Life Cycle Plan (LCP)

<FlowerSeeker>

<Team 4>

Celia Chen, Project Manager
Jason Tan, Life Cycle Planner
Xiaoran Huang, Feasibility Analyst
Chenghao Yang, Operational Concept Engineer
Ruiwen Tang, Requirements Engineer
Xian Li, System/Software Architect
Clifford Rhyne, IV&V

04/27/15

Version History

Date	Author	Version	Changes made	Rationale
09/29/14	Team04	1.0	Created from LCP template, Updated team member roles and skills in Section 3.3	VCP submission
10/13/14	Jason Tan	2.0	Completed section 1 - 5	Draft FCP submission
10/17/14	Jason Tan	2.1	Updated COCOMOII SOLC and added milestones	Final FCP submission
12/1/14	Jason Tan	3.0	Added Section 6.1	Draft DCP submission
12/5/14	Jason Tan	3.1	Edit Section 6.1 OC numbers	Stay updated with other documents
12/8/14	Jason Tan	3.2	Updated Section 2.1 for development phase Updated section 3.2	Final DCP submission
2/11/15	Jason Tan	4.0	Updated team member roles and skilss in Section 3.3	RDCR submission
3/30/15	Jason Tan	5.0	Completed section 6.2	CCD submission
4/25/15	Jason Tan	6.0	Updated section 6.3	ASBUILT submission

Table of Contents

Life Cycle Plan (LCP)
Version History
Table of Contents
Table of Tables
Table of Figures

1. Introduction
1.1 Purpose of the LCP
1.2 Status of the LCP
1.3 Assumptions

2. Milestones and Products
2.1 Overall Strategy
2.2 Project Deliverables

3. Responsibilities
3.1 Project-specific stakeholder's responsibilities
3.2 Responsibilities by Phase
3.3 Skills

4. Approach
4.1 Monitoring and Control
4.2 Methods, Tools and Facilities

5. Resources
6. Iteration Plan
6.1 Plan

6.1.1 Capabilities to be implemented

6.1.2 Capabilities to be tested

6.1.3 Capabilities not to be tested

6.1.4 CCD Preparation Plans
6.2 Iteration Assessment

6.2.1 Capabilities Implemented, Tested, and Results

6.2.2 Core Capabilities Drive-Through Results
6.3 Adherence to Plan

Table of Tables

Table 1: Artifacts Deliverables in Exploration Phase
Table 2: Artifact deliverable in Exploration Phase
Table 3: Artifact deliverable in Valuation Phase
Table 4: Artifact deliverable in Foundations Phase
Table 5: Artifact deliverable in Development Phase
Table 6: Stakeholder's Responsibilities in each phase
Table 7: COCOMOII Scale Driver
Table 8: COCOMOII Cost Driver
Table 9: Application Count: Screens
Table 10: Application Count: Reports
Table 11: Application Count: 3GL components
Table 12: Application Point Parameters
Table 13: Construction iteration capabilities to be implemented
Table 14: Construction iteration capabilities to be tested
Table 15: Capabilities implemented, tested, and results

Table of Figures

No table of figures entries found.

1. Introduction

1.1 Purpose of the LCP

The purpose of the LCP is to document the project objectives, assumptions, milestones, overall strategy, and deliverables for completing the project. It is also used to define the stakeholders' individual responsibilities, the roles of each person , the skills of each person on the team and document the place where they will work on the project.

1.2 Status of the LCP

The current status of the LCP is currently at the Draft Foundation Commitment Package version. The major changes from the Valuation Commitment Package are:

- This version has sections 1-5 completed

1.3 Assumptions

- The duration of the project is 24 weeks, which are 12 weeks in Fall 2014 and 12 weeks in Spring 2015.
- There are 6 on campus students and 1 den student based in Chicago
- All team members will remain on the project for the whole year
- There will be no additional new team members added to the team
- The client's back-end system is working

2. Milestones and Products

2.1 Overall Strategy

This project will use Agile process because the product does not use any NDI and will be built from sratch. However, the project will use a third party payment system, a backend system that has already been implemented and map APIs to add to the FlowerSeeker website.

Exploration phase

Duration: 08/30/14- 9/29/14

Concept: For the exploration phase, the team met with the client to understand the business case and motivation behind the FlowerSeeker idea. The team started putting together the operational concept, life cycle plan, project scope, and identified the SCS's needs and the

team's skill set. Also, the team identified major risks initially in the project and came up with risk mitigation plans on how to deal with those.

Deliverables: Valuation Commitment Package

Milestone: Valuation Commitment Review

Strategy: One Incremental Commitment Cycle

Valuation phase

Duration: 9/30/14- 10/19/14

Concept: For Valuation phase, the team heard winwin sessions with the clients to figure out which features were the priorities in the project. The team did some prototyping on the UI and payment system for FlowerSeeker. Also, the team worked on the artifacts in the Foundation Commitment Package.

Deliverables: Foundation Commitment Package

Milestone: Foundation Commitment Review

Strategy: Winwin sessions, Prototyping, competitive analysis

Foundation phase

Duration: 10/20/14 - 12/08/14

Concept: The Scope of the project has changed since 10/12/14. For Foundation phase, the team will look into the client's back-end code and reevaluate the scope of the project. The team will put in plans to test the client's existing backend system. After this will allow us to create a more appropriate software architecture and framework for the design of the code. There will be prototyping with the backend and integration with the front end to give us feasibility evidence.

Deliverables: Development Commitment Package

Milestone: Development Commitment Review

Strategy: Prototyping backend API, Prototyping payment system, UI prototyping

Foundation phase - Rebaseline

Duration: 1/12/15 - 1/16/15

Concept: The team will not have any turnover of team members during the 2nd semester so it will not be necessary to spend a lot of time on this phase as compared to other teams that have new members. The team will spend a fews days for the business transitions of the operational concepts, create sequence diagrams for all the rainy day scenarios of the system, and review the development and test plans before moving forward will development

Deliverables: Sequence Diagrams with rainy day scenarios, test plans, development plans.

Milestone: Beginning of Development Phase

Strategy: Sequence Diagrams with rainy day scenarios, Scheduling

Development Phase - Construction Integration

Duration: 1/12/15 - 3/27/15

Concept: The team will divide the development into 3 iterations based on the risk and importance of each feature. The longest and most difficult iteration will be the first one. This is migrate the risks the team may encounter during the development. The team will

test at the end of each iteration to ensure the system is working properly. The team will receive feedback from the client and make changes accordingly. The team will perform continuous integration with the front end system as each feature is built and tested.
Deliverables: Operation Commitment Package
Milestone: Operation Commitment Review
Strategy: Prototyping. Product Development, Product Testing

Development Phase - Transition Iteration

During: 4/27/15 - 5/1/15
Concept: This is the final stage of product development. The team will provide the client with training on how to use the product and will present the final product to the client. The team will implement any minor last minute changes the client may need before delivering the final product.
Deliverables: Final Product, Training Manual
Milestone: Product Transition
Strategy: Product Transition and Client Training

2.2 Project Deliverables

2.2.1 Exploration Phase

Table 1: Artifacts Deliverables in Exploration Phase

Artifact	Due date	Format	Medium
Client Interaction Report	9/19/2014	.doc, .pdf	Soft copy
Valuation Commitment Package ● Life Cycle Plan (LCP) Early Section ● Feasibility Evidence Description (FED) Early Section	09/29/2014	.doc, .pdf	Soft copy
Bugzilla Report	Every Monday	bugzilla	ER system
Project Plan	Biweekly Wednesday	.mpp, .pdf	Soft copy
Progress Report	Biweekly Wednesday	.xls	Soft copy

2.2.2 Valuation Phase

Table 2: Artifact deliverable in Valuation Phase

Artifact	Due date	Format	Medium
Draft Foundation Commitment Package ● Operational	10/13/14	.doc, .pdf	hard copy, soft copy

Concept Description (OCD) ● Feasibility Evidence Description (FED) Section 1 - 5 ● Prototype Report ● Life Cycle Plan (LCP) Section 1 - 5 ● System and Software Architecture (SSAD)			
Foundation Commitment Package ● Operational Concept Description (OCD) ● Feasibility Evidence Description (FED) Section 1 - 5 ● Prototype Report ● Life Cycle Plan (LCP) Section 1 - 5 ● System and Software Architecture (SSAD)	10/20/14	.doc, .pdf	Soft copy
Bugzila Report	Every Monday	bugzilla	Soft copy
Progress Report	Biweekly Wednesday	.mpp, .pdf	Soft copy
Progress Plan	Biweekly Wednesday	.xls	Soft copy

2.2.3 **Foundations Phase**

Table 3: Artifact deliverable in Foundations Phase

Artifact	Due date	Format	Medium
Bugzilla Report	Every Monday	Bugzilla	soft copy
Progress Report	Biweekly Wednesday	.mpp, .pdf	soft copy
Progress Plan	Biweekly Wednesday	.xls	soft copy
Draft Foundation Commitment Package ● Operational Concept Description (OCD) ● Feasibility Evidence Description (FED) ● Prototype Report ● Life Cycle Plan (LCP) Section 1 - 6.1 ● System and Software Architecture (SSAD)	12/1/14	.docx, .pdf	soft copy
Foundation Commitment Package ● Operational Concept Description (OCD) ● Feasibility Evidence Description (FED) ● Prototype Report ● Life Cycle Plan (LCP) Section 1 - 6.1 ● System and Software		.docx, .pdf	soft copy

Architecture (SSAD)			

2.2.4 **Development Phase**

Table 4: Artifact deliverable in Development Phase

Artifact	Due date	Format	Medium
Bugzilla Report	Every Monday	Bugzilla	soft copy
Progress Report	Biweekly Wednesday	.mpp, .pdf	soft copy
Progress Plan	Biweekly Wednesday	.xls	soft copy
Core Capabilities Drive-through Report	3/30/15	.doc, .pdf	soft copy
Transition Readiness Review Package	4/13/15	.doc, .pdf	soft copy

2.2.5 **Transition Phase**

Table 5: Artifacts deliverable in Transition Phase

Artifact	Due date	Format	Medium
Bugzilla Report	Every Monday	Bugzilla	soft copy
Progress Report	Biweekly Wednesday	.mpp, .pdf	soft copy
Progress Plan	Biweekly Wednesday	.xls	soft copy
ASBUILT Package ● Operational Concept Description ● System and Software Architecture Description ● Life Cycle Plan ● Feasibility Evidence	4/27/15	.docx, .pdf	soft copy

Description ● Test Plan and Cases ● Test Procedure and Results ● Transition Plan ● User Manual ● Support Plan ● Regression Test Package ● Training materials ● Functioning system ● Release Description			
Project Archive	5/4/15	.zip	soft copy

3. Responsibilities

3.1 Project-specific stakeholder's responsibilities

3.2 Responsibilities by Phase

Table 6: Stakeholder's Responsibilities in each phase

Team Member / Role	**Primary/ Secondary Responsibility**				
	Exploration	**Valuation**	**Foundations**	**Development-** Construction Iteration	**Development -** Transition Iteration
Name: Clifford Rhyne IV & V	**Primary Responsibility** (1) Review	**Primary Responsibility** (1) Review	**Primary Responsibility** (1) Review	**Primary Responsibility** (1) Review	**Primary Responsibility** (1) Review

	Artifacts (2) Track bugs in Bugzilla **Secondary Responsibility** (3) Consult team with expertise	Artifacts (2) Track bugs in Bugzilla **Secondary Responsibility** (3) Consult team with expertise	Artifacts (2) Track bugs in Bugzilla **Secondary Responsibility** (3) Consult team with expertise	Artifacts (2) Track bugs in Bugzilla **Secondary Responsibility** (3) Consult team with expertise	Artifacts (2) Track bugs in Bugzilla **Secondary Responsibility** (3) Consult team with expertise
Name: Jason Tan Life Cycle Planner & Prototyper	**Primary Responsibility** (1) Identify responsibilities and skills (2) Plan and update the project timeline **Secondary Responsibility** (3) Prototype UI concept	**Primary Responsibility** (1) Document Lift Cycle Plan (2) Plan and update the project timeline (3) Identify project milestones **Secondary Responsibility** (4) Prototype UI concept (5) Put together presentation	**Primary Responsibility** (1) Document Life Cycle Plan (2) Identify project milestones (3) Plan and update project timeline **Secondary Responsibility** (4) Support prototype design	**Primary Responsibility** (1) Document Life Cycle Plan (2) Identify project milestones (3) Plan and update project timeline (4) Support search, payment development **Secondary Responsibility** (5) Test code	**Primary Responsibility** (1) Document Life Cycle Plan (2) Identify project milestones (3) Plan and update project timeline (4) Support search payment modifications **Secondary Responsibility** (4) Support prototype design
Name: Chenghao Yang Operational Concept Engineer& Feasibility Analyst	Primary Responsibility (1) Analyze the current system (2) analyze the work flow of current system Secondary Responsibility (1)Analyze the current system	Primary Responsibility (1) explore new operational concept (2)explore the work flow Secondary Responsibility (1) execute feasibility evidence	Primary Responsibility (1) According to the new operational concept to help prototype Secondary Responsibility (1)risk analysis and plan for risk mitigation	Primary Responsibility (1) adjust the operational concept if necessary Secondary Responsibility (1) provide plan for risk mitigation	Secondary Responsibility (1)provide plan for risk mitigation
Name: Celia Chen Project Manager, System/Software Architect	**Primary Responsibility** (1) Identify objectives, constraints and priorities (2) Record Project Progress and MPP (3) Manage team	**Primary Responsibility** (1) Manage team and distribute tasks to team members (2) Record Project Progress and MPP	**Primary Responsibility** (1) Manage team and distribute tasks to team members (2) Record Project Progress and MPP (3)Communicate	**Primary Responsibility** (1) Manage team and distribute tasks to team members (2) Record Project Progress and MPP (3) Communicate with client and wintin the team	**Primary Responsibility** (1) Manage team and distribute tasks to team members (2) Record Project Progress and MPP (3)Communicate

	and distribute tasks to team members (4) Communicate with client and wintin the team **Secondary Responsibility** (5) Analyze the current system	(3)Communicate with client and wintin the team **Secondary Responsibility** (4) Explore and define system architecture	with client and wintin the team **Secondary Responsibility** (4) Find NDI and NCS	**Secondary Responsibility** (4) Modify artchitecture, patterns and frameworks	with client and wintin the team
Name: Xian Li Role: System/Software Architect& Requirement Engineer	**Primary Responsibility** (1) Explore the current system	**Primary Responsibility** (1) Explore and Design system Architect (2) Explore and Design NDI/NCS **Secondary Responsibility** (3) Communicate with the clients and end-users, analysis the requirement and design the use case or user story	**Primary Responsibility** (1) Describe the architecture, patterns, and frameworks **Secondary Responsibility** (2) Find ready-to-use NDI or NCS and bridge the gap between different component	**Primary Responsibility** (1)modify the architecture, patterns, and frameworks if necessary **Secondary Responsibility** (2) Test system	**Primary Responsibility** (1) Implement any last minute changes to the system **Secondary Responsibility** (2) Test system
Name:Xiaoran Huang Role: Feasibility analyst Life Cycle Planner	**Primary Responsibility** (1)Identify current risk of the system (2)Write the feasibility Evidence Document	**Primary Responsibility** (1)Explore new system risk (2)Document the Feasibility Evidence **Secondary Responsibility** (1)Research on the hardware and software needed for this project	**Primary Responsibility** (1)Explore more on the risk about the back end of the system (2)Evaluate cost of each phase (3)Evaluate the benefit gained from project **Secondary Responsibility** (1)Calculate the ROI based on the evaluation	**Primary Responsibility** (1)Explore more on the risk on the system (2)Document the Feasibility Evidence **Secondary responsibility:** (1)Record Project Process.	**Primary Responsibility** (1)Explore more on new risk (2)Document the Feasibility Evidence **Secondary responsibility:** (1)Record Project Process.
Name: Ruiwen Tang	**Primary Responsibility**	**Primary Responsibility**	**Primary Responsibility**	**Primary Responsibility**	**Primary Responsibility**

Requirement Engineer& Feasibility Analyst	(1) Communicate with clients (2)collect clients' requirements **Secondary Responsibility** (1)Analyze the current system	(1) Analyze clients' requirements (2)Negotiate with clients about WinWin condition and define Winbook **Secondary Responsibility** (1) analyze the feasibility of the system (2)analyze the current risk of system	(1) Negotiate with clients about the priority of all requirements (2)assure all requirements that are implemented in the system and classify the basic requirements and revolutionary requirements (3) define user case and technology we will use **Secondary Responsibility** (1)analyze cost, benefit of system and ROI analysis, and architecture feasibility	(1) analyze clients' requirements (2) adjust requirements and relationship among them **Secondary Responsibility** (1) analyze new architecture pattern's feasibility	(1)adjust requirements (2)document requirements reports Secondary Respinsibility (1)complete feasibility report (2)analyze feasibility of every change of requirement and architecture
Name: Jessica Lee Client	**Primary Responsibility** **(**1) Provide motivation behind FlowerSeeker (2) Describe project to team	**Primary Responsibility** (1) Prioritize features during Winwin session	**Primary Responsibility** (1) Ensure that needs of the client are met **Secondary Responsibility** (1) Give feedback on prototypes	**Primary Responsibility** (1) Ensure that needs of the client are met **Secondary Responsibility** (1) Give feedback on prototypes	**Primary Responsibility** (1) Ensure that needs of the client are met **Secondary Responsibility** (1) Give feedback on prototypes
Name: Eder Figueroa Client	**Primary Responsibility** (1) Provide technical expertise on client's back-end system	**Primary Responsibility** (1) Provide technical expertise on client's back-end system	**Primary Responsibility** (1) Provide technical expertise on client's back-end system	**Primary Responsibility** (1) Provide technical expertise on client's back-end system	**Primary Responsibility** (1) Provide technical expertise on client's back-end system

3.3 **Skills**

Team members	Role	Skills
Jason Tan	Primary Role: Tester Secondary Role: Implementer	Current skills: Java, Microsoft Project Required skills: COCOMO II

Celia Chen	Primary Role: Project Manager Secondary Role: Tester	Current skills: Java, MySQL, Web Design, COCOMO II Required skills: Project coordination, Project management
Xiaoran Huang	Primary Role: Tester Second Role: Trainer	Current skills: Java, html, CSS Required skills: PHP, HTML, CSS, COCOMOII
Chenghao Yang	Primary Role: Quality Focal Point Second Role: Implementer	Current skills: Java, C++, Python Required skills: PHP, HTML, CSS, COCOMOII
Ruiwen Tang	Primary Role: Tester Secondary Role: Trainer	Current skills: Java Required skills: HTML, PHP, COCOMO II, JQuery UI
Xian Li	Primary Role: Implementer Secondary Role: Tester	Current skills: C, C++, Java, JFlex, PHP, Javascript, Node.js Required skills: HTML5, CSS, JQuery, COCOMO II, JQuery UI
Clifford Rhyne	Primary Role: IV&V Secondary Role: Quality Focal Point	Current skills: Java, EC2, Software Architecture Required skills: ICSM sign-off criteria

4. Approach

4.1 Monitoring and Control

Progress Reports are used to track the weekly progress of the project and helps the team tackle high risk items encouraged. Also, schedules are used to keep the project timeline moving forward to make sure nothing is delayed.

4.1.1 Closed Loop Feedback Control

The team has all the artifacts on Google drive and we work on them and review them together as a team to make sure we are getting appropriate feedback. We also created a wechat group to communicate with each other.

4.1.2 Reviews

The DEN student on the team is an experienced software engineer who has been reviewing our artifacts and progress and providing his expertise. As a team, we have meetings usually 2-3

times a week to discuss the progress of the project. Also, winwin negotiations were done with the client to make sure all the SCS's needs were factored into the requirements of the project.

4.2 Methods, Tools and Facilities

Tools	Usage	Provider
Winbook	This tool helps us create win-win conditions that satisfies the needs of all success critical stakeholders by helping us prioritize the features we will develop	USC
Bugzilla	This tool is used to track the bugs in the system and work hours spent on the project	USC
Github	This is an online repository system allows us to share the most recently updated code with each other and also helps track the changes made to the code	Open source
FileZilla	This tool is used to upload documents/code to the 577 class server	Open source
Sublime	This is a color coded text editor that we use to edit our source code	Open source
Google Drive	This is a cloud based document manager/editor that we used to manage/edit all our documents for the project	Open source
Gmail/Google hangout	This is the method we use to communicate with each other. Google hangout is used for meetings since some SCS live far from USC campus	Open source
Wechat	This is a phone app that the group uses to communicate with each other through mobile	Open source

5. Resources

Identify the following information in order to estimate the software cost:

- Estimated CSCI577a Effort : 7 team members at 10 hrs/week for 12 weeks
- Estimated CSCI577b Effort : 7 team members at 10 hrs/week for 12 weeks
- Total estimated effort : 1680 hours
- Budget information : $400
- Project duration : 24 weeks
- Component modules in your development project : User Management, Flower Management, Payment, Order Management, Search, Tracking, Review and Rating
- Programming language used : html, Java, js

Table 7: COCOMOII Scale Driver

Scale Driver	Value	Rationale
PREC	Low	The team does not have much experience with online shopping system especially implementing the payment method
FLEX	Nominal	The client has requirements for the product but is willing to give us freedom on the way we implement the system.
RESL	Low	All the architecture and risk management were completed based on the assumption of a working back-end from the client. At this point, the client their back-end therefore the level of uncertainity is signifant
TEAM	Very High	All the stackholders are willing to work together as a team to deliver the product
PMAT	Nomial	Based on CMN and KPA assessments, our team falls under CMN level 2 which gives us a nominal rating

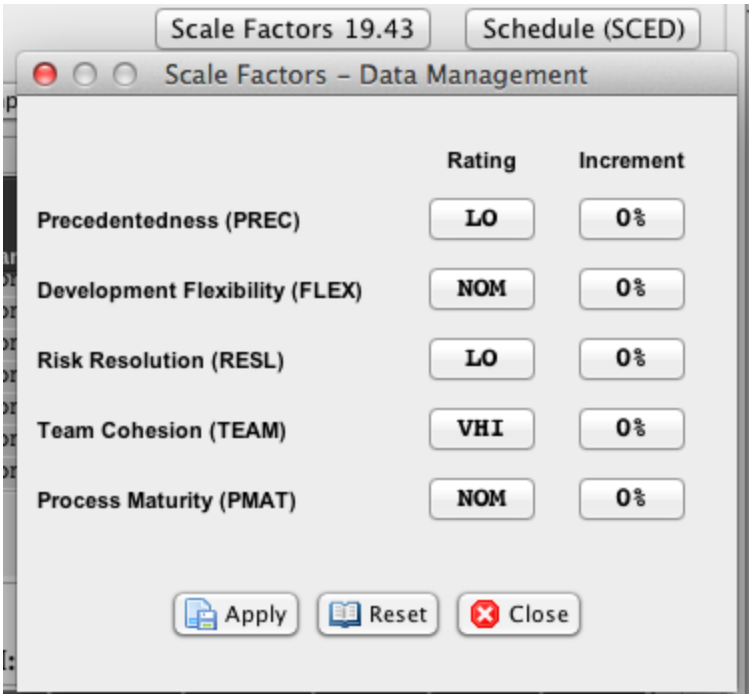


Table 8: COCOMOII Cost Driver- User Management System

Cost Driver	Value	Rationale
RELY	High	If the system stopped working, it will prevent users from logging in to their accounts to purchase flowers resulting in high financial loss.
DATA	High	Need to provide enough space for the customer/florist to upload profile pictures and descriptions of themselves.
DOCU	Nominal	All the documents will match the life-cycle because

		there is no stringent requirement for micro-level documentation, but it must be adequate for further maintenance.
CPLX	Nominal	Assuming that the client's back-end is working, the client's system will handle the management of the user database and our system should be able to pull data from the client's system.
RUSE	Low	The product will not be used in the future. There is no product line for the product we are developing.
TIME	Nominal	The product can run on 50% of the execution time.
STOR	Nominal	The user management system does not require a lot of the storage resources.
PVOL	Nominal	The platform we are using to develop the front-end is stable however, the client's back-end system may be unstable
ACAP	Nominal	Our team has the ability to cooperate and communicate howver, we lack the ability in analysis and design.
PCAP	Low	Only one members of our team have experience with using COTS packages, however the rest of our team does not have much experience with this
PCON	Very High	All of the team members are planning to take 577b.
APEX	Low	Only one member has the experience to develop this type of system. The rest of our team does not have experience to built this system.
LTEX	Low	We will use html, js, css which we have little experience in.
PLEX	Very Low	We do not have any experience with the client's database platform.
TOOL	Nominal	The tools we use in our system are basic and moderately integrated.
SITE	High	Two members of the team live in a different city however we use video conference calls to communicate with each other.

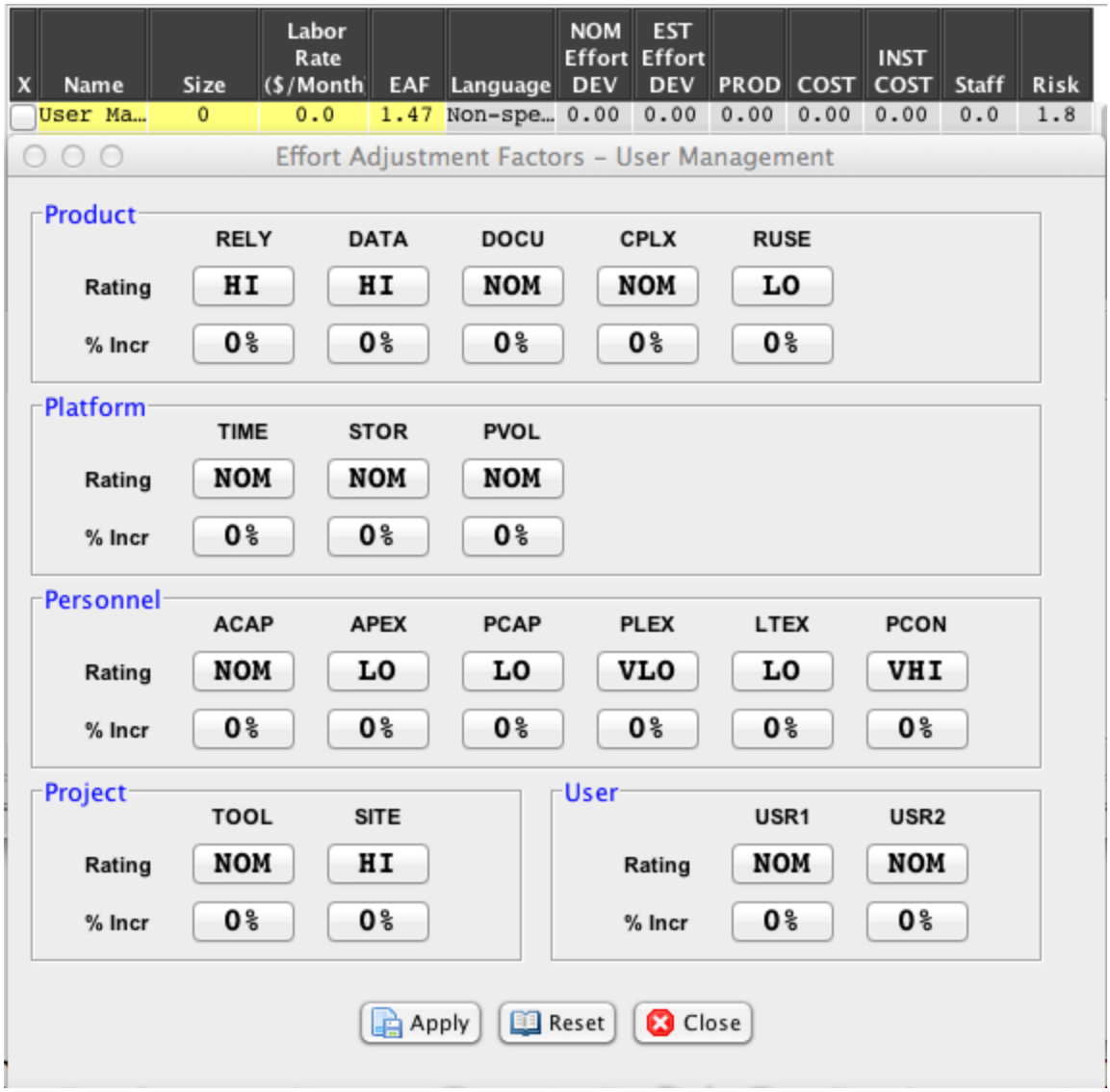


Table 9: COCOMOII Cost Driver- Flower Management System

Cost Driver	Value	Rationale
RELY	High	If the system stopped working, online shoppers cannot browse and purchase flowers so it will result in a high financial loss.
DATA	High	Need to provide large space to store the photos about the flowers for each florists in our system.
DOCU	Nominal	All the documents will match the life-cycle because there is no stringent requirement for micro-level documentation, but it must be adequate for further maintenance.
CPLX	Nominal	Assuming that the client's back-end is working, the flower management module would allow users to

		upload and manage catalogs.
RUSE	Low	This module is designed for FlowerSeeker, not for any other project or program.
TIME	Nominal	The execution time resource is little.
STOR	High	Since we are allowing photos, descriptions and multi-media files, the storage will be high.
PVOL	Nominal	The platform we are using to develop the front-end is stable however, the client's back-end system may be unstable.
ACAP	Nominal	Our team has the ability to cooperate and communicate howver, we lack the ability in analysis and design.
PCAP	Low	Only one members of our team have experience with using COTS packages, however the rest of our team does not have much experience with this.
PCON	Very High	All of the team members are planning to take 577b.
APEX	Low	Only one member has the experience to develop this type of system. The rest of our team does not have experience to built this system.
LTEX	Low	We will use html, js, css which we have little experience in.
PLEX	Very Low	We do not have any experience with the client's database platform
TOOL	Nominal	The tools we use in our system are basic and moderately integrated.
SITE	High	Two members of the team live in a different city however we use video conference calls to communicate with each other.

Table 10: COCOMOII Cost Driver- Payment System

Cost Driver	Value	Rationale
RELY	High	If the payment system stopped working, customers cannot make payments online which will result in a high financial loss.
DATA	Nominal	The payment system only needs to record the payment history involving time, price and participants.
DOCU	Nominal	All the documents will match the life-cycle because there is no stringent requirement for micro-level documentation, but it must be adequate for further maintenance.
CPLX	Very High	This involves integrating the back-end database with the third party payment system which is complicated to do.
RUSE	Low	This module is designed for FlowerSeeker, not for any

		other project or program.
TIME	Nominal	The execution time resource is little.
STOR	Nominal	FlowerSeeker will not store the customers/florist payment information because of secruity issues. The storage of this information will be taken care of by the third party payment system.
PVOL	Nominal	The third party payment system is stable however the integration with the backend system could result in some code changes throughout the development
ACAP	Nominal	Our team has the ability to cooperate and communicate howver, we lack the ability in analysis and design.
PCAP	Low	Only one members of our team have experience with using COTS packages, however the rest of our team does not have much experience with this.
PCON	Very High	All of the team members are planning to take 577b.
APEX	Low	Only one member has the experience to develop this type of system. The rest of our team does not have experience to built this system.
LTEX	Low	We will use html, js, css which we have little experience in.
PLEX	Very Low	We do not have any experience with the client's database platform.
TOOL	Nominal	The tools we use in our system are basic and moderately integrated.
SITE	High	Two members of the team live in a different city however we use video conference calls to communicate with each other.

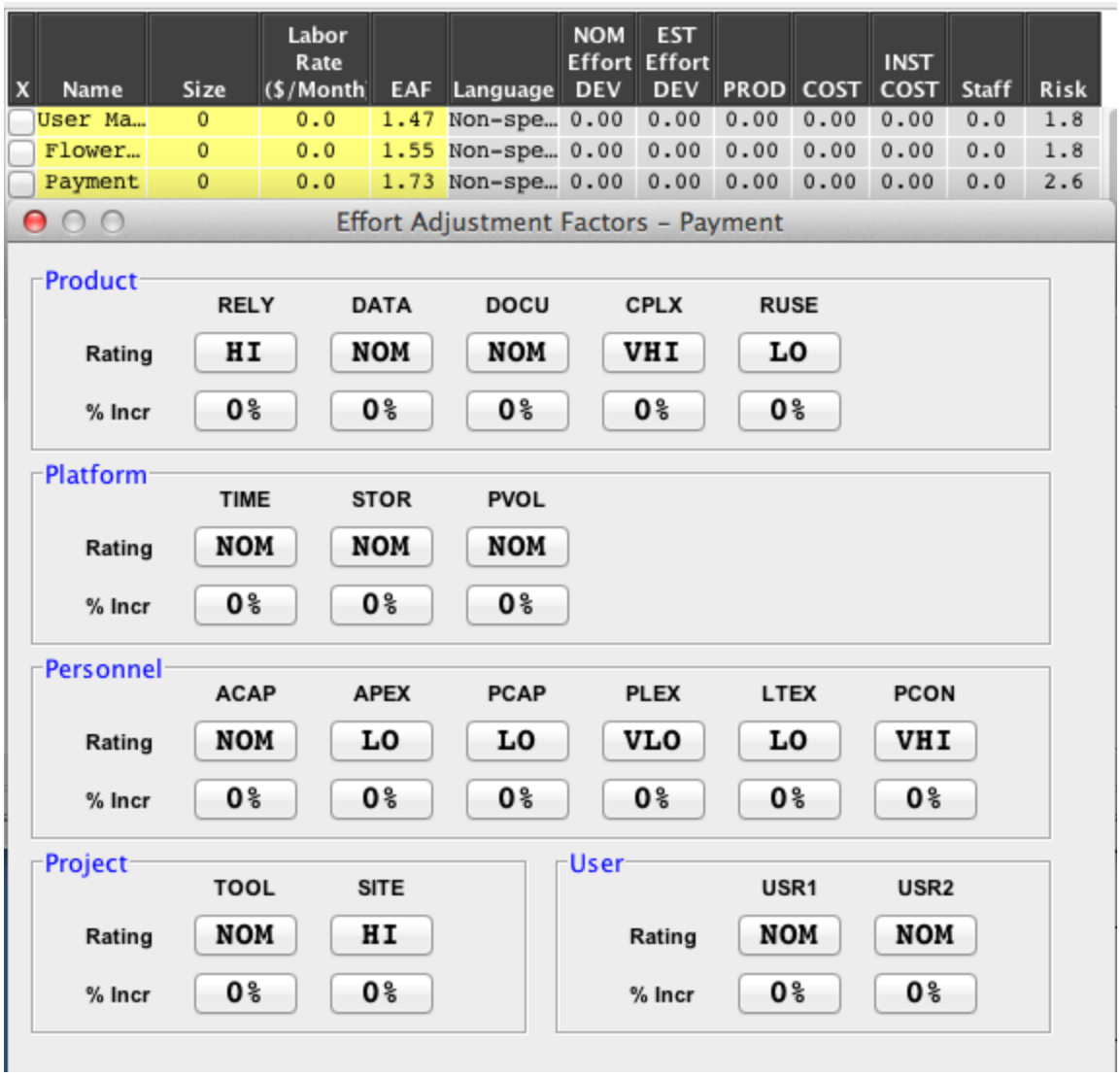


Table 11: COCOMOII Cost Driver- Order Management System

Cost Driver	Value	Rationale
RELY	High	If the order management stopped working, the customers would not be able to place orders for flowers which it will result in a high financial loss.
DATA	Nominal	The system only needs to record the amount of orders and information about each order, which does not need too much storage.
DOCU	Nominal	All the documents will match the life-cycle because there is no stringent requirement for micro-level documentation, but it must be adequate for further maintenance.
CPLX	Nominal	Assuming that the client's back-end is working, the back-end module would allow users to upload and

		manage catalogs.
RUSE	Low	This module is designed for FlowerSeeker, not for any other project or program.
TIME	Nominal	The execution time resource is normal.
STOR	Nominal	We do not require a lot of storage space for the order management system.
PVOL	Nominal	The platform we are using to develop the front-end is stable however, the client's back-end system may be unstable
ACAP	Nominal	Our team has the ability to cooperate and communicate howver, we lack the ability in analysis and design.
PCAP	Low	Only one members of our team have experience with using COTS packages, however the rest of our team does not have much experience with this.
PCON	Very High	All of the team members are planning to take 577b.
APEX	Low	Only one member has the experience to develop this type of system. The rest of our team does not have experience to built this system.
LTEX	Low	We will use html, js, css which we have little experience in.
PLEX	Very Low	We do not have any experience with the client's database platform.
TOOL	Nominal	The tools we use in our system are basic and moderately integrated.
SITE	High	Two members of the team live in a different city however we use video conference calls to communicate with each other.

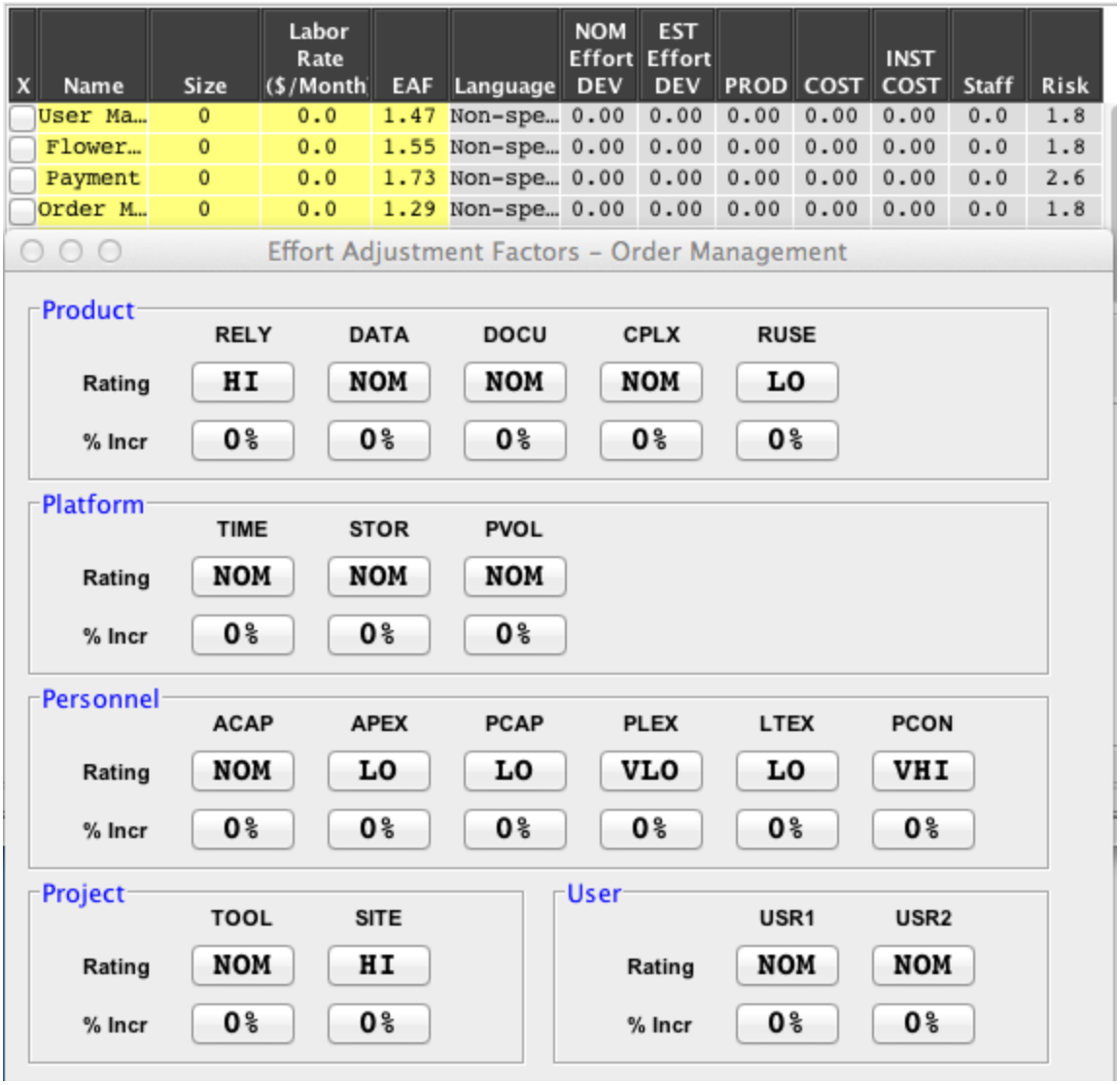


Table 12: COCOMOII Cost Driver- Search System

Cost Driver	Value	Rationale
RELY	High	If the search system stopped working, customers cannot search for the flowers they want which would result in a high financial loss.
DATA	Low	The information about flowers are saved in the database and we only need to provide the key word for searching.
DOCU	Nominal	All the documents will match the life-cycle because there is no stringent requirement for micro-level documentation, but it must be adequate for further maintenance.
CPLX	Nominal	Assuming that the client's back-end is working, we would just need to use the search API to import the results into our front end

RUSE	Low	This module is designed for FlowerSeeker, not for any other project or program.
TIME	Nominal	The execution time resource is normonal speed.
STOR	Nominal	The search will just query the database to find the results so they is only need for a little bit of storage place.
PVOL	Nominal	The platform we are using to develop the front-end is stable however, the client's back-end system may be unstable.
ACAP	Nominal	Our team has the ability to cooperate and communicate howver, we lack the ability in analysis and design.
PCAP	Low	Only one members of our team have experience with using COTS packages, however the rest of our team does not have much experience with this
PCON	Very High	All of the team members are planning to take 577b.
APEX	Low	Only one member has the experience to develop this type of system. The rest of our team does not have experience to built this system.
LTEX	Low	We will use html, js, css which we have little experience in.
PLEX	Very Low	We do not have any experience with the client's database platform.
TOOL	Nominal	The tools we use in our system are basic and moderately integrated.
SITE	High	Two members of the team live in a different city however we use video conference calls to communicate with each other.

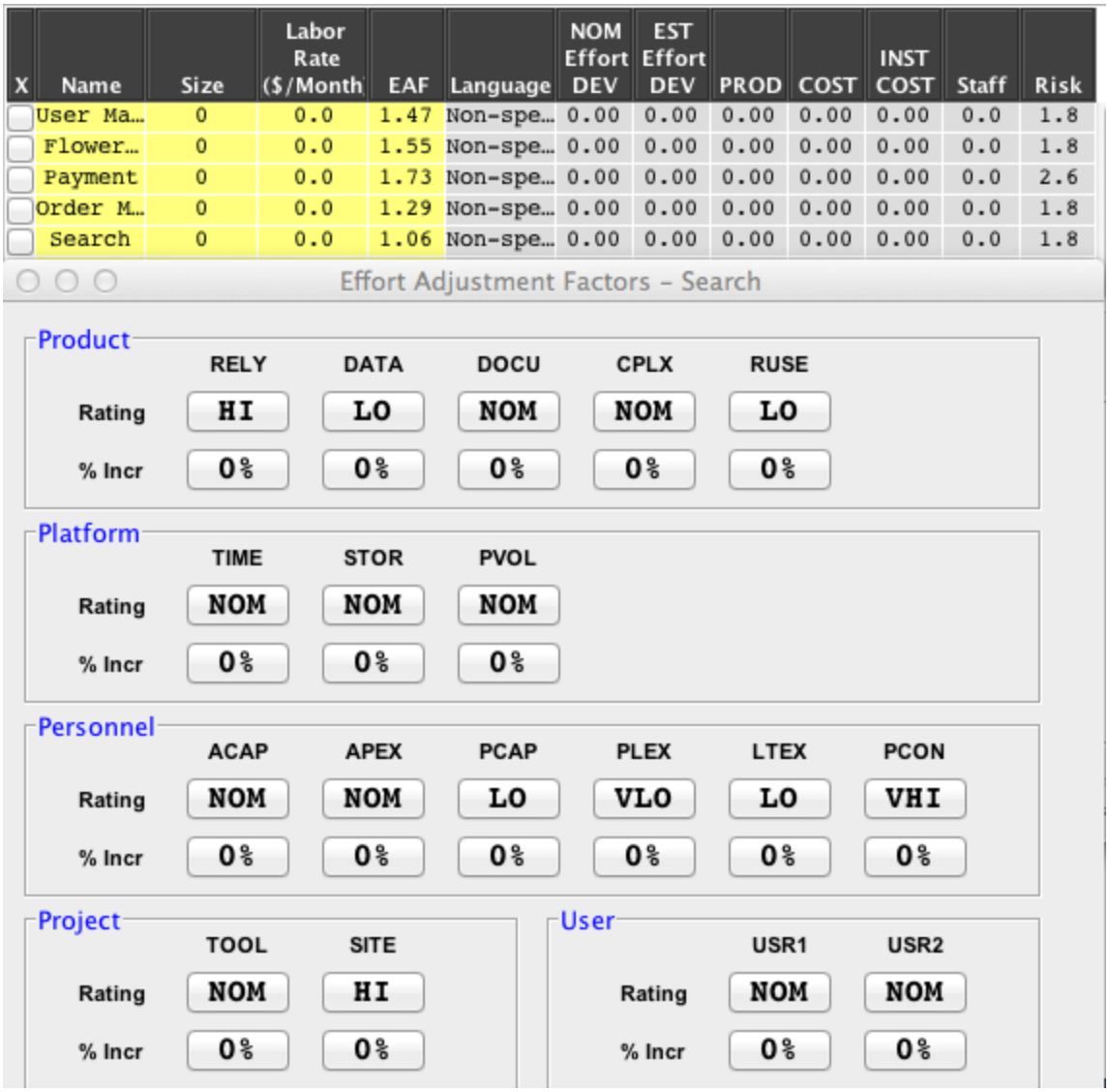


Table 13: COCOMOII Cost Driver- Tracking System

Cost Driver	Value	Rationale
RELY	Nominal	If the tracking system was not working, it would cause some unhappy customers but not high financial loss.
DATA	Low	In this part we only need to show which phase the order is in by extracting relevant from database.
DOCU	Nominal	All the documents will match the life-cycle because there is no stringent requirement for micro-level documentation, but it must be adequate for further maintenance.
CPLX	Nominal	Assuming that the client's back-end is working, we have to take the information from the back-end and create a visual for the customer to see.
RUSE	Low	This module is designed for FlowerSeeker, not for any

		other project or program.
TIME	Nominal	The execution time resource is normal speed.
STOR	Nominal	This does not require much storage because it is just using a few tables of information.
PVOL	Nominal	The platform we are using to develop the front-end is stable however, the client's back-end system may be unstable.
ACAP	Nominal	Our team has the ability to cooperate and communicate howver, we lack the ability in analysis and design.
PCAP	Low	Only one members of our team have experience with using COTS packages, however the rest of our team does not have much experience with this.
PCON	Very High	All of the team members are planning to take 577b.
APEX	Low	Only one member has the experience to develop this type of system. The rest of our team does not have experience to built this system.
LTEX	Low	We will use html, js, css which we have little experience in.
PLEX	Very Low	We do not have any experience with the client's database platform
TOOL	Nominal	The tools we use in our system are basic and moderately integrated.
SITE	High	Two members of the team live in a different city however we use video conference calls to communicate with each other.

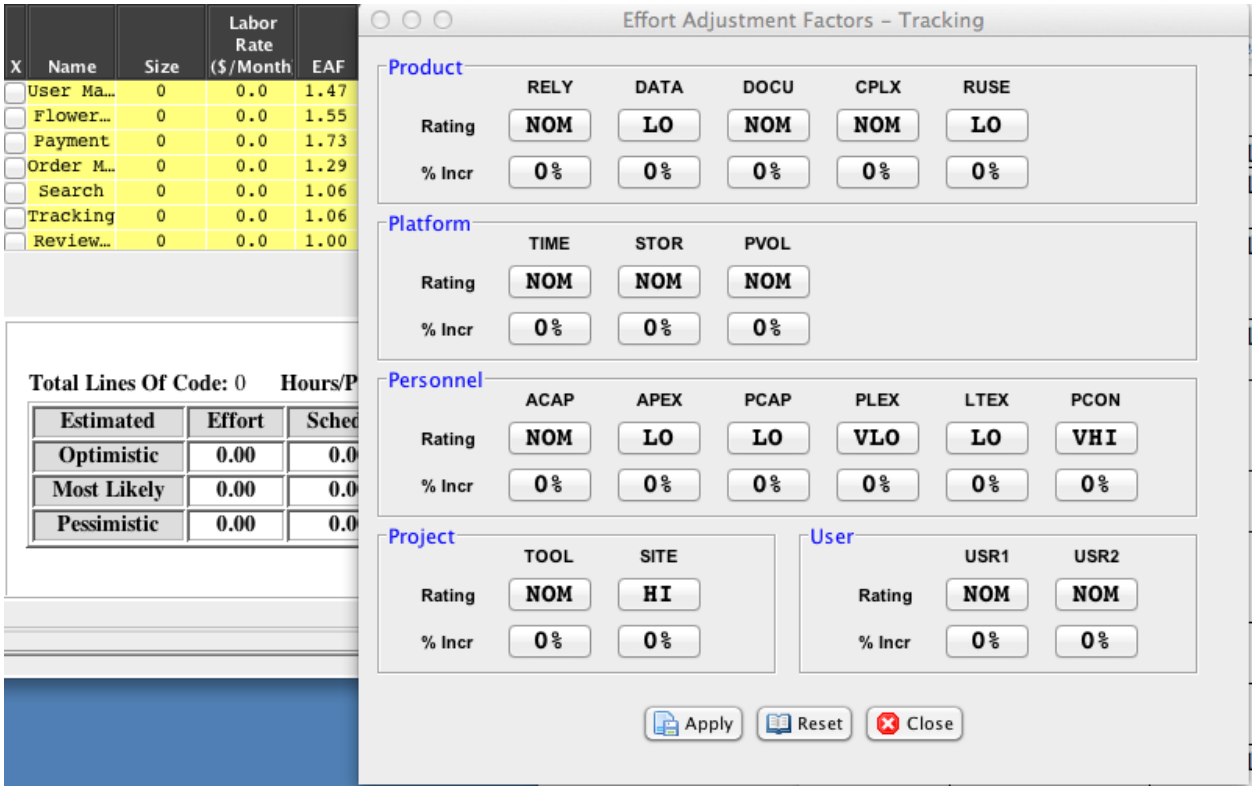
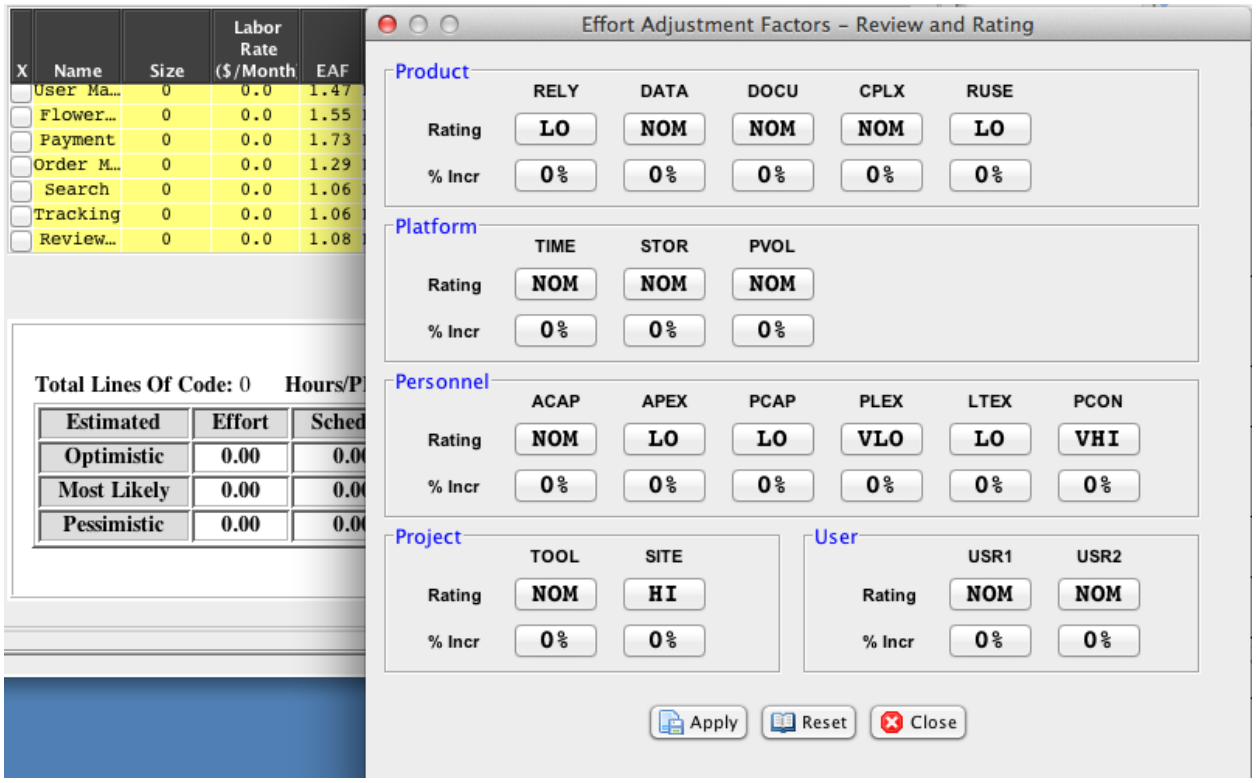
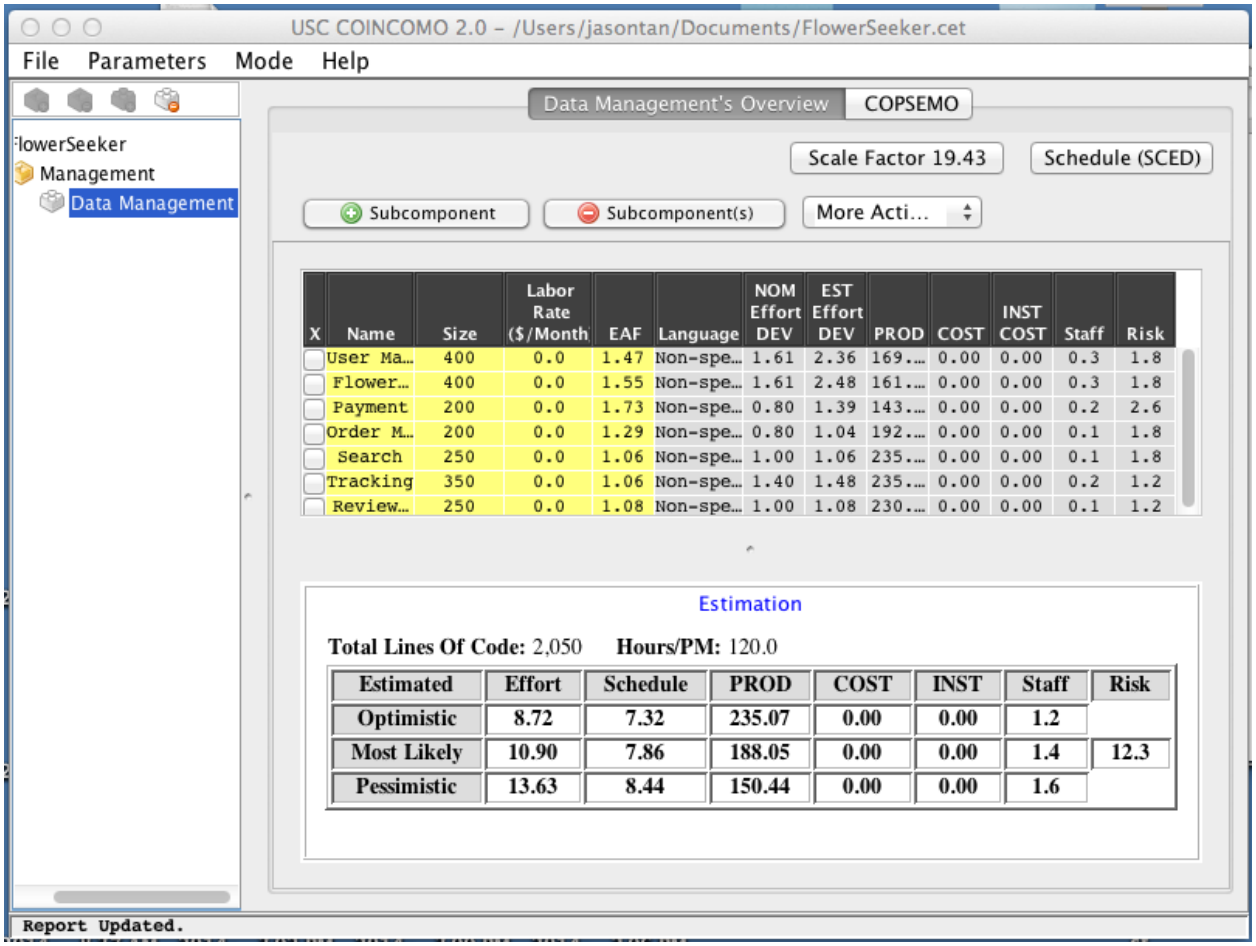


Table 14: COCOMOII Cost Driver- Review and Rating System

Cost Driver	Value	Rationale
RELY	Low	If the system stopped working, it would not result in immedate financial loss but there would be unhappy customers.
DATA	Nominal	In this part we need to record all the reviews made by customers and responses made by florists.
DOCU	Nominal	All the documents will match the life-cycle because there is no stringent requirement for micro-level documentation, but it must be adequate for further maintenance.
CPLX	Nominal	Assuming that the client's back-end is working, we just need to pull the information from the back-end and display that to the customer.
RUSE	Low	This module is designed for FlowerSeeker, not for any other project or program.
TIME	Nominal	The execution time resource is little.
STOR	Nominal	We are only storing word text so the storage is low.
PVOL	Nominal	The platform we are using to develop the front-end is stable however, the client's back-end system may be unstable
ACAP	Nominal	Our team has the ability to cooperate and communicate howver, we lack the ability in analysis and design.

PCAP	Low	Only one members of our team have experience with using COTS packages, however the rest of our team does not have much experience with this.
PCON	Very High	All of the team members are planning to take 577b.
APEX	Low	Only one member has the experience to develop this type of system. The rest of our team does not have experience to built this system.
LTEX	Low	We will use html, js, css which we have little experience in.
PLEX	Very Low	We do not have any experience with the client's database platform
TOOL	Nominal	The tools we use in our system are basic and moderately integrated.
SITE	High	Two members of the team live in a different city however we use video conference calls to communicate with each other.





COINCOMO Estimation:
13.63*120.0 = 1635.6 hr

Human Estimation:

- 6 team members at 10hrs/week for 24 weeks
- 1 DEN student at 3/hrs/week for 24 weeks
- 6*10*24 + 3*24 = 1512 hr

6. Iteration Plan

6.1 Plan

The first iteration addresses the highest risks and most value added winwin conditions for the team. During this iteration, the team will implement Order Placement, Managing Florist, Search, Flower Delivery, Tracking orders, and payment. The highest risk is the payment so the team will spend much of the time developing and testing this feature. These features are the core capabilities of the website which is a milestone for the project since these features are necessary

for the system to work. The front-end should be built on top this to insure that the system is fully functional.

The second iteration addresses features the client would like to have but are less of a risk compared to those in iteration 1. The team will implement Order pickup and Private messaging.

The third iteration addresses features that clients see as a low priority compared to the previous iterations. The team will implement an appointment scheduling feature. After this iteration, the front end should be updated to included these features.

6.1.1 Capabilities to be implemented

Table 13: Construction iteration capabilities to be implemented

ID	Capability	Description	Priority	Iteration
OC-1	Order Placement	The system allows customers to drag the flowers they choose into the shopping cart and delete the flowers from the shopping cart Corresponding user cases: UC-6, UC-7 Corresponding requirements: WC_3337, WC_3343, WC_3353	Must have	1
OC-2	Managing Florist Information	The system allows florists to create and manage their profile account. They can also upload and remove flowers on their page Corresponding user cases: UC-1, UC-4, UC-11, UC-12 Corresponding requirements: WC_3470, WC_3339	Must have	1
OC-3	Search Functionality	The system allows customer to search the flowers according to price, location and review Function. The vendors can name their own hashtag. Corresponding user cases: UC-5 Corresponding requirements:	Must have	1

		WC_3502, WC_3338		
OC-4	Flower Delivery	The system allows florists to deliver the flowers chosen by customers to the specific address Corresponding user cases: UC-9, UC-13 Corresponding requirements: WC_3353, WC_3352	Must have	1
OC-5	Order pick up	After preparing the flowers for customers, florists can notify customers to pick up their flowers Corresponding user cases: UC-7, UC-9, UC-13 Corresponding requirements: WC_3343, WC_3337	Should have	2
OC-6	Tracking Orders	The system is capable of tracking the vendors' process state of the orders and showing this information to the customer. The 3 states are ordered, processed, and delivered Corresponding user cases: UC-9, UC-13 Corresponding requirements: WC_3354, WC_3342	Must have	1
OC-7	Payment Function	The system is capable of making transactions between customers and vendors Corresponding user cases: UC-7 Corresponding requirements: WC_3349	Must have	1
OC-8	Order History	The system allows customers to check their order history so that they have a record of what they bought. And the system likewise allows florists to track their they have a record of their past	Must have	1

		transactions. Corresponding user cases: UC-8, UC-9 Corresponding requirements: WC_3359, WC_3358		
OC-9	Rating & Review	The system allows customers to rank and review the flowers they bought. Corresponding user cases: UC-12 Corresponding requirements: WC_3346, WC_3345	Must have	1
OC-10	Appointment Scheduling	The system allows customers to consult florists about flowers and relevant service. Corresponding user cases: Corresponding requirements: WC_3344	Should have	2
OC-11	Order Cancellation/ Confirmation	Because the situation of cancelling order after payment is complicated, we probably use policy between customers and florists to solve that. Corresponding user cases: Corresponding requirements: WC_3353	Should have	2
OC-12	Order Analytics	The system should allow customers to receive recommendations of products based on analytics. Corresponding user cases: Corresponding requirements: WC_3353	Could have	3
OC-13	Private Messaging	The system is capable of searching based on different categories as well as a hashtag function that vendors can name their own hashtag Corresponding user cases:	Could have	3

		UC-15, UC-16 Corresponding requirements: WC_3351		

6.1.2 Capabilities to be tested

Table 14: Construction iteration capabilities to be tested

ID	Description	Priority	Iteration
OC-1	The system allows customers to drag the flowers they choose into the shopping cart and delete the flowers from the shopping cart Corresponding user cases: UC-6, UC-7, UC-1 Corresponding requirements: WC_3337, WC_3343, WC_3353	Must have	1
OC-2	The system allows florists to create and manage their profile account. They can also upload and remove flowers on their page Corresponding user cases: UC-1, UC-4, UC-11, UC-12 Corresponding requirements: WC_3470, WC_3339	Must have	1
OC-3	The system allows customer to search the flowers according to price, location and review Function. The vendors can name their own hashtag. Corresponding user cases: UC-5 Corresponding requirements: WC_3502, WC_3338	Must have	1
OC-4	The system allows florists to deliver the flowers chosen by customers to the specific address Corresponding user cases: UC-9, UC-13	Must have	1

	Corresponding requirements: WC_3353, WC_3352		
OC-5	After preparing the flowers for customers, florists can notify customers to pick up their flowers Corresponding user cases: UC-7, UC-9, UC-13 Corresponding requirements: WC_3343, WC_3337	Should have	2
OC-6	The system is capable of tracking the vendors' process state of the orders and showing this information to the customer. The 3 states are ordered, processed, and delivered Corresponding user cases: UC-9, UC-13 Corresponding requirements: WC_3354, WC_3342	Must have	1
OC-7	The system is capable of making transactions between customers and vendors Corresponding user cases: UC-7 Corresponding requirements: WC_3349	Must have	1
OC-8	The system allows customers to consult florists about flowers and relevant service. Corresponding user cases: UC-15 Corresponding requirements: WC_3344	Could have	3
OC-9	The system is capable of searching based on different categories as well as a hashtag function that vendors can name their own hashtag Corresponding user cases: UC-15	Should have	2

	Corresponding requirements: WC_3351		

6.1.3 Capabilities not to be tested

In the first, second, and third iteration, all the capabilities will be tested at the end of each iteration.

6.1.4 CCD Preparation Plans

Jessica and Eder will be involved with the Core Capability Drive. With each iteration completed, the client will give the team feedback on the different features. After the third iteration, the clients will help the team with a site preparation dry run to make sure all winwin conditions are met. The client will distribute the software to selected vendors for beta testing and feedback. The team will modify the system based on this feedback. To mitigate risks, the team will review potential risks associated with the CCD with each iteration.

6.2 Iteration Assessment

6.2.1 Capabilities Implemented, Tested, and Results

Table 15: Capabilities implemented, tested, and results

ID	Capability	Test Case	Test Results	If fail, why?
OC-1	Order Placement	TC-03	Pass	
OC-2	Managing Customer/Florist Information	TC-01	Pass	
OC-3	Search Function	TC-02	Pass	
OC-4	Flower Delivery	TC-03	Pass	
OC-5	Order Pick-up	TC-03	Pass	
OC-6	Tracking Orders	TC-03	Pass	
OC-7	Payment Function	TC-03	Pass	
OC-8	Order History	TC-03	Pass	

OC-9	Review & Rating	TC-04	Pass	

6.2.2 Core Capabilities Drive-Through Results

There is a lot of cleanup work that has to be done on the product. It is confusing for the user when they input their data into the system. For example, it does not show correctly how to input the phone number, and when the user incorrectly inputs this information, it will give an error without notifying the user. There are also many broken links on product which need to be fixed. The client would also like to search not just by zip code but by occasion, prize, color. etc. The client would also like to see more search functionality on the homepage instead of the footer information on the bottom of the page. A major risk is that payment is still not implemented in the system yet and that could cause some problems with the other parts of the system. The client was overall impressed with the UI design of the website.

6.3 Adherence to Plan

There were quite a few deviations from the original iteration 1 plan. Because of these deviations from the original plan, it delayed the schedule of completing the features from iteration 2. It was decided that there were more features than the features on iteration 2 and iteration 3. Therefore, the more important features will be add to the schedule. The project is on budget and on time according to the new schedule. To avoid mistakes in the future, we should add comment blocks to the code to make it easier for any developer to continue with the project.

After each ARB session, the client was to add new features to the system. We try to accommodate the needs of the client by adding new features to the scope of the project however this leads to scope creep. The scope creep throughout the project really put stress on the team and caused us to delay the schedule. There were also many bugs in the system which caused some delays in the development towards the final months of the project.

We were able to complete 90% of the originally agreed on winwin conditions by the TTR ARB. The remaining time is being used to fix the bugs in the system and work on transition material to present to the client as we bring the project to a close. We are able to stick to the schedule by putting in additional hours.