

# Life Cycle Plan (LCP)

## Farm workers Safety app

### Team09

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12/02/16

# Version History

Date	Author	Version	Changes made	Rationale
10/12/16	Shobhit Agarwal	1.0	Created document from ICSM template, updated team roles and skill sections	Draft for the FCR ARB Submission
10/17/16	Basir Navab	1.1	Created skills, different tables	10/17/2016
11/26/16	Basir Navab	2.0	Updated some sections according to feedback from FCR ARB: - Updated artifacts to be delivered before DCR ARB.	For FCP package submission.
12/5/16	Basir Navab	2.1	Updating Cocomo cost drivers for different modulus do the whole part 6 and setting context	For FCP package submission.

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# 1. Introduction

## 1.1 Purpose of the LCP

The goal of this project is to provide for farmworker safety by identifying adverse heat conditions. The clients - Senator Dean Florez and his daughter Faith - had the vision to provide a feature that allows farmworkers to be notified of when they need to take a break when the temperature rises above 80°F. Also, advise the farmworkers by telling them what's good for them to wear on their workday, eat a night before their workday and educate them on their rights to work safety through a mobile app.

Currently no system exists. The farmworkers take a break only when their contractors ask them to. The contractors rely on a single temperature measuring device in the farm, which may or may not be present. There is no system in place to notify the farmworkers about the adverse heat conditions in the farm.

The objective is to use an application to send text based notifications to the farmworkers whenever the temperature at their registered farm location rises above a certain threshold. The farmer can update his farm location whenever he moves to a new farm.

The LCP will serve as a basis for controlling and monitoring this project's progress. It identifies the available personnel, the skills each of them possess and their availability to bring out the best in them for the project's benefit. This also serves as a proof to key stakeholders that major life cycle issues are known and have been thought of in advance.

## 1.2 Status of the LCP

The LCP is currently at version 1.1. This version reflects changes in the plan because of the re-defined project phase.

## 1.3 Assumptions

Conditions Necessary to Meet Plans, which, if not realized, would require re-negotiation.

- We have 15 weeks for the first part of the project.
- There are 6 people for this project plus 1 DEN student.
- The client will not change
- Minimum funding for purchasing some COTS

## 2. Milestones and Products

### 2.1 Overall Strategy

The team has been following the One Incremental Commitment Agile plan. Since no system exists already, we are building this from the scratch. For the strategy, we use ICSM NDI-intensive. One of the common cases for the ICSM is NDI-intensive which focuses mainly on the project for which more than 30% of end-user are provided by NDI such as COTs, open sources or web services.

#### **Description of Exploration Phase**

Duration: 09/07/2016 – 09/15/2016

Concept: Project Management, Win-Win Conditions Analysis with all stakeholders

Deliverables: Risk Defect Template, Client Interaction Report, Win Condition Report, Progress Reports, Meeting Reports

Milestones: Valuation Commitment review

Strategy: One Incremental Commitment development cycle

#### **Description of Valuations Phase**

Duration: 09/16/2016 – 10/09/2016

Concept: Project Management, Project Top Risk Prototype, Project Documentation

Deliverables: OCD, Feasibility analysis, initial life cycle planning, Use Case

Diagram, OOAD artifacts, Architecture Initial designs.

Milestones: Foundation Commitment Review

Strategy: One Incremental Commitment development cycle

#### **Description of Foundations Phase**

Duration: 10/10/2016 – 12/09/2016

Concept: Project Management, proactively maintaining Project Quality, Project Design and UX Engineering, Project Documentation

Deliverables: : Life Cycle Report, Feasibility Analysis enhanced, SSAD, Prototype, QFP, UI prototype, Wire Frames, Project UI Design and UX engineering, Working prototypes for each risk item.

Milestones: Development Commitment Review

Strategy: One Incremental Commitment development cycle

Duration: 01/09/2017 – 05/02/2017

Concept: Project Management, Development, Project Documentation, Testing, UAT, push to production and Project Transition

Deliverables: Final design, UI design, Deliverable product, maintenance report, project documentation, test cases and test report, user manual/guide.

Milestones: Test Readiness Review, As Built Package

Strategy: One Incremental Commitment development cycle

## 2.2 Project Deliverables

### 2.2.1 Exploration Phase

**Table 1: Exploration Phase**

Artifact	Due Date	Format	Medium
Win Condition Report	09/23/2016	.pdf file	Soft Copy
Client Interaction Report	09/08/2016	.pdf file	Soft Copy
Progress Report	Bi-weekly every Wednesday	.xlsx file	Soft Copy
Project Plan	Bi-weekly every Wednesday	.mpp file	Soft Copy
Risk & Defect	Bi-weekly every Wednesday	.xlsx file	Soft Copy

### 2.2.2 Valuation Phase

**Table 2: Valuation Phase**

Artifact	Due Date	Format	Medium
Top Risk Prototype	10/05/2016	.ppt file	Soft Copy
Progress Report	Bi-weekly every Wednesday	.xls file	Soft Copy
Project Plan	Bi-weekly every Wednesday	.mpp file	Soft Copy
Risk & Defect	Bi-weekly every Wednesday	.xls file	Soft Copy



## 2.2.3 Foundations Phase

**Table 3: Foundation Phase**

<b>Artifact</b>	<b>Due date</b>	<b>Format</b>	<b>Medium</b>
Foundations Commitment Package <ul style="list-style-type: none"> <li>• Operational Concept Description (OCD) All sections</li> <li>• Life Cycle Plan (LCP) Sections 1-5</li> <li>• Feasibility Evidence Description (FED) Sections 1-5</li> <li>• Prototype Description (PRO) All sections</li> <li>• System and Software Architecture Description (SSAD) Sections 1 &amp; 2</li> </ul>	10/20/14	.doc, .pdf	Soft copy
Client Feedback Form			
Draft Development Commitment Package	12/01/14		
Development Commitment Package	12/08/14		
Project Effort	Every Monday	Text	Bugzilla
Project Plan	Every other Wednesday	.mpp	Soft copy
Progress Report	Every other Wednesday	.xls	Soft copy

## 2.2.4 Foundations Phase

**Table 4: Artifact deliverable in Foundations Phase**

<b>Artifact</b>	<b>Due date</b>	<b>Format</b>	<b>Medium</b>
Rebase-lined Development Commitment Package	05/12/16	.doc, .pdf	Soft copy
Project Effort	Every Monday	Text	Bugzilla
Project Plan	Every other Wednesday	.mpp	Soft copy
Progress Report	Every other Wednesday	.xls	Soft copy

## 2.2.5 Description of Development Phase

Table 5: Artifact deliverable in Development Phase

Artifact	Due date	Format	Medium
Core Capabilities Drive-through Report	5/5/16	.doc, .pdf	Soft copy
Transition Readiness Review Package	5/15/16	.doc, .pdf	Soft copy
Project Effort	Every Monday	Text	Bugzilla
Project Plan	Every other Wednesday	.mpp	Soft copy
Progress Report	Every other Wednesday	.xls	Soft copy

## 2.2.6 Transition Phase

Table 6: Artifact deliverable in Development Phase

Artifact	Due date	Format	Medium
Project Archive	5/25/15	.zip	Soft copy
Project Effort	Every Monday	Text	Bugzilla
Project Plan	Every other Wednesday	.mpp	Soft copy
Progress Report	Every other Wednesday	.xls	Soft copy

## 3. Responsibilities

### 3.1 Responsibilities by Phase

**Table 7: Team member responsibilities - Developers**

Team Member	Exploration	Valuation	Foundation
Shobhit Agarwal Role: System Architect, Project Manager, Life Cycle Planner	Primary Responsibility: Point of contact for the client. Developing client interaction report and assisting in win-win negotiations.	Primary Responsibility: Developing biweekly packages, assisting in top risk prototype schema	Primary Responsibility: Organizing and leading client interaction meetings for system improvement. Identifying SSAD and LCP
Akshay Aggarwal Role: System Architect, Prototype Developer, Feasibility Evidence Analyst	Primary Responsibility: Creating diagrams and Analyses for the System Architect and also helping on developing the prototype	Primary Responsibility: Evaluation Criteria for Weather API.	Primary Responsibility: Analysis of COTS - NDI Alternatives
Viraj Sahai Role: Prototype Developer Feasibility Evidence Analyst	Primary Responsibility: Developing prototype and also doing Feasibility Evidence Analyst	Primary Responsibility: Developing prototype and also doing different costs and creating risks	Primary Responsibility: Creating software and hardware costs, benefit analysis and major risks
Marko Djularlio Role: Independent Verification and Validation, Quality Focal Point	Primary Responsibility: Main point is working in the Quality Focal Point	Primary Responsibility: Developing quality management plan	Primary Responsibility: Creating Traceability Matrix, Quality Management Strategy
Basir Navab Role: Life Cycle	Primary Responsibility: Life cycle planner, planning the project on the Microsoft project	Primary Responsibility: Updating Microsoft project plan.	Primary Responsibility: organizing and planning different works on the Microsoft project plan. Commutating with project

Planner, Project Manager	plan and helping project manager to manage the project		manager to help him in his tasks
Vahagen Sinanian  Role: Operational Concept Developer, NDI Analysis, Personas	Primary Responsibility: Creating Operational Concept Developing diagrams and also researching bout personas	Primary Responsibility: Creating personas and OCD diagrams	Primary Responsibility: Organizing personas based on the research and also gathering all of the OCD diagrams.
Juan Andrade  Role: Requirements Engineer, Prototype Developer, Operational Concept Developer	Primary Responsibility: Developing prototype and also doing operational concept	Primary Responsibility: Developing the prototype	Primary Responsibility: Developing prototype based on the win win negotiation session and existing docs

**Table 7: Team member responsibilities – Client**

Name	Mr. Dean Florez and Ms. Faith Florez
Role	Client
Exploration	Project vision
Valuation	Propose Win Conditions
Foundations	Review Team Presentation and give instant feedback

## 3.2 Skills

TEAM MEMBER NAME	ROLES	SKILLSET
<b>Shobhit Agarwal</b>	Project Manager Life Cycle Planner System Architect	Project Management, Jira, Agile Development, Web development, Database, Java, Analystical skills, Git
<b>Akshay Aggarwal</b>	System Architect Prototype Developer Feasibility Evidence Analyst	Web development, Java, SQL, NDI Analytics, Git
<b>Viraj Sahai</b>	Prototype Developer Feasibility Evidence Analyst	Web development, php laravel
<b>Vahagen Sinanian</b>	Operational Concept Developer	Web development, PHP,

	NDI Analysis Personas	Analytical skills, Git
<b>Juan Andrade</b>	Requirements Engineer Prototype Developer Operational Concept Developer	ASP.NET, C#, Databases, Git
<b>Basir Navab</b>	Life Cycle Planner Project Manager	C#, Java, PHP, Web development, Flash
<b>Marko Djuliarso</b>	Independent Verification and Validation Quality Focal Point	Tasting, quality management, C++

## 4. Approach

### 4.1 Monitoring and Control

The development team used Progress Report, Risk and Defect Report and Project plan in monitoring and controlling the project.

#### 4.1.1 Closed Loop Feedback Control

The team used Gmail, Google Drive, Basecamp and a common WhatsApp Group for all the communications.

The team met every Monday, Wednesday and Friday after class to work on project deliverables.

#### 4.1.2 Reviews

Each task is divided between different team members. This method gives the opportunity to each person to peer review the work of another team member to give feedback and make sure that the work is completed with high quality.

### 4.2 Methods, Tools and Facilities

Tools	Usage	Provider
ASP.net	For creating prototype, uses C#	Microsoft
mySQL	For backend database	Microsoft
Weather API	For getting the weather temperature	DarkSky “Hyperlocal”
SMS API	For sending SMS-based notifications to farmworkers	Nexmo
Microsoft Project	To create a project plan	Microsoft
Draw.IO	To create all diagrams used in our reports	Google
Winbook	Used to prioritize win conditions with the client	USC Center for Software Engineering
Skype	Communications with Off-Campus/DEN Student	Microsoft
Basecamp	Communication with the client and sharing files	Basecamp LLC

## Resources

- Estimated CSCI577a Effort: 7 team members at 14 hrs/week for 12 weeks
- Total estimated effort: unknown
- Budget information: The client will get the product free of cost, however charges to the development team can be applied for hosting the website.
- Project duration: 2 semesters
- Component modules in the development project:
- Programming language used: ASP.NET and COTS for getting weather forecast and sending notifications

**Table 8: SLOC analysis**

Name	Size SLOC	Cost	Staff	Effort	Schedule
Temperature Retrieval Module	100	\$0,00	0.1	0.58	2.45
Notification Module	100	\$0,00	0.2	1.22	3.12
Learning Module	2,000	\$0,00	0.5	2.87	4.34
Testing Module	1,200	\$0,00	0.3	1.87	3.98
Registration Module	2,00	\$0,00	0.4	2.21	4.65
<b>Total</b>	<b>5,400</b>	<b>\$0,00</b>		<b>8.75</b>	

**Table 9: COCOMOII Scale Driver**

Scale Driver	Value	Rationale
PREC	HIGH	The development team is familiar with Web Application and Mobile application development but need more information on the available APIs to integrate the text based notifications and fetching weather forecasts.
FLEX	HIGH	There are various COTS available to fetch the weather forecasts and send test based notifications. The system also does not hold any technological limitations and the development team can choose a technological stack of their choice.

RESL	NOMINAL	All critical risk items, schedule, budget and internal milestones are identified. All team members are well versed in the technological stack. Juan is an expert on ASP.NET framework and Akshay, Vahag worked on the NDI and cost analysis for each available COTS.
TEAM	VERY HIGH	Our client understands the development details and has given the developers freedom to choose the technological stack, NDIs, etc. that suits the best for the application. The client and the development team worked closely and got all their doubts cleared right from the first client meeting.
PMAT	NOMINAL	The development team follows ICSM guidelines, which the processes are defined and repeatable but the result may not be consistent, CMM Level 2.

**Table 10: COCOMOII Cost Drivers for point system**

Cost Driver	Value	Rationale
APEX	Low	Only a few members of the team have experience developing applications in the C# language
LTEX	Low	Only three members of the team are experienced developers

**Table 11: COCOMOII User Profile Module**

Cost Driver	Value	Rationale
RELY	High	The reliability of the system and it should be 24/7
DATA	High	For profile, we are storing a lot of data.
CPLX	High	The complexity of implementing the system.
RUSE	Low	profile will be tailored for this specific project, no reuse.
DOCU	Nominal	The documentation was developed for each phase of development.
TIME	Nominal	The system is expected to use less than 50% of the available execution time. And the response time.
STOR	Nominal	It will take up at < 80% use of available storage
PVOL	Nominal	In this project, we do not update the change frequently.
ACAP	High	The team cohesively works on gathering requirements and high level design of the system.
PCAP	Very	Most of our team members are capable. We have mix skills



	High	from 90th percentile to 55 percentiles so we are going to estimate in between = 75 percentile.
PCON	High	There is no personnel turnover.
APEX	High	The team is not fully familiar with the COTS/NDI that will be used in developing the system.
PLEX	Nominal	In the team, there are mixes of people familiar and unfamiliar with the platforms
TOOL	High	Basic life-cycle tools, moderately integrated.
SITE	Very Low	The DEN students are not present at the same site, but connection is achieved using Skype.

**Table 12: COCOMOII Notification Module**

<b>Cost Driver</b>	<b>Value</b>	<b>Rationale</b>
RELY	Very High	It's important that we need to make sure notification is going to be delivered.
DATA	Nominal	For notification, we store not a lot of data.
CPLX	Nominal	Straightforward nesting of structured. Simple GUI builder, straightforward database structure.
RUSE	Nominal	Reusable across project.
DOCU	Nominal	The documentation was developed for each phase of development.
TIME	Very high	The system is expected to use more than 80% of the available execution time.
STOR	Nominal	It will take up at most 50% use of available storage
PVOL	Nominal	In this project, we do not update the change frequently.
ACAP	Very High	The team cohesively works on gathering requirements and high level design of the system.
PCAP	High	Most of our team members are capable. We have mix skills from 90th percentile to 55 percentiles so we are going to estimate in between = 75 percentile.
PCON	Nominal	There is no personnel turnover.
APEX	High	The team is not fully familiar with the COTS/NDI that will be used in developing the system.
PLEX	High	In the team, there are mixes of people familiar and unfamiliar with the platforms
TOOL	High	Basic life-cycle tools, moderately integrated.
SITE	Very Low	The clients and the DEN students are not present at the same site, but connection is achieved using Skype.

**Table 13: COCOMOII Education Module**

<b>Cost Driver</b>	<b>Value</b>	<b>Rationale</b>
RELY	High	It is important because we need to educate farmworkers
DATA	Very High	We do not have much test data.
CPLX	Very High	Straightforward nesting of structured. Simple GUI builder, straightforward database structure.
RUSE	Nominal	Reusable across project.
DOCU	High	The documentation was developed for each phase of development.
TIME	Nominal	The system is expected to use 50% of the available execution time.
STOR	Very High	It will take up at most 40% use of available storage
PVOL	High	In this project, we do not update the change frequently.
ACAP	Very High	The team cohesively works on gathering requirements and high level design of the system.
PCAP	High	Most of our team members are capable. We have mix skills from 90th percentile to 55 percentiles so we are going to estimate in between = 75 percentile.
APEX	Very High	The team is not fully familiar with the COTS/NDI that will be used in developing the system.
PLEX	High	In the team, there are mixes of people familiar and unfamiliar with the platforms
TOOL	High	Basic life-cycle tools, moderately integrated.
SITE	Very low	The DEN students are not present at the same site, but connection is achieved using Skype.

**Table 14: COCOMOII Weather Module**

<b>Cost Driver</b>	<b>Value</b>	<b>Rationale</b>
RELY	Very High	We need to relay on the weather information because it plays very important roles
DATA	High	We do not have much test data.
CPLX	High	Mostly simple nesting. Some intermodal control.
RUSE	Very High	Reuse across project.
DOCU	Nominal	The documentation was developed for each phase of

		development.
TIME	Very High	The system is expected to use more than 80% of the available execution time.
STOR	Nominal	It will take up at most 50% use of available storage
PVOL	Low	In this project, we do not update the change frequently.
ACAP	Very High	The team cohesively works on gathering requirements and high level design of the system.
PCAP	Very High	Most of our team members are capable. We have mix skills from 90th percentile to 55 percentiles so we are going to estimate in between = 75 percentile.
PCON	Nominal	There is no personnel turnover.
APEX	High	The team is not fully familiar with the COTS/NDI that will be used in developing the system.
PLEX	High	In the team, there are mixes of people familiar and unfamiliar with the platforms
TOOL	Nominal	Basic life-cycle tools, moderately integrated.
SITE	Very Low	The clients and the DEN students are not present at the same site, but connection is achieved using Skype.

**Table 15: COCOMOII Farm Module**

<b>Cost Driver</b>	<b>Value</b>	<b>Rationale</b>
RELY	High	We need the information of the farms to manage the farmworkers.
DATA	High	We do not have much test data.
CPLX	Nominal	Mostly simple nesting. Some intermodals control.
RUSE	Low	Reuse across project.
DOCU	Nominal	The documentation was developed for each phase of development.
TIME	Nominal	The system is expected to use less than 50% of the available execution time.
STOR	High	It will take up at most 20% use of available storage
PVOL	Low	In this project, we do not update the change frequently.
ACAP	Very High	The team cohesively works on gathering requirements and high level design of the system.
PCAP	High	Most of our team members are capable. We have mix skills from 90th percentile to 55 percentiles so we are going to estimate in between = 75 percentile.
PCON	High	There is no personnel turnover.
APEX	High	The team is not fully familiar with the COTS/NDI that will be used in developing the system.

PLEX	Nominal	In the team, there are mixes of people familiar and unfamiliar with the platforms
TOOL	Nominal	Basic life-cycle tools, moderately integrated.
SITE	Very Low	The clients and the DEN students are not present at the same site, but connection is achieved using Skype.

X	Module Name	Module Size	LABOR Rate (\$/month)	EAF	Language	NOM Effort DEV	EST Effort DEV	PROD	COST	INST COST	Staff	RISK
	User Profile	S:1100	0.00	0.63	Non-Specified	3.8	2.4	460.0	0.00	0.0	0.3	0.0
	Notification	S:700	0.00	0.88	Non-Specified	2.4	2.1	331.0	0.00	0.0	0.2	0.3
	Education	S:2700	0.00	1.25	Non-Specified	9.3	11.7	231.0	0.00	0.0	1.3	0.0
	Weather	S:200	0.00	1.02	Non-Specified	0.7	0.7	283.8	0.00	0.0	0.1	0.3
	Farm	S:300	0.00	0.60	Non-Specified	1.0	0.6	484.6	0.00	0.0	0.1	0.0

  

	Estimated	Effort	Sched	PROD	COST	INST	Staff	RISK
Total Lines of Code:	5000	14.0	8.5	356.8	0.00	0.0	1.6	
Hours/PM:	152.00	17.5	9.1	285.4	0.00	0.0	1.9	0.7
		21.9	9.8	228.3	0.00	0.0	2.2	

Total number of week = 12 weeks (1 semesters).

One person can work 10 hours per week.

According to COINCOMO II;

The COCOMO II estimation effort calculated from the 5 modules gives an effort of **11.07 PM**

$$13.59 \text{ PM} * 152 \text{ hrs/PM} = 2065.68 \text{ hr to do the work}$$

$$10 \text{ hrs/week/person} * 12 \text{ weeks} = 120 \text{ hr/person}$$

$$2065.68 \text{ hrs} / 120 \text{ hrs} / \text{person} = 4.3 \text{ person}$$

We have 6 team members, so according to the pessimistic estimate we are good to go.

## 6. Iteration Plan

### 6.1 Plan

We divided construction iteration of the Development phase into two parts; the first one will be the core capabilities of the system are developed and the second this is because we want to make sure every feature of the project will be done perfectly.

## 6.1.1 Capabilities to be implemented

Table 16: Construction iteration capabilities to be implemented

Capability	Description	Priority	Iteration
OC-1	Temperature-based notification system	High	1
OC-2	Educational content system	High	1
OC-3	Accurate farmworker location	High	1
OC-4	Profile system	Medium	1

## 6.1.2 Capabilities to be tested

Table 17: Construction iteration capabilities to be tested

ID	Capability	Description	Priority	Iteration
1	OC-1	Temperature-based notification system	High	1
2	OC-2	Educational content system	High	1
3	OC-3	Accurate farmworker location	High	1
4	OC-4	Profile system	Medium	1

## 6.1.3 Capabilities not to be tested

We tested all the test cases.

## 6.1.4 CCD Preparation Plans

Our clients, Dean Florez and Faith Florez, will be involved in the CCD. The development team will prepare a system to be tested by the clients. The farmworkers will be asked to perform certain tasks in the system, such as create a profile and sending text to a specific number. The results, farmworkers experience and suggested improvements will be documented and followed-up by the team.

## 6.2 Iteration Assessment

### 6.2.1 Capabilities Implemented, Tested, and Results

Table 16: Capabilities implemented, tested, and results

Capability	Capability	Test Case	Test Results	If fail, why?
------------	------------	-----------	--------------	---------------

OC-1	Temperature-based notification system	TC-01: Send SMS	Pass	-
		TC-02: notifications Fetch temperature based on user's location	Pass	-
OC-2	Educational content system	TC-03 Upload new educational content	Pass	-
		TC-04 View educational content	Pass	-
		TC-05 Create a quiz	Pass	-
		TC-06 Take a quiz on educational content	Pass	-
OC-3	Accurate farmworker location	<i>TC-07 Update farmworker location via SMS</i>	Pass	-
		<i>TC-08 Farmworker self-update of location</i>	Pass	-
		<i>TC-09 Contractor/Farmer update of farmworker location</i>	Pass	-
OC-4	Profile system	<i>TC-10 Create user profile</i>	Pass	-
		<i>TC-11 Edit/Update user profile</i>	Pass	-
		<i>TC-12 Delete user profile</i>	Pass	-

## 6.2.2 Core Capabilities Drive-Through Results

### **Create account and log in**

The clients can open the application and sign up. They can enter their information such as first name, last name, phone number and other information.

### **Send text and choose the farm that they are working in it**

The clients generally are asked to send a code to a specific number to sign up for a farm and get notification based on the weather related to the farm.

### **Watch educational content**

The clients can go to their profile and watch educational movies related and they can take a test and quiz in their profile.

### **Emergency call**

The clients can call to the emergency numbers that is provided for them in the application.

### **Notifications**

The clients receive different notification based on the weather condition.

## 6.3 Adherence to Plan

The team has adhered to the plan of the project based on the time, schedule of the class, and met all requirements. The professor and TA's helped us to maintain a good quality project. All the deliverables and requirements that were promised to the client for this semester were met. After analyzing our metrics, we found that we were behind schedule at some point in the middle of the project. We put extra effort and are back on track to finish in time. Our team did an amazing job from beginning to the end of our semester.