

CS5363 - Summer 25  
Project Management Case Study:  
Lubbock Florist Order and Inventory System

Project Management & Work Breakdown Structure Analysis

July 24, 2025

## Class Exercise 4

This is part 4 of a solution for small Lubbock Florist which aims to transition from a manual, paper-based order and inventory system to an automated online solution. This approach follows the Project Management Body of Knowledge (PMBOK) guidelines and employs a reuse-oriented software development approach.

## Case Study Background

Lubbock Florist, owned by Carlos, specializes in creating unique bouquets for various celebrations. The current manual process involves:

- Paper forms for order intake
- Manual entry into Excel spreadsheets
- Physical inspection for inventory management

## Current Problems

1. **Duplicate Orders** - Identical bouquets are sometimes created by mistake
2. **Late-stage Stockouts** - Low supplies aren't detected until too late, especially during peak periods
3. **Slow Fulfillment** - Cross-verification between paper and spreadsheet delays order processing

## Project Scope Statement

### Project Objective

Implement an online order-entry and real-time inventory management system to eliminate manual processing errors, prevent stockouts, and improve order fulfillment speed for Lubbock Florist.

### Key Deliverables

- Web-based order entry system
- Real-time inventory tracking system
- Integration between order and inventory systems
- Staff training materials

## Requirements

### Functional Requirement

The system shall automatically update inventory levels when orders are placed and alert staff when stock falls below predefined thresholds.

### Performance Requirement

The system shall process order entries within 2 seconds and display real-time inventory status without manual refresh.

### Out of Scope

- Point-of-sale hardware
- Accounting integration
- Delivery tracking

## Use Case Analysis

### Use Case Descriptions

1. **Place Order** - Customer or staff enters order details including flower types, quantities, and delivery information
2. **Alert Low Stock** - System automatically notifies staff when inventory items fall below minimum threshold levels
3. **Check Inventory** - Staff views current stock levels for all items in real-time
4. **Generate Order Report** - Manager creates reports showing daily/weekly order summaries and fulfillment status

### Use Case Diagram

## Software Development Approach

This project employs a **reuse-oriented software development** approach, which emphasizes leveraging existing software components to reduce development time and costs.

### Modified Deliverable Structure Chart

For the Execution and Control phase, the following deliverables are defined:

#### Requirements Specification Phase

- **System Requirements Document** - Comprehensive documentation of functional and non-functional requirements

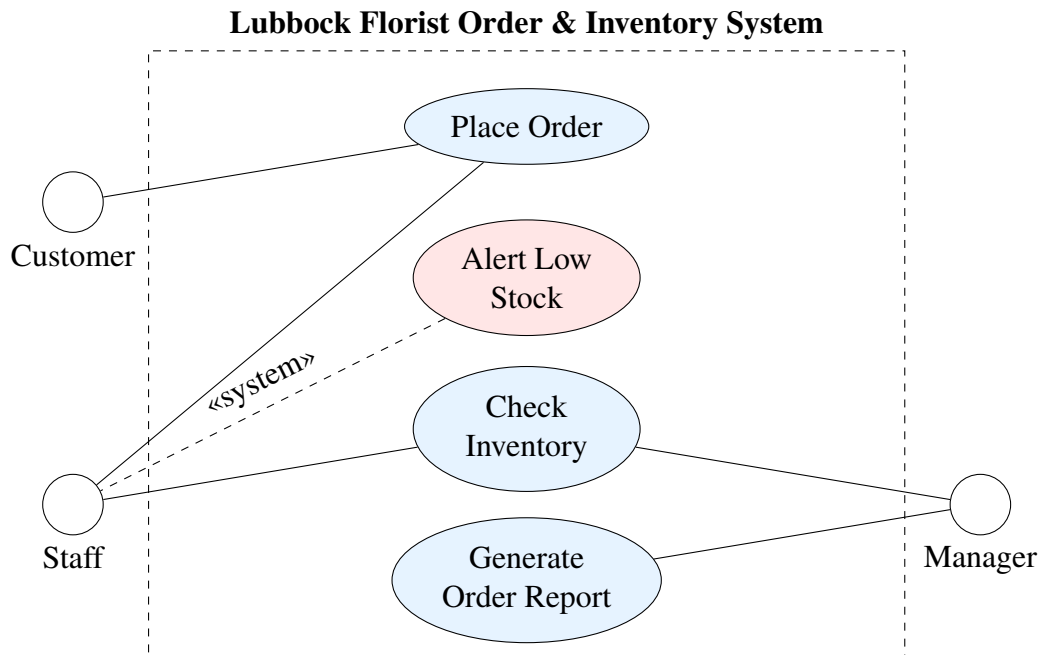


Figure 1: Use Case Diagram for Lubbock Florist System

### Software Discovery Phase

- **COTS Evaluation Matrix** - Comparative analysis of Commercial Off-The-Shelf solutions for order management and inventory systems

### Software Evaluation Phase

- **Software Selection Report** - Final recommendation with cost-benefit analysis and integration requirements

## Work Breakdown Structure (WBS)

The WBS decomposes project deliverables into manageable activities:

### Requirements Specification Phase

#### 1.1 System Requirements Document

- 1.1 Conduct stakeholder interviews with Carlos and staff
- 1.2 Document current workflow and pain points analysis
- 1.3 Define system requirements and acceptance criteria

### Software Discovery Phase

#### 2.1 COTS Evaluation Matrix

- 2.1 Research available order management systems
- 2.2 Identify inventory management software options

### 2.3 Create evaluation criteria and scoring matrix

## Software Evaluation Phase

### 3.1 Software Selection Report

- 3.1 Conduct vendor demonstrations and trials
- 3.2 Perform cost-benefit analysis for top 3 solutions
- 3.3 Document integration requirements and recommendations

## Resource Assignment and Duration Estimation

### Requirements Specification Phase

Deliverable	Task	Assigned sources	Re- Estimation Method	Duration (Days)
System Requirements Document	1.1 Conduct stakeholder interviews	Business Analyst, Project Manager	Bottom-up	3
System Requirements Document	1.2 Document current workflow	Business Analyst, Technical Writer	Bottom-up	2
System Requirements Document	1.3 Define system requirements	Business Analyst, System Architect	Time-boxing	4

Table 1: Requirements Specification Phase Resource Assignment

### Software Discovery Phase

Deliverable	Task	Assigned sources	Re- Estimation Method	Duration (Days)
COTS Evaluation Matrix	2.1 Research order management systems	System Analyst, Technical Lead	Time-boxing	3
COTS Evaluation Matrix	2.2 Identify inventory software	System Analyst, Subject Matter Expert	Bottom-up	2
COTS Evaluation Matrix	2.3 Create evaluation matrix	Business Analyst, System Analyst	Bottom-up	2

Table 2: Software Discovery Phase Resource Assignment

## Estimation Method Rationale

- **Bottom-up Estimation:** Used for tasks with clear, definable activities where effort can be estimated based on specific work items
- **Time-boxing:** Used for research and analysis tasks where scope might expand; sets a fixed deadline to ensure progress

## Key Project Resources

**Business Analyst** Requirements gathering and documentation

**System Analyst** Technical evaluation and system design

**Project Manager** Stakeholder coordination and project oversight

**Technical Lead** Software architecture and integration assessment

**Technical Writer** Documentation standards and clarity

**System Architect** Technical requirements and design decisions

**Subject Matter Expert** Domain knowledge for inventory management

## Key Project Management Concepts (PMBOK Guide)

This case study demonstrates several fundamental project management concepts from the PMBOK Guide:

### Scope Management

The scope statement defines project boundaries and prevents scope creep. It's part of the Project Scope Management knowledge area in PMBOK, ensuring that all required work (and only the required work) is included in the project.

### Requirements Management

Use cases help capture stakeholder requirements systematically. This falls under both Scope Management and Stakeholder Management knowledge areas, providing a structured approach to understanding user needs.

### Work Breakdown Structure (WBS)

A hierarchical decomposition of project work into manageable components. The WBS serves as the foundation for:

- Schedule development
- Cost estimation
- Risk identification
- Resource planning

## **Estimation Techniques**

**Bottom-up Estimation** Estimating individual activities and aggregating upward

**Time-boxing** Setting fixed time limits for activities to control scope and ensure timely delivery

## **Resource Management**

Identifying and assigning the right people with appropriate skills to project tasks, ensuring optimal utilization of human resources throughout the project lifecycle.