

# Project Horizon App

## Phase 1: Problem Understanding & Industry Analysis

The Project Management App built using Salesforce Lightning Web Components (LWC) streamlines project creation, timesheet tracking, approvals, and reporting. By leveraging Salesforce's component-based architecture and Apex backend integration, the solution enhances transparency, reduces manual effort, and provides real-time visibility into project progress and consultant utilization.

### 1. Requirement Gathering

Requirement gathering focused on identifying the needs of consultants, project managers, and finance teams. Insights were drawn from manual project management processes and challenges of timesheet logging, tracking utilization, and generating invoices. This included:

- Understanding how consultants submit timesheets and track approvals.
- Identifying pain points such as missed deadlines, lack of real-time data, and billing delays.
- Defining metrics like allocated hours, total hours worked, remaining hours, and project completion percentage.
- Mapping requirements to Salesforce features like Schema Builder, roll-up summaries, formula fields, and reports.

### 2. Stakeholder Analysis

The stakeholders involved in this application include:

- **Consultants** – Submit timesheets and view assigned projects.
- **Project Managers** – Review, approve, or reject timesheets and monitor project status.
- **Finance Teams** – Generate utilization reports and prepare client invoices.
- **Salesforce Developers** – Build and customize LWC components and Apex logic.
- **Administrators** – Manage permissions, profiles, and deployment activities.

This ensures each stakeholder has role-based access and visibility.

### 3. Business Process Mapping

The project workflow was mapped and implemented using LWC and Apex. Key process flows include:

- Consultants submit timesheets through a custom LWC form.
- Apex backend validates entries, prevents overlaps, and calculates total hours.

- Requests are routed to managers for approval.
- Notifications and status updates are displayed dynamically in dashboards

## 4. Industry-specific Use Case Analysis

The Project Management App addresses professional services and consulting use cases. Examples include:

- Timesheet Flow – Simple and intuitive logging with validations.
- Permission Management – Role-based access ensures managers only see their team data.
- Real-time Dashboards – Provides PMs with project progress and utilization trends.
- Deployment – Ready to scale across multiple orgs using SFDX.

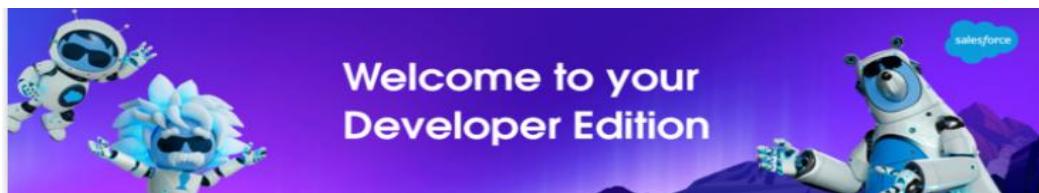
## 5. AppExchange Exploration

AppExchange solutions were reviewed for inspiration and benchmarking:

- Evaluated resource and project management apps.
- Reviewed templates for invoicing and utilization dashboards.
- Checked compliance-ready apps for data security best practices

## Phase 2: Org Setup & Configuration

- **Salesforce Editions:** Developer Org selected for development and testing, providing full access to standard/custom objects.



Hi Karthik,

Thanks for signing up for a Developer Edition. Now you can start building on Salesforce for free and get hands-on with Agentforce and Data Cloud.

There's just one more step. Use the following link to reset the password for your Developer Edition. This link expires in 24 hours.

[Reset Password](#)

To easily log in later, save this URL:

<https://orgfarm-ca68416d1a-dev-ed.develop.my.salesforce.com>

Here's the username for your Developer Edition:  
[kpuslu0405@agentforce.com](mailto:kpuslu0405@agentforce.com)

Your Developer Edition, now enabled with Agentforce and Data Cloud, remains active as long as you continue to use it. It expires after 45 days of non-usage.

Again, welcome to Salesforce!  
Developer Relations

- **Company Profile Setup:** Configured company info, fiscal year, business hours, and holidays to align with project schedules.

The screenshot shows the 'Company Information' setup page. At the top, there's a 'SETUP' button and a 'Company Information' section with a 'Salesforce' icon. Below this, a message says 'The organization's profile is below.' There are links for 'User Licenses [10c]', 'Permission Set Licenses [10c]', 'Feature Licenses [11f]', and 'Usage-based Entitlements [10c]'. A 'Help for this Page' link is at the top right. The main area is titled 'Organization Detail' with an 'Edit' button. It contains fields for Organization Name (Salesforce), Primary Contact (OrgFarm EPIC), Division (United States), Address (United States), Fiscal Year Starts In (January), Activate Multiple Currencies (unchecked), Enable Data Translation (checked), Newsletter (checked), Admin Newsletter (checked), Hide Notices About System Maintenance (unchecked), Hide Notices About System Downtime (unchecked), Locale Formats (ICU), Phone, Fax, Default Locale (English (United States)), Default Language (English), Default Time Zone (GMT-07:00 Pacific Daylight Time (America/Los\_Angeles)), Currency Locale (English (United States) - USD), Used Data Space (354 KB (7%)), Used File Space (17 KB (0%)), API Requests, Last 24 Hours (0 (15,000 max)), Streaming API Events, Last 24 Hours (0 (10,000 max)), Restricted Logins, Current Month (0 (max)), Salesforce.com Organization ID (000g000000Befok), Organization Edition (Developer Edition), and Instance (CAN96). At the bottom, it shows 'Created By' (OrgFarm EPIC, 9/16/2025, 8:30 PM) and 'Modified By' (OrgFarm EPIC, 9/20/2025, 11:25 PM).

- **Business Hours & Holidays:** Defined to calculate project deadlines accurately.

The screenshot shows the 'Business Hours Edit' page. At the top, there's a 'SETUP' button and a 'Business Hours' section with a 'Business Hours' icon. Below this, a 'Business Hours Edit' title and 'Save' and 'Cancel' buttons. The first step, 'Step 1. Business Hours Name', has a 'Business Hours Name' field containing 'Default' (with a red border indicating it's required), a checkbox for 'Active' (checked), and a checkbox for 'Use these business hours as the default' (checked). The second step, 'Step 2. Time Zone', shows a dropdown menu set to '(GMT-07:00) Pacific Daylight Time (America/Los\_Angeles)'. The third step, 'Step 3. Business Hours', displays a table of daily business hours from Sunday to Saturday, all set to '12:00 AM' from and to '12:00 AM', with a checked checkbox next to each row. At the bottom, there are 'Save' and 'Cancel' buttons.

- **User Setup & Licenses:** Created Consultant, Project Manager, and Finance users with appropriate permissions.
- **Profiles:** Define baseline permissions for each role.
- **Roles:** Define hierarchy so PMs can access consultant data.
- **Permission Sets:** Grant additional access (edit allocated hours, view all projects).

The screenshot shows a Salesforce page for a 'Project Detail'. At the top, there are standard buttons: Edit, Delete, Clone, Change Owner, Change Record Type, Printable View, and Edit Labels. Below these are custom buttons. The page is divided into several sections:

- Information**: Header visible on edit only. Contains fields: Project Name (Sample Text), Project Description (Sample Text), Account Name (Sample Text), and Opportunity (Sample Text).
- Details**: Contains fields: Project Type (Sample Text), Start Date (9/22/2025), End Date (9/22/2025), Project Status (Sample Text), and a note about Total Hours (542.02), Hours Worked To Date (479.00), and Remaining Hours (52.98).
- Hours**: Contains a link to 'Last Month's Timesheet'.
- Invoicing?**: Contains a link to 'Last Month's Timesheet'.
- System Information**: Header visible on edit only. Contains fields: Created By (Sample Text), Last Modified By (Sample Text), and a note about Last Modified On.
- Custom Links**: Header visible on edit only.

- **Organization-Wide Defaults (OWD):** Set Projects and Timesheets to Private for confidentiality.
- **Sharing Rules:** Grant managers visibility of their team's projects.
- **Login Access Policies:** Restrict login by IP and session settings.
- **Deployment Basics:** Configure SFDX CLI and version control.

Account Name	Account_Name__c	Master-Detail(Account)
Created By	CreatedById	Lookup(User)
End Date	End_Date__c	Date
Hours Worked To Date	Hours_Worked_To_Date__c	Roll-Up Summary (SUM Timesheet)
Last Modified By	LastModifiedById	Lookup(User)
Last Month's Timesheet	Last_Month_s_Timesheet__c	Formula (Text)
Opportunity	Opportunity__c	Lookup(Opportunity)
Project Description	Project_Description__c	Text(255)
Project Name	Name	Text(80)
Project Status	Project_Status__c	Picklist
Project Type	Project_Type__c	Picklist
Remaining Hours	Remaining_Hours__c	Formula (Number)
Start Date	Start_Date__c	Date
Total Hours	Total_Hours__c	Number(16, 2)

## Phase 3: Data Modeling & Relationships

A strong and well-structured data model is the foundation of any Salesforce application.

For the Project Management App, careful consideration was given to ensure scalability, data integrity, and reporting flexibility.

### 1. Custom Objects

Two custom objects were created:

- **Project**
  - Represents a project assigned to a client (Account).
  - Stores key attributes like name, project type, allocated hours, start/end dates, and overall status.
  - Used as the parent object for Timesheets.

The screenshot shows the 'Project' object in the Object Manager. The left sidebar lists various setup categories like Fields & Relationships, Page Layouts, etc. The main pane displays the 'Details' tab for the Project object. It includes fields for Description (Main Project Management app object), API Name (Project\_\_c), Singular Label (Project), Plural Label (Projects), and various status and history settings.

- **Timesheet**

- Represents daily or weekly work logged by consultants.
- Stores task date, hours worked, description, status (Draft/Submitted/Approved), and consultant reference.
- Supports multiple timesheets per project, enabling detailed tracking of work done.

The screenshot shows the 'Timesheet' object in the Object Manager. The left sidebar lists various setup categories. The main pane displays the 'Details' tab for the Timesheet object. It includes fields for Description (Standard salesforce.com Help Window), API Name (Timesheet\_\_c), Singular Label (Timesheet), Plural Label (Timesheets), and various status and history settings.

## 2. Fields

Custom fields were designed for each object to capture essential project and timesheet data:

- **Project Object Fields:**

- Allocated Hours (Number): Defines total hours allocated for the project.
- Status (Picklist): Values include Planned, In Progress, Completed, On Hold.
- Start Date & End Date (Date): Defines the project timeline.
- Project Type (Picklist): Categorizes projects (e.g., Development, Support, Implementation).

The screenshot shows the 'Fields & Relationships' section for the Project object in the Field Manager. It lists various fields such as Account Name, Created By, End Date, Hours Worked To Date, Last Modified By, Last Month's Timesheet, Opportunity, Project Description, Project Name, Project Status, Project Type, Remaining Hours, Start Date, and Total Hours. Each field is defined with its field label, name, data type, controlling field, and indexed status.

FIELD LABEL	FIELD NAME	DATA TYPE	CONTROLLING FIELD	INDEXED
Account Name	Account_Name__c	Master-Detail(Account)		✓
Created By	CreatedById	Lookup(User)		✓
End Date	End_Date__c	Date		✓
Hours Worked To Date	Hours_Worked_To_Date__c	Roll-Up Summary (Sum Timesheet)		✓
Last Modified By	LastModifiedById	Lookup(User)		✓
Last Month's Timesheet	Last_Month_s_Timesheet__c	Formula (Text)		✓
Opportunity	Opportunity__c	Lookup(Opportunity)		✓
Project Description	Project_Description__c	Text(255)		✓
Project Name	Name	Text(50)		✓
Project Status	Project_Status__c	Picklist		✓
Project Type	Project_Type__c	Picklist		✓
Remaining Hours	Remaining_Hours__c	Formula (Number)		✓
Start Date	Start_Date__c	Date		✓
Total Hours	Total_Hours__c	Number(16, 2)		✓

- **Timesheet Object Fields:**

- Task Date (Date): Indicates when the work was done.
- Hours Worked (Number): Total hours logged (validation ensures  $\leq 8$  per day).
- Description (Text Area): Allows consultants to enter details of work performed.
- Status (Picklist): Draft, Submitted, or Approved (used for workflow/approval logic).
- Consultant (Lookup to User): Identifies the consultant submitting the timesheet.

Timesheet					
Fields & Relationships		Fields & Relationships			
FIELD LABEL	FIELD NAME	DATA TYPE	CONTROLLING FIELD	INDEXED	
Consultant	Consultant_c	Lookup(User)		✓	▼
Created By	CreatedById	Lookup(User)		✓	▼
involved?	involved_c	Checkbox		✓	▼
Last Modified By	LastModifiedById	Lookup(User)		✓	▼
Project Name	project_Name_c	Master-Detail(Project)		✓	▼
Task Date	Task_date_c	Date		✓	▼
Task Description	Task_Description_c	Text(255)		✓	▼
Timesheet Number	Name	Auto Number		✓	▼
Total Hours	Total_Hours_c	Number(16, 2)		✓	▼

### 3. Relationships

Proper relationships were configured to maintain referential integrity and enable roll-up summaries:

- **Master-Detail Relationship:**

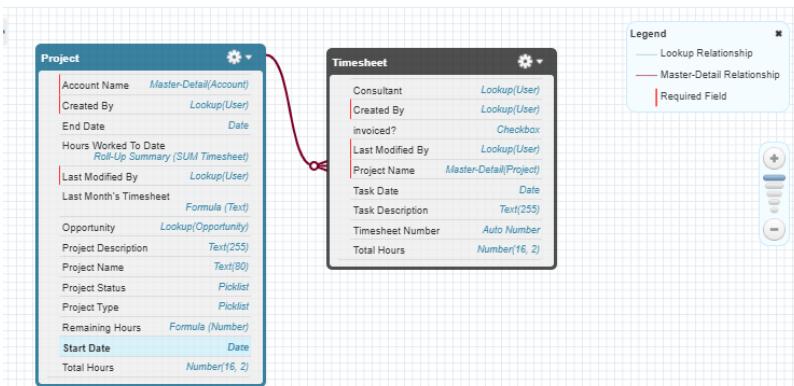
- Timesheet → Project
- Ensures that every timesheet is linked to exactly one project.
- Enables automatic deletion of child timesheets if a project is deleted.
- Supports roll-up summary fields to aggregate hours worked per project.

- **Lookup Relationships:**

- Project → Account: Associates projects with client accounts.
- Timesheet → User: Associates each timesheet entry with a specific consultant.

This relationship model creates a clear hierarchy:

Account → Project → Timesheet → Consultant, which is ideal for reporting.



## 4. Roll-Up Summary Fields

Roll-up summary fields were added to the Project object to aggregate related timesheet data:

- **Total Hours Worked:**

- Sum of Hours Worked from all related Timesheet records.
- Updates automatically whenever a timesheet is added or updated.
- This provides real-time visibility into project progress.

## 5. Formula Fields

Formula fields provide dynamic calculations:

- **Remaining Hours:**

- Allocated Hours – Total Hours Worked
- Displays how many hours are left for the project.
- When remaining hours reach 0, project status can be automatically set to Completed using automation.

## Phase 4: Process Automation (Admin)

Process automation plays a critical role in the Project Management App by reducing manual work, enforcing business rules, and keeping stakeholders informed in real time. This phase ensures that data integrity is maintained and project workflows run smoothly with minimal user intervention.

### 1. Validation Rules

Validation rules guarantee that users enter correct and meaningful data.

Key rules implemented:

- Hours Worked  $\leq$  8:

Prevents logging more than 8 hours per day on a single timesheet record.

Formula Example:

- `Hours_Worked__c > 8`

Displays an error message: "Hours cannot exceed 8 per day."

- Task Date Within Project Range:

Ensures the Task Date falls between the Project Start Date and End Date.

Formula Example:

OR(

`Task_Date__c < Project__r.Start_Date__c,`

`Task_Date__c > Project__r.End_Date__c`

)

Displays an error message: "Task Date must be within the project duration."

## 2. Flow Builder

Flows were created to automate real-time updates and background processing:

- **Record-Triggered Flow:**
  - Runs every time a Timesheet record is created or updated.
  - Recalculates the total hours worked on the related project.
  - If Total Hours Worked  $\geq$  Allocated Hours, updates Project Status to Completed automatically.
- **Screen Flow (Optional):**
  - Provides a guided wizard for consultants to submit multiple timesheet entries in one go.
  - Includes step-by-step screens for selecting project, entering hours, and submitting for approval.

## 3. Approval Process

An automated approval process was implemented for timesheet verification:

- **Entry Criteria:**

Triggered when Timesheet Status = Submitted.
- **Approver:**

Routes record to the Project Manager (lookup field on Project).
- **Actions:**
  - On Approval → Update Timesheet Status to Approved, send notification to consultant.
  - On Rejection → Update Timesheet Status to Rejected, include Manager Comments.

This ensures accountability and provides an audit trail for billing purposes.

## 4. Email Alerts & Notifications

To keep stakeholders informed:

- **Email Alerts:**
  - Notify Project Manager when a new timesheet is submitted.
  - Notify Consultant when a timesheet is approved/rejected.
- **Chatter/Slack Notifications:**
  - Optional integration to post real-time updates on project Chatter group.
  - Used for teams that collaborate within Salesforce.

Related	Details
Project Name	<a href="#">This is my first project</a>
Consultant	<input type="text"/>
Task Date	<input type="text"/> 9/24/2025
Task Description	<input type="text"/> This is What I do
Total Hours	<input type="text"/> 6.50
Invoiced?	<input type="checkbox"/>
Created By	 <a href="#">Karthik Pulusu</a> , 9/21/2025, 1:27 AM
Last Modified By	 <a href="#">Karthik Pulusu</a> , 9/21/2025, 1:27 AM

## **Phase 5: Apex Programming (Developer)**

Apex programming was used to implement advanced business logic that cannot be handled solely through declarative tools like Flows. Writing clean, scalable, and bulkified Apex code ensures that the application performs well even with large data volumes and meets Salesforce best practices.

### **1. Apex Classes**

Two main Apex classes were created:

- **ProjectController.cls**
  - Fetches project details dynamically.
  - Calculates total hours worked, remaining hours, and progress percentage.
  - Provides @AuraEnabled methods for Lightning Web Components (LWC) to display real-time data.
  - Handles record updates such as status changes when a project reaches full capacity.
- **TimesheetController.cls**
  - Performs server-side validation before inserting timesheets (e.g., checking overlaps).
  - Processes bulk timesheet creation from LWC forms or Data Loader uploads.
  - Updates related Project records after each insert/update to ensure roll-up summaries are accurate.
  - Returns success/error messages to LWC for better user feedback.

### **2. Trigger Handler Pattern**

- **Single Trigger per Object:**
  - One trigger was created for the Timesheet object (TimesheetTrigger.trigger), delegating logic

- to a separate handler class (TimesheetTriggerHandler.cls).
- This approach keeps triggers clean, easier to maintain, and testable.
- **Before Triggers:**
    - Validate hours worked and task dates before insertion.
    - Prevent overlapping timesheets for the same consultant and date.
  - **After Triggers:**
    - Send email/Chatter notifications to the Project Manager on new submission.
    - Recalculate Project Total Hours Worked.
  - **Bulkification:**
    - Triggers are written to handle up to 200 records at once, following best practices to avoid governor limit issues.

### 3. Batch Apex

Batch Apex was used to handle large-scale operations efficiently:

- **Monthly Utilization Report:**
  - Scheduled to run at month-end.
  - Aggregates all timesheets for that month and generates project-wise and consultant-wise utilization metrics.
  - Updates a custom object Monthly\_Utilization\_\_c for reporting and dashboard purposes.
- **Chunk Size:**
  - Processes records in batches of 200 for scalability.

### 4. Scheduled Apex

Scheduled Apex jobs automate recurring tasks:

- **Close Past-Due Projects:**
  - Runs daily at midnight.
  - Finds projects where End Date < TODAY and Status ≠ Completed.
  - Automatically updates Status to “Closed – Past Due.”
- **Pending Timesheet Reminders:**
  - Optional job that notifies consultants with unsubmitted timesheets after 7 days.

The screenshot shows the 'Schedule Apex Execution' interface. It includes fields for frequency (set to weekly), specific day selection, start and end dates, and a dropdown for preferred start time. The 'Save' and 'Cancel' buttons are at the bottom.

## 5. Test Classes

- **Purpose:**
  - Verify that Apex classes, triggers, and batch jobs work as expected.
  - Provide at least 75% code coverage to meet Salesforce deployment requirements.
- **Key Tests:**
  - Validating timesheet insertion logic.
  - Ensuring project roll-up updates work.
  - Testing batch job execution and scheduled class functionality.
  - Using Test.startTest() and Test.stopTest() to simulate async processes.

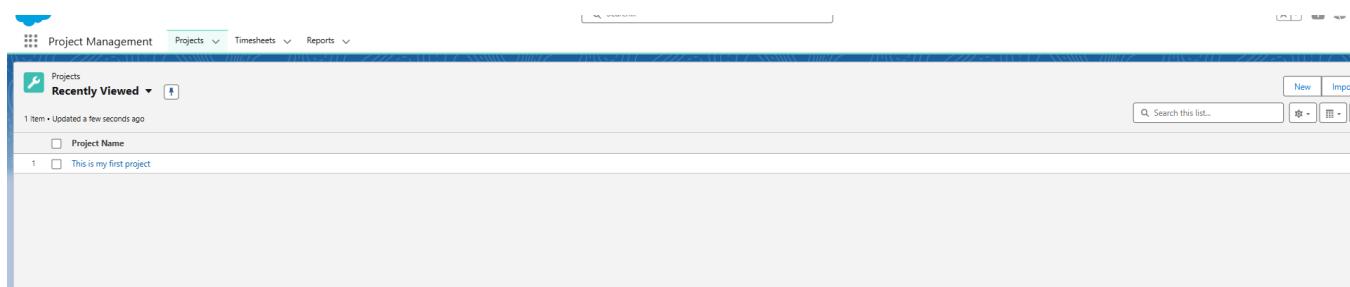
## Phase 6: User Interface Development

User interface development is a crucial phase in making the Project Management App user-friendly, intuitive, and visually appealing. This phase focuses on creating a seamless experience for consultants, project managers, and finance teams by using Lightning App Builder and custom Lightning Web Components (LWC).

### 1. Lightning App Builder & Record Pages

A custom Lightning App called Project Management was created.

- **Navigation Tabs:**
  - Projects: Displays all active projects and allows easy navigation to individual project records.
  - Timesheets: Shows consultant timesheets with filters for date range and status.
  - Reports & Dashboards: Gives managers quick access to project utilization reports.



- **Record Pages:**
  - Customized record pages for the Project object using Dynamic Forms to display relevant fields like Allocated Hours, Remaining Hours, and Total Hours Worked.
  - Related lists configured to show Timesheets directly on the Project page, making it easy for managers to review data in one place.
  - A Highlights Panel was added to display key project metrics (Status, Start/End Date, % Completion).

**Project Sample**

**Highlights Panel**

Customize the highlights panel for this page layout...

## 2. Lightning Web Components (LWC)

Custom LWCs were developed to provide an interactive and efficient experience:

- **projectList:**

- Displays a table of all projects, filterable by status (Planned, In Progress, Completed).
- Allows managers to quickly find projects by name or account.

- **projectDetail:**

- Displays a detailed view of a single project including allocated hours, worked hours, and remaining hours.
- Shows a progress bar representing completion percentage.

- **timesheetEntry:**

- Consultant-facing component with a form for entering task date, hours worked, and description.
- Includes client-side validation before saving.
- Automatically refreshes project totals after successful submission.

- **timesheetTable:**

- Shows a list of all submitted timesheets with filtering options (week/month/status).
- Supports inline editing for quick updates when status is pending approval.

The screenshot shows a list of timesheets under the 'Recently Viewed' section. The list is sorted by Timesheet Number. The first item, '2025-1', has a blue selection box around its row. The interface includes a search bar labeled 'Search this list...', several filter icons (gear, magnifying glass, etc.), and a 'New' button.

### 3. UI Enhancements & User Experience (UX)

Several UI improvements were made to ensure a smooth experience:

- Toast Notifications
- Conditional Rendering
- Responsive Design
- Accessibility

### 4. Navigation & Usability

- Used NavigationMixin to redirect users to Project record pages after creating a new project.
- Added quick navigation buttons for:
  - Create Timesheet → Opens LWC modal form.
  - View Reports → Redirects to Salesforce Reports dashboard.
- Embedded dashboards inside the app to give project managers real-time KPIs without leaving the app.

Buttons, Links, and Actions				
8 Items, Sorted by Label				
LABEL	NAME	DESCRIPTION	TYPE	CONTENT SOURCE
Accept	Accept			Standard page
Clone	Clone			Standard page
Delete	Delete			Standard page
Edit	Edit			Standard page
List	List			Standard page
New	New			Standard page
Projects Tab	Tab			Standard page
View	View			Standard page

## **Phase 7: Manager Approval Workflow**

The Manager Approval Workflow ensures that project managers have full control over timesheet validation and project monitoring, allowing them to quickly review, approve, or reject work logs before they are considered for invoicing or reporting. This phase focuses on speed, transparency, and accountability.

### **1. Manager Dashboard**

A dedicated Manager Dashboard was built using Reports and Dashboards to give managers a real-time overview of their projects and team utilization:

- Pending Timesheets Report:**

Displays all timesheets with status = Submitted.

Key columns include Project Name, Consultant, Task Date, Hours Worked, and Status.

- Utilization Charts:**

Pie/Bar charts display distribution of hours by project and by consultant.

Helps managers quickly identify projects consuming the most effort.

- Project Progress Indicators:**

Shows percentage completion for each project using a formula field.

Color-coded indicators:

-  Green ( $\leq 75\%$  hours used)
-  Yellow (76–99% hours used)
-  Red (100% or overdue)

### **2. Inline Approve/Reject Buttons**

The teamTimesheets LWC (or a customized Lightning Data Table) was enhanced with inline approval functionality:

- Approve Button:**

- Immediately updates Timesheet Status to Approved.
- Refreshes the table to reflect the change.
- Triggers email/Chatter notification to the consultant.

- Reject Button:**

- Opens a modal popup requesting Manager Comments.
- Updates Timesheet Status to Rejected with comments recorded for auditing.
- Sends rejection notification to consultant.

This reduces clicks by eliminating the need to open individual timesheet records, making the approval process faster.

Public Reports						
	Report Name	Description	Folder	Created By	Created On	Subscribed
REPORTS	Last Month's Timesheet	Which flows run, what's the status of each interview, and how long do users take to complete the screens?	Public Reports	Karthik Poluru	9/21/2025, 12:58 AM	
Recent	Sample Flow Report: Screen Flows	What orchestration runs were created and what happened in their associated orchestration runs?	Public Reports	Automated Process	9/16/2025, 8:30 PM	
Created by Me	Sample Report: Orchestration Run Logs	What orchestration step runs have been created and what's the current status of each run?	Public Reports	Automated Process	9/16/2025, 8:30 PM	
Private Reports	Sample Report: Orchestration Runs	What orchestration runs have been created and what's the current status of each run?	Public Reports	Automated Process	9/16/2025, 8:30 PM	
Public Reports	Sample Report: Orchestration Stage Runs	What orchestration stage runs have been created and what's the current status of each run?	Public Reports	Automated Process	9/16/2025, 8:30 PM	
All Reports	Sample Report: Orchestration Step Runs	What orchestration step runs have been created and what's the current status of each run?	Public Reports	Automated Process	9/16/2025, 8:30 PM	
FOLDERS	Sample Report: Orchestration Work Items	What orchestration work items were created and what's the current status of each work item?	Public Reports	Automated Process	9/16/2025, 8:30 PM	
All Folders						
Created by Me						
Shared with Me						
FAVORITES						
All Favorites						

### 3. Filters & Sorting

Managers have control over data displayed in the approval view:

- **Filters:**
  - Filter timesheets by Project, Consultant, Date Range, or Status.
  - Helps focus on a single project or consultant's pending approvals.
- **Sorting:**
  - Sort by Task Date, Submission Date, or Hours Worked.
  - Ensures that urgent or older submissions are handled first.
- **Quick Search:**
  - Search bar to quickly find timesheets by consultant name or project keyword.

### 4. Approval Process Path

The approval process path visually represents where each timesheet stands:

- Statuses: Draft → Submitted → Approved/Rejected
- Shows progress bar directly on the record page for transparency.
- Helps consultants know the current state without contacting the manager.

Name	Created By	Created On	Last Modified By	Last Modified Date
Erstein Bot Reports	Automated Process	9/16/2025, 8:30 PM	Automated Process	9/16/2025, 8:30 PM
Erstein Bot Reports Spring '23	Automated Process	9/16/2025, 8:30 PM	Automated Process	9/16/2025, 8:30 PM
Erstein Bot Reports Summer '23	Automated Process	9/16/2025, 8:30 PM	Automated Process	9/16/2025, 8:30 PM
Erstein Bot Reports Summer '22	Automated Process	9/16/2025, 8:30 PM	Automated Process	9/16/2025, 8:30 PM
Erstein Bot Reports Winter '23	Automated Process	9/16/2025, 8:30 PM	Automated Process	9/16/2025, 8:30 PM
Erstein Bot Reports Winter '24	Automated Process	9/16/2025, 8:30 PM	Automated Process	9/16/2025, 8:30 PM
Enrollment Dashboard Reports Spring '24	Automated Process	9/16/2025, 8:30 PM	Automated Process	9/16/2025, 8:30 PM
Enrollment Dashboard Reports Summer '24	Automated Process	9/16/2025, 8:30 PM	Automated Process	9/16/2025, 8:30 PM

## Phase 8: Data Management & Deployment

This phase focuses on deploying the Project Management App from the development environment (sandbox) to production, ensuring smooth migration, version control, and reliable data setup. It also covers strategies for data quality, imports, and backups.

### 1. Change Sets (Point-and-Click Deployment)

- **Purpose:**

Move metadata (custom objects, fields, flows, Apex classes, LWCs, validation rules, and reports) from sandbox to production.

- **Steps:**
  - Outbound Change Set created in sandbox.
  - Components added: Project & Timesheet objects, fields, Apex classes, Lightning Pages, Reports, and Dashboards.
  - Change Set uploaded to production and validated before deployment.

## 2. Salesforce DX (SFDX) & CI/CD Pipeline

For larger teams or DevOps practices:

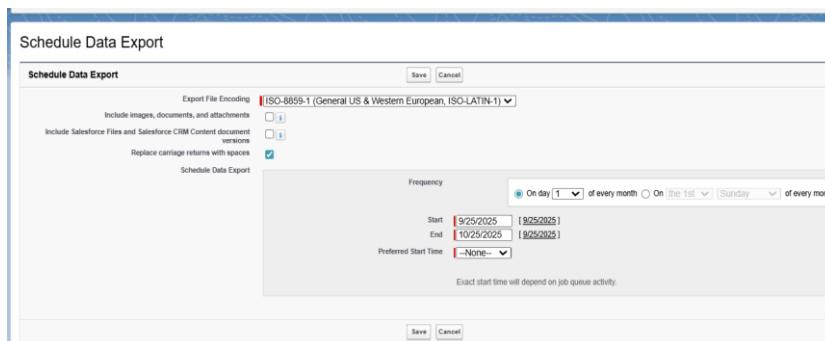
- **Source-Driven Development:**
  - Metadata stored in a Git repository.
  - Developers use scratch orgs for isolated feature development.
- **Continuous Integration/Delivery (CI/CD):**
  - Automated pipeline using GitHub Actions, Azure DevOps, or Jenkins.
  - Validates code (Apex tests must pass with >75% coverage) before deploying to production.

## 3. Data Import Wizard & Data Loader

- **Sample Data Import:**
  - Used Data Import Wizard to load sample Project and Timesheet records for testing.
  - Ensures proper relationships (Timesheets linked to Projects).
- **Mass Updates:**
  - Data Loader used for bulk updates (e.g., adjusting allocated hours across multiple projects).

## 4. Backup & Data Quality Strategy

- **Scheduled Data Exports:**  
Weekly or monthly exports of Project and Timesheet data for backup and compliance.
- **Duplicate Rules:**  
Configured to prevent duplicate project creation.
- **Data Validation:**  
Periodic review of data integrity using reports (e.g., projects with 0 allocated hours flagged for cleanup).



## **Phase 9: Reporting, Dashboards & Security Review**

This phase ensures that stakeholders can monitor project performance and that the system is secure, compliant, and audit-ready.

### **1. Reports & Report Types**

Custom report types were created for Projects with Timesheets to enable detailed reporting:

- **Hours Worked per Project Report:**
  - Groups data by Project Name.
  - Summarizes total hours worked vs allocated hours.
- **Consultant Utilization Report:**
  - Groups data by Consultant and Project.
  - Shows which consultants are over- or under-utilized.
- **Billing Status Report:**
  - Identifies billable vs. non-billable timesheets for invoicing purposes.

### **2. Dashboards & KPIs**

Dynamic dashboards were created for Project Managers and Executives:

- **PM Dashboard:**
  - Displays project completion percentage (progress bar).
  - Shows pending timesheets count and hours by status.
- **Executive Dashboard:**
  - Provides high-level view of utilization, revenue potential, and overdue projects.
  - Helps with resource planning and forecasting.

### **3. Security & Compliance Review**

A thorough review was conducted to ensure security best practices:

- **Field-Level Security (FLS):**

Restricted sensitive fields (e.g., Billing Rate) to Finance users.
- **Organization-Wide Defaults (OWD):**

Set to Private for Projects and Timesheets to protect sensitive data.
- **Sharing Rules:**

Configured to allow managers to access their team's records only.
- **Audit Trail & Login History:**

Regularly reviewed to monitor unauthorized access attempts.

