**Project Management System Documentation**

This Salesforce implementation provides a simple project management system that allows users to track projects, milestones, and to-do items. The system includes automatic calculation of completion percentages and status updates based on the completion of subordinate items.

**Objects and Relationships**

1. **Projects\_\_c**
   * Core object to store projects
   * Fields:
     1. Name (Text)
     2. Owner\_\_c (Lookup to User)
     3. Status\_\_c (Picklist: Not Started, In Progress, Complete)
     4. CompletePercent\_\_c (Percent)
     5. Project\_Description\_\_c(Text Area)
2. **Project\_Milestones\_\_c**
   * Child object related to Projects
   * Master-Detail relationship with Project\_\_c
   * Fields:
     1. Name (Text)
     2. Project\_\_c (Master-Detail)
     3. Status\_\_c (Picklist: Not Started, In Progress, Complete)
     4. CompletePercent\_\_c (Percent)
     5. Due\_Date\_\_c (Date)
3. **To\_Do\_Items\_\_c**
   * Child object related to Milestones
   * Master-Detail relationship with Milestone\_\_c
   * Fields:
     1. Name (Text)
     2. Project\_Milestones\_\_c (Master-Detail)
     3. Status\_\_c (Picklist: Not Started, In Progress, Complete)
     4. Due\_Date\_\_c (Date)

**Percentage Complete Calculations**

1. **Milestone Percentage Complete**
   * Calculated as: (Number of Completed ToDos / Total Number of ToDos) \* 100
   * Flow handles the scenario whenever a To Do Item is:
     + Created
     + Updated
2. **Project Complete Percentage** 
   * Calculated as the average of all its Milestone percentages
   * Flow handles whenever a Milestone is:
     + Created
     + Updated

**Status Updates**

1. Status field values automatically update based on Percent Complete:
   1. 0% = "Not Started"
   2. 100% = "Complete"
   3. Anything in between = "In Progress"
2. Users cannot manually change status fields.

**Implementation Detail**

**Triggered Flows**

1. This is a Record-Triggered Flow. This flow is triggered after a record is created or updated in the TO\_DO\_Items\_\_c object. It first verifies if the to-do item status has changed. If yes, it fetches all related to-do items and milestones. Then, it iterates through these records to calculate completion percentages and update the project status and details accordingly. The flow handles different scenarios based on the completion percentages of to-do items and milestones.
2. TO\_DO\_Items\_\_c - Status\_\_c : The flow checks and updates this field to determine if a to-do item is complete or incomplete.
3. Project\_Milestones\_\_c - Status\_\_c : The flow updates this field to reflect the milestone's progress status.
4. Projects\_\_c - Status\_\_c, CompletePercent\_\_c : The flow updates these fields to reflect the overall project status and completion percentage.

**Lightning Web Component**

The system includes a comprehensive Lightning Web Component (LWC) that provides:

1. **Project Management**
   1. Creating new projects
   2. Viewing project details
   3. Overview for specific Project (if selected Yes, prompts you to enter the name existing project and takes you to overview)
2. **Project Creation**
   1. Prompts you to enter new project name and Description
   2. Prompts you to enter milestone details
   3. Tracking due dates
   4. Prompts you to enter TO-DO Items

**User Instructions**

**Creating a New Project**

1. Click on the Project Management System app
2. System prompts you to enter “Do you want to create Project?”
3. Select YES and it takes you to New Project Creation.
4. Click Save and new project is created.

**Adding Project Milestones to a Project**

1. After the above, you will get to a new Screen called Create Project Milestones.
2. Enter **Milestone Name**.
3. Enter **Due date**.
4. Select the **Project Name** from the existing project list you have created.
5. Click **Save Milestone**.

**Adding ToDo Items to a Milestone**

1. Create TO DO Items.
2. Click "Name".
3. Enter “Due date”.
4. Click "Save ToDo Items".

**Tracking Progress**

1. The system automatically calculates and displays:
   1. Project completion percentage
   2. Project status
   3. Milestone completion percentages
   4. Milestone statuses

**Updating ToDo Status**

1. To update progress, modify the status of individual ToDo items.
2. The system will automatically recalculate percentages and update statuses.

**Design Decision**

**Automatic Calculation Logic**

1. Percentage complete calculations are handled through Record Triggered Flow

**Lightning Web Component Structure**

The LWC is designed to provide a complete project management experience within a single interface, with:

1. Project Overview
2. Project creation
3. Project Milestone
4. ToDo Items Creation

**Data Security**

1. This has been implemented based on the permission set that give the appropriate level of access.

**Deployment Instructions**

1. Deploy the SFDX project using the provided package.xml manifest.
2. Create a new user and assign the profile to the new user so you can start testing after assigning the permission set.