Phase 3: Data Modeling & Relationships

Project: TaskFlow Pro - Project Management System

3.1 Standard & Custom Objects

Type	Object Name	Description
Standard	Account	Client/customer organization
Standard	Contact	Team members and stakeholders
Custom	TFP_Project__c	Project master record
Custom	TFP_Task__c	Individual work items
Custom	TFP_Milestone__c	Key project deliverables
Custom	TFP_Resource_Allocation__c	Team member assignments
Custom	TFP_Time_Entry__c	Work hours logged
Custom	TFP_Issue__c	Problems and blockers
Custom	TFP_Risk__c	Potential threats

3.2 Objects Created & Justifications

Object 1: Account (Standard - Customized)

Why Necessary:

- Stores client organization information
- Links projects to customers
- Enables client portal access

Use Case: "Without Account, we can't associate projects with clients for billing and reporting."

Object 2: Contact (Standard - Customized)

Why Necessary:

- Stores team member details
- Enables assignment to tasks
- Tracks availability and skills

Use Case: "Contact object links people to tasks and enables resource management."

Object 3: TFP_Project__c (Custom)

Why Necessary:

- Central object for all project data
- Tracks status, budget, timeline
- Parent for tasks and milestones

Use Case: "Project object is the foundation - without it, no project management is possible."

Object 4: TFP_Task__c (Custom)

Why Necessary:

- Breaks project into manageable work items
- Assigns work to team members
- Tracks progress and completion

Use Case: "Tasks are the atomic units of work that teams execute daily."

Object 5: TFP_Milestone__c (Custom)

Why Necessary:

- Defines key deliverables
- Marks project phases
- Triggers approvals and payments

Use Case: "Milestones ensure projects stay on track and meet deadlines."

Object 6: TFP_Resource_Allocation__c (Custom)

Why Necessary:

- Junction between Contact and Project
- Tracks capacity and utilization
- Prevents overallocation

Use Case: "Resource Allocation prevents team members from being double-booked."

Object 7: TFP_Time_Entry__c (Custom)

Why Necessary:

- Logs hours spent on tasks
- Calculates project costs
- Enables billing and invoicing

Use Case: "Time Entry tracks actual effort for accurate billing and productivity analysis."

Object 8: TFP_Issue__c (Custom)

Why Necessary:

- Documents problems and blockers
- Tracks resolution status
- Assigns ownership

Use Case: "Issue tracking ensures problems don't fall through cracks."

Object 9: TFP_Risk__c (Custom)

Why Necessary:

- Identifies potential threats
- Documents mitigation plans
- Monitors probability and impact

Use Case: "Risk management helps avoid project failures."

3.3 Complete Field List with Justifications

TFP_Project__c Fields

#	Field Name	Type	Why Necessary	Business Impact
1	Name	Text	Project identifier	Easy reference
2	TFP_Project_Code__c	Text(20)	Unique code	System integration
3	TFP_Description__c	Long Text	Project details	Clear scope
4	TFP_Client__c	Lookup(Account)	Client link	Billing accuracy
5	TFP_Project_Manager__c	Lookup(Contact)	Owner	Accountability
6	TFP_Start_Date__c	Date	Timeline tracking	Schedule planning
7	TFP_End_Date__c	Date	Deadline	Delivery commitment
8	TFP_Status__c	Picklist	Current state	Progress visibility
9	TFP_Priority__c	Picklist	Importance	Resource allocation
10	TFP_Budget__c	Currency	Financial plan	Cost control
11	TFP_Actual_Cost__c	Formula	Real spending	Budget tracking
12	TFP_Completion__c	Percent	Progress	Status reporting
13	TFP_Health__c	Picklist	Risk indicator	Early warning

Picklist Values:

- **Status:** Planning, In Progress, On Hold, Completed, Cancelled

- **Priority:** Critical, High, Medium, Low
- **Health:** Green, Yellow, Red

TFP_Task__c Fields

#	Field Name	Type	Why Necessary	Business Impact
1	Name	Auto Number	Task ID	Unique tracking
2	TFP_Project__c	Lookup(Project)	Parent link	Hierarchy
3	TFP_Task_Name__c	Text(255)	Description	Clear work item
4	TFP_Assigned_To__c	Lookup(Contact)	Ownership	Accountability
5	TFP_Start_Date__c	Date	Begin work	Scheduling
6	TFP_Due_Date__c	Date	Deadline	Time management
7	TFP_Status__c	Picklist	Current state	Progress tracking
8	TFP_Priority__c	Picklist	Importance	Work ordering
9	TFP_Estimated_Hours__c	Number(5,2)	Planned effort	Capacity planning
10	TFP_Actual_Hours__c	Formula	Real effort	Performance
11	TFP_Dependencies__c	Text(255)	Blocked by	Sequencing
12	TFP_Completion__c	Percent	Progress	Status

Picklist Values:

- **Status:** Not Started, In Progress, Testing, Blocked, Completed, Cancelled
- **Priority:** Urgent, High, Medium, Low

TFP_Milestone__c Fields

#	Field Name	Type	Why Necessary	Business Impact
1	Name	Text(100)	Milestone name	Identification
2	TFP_Project__c	Lookup(Project)	Parent	Hierarchy
3	TFP_Target_Date__c	Date	Deadline	Planning
4	TFP_Actual_Date__c	Date	Completion	Tracking
5	TFP_Status__c	Picklist	Current state	Visibility
6	TFP_Deliverables__c	Long Text	Requirements	Clarity
7	TFP_Approval_Required__c	Checkbox	Gate	Quality control

Picklist Values:

- **Status:** Planned, In Progress, Achieved, Missed, Cancelled

TFP_Resource_Allocation__c Fields

#	Field Name	Type	Why Necessary	Business Impact
1	Name	Auto Number	Allocation ID	Tracking
2	TFP_Project__c	Lookup(Project)	Project link	Assignment
3	TFP_Resource__c	Lookup(Contact)	Team member	Who
4	TFP_Role__c	Picklist	Position	Skills match
5	TFP_Allocation__c	Percent	Capacity	Workload
6	TFP_Start_Date__c	Date	Begin	Planning
7	TFP_End_Date__c	Date	End	Release
8	TFP_Billable__c	Checkbox	Charge client	Revenue

Picklist Values:

- **Role:** Project Manager, Developer, Designer, Tester, BA, Architect

TFP_Time_Entry__c Fields

#	Field Name	Type	Why Necessary	Business Impact
1	Name	Auto Number	Entry ID	Tracking
2	TFP_Task__c	Lookup(Task)	Work item	Detail
3	TFP_Resource__c	Lookup(Contact)	Who worked	Accountability
4	TFP_Date__c	Date	When	Timeline
5	TFP_Hours__c	Number(4,2)	Duration	Cost calculation
6	TFP_Description__c	Text Area	What done	Clarity
7	TFP_Billable__c	Checkbox	Charge	Revenue
8	TFP_Rate__c	Currency	Hourly rate	Billing
9	TFP_Cost__c	Formula	Total cost	Budget

Formula (TFP_Cost__c): TFP_Hours__c × TFP_Rate__c

3.4 Relationships (Schema)

From Object	To Object	Type	Description
TFP_Project__c	Account	Lookup	Client relationship
TFP_Project__c	Contact	Lookup	Project Manager
TFP_Task__c	TFP_Project__c	Lookup	Task belongs to Project
TFP_Task__c	Contact	Lookup	Assigned To

From Object	To Object	Type	Description
TFP_Milestone__c	TFP_Project__c	Lookup	Milestone in Project
TFP_Resource_Allocation__c	TFP_Project__c	Lookup	Project assignment
TFP_Resource_Allocation__c	Contact	Lookup	Team member
TFP_Time_Entry__c	TFP_Task__c	Lookup	Time on Task
TFP_Time_Entry__c	Contact	Lookup	Who logged time
TFP_Issue__c	TFP_Project__c	Lookup	Issue in Project
TFP_Risk__c	TFP_Project__c	Lookup	Risk in Project

Junction Object: TFP_Resource_Allocation__c connects Contact and TFP_Project__c

3.5 List Views

Created for quick data visibility:

1. **Active Projects** - Status = In Progress
2. **Overdue Tasks** - Due Date < TODAY AND Status != Completed
3. **My Assignments** - Assigned To = Current User
4. **High Priority Items** - Priority = High OR Urgent
5. **This Week's Milestones** - Target Date = THIS_WEEK
6. **Resource Utilization** - Allocation > 80%

3.6 Page Layouts

Customized for clarity:

- **Project Layout:** Details, Budget, Team sections with related lists
- **Task Layout:** Task Info, Assignment, Progress sections
- **Time Entry Layout:** Work Details, Billing Information

3.7 Compact Layouts

Project Compact Layout:

- Project Name
- Status
- Project Manager
- Health
- Completion %
- Budget

3.8 Field-Level Security

Formula fields set to Read-Only:

- TFP_Actual_Cost__c
- TFP_Actual_Hours__c
- TFP_Cost__c (in Time Entry)

3.9 Quick Actions

Action	Object	Type	Purpose
Log Time	Task	Create Record	Quick time logging
Add Issue	Project	Create Record	Report problem
Update Status	Task	Update Record	Quick status change
New Task	Global	Create Record	Create from anywhere

3.10 Record Types

Object: TFP_Project__c

- **Internal Project** - For company initiatives
- **Client Project** - For billable work

Object: TFP_Task__c

- **Development Task**
- **Design Task**
- **Testing Task**
- **Documentation Task**