkthrough:

1. Create a new Customer
2. Create a new Bike
3. Book a rental for the customer (assign rental plan, start/end dates)
4. Show overdue or upcoming rentals and trigger notifications
5. Demonstrate maintenance alerts for bikes reaching usage threshold
6. Show dashboards: Active/Overdue Rentals, Maintenance Tasks, Agent Workload.