

Life Cycle Plan (LCP)

Los Angeles Child Guidance Clinic Employment Opportunities Online Application System

Team # 10

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Version History

Date	Author	Version	Changes made	Rationale
09/20/11	AK	1.0	Recent activities have been recorded till date.	Initial draft during Exploration Phase.
10/7/11	AK	2.0	Edited section 3.3,skills added, Completed section 1-3.3	This version of LCP is a part of Core FCP
10/14/11	AK	3.0	Edited Section 3.3, changes in skills section. Completed section 4.	After getting response from graders, section 4 is required for Draft FC Package.
10/14/11	EH	3.1	Completed Section 5	This version of LCP is a part of Draft FC Package.
10/17/11	AK	3.1.2	All Sections Completed	This version is for ARB
10/24/11	AK	3.2	Major changes in Section 5 Identified Roles & Responsibilities for 577b Identified skills required for 577b Resolved bugs viz bug #5739, Bug # 5739,Bug # 4784,Bug#5782 reported by DEN student.	Based on the feedback given in ARB. This version of LCP is also a part of FC package.
11/21/11	AK	4.0	Changes in Section 3.2 and cost drivers as suggested in the graded documents for FCP	These changes are part of Draft DC Package
11/26/11	AK	4.1	Minor changes in Section 5 for DCR ARB	These changes are part for the documents to be submitted for DCR ARB
12/4/2011	AK	4.2	<ul style="list-style-type: none"> Changes in number of iterations for Development Phase. 577b schedule updated as per the Potential 577b schedule COTIPMO Estimates includes current iteration now which is 7th iteration. 	These changes are suggested after DCR ARB and are part of Development Commitment Package
12/11/11	AK	4.3	<ul style="list-style-type: none"> Minor change in Section 3.1 as reported by IIV&V. 	This change is a part of the Final Deliverable section for this semester.

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1. Introduction

1.1 Purpose of the LCP

A Life Cycle Plan is an artifact which is required during the development of a project. It will be helpful in the identification of life-cycle stakeholders like users, customers, developers and life-cycle process model like top level stages and increments. This document will answer the questions like: Why we have to do this project? What are the milestones and when to do that? It also tells us about the accomplishment criteria about the milestones. Who will be responsible for what and their qualifications? Which pattern should be selected like Architected Agile, Use single NDI, NDI Intensive and Services Intensive. All these things must be documented properly in the LCP.

1.2 Status of the LCP

This version 4.2 of LCP includes all the details required for Development Commitment Package.

1.3 Assumptions

- The duration of the project is 24 weeks, which are 12 weeks in Fall 2010 and 12 weeks in Spring 2012.
- There are six people working on the project including one DEN student.
- One of our team members is not sure about taking 577b in Spring 2012.
- Five out of six team members will not be taking this course.
- Team meeting with the client is scheduled once in a week.
- There will be two IOC documents in 577b which will be turned in after every two iterations.

2. Milestones and Products

2.1 Overall Strategy

The team will be following the Architected Agile pattern of the Incremental Commitment Spiral Model.

Exploration phase

Duration: 09/09/2011- 9/28/2011

Concept: In Exploration Phase the development team does the initial scoping, analyze the current system and also explore about the solution. The team has interacted with the clients three times including the client interaction meeting. The team has identified the basic requirements. The initial life cycle plan and feasibility evidence is ready. The Win book contains updated information about the sundry win conditions, issues and options.

Deliverables: Valuation Commitment Package

Milestone: Valuation Commitment Review

Strategy: One Incremental Commitment Cycle

Valuation phase

Duration: 9/29/2011-10/24/2011

Concept: During the Valuation phase the team has elaborated on the requirements gathered in the previous phase. The initial prototype has been defined by this time. The progress on the Life Cycle Plan, Feasibility Evidence Description and Operation concepts has been recorded. All the stakeholders were involved in addressing the possible solutions for the issues, agreed and potentially agreed on the issues.

Deliverables:

- Core Foundation Commitment Package
- Draft Foundation Commitment Package
- Foundation Commitment Package

Milestone: Foundation Commitment Review

Strategy: At least one Incremental Commitment Cycle

Foundation Phase

Duration: 10/25/2011-12/5/2011

Concept: The main tasks involved in this phase are proper planning, assessing project status, develop system architecture, managing project quality, prototyping. If any issue arises it must be discussed with the stake holders.

Deliverables:

- Draft Development Commitment Package
- Development Commitment Package

Milestone: Development Commitment Review

Strategy: One Incremental Commitment Cycle

Rebaselined Foundation Phase

Duration: 1/9/2012-2/15/2012

Concept: In this phase, the teams are reformed , project status is assessed along with all the documents. Team members are required to be prepared for the development phase by developing the iteration plan and identifying the development iteration. There should be proper planning for the test plan and project

Deliverables:

- Draft Rebase lined Development Commitment Package
- Rebase lined Development Commitment Package

Milestone: Rebase lined Development Commitment Review

Strategy: One Increment Commitment Cycle.

Development Phase

Duration: 2/16/2012-5/06/2012

Concept: In this phase the system architecture and the functionalities designed in the prototype will be implemented and the development takes place based on the architecture we have decided in the foundation phase. Coding and testing might take place at the same time and if the project is big enough it can be divided into two increments.

Deliverables: Working System, Operational Commitment Package, Transition Package, Core Capability drive-through report.

Milestones:

- Core Capability Drive through
- Transition Readiness Review
- Operation Commitment Review

Strategy: One Increment Commitment Cycle: Construction Iteration, Transition Iteration.

Development Phase- Construction Iteration 1**Duration:** 2/17/2012-2/22/2012

Concept: The system architecture and prototype designed are implemented. At first the assessment of Iteration plan takes place and then core capability drive through is performed to know whether developers are on right track and to determine whether client needs anything to ensure successful transition and operation. Then the system is implemented and testing is performed. In this iteration capabilities like collection of applicant data and searching applicants based on various criteria will be implemented. Also, the HR and IT department people will be able to add/edit job positions and delete the filled job post by the end of this iteration.

Deliverables:

Source code.

Milestones:

Working system covering all the capabilities for Iteration 1.

Strategy: Incremental Iteration

Development Phase- Construction Iteration 2**Duration:** 02/23/2012-03/13/2012

Concept: In this iteration the system should be able to generate EEOC form, generate reports in excel sheet format. The applicants would be able to apply for multiple job positions and update their profile. The important feature suggested by the clients which is security to the database and maintaining the confidentiality would be taken care of by the development team. All the core capabilities will be completed by the end of this iteration.

Deliverables:

Core Capability Drive through report.

Milestones:

Core Capability Drive through.

Strategy: Incremental Iteration

Development Phase- Construction Iteration 3**Duration:** 03/14/2012-03/30/2012

Concept: In this iteration the team will focus on all the “Should Haves “, “Could Have” and “Would Have” from here on. The system is expected to track multiple position applications of same applicant and allow them to re-apply for jobs. Also attachments need to be handled by this time.

Deliverables:

Source Code

Milestones:

Working system covering all the capabilities till Iteration 3.

Strategy: Incremental Iteration

Development Phase- Construction Iteration 4

Duration: 04/01/2012-04/16/2012

Concept: The system is expected to address all the remaining capabilities by the end of this iteration. In other words, capabilities like archiving of historical data for at least one year, status of the application, functionality for tracking applicants and employees and HR updating internal database would be implemented. After this iteration, the system should be ready for transition.

Deliverables:

- Draft Transition Readiness Package
- Transition Readiness Package

Milestones:

- Transition Readiness Review

Strategy: Incremental Iteration

Development Phase- Transition Iteration

Duration: 4/17/2012-5/06/2012

Concept: The support plan and transition plan is developed. The testing is performed by identifying test cases, test procedures and then the test results are recorded. Manual for users are prepared and then the transition of new system to client should be started.

Deliverables:

- Operation Commitment Package

Milestones:

- Operation Commitment Review

Strategy: Transition and 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	9/21/2011	.doc, .pdf	Soft copy
Valuation Commitment Package <ul style="list-style-type: none"> • Operational Concept Description (OCD) Early Section • Life Cycle Plan (LCP) Early Section • Feasibility Evidence Description (FED) Early Section 	09/28/2011	.doc, .pdf	Soft copy
Effort Report	Every Monday	Text	ER system
Project Plan	Every Wednesday	.mpp, .pdf	Soft copy
Progress Report	Every Wednesday	.xls	Soft copy

2.2.2 Valuation Phase

Table 2: Artifact deliverable in Valuation Phase

Artifact	Due date	Format	Medium
Evaluation of Valuation Commitment Package	10/3/11	.doc, and .pdf	Soft Copy
Response to Evaluation of VC Package	10/07/11		
Core Foundations Commitment Package <ul style="list-style-type: none"> • Operational Concept Description (OCD) 	10/7/11	.doc and .pdf	Soft Copy

<ul style="list-style-type: none"> • Initial Prototype (PRO). • System and Software Requirements Definition (SSRD) • System and Software Architecture Description (SSAD) • Life Cycle Plan (LCP) • Feasibility Evidence Description (FED) • Supporting Information Document (SID) 			
Evaluation of Core Foundations Commitment Package	10/10/11	.doc, .pdf	Soft Copy
Response to Evaluation of Core Foundation Commitment Package	10/14/11		
Draft Foundation Commitment Package <ul style="list-style-type: none"> • Operational Concept Description (OCD) • Initial Prototype (PRO). • System and Software Requirements Definition (SSRD) • System and Software Architecture Description (SSAD) • Life Cycle Plan (LCP) • Feasibility Evidence Description (FED) • Supporting Information Document (SID) 	10/14/11	.doc and .pdf	Soft Copy
Evaluation of Draft Foundation Commitment Package	10/17/2011	.doc, .pdf	Soft copy
Response to Evaluation of Draft Foundation Commitment Package	10/24/11		
Foundation Commitment Package	10/24/2011	.doc and .pdf	Soft Copy

<ul style="list-style-type: none"> • Operation Concept Description(OCD) • Prototype Report (PRO) • System and Software Requirements Definition (SSRD) • System and Software Architecture Description (SSAD) • Feasibility Evidence Description (FED) • Life Cycle Plan (LCP) • Supporting Information Document (SID) • Quality Management Plan (QMP) 			
Project Effort	Every Monday	Text	ER system
Project Plan	Every Wednesday	.mpp, .pdf	Soft copy
Progress Report	Every Wednesday	.xls	Soft copy

2.2.3 Foundations Phase

Table 3: Artifact deliverable in Foundations Phase

Artifact	Due date	Format	Medium
Evaluation of Foundation	10/31/11	.doc, .pdf	Soft Copy

Commitment Package			
Response to Evaluation of FC Package	11/07/11		
Draft Development Commitment Package <ul style="list-style-type: none"> • Operation Concept Description (OCD) • Prototype Report (PRO) • System and Software Requirements Definition (SSRD) • System and Software Architecture Description (SSAD) • Life Cycle Plan (LCP) • Feasibility Evidence Description(FED) • Supporting Information Document(SID) • Quality Management Plan(QMP) • *Transition Plan(TP) • *Iteration Plan(IP) • *Acceptance Test Plan and Cases(ATPC) (Note: * means Not available for Architected Agile during that time)	11/21/2011	.doc, .pdf	Soft Copy
Evaluation of Draft DC Package <ul style="list-style-type: none"> • Operation Concept Description 	11/28/2011	.doc, .pdf	Soft Copy

(OCD) <ul style="list-style-type: none"> • Prototype Report (PRO) • System and Software Requirements Definition (SSRD) • System and Software Architecture Description (SSAD) • Life Cycle Plan (LCP) • Feasibility Evidence Description(FED) • Supporting Information Document(SID) • Quality Management Plan(QMP) • Transition Plan(TP) • Iteration Plan(IP) • Acceptance Test Plan and Cases(ATPC) 			
Response to Evaluation of Draft Development Commitment Package	12/05/11		
Development Commitment Package	12/05/11	.doc and .pdf	Soft Copy
Evaluation of Development Commitment Package	12/12/11	.doc and .pdf	Soft Copy
Project Effort	Every Monday	Text	ER system
Project Plan	Every Wednesday	.mpp, .pdf	Soft Copy
Progress Report	Every Wednesday	.xls	Soft Copy

2.2.4 Rebaselined Foundation Phase

Table 4: Artifacts Deliverables in Rebaselined Foundation Phase

Artifact	Due date	Format	Medium
Draft Rebase lined Development Commitment Package (Draft RDC Package)	02/06/2012	.doc, .pdf	Soft copy
• Rebase lined Development Commitment Package (RDC Package)	02/22/2012	.doc, .pdf	Soft copy
Effort Report	Every Monday	Text	ER system
Project Plan	Every Wednesday	.mpp, .pdf	Soft copy
Progress Report	Every Wednesday	.xls	Soft copy

2.2.5 Development Phase

Table 5: Artifact deliverable in Development Phase

Artifact	Due date	Format	Medium
Evaluation of Rebase lined Development Commitment package.	2/27/2012	.doc, .pdf	Soft Copy
Initial Operational Capability Working Set #1 <ul style="list-style-type: none"> • Operation Concept Description(OCD) • System and Software Requirements Definition(SSRD) • System and Software Architecture Description(SSAD) & UML Models • Life Cycle Plan(LCP) • Feasibility Evidence 	03/30/2012	.doc, .pdf .ras	Soft Copy

Description(FED) <ul style="list-style-type: none"> • Supporting Information Description(SID) • Test Procedure and Results(TPR) • Iteration Assessment Report(IAR) • Quality Management Plan(QMP) • Test Plan and Cases(TPC) • Transition Plan(TP) • Iteration Plan(IP) 			
Core Capability Drive-Through Report	4/02/2012	.doc, .pdf	Soft Copy
Draft Transition Readiness Review Package <ul style="list-style-type: none"> • Transition Plan(TP) • User Manual(UM) • Support Plan(SP) • Training Materials(TM) • Regression Test Package(RTP) 	4/09/2012		
Support and Transition Set Package <ul style="list-style-type: none"> • Transition Plan(TP) • User Manual(UM) • Support Plan(SP) • Training Materials(TM) • Regression Test Package(RTP) 	4/16/2012	.doc, .pdf	Soft Copy
Evaluation Documents: <ul style="list-style-type: none"> • Eval of RDC Package • Eval – IOC#1 • Eval- TS Set 	<ul style="list-style-type: none"> • 2/27/2012 • 4/4/2012 • 4/23/2012 	.doc, .pdf	Soft Copy
Initial Operational Capability Working Set #2 and Support and Transition Set Package	4/27/2012	.doc, .pdf	Soft Copy
Progress Report	Every Wednesday	.xls	Soft copy
Project Plan	Every Wednesday	.mpp	Soft copy

3. Responsibilities

3.1 Project-specific stakeholder's responsibilities

Table 6: Project Specific Stakeholder's responsibilities

Stakeholder / Role	Name	Responsibilities
VP(Human Resources and Risk Management)	Teresa Leingang	<ul style="list-style-type: none"> • Attend Client Interaction Meeting. • Attend the FCR ARB session. • Attend Win Win sessions I & II. • Provide requirements. • Attend the DCR ARB session. • Collaborate with the development team. • Provides Feedback
IT Manager	Jerry Cantrell	<ul style="list-style-type: none"> • Provide technical information to the development team.. • Provide feedback and information on the ongoing development during meetings. • Attend FCR ARB and DCR ARB session
Maintainer (DBA/Developer)	Kyosik Lee	<ul style="list-style-type: none"> • Provide information and feedback, review and test the product. • Test and deploy the product in operational environment • Prepare operational environment. • Receive training for the new system, provide training for users. • Maintain the system
Developer/Builder	On Campus Team	<ul style="list-style-type: none"> • Gather project related information from the client. • Attend Win Win negotiation session I & II and weekly team meetings. • Develop prototype and plan the project accordingly. • Gather information about the current system, identify risks. • Discuss project's progress with the client during meeting. • Develop and project artifacts to meet the milestones. • Test the project • Develop the system based on the architecture and then perform transition on it. • Provide training for clients,
IIV & V	Off Campus	<ul style="list-style-type: none"> • Facilitate in Win Win negotiation • Ensure the quality of the project

	Student	<ul style="list-style-type: none"> Review and provide feedback to the development team. Plan and conduct testing.
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3.2 Responsibilities by Phase

Table 7: Stakeholder's Responsibilities in each phase

Team Member / Role	Primary / Secondary Responsibility				
	Exploration	Valuation	Foundations	Development- Construction Iteration	Development- Transition Iteration
Lawrence Aung Project Manager and Prototyper	Primary Responsibility(PM) 1) Project Management 2) Project's Progress record. Secondary Responsibility(PRO) 1) Analyze implementation difficulty. 2) Communicate to client & come up with mutually agreed milestones.	Primary Responsibility(PM) 1) Plan and Manage Project 2) Track progress of the project Secondary Responsibility(PRO) 1) Analyze and Prioritize Capabilities to Prototype. 2) Assess Prototype and Components	Primary Responsibility(PM) 1) Plan and Manage Project 2) Detail Project Plan Secondary Responsibility (PRO) 1) Develop Prototype 2) Prepare development & production environment		
Adarsh Khare Life Cycle Planner and	Primary Responsibility (LCP) 1) Identify Responsibilities and Skills	Primary Responsibility (LCP) 1) Project's Life Cycle plan	Primary Responsibility (LCP) 1) Life Cycle Plan		

System Architect	2) Detail Project Plan	Secondary Responsibility (SA) 1) Analyze the Proposed System. 2) Define Architecture	2) Detail Project Plan		
Eric Hu Feasibility Analyst and Life Cycle Planner	Primary Responsibility(FA) 1) Assess and Plans to Mitigate Risks 2) Provide Feasibility Description Secondary Responsibility(LCP) 1) Identify Responsibilities and Skills 2) Detail Project Plan	Primary Responsibility(FA) 1) Explore Alternatives 2) Feasibility Evidence Description Secondary Responsibility (LCP) 1) Life Cycle Plan	Primary Responsibility(FA) 1) Assess Feasibility Evidence 2) Modifies Feasibility Evidence description Secondary Responsibility (LCP) 1) Life Cycle Plan 2) Detail Project Plan		
Sonesh Suryawanshi Software Architect and Operation Concept	Primary Responsibility (OCE) 1) Analyze the current System.	Primary Responsibility 1) Analyze the Proposed System. 2) Define	Primary Responsibility(OC E) 1) Assess Operation Concept, status of the project.		

Engineer		Architecture			
Siva Soumya Mandadi Requirements Engineer and Prototyper	Primary Responsibility (PRO) 1) Analyze implementation difficulty. 2) Communicate to client & come up with mutually agreed milestones	Primary Responsibility (RE) 1) Establish New Operation Concept Secondary Responsibility 1) Analyze and Prioritize Capabilities to Prototype. 2) Assess Prototype and Components	Primary Responsibility(RE) 1) Responsible for System and Software Requirements Definition Secondary Responsibility 1) Develop Prototype 2) Prepare development & production environment		
Colin Crenshaw IIV & V	Primary Responsibility(Development Team) Identify skills and responsibilities,	Primary Responsibility(IIV & V) 1) Verify and Validate Work Products 2) Examine the work product, find defects and evaluate work product 3) Perform necessary rework	Primary Responsibility (IIV & V) 1) Verify and Validate Work Products 2) Examine the work product, find defects and evaluate work product 3) Perform necessary rework		
Lawrence Aung* (Builder And Trainer) *May or may not be available for				Primary Responsibilities(Builder) 1)Develop software components/modules	Primary Responsibilities (Builder) Transition the system Secondary Responsibilities

577b				2)Resolve implementation issues or defects 3)Integrate and Tailor components Secondary Responsibilities(Trainer) 1)Coordinate with clients to identify training schedule 2)Prepare training scenario and data set for the trainee 3)Perform training	(Trainer) 1)Training plan 2)Perform training
New Member (Tester and QFP)				Primary Responsibilities(Tester)) 1)Identify various test plans & test procedures 2)Perform Testing 3)Record Test Results Secondary Responsibilities (QFP) 1)Assess Quality Management Strategy 2)Identify Configuration Management 3)Identify Quality Management Strategy	Primary Responsibilities (Tester) 1) Help in transitioning the system Secondary Responsibilities (QFP) 1)Assess Quality Management Strategy
New Member (Trainer and Knowledge Contributor)				Primary Responsibilities(Trainer) 1)Coordinate with clients to identify training schedule 2)Prepare training scenario and	Primary Responsibilities (Trainer) 1)Training plan 2)Perform training Secondary Responsibilities (Knowledge

				<p>data set for the trainee</p> <p>3) Perform training</p> <p>Secondary Responsibilities (Knowledge Contributor)</p> <p>1) Responsible for negotiating artifacts like Win Condition, Issue, Option and Agreement.</p> <p>2) Responsible for identifying and engaging stakeholders, get tutorials on WikiWinWin.</p> <p>2) Responsible for setting up stakeholder kickoff meeting and defining terminologies and requirements related information.</p> <p>3) Modify WikiWinWin report</p> <p>3) Responsible for continuous refinement of modified Win conditions ,new or changed issues, options, change of agreement etc</p>	<p>Contributor)</p> <p>Transition the system</p>
New Member (Quality Focal Point and Tester)				<p>Primary Responsibilities (QFP)</p> <p>1) Assess Quality Management Strategy</p> <p>2) Identify Configuration</p>	<p>Primary Responsibilities (QFP)</p> <p>1) Assess Quality Management Strategy</p> <p>Secondary Responsibilities</p>

				Management 3)Identify Quality Management Strategy Secondary Responsibilities (Tester) 1)Identify various test plans & test procedures 2)Perform Testing 3)Record Test Results	(Tester) 1) Help in transitioning the system
New Member (UML Modeler And Project Manager)				Primary Responsibilities 1) Provide a short description of system being developed and then define system context in the form of a UML Class diagram showing the actors. 2) Use case processes must be defined with one or more UML Use Case diagrams showing the interaction between actors and system 3) Define technology independent architecture that won't contain specific hardware platforms, programming languages etc Secondary Responsibilities	Primary Responsibilities 1)Help in transitioning the system Secondary Responsibilities 1) Plan and Manage Project 2) Detail Project Plan

				<p>s</p> <ol style="list-style-type: none"> 1) Plan and Manage Project 2) Detail Project Plan 3) Record Project Progress 	
New Member (Builder and Shaper)				<p>Primary Responsibilities (Builder)</p> <ol style="list-style-type: none"> 1) Develop software components/modules 2) Resolve implementation issues or defects 3) Integrate and Tailor components <p>Secondary Responsibilities (Shaper)</p> <ol style="list-style-type: none"> 1) As a critical success factor, shaper must focus on identifying business opportunities. 2) In Wiki-base requirements Shapers must express their ideas, moderate the 	<p>Responsibilities (Builder & Shaper)</p> <p>Transition the System</p>

				negotiation process and help to shape stakeholder's input. 3) By focusing on similarity and discrepancy among win conditions, the shaper helps focus negotiation towards reaching agreements.	
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3.3 Skills

Table 8: Team Members Skills (For 577a)

Team members	Role	Skills
Lawrence Aung	Project Manager	<ul style="list-style-type: none"> • Project Management like organization, decision making & Planning Skills • Communication Skills and Interpersonal Skills • Presentation Skills • Technical Skills like C/C++ ,C# and Python.
Adarsh Khare	Life Cycle Planner	<ul style="list-style-type: none"> • Project Coordination • Technical skills like Perl, C, C#, SQL. • Schedule and resource management.

		<ul style="list-style-type: none"> • Plan and manages the life cycle.
Eric Hu	Feasibility Analyst	<ul style="list-style-type: none"> • Organizational and analytical skills • Proficient in numerical calculations • Ability to assess risks and mitigate them • Technical skills like Java, XML and HTML.
Siva Soumya Mandadi	Requirements Engineer	<ul style="list-style-type: none"> • Interpersonal and Communication skills. • Ability to capture client's requirements. • Technical skills like C, C#, Java. • Organizational Skills
Sonesh Suryawanshi	System Architect	<ul style="list-style-type: none"> • UML Modeling Skills • Strong Communication skills (written, verbal, presentation) • Good Design Skills • Technical skills like C,C++, ASP.NET.
Colin Crenshaw	IIV & V	<ul style="list-style-type: none"> • Communication Skills • Negotiation Skills • Defect Tracking • Consultation skills • Version control expertise • Technical Skills like C,C++,C#, and .NET

Table 9: Team Member Roles and Skills (For 577b)

Team Members	Role	Skills
Lawrence Aung [*] *May or may not be available for 577b.	Builder /Developer	<ul style="list-style-type: none"> • Technical skills like ASP.NET, PHP and MySQL • Communication & analytical skills • Ability to fix defects • Ability to tailor components and transition the system Ability to produce technical documentation
New Member	Tester /Developer	<ul style="list-style-type: none"> • Technical skills like ASP.NET, PHP and MySQL • Ability to plan, build and perform test cases • Analytical skills • Communication skills
New Member	Trainer /Developer	<ul style="list-style-type: none"> • Technical skills like ASP.NET, PHP and MySQL • Training skills • Communication & planning skills
New Member	Knowledge Contributor / Shaper	<ul style="list-style-type: none"> • Technical skills like ASP.NET, PHP and MySQL • Negotiation skills • Communication skills

		<ul style="list-style-type: none"> • Analytical skills • Conflict management skills
New Member	UML Modeler/Developer	<ul style="list-style-type: none"> • Ability to model the system • UML Modeling, syntax and rules • Interpersonal and Communication skills • Technical skills like ASP.NET, PHP and MySQL
New Member	Quality Focal Point/Developer	<ul style="list-style-type: none"> • Technical skills like ASP.NET, PHP and MySQL • Quality Evaluation Skills • Interpersonal and Communication skills • Project Coordination

4. Approach

4.1 Monitoring and Control

1) **Progress Report:** The Project Manager submits the progress report at the start of every week. This helps us in checking whether we are heading towards right direction or not, whether we are able to complete our goals on time or not.

2) **Project Plan:** Proper project planning is done during several team meetings and meeting with the client once in a week. The project manager records every week's project plan in an artifact called Project Plan.

3) **Artifacts Reviewing:** At every milestone, all the artifacts are reviewed among the on campus team members and with the help of IIV & V.

4.1.1 Closed Loop Feedback Control

All the team members are active as far as communication among each other is concerned. Every team member is highly responsive to emails and phone calls. We organize team meetings every week. The team meetings are flexible as far as time is concerned which usually depends on the class hours of every team member.

4.1.2 Reviews

Reviewing team's work frequently is an important part of our project. The following are the ways of reviewing team's work:

1) **Peer Review:** The team meeting is organized every week and during that every team member discuss about the work done in the past. Sometime this is done through emails where every team member forwards his/her document for further review to every other team members and then everyone comments on the work and suggests if there are some changes required.

2) **Client Review:** The meeting with client is scheduled every week, mostly on Fridays. During this meeting the progress of project is discussed.

3) **IIV & V Review:** The IIV & V reviews each and every document and then report bugs if found through bugzilla and then the necessary corrections are made by the team members who have been assigned those bugs.

- 4) **CS577a Staff Review:** At every milestone the TA's review the documents and mention the changes required.

4.2 Methods, Tools and Facilities

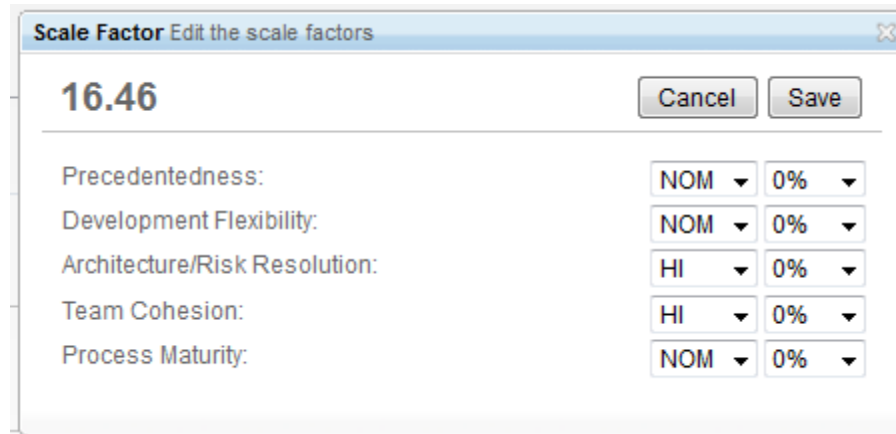
Table 10: Method, Tools and Facilities

Tools	Usage	Provider
COCOMO II (Version 2000.3)	This tool is helpful in cost estimation.	USC
COTIPMO Tool	This tool is also useful in Cost Estimation	USC
Bugzilla	Mainly used by IIV & V to report the bugs in the artifacts.	CSC
WinBook	The win conditions are identified and written on the win book followed by the negotiation with the clients and team members.	USC
Rational Software Modeler	This tool helps in creating UML models specifically by software architect.	IBM
Microsoft Project Plan	Project plan is build using this tool.	Microsoft
iCard and USC Effort	Used for the effort report submission of every team member.	USC

5. Resources

Table 11: COTIPMOII Scale Driver – Dominant for all Modules

Scale Driver	Value	Rationale
PREC	NOM	Members of the Development Team have seen similar types of job application/database schematics before and have an idea of how they work, but have not yet built one on their own.
FLEX	NOM	There is a generous amount of time and money given for the project (considering its size). Relatively strict requirements on the appearance and format of the application forms and database.
RESL	HI	Since the team is following ICM, we are required to perform risk resolution. Lot of risk management is involved. And as far as the architecture with which team is dealing with it is not very complex.
TEAM	Hi	On campus team meets with the clients every week mostly on Friday. The development team is also cooperating well via team meetings, email
PMAT	NOM	Set according to CSCI577 class standards. The development team follows ICM guidelines, which is compatible to CMMI level 2 maturity level

Figure 1: Scale Factors for all the modules

Scale Factor Edit the scale factors

16.46

Cancel Save

Precedentedness:	NOM	0%
Development Flexibility:	NOM	0%
Architecture/Risk Resolution:	HI	0%
Team Cohesion:	HI	0%
Process Maturity:	NOM	0%

Table 12: COTIPMO Cost Drivers for Authentication Module

Cost Driver	Value	Rationale
RELY	NOM	Minor inconvenience for users if website is temporarily down; some time loss, possible applicant loss, no risk of life loss.
DATA	NOM	The way DATA is calculated is by testing the database. To be able to come up with the data estimate it needs to be tested on the database by creating a test data. Right now for 577a projects the DATA value is not higher than nominal.
DOCU	NOM	Not much detail will be included as compared with other two modules.
CPLX	VLo	The authentication module's features follows simple format which are easy from the development point of view.
RUSE	Lo	Self-developed code, unlikely to be used elsewhere in the client's facilities
TIME	NOM	This module is not going to take much time as far as execution time is concerned.
STOR	NOM	The authentication module is not expected to take up large space.
PVOL	NOM	Since the team is dealing with a web based system the platform volatility is not going to change frequently like every month or so.
PCAP	Hi	Most of the team members are comfortable with authentication module since some of have already created such type of module before.

PCON	VLo	Personnel capability is low as 5 out of 6 team members are expected to leave after this semester and the rest one is still unsure about it.
APEX	Lo	The team does not have any prior experience in developing such type of system.
LTEX	NOM	About half the team knows MySQL and few knows PHP.
PLEX	NOM	Not all the developers in the team are familiar with the language or tools required such as MySQL, PHP etc but the team can complete this module easily.
TOOL	NOM	The form will have a simple login, log out and retrieve password feature. Everything will be coded manually, from scratch by the development team.
ACAP	NOM	Some of the analysts in the team have prior experience and hence overall, the team has good analysis and design capabilities, ability to communicate and cooperate.
SITE	Hi	Most of the development team members are located within the two miles radius. The clients are located within 0.5 mile. There is a face to face meeting with the client every week at client's location.
SCED	NOM	Since the schedule of the project we are doing is fixed There is a one year timeline for the project.

Figure 2: Cost Drivers for Authentication Module

Effort Adjust Factors ✕

0.81 Cancel Save

Product:	RELY NOM ▼ 0% ▼	DATA NOM ▼ 0% ▼	DOCU NOM ▼ 0% ▼	CPLX VLO ▼ 0% ▼	RUSE LO ▼ 0% ▼
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Platform:	TIME NOM ▼ 0% ▼	STOR NOM ▼ 0% ▼	PVOL NOM ▼ 0% ▼
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Personnel:	ACAP NOM ▼ 0% ▼	PCAP HI ▼ 0% ▼	PCON VLO ▼ 0% ▼	APEX LO ▼ 0% ▼	PLEX NOM ▼ 0% ▼	LTEX NOM ▼ 0% ▼
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Project:	TOOL NOM ▼ 0% ▼	SITE HI ▼ 0% ▼	SCED NOM ▼ 0% ▼
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Table 13: COTIPMO Cost Driver – Job listing Module

Cost Driver	Value	Rationale
RELY	NOM	Minor inconvenience for users if website is temporarily down; some time loss, possible applicant loss, no risk of life loss.
DATA	NOM	The way DATA is calculated is by testing the database. To be able to come up with the data estimate it needs to be tested on the database by creating a test data. Right now for 577a projects the DATA value is not expected to be higher than nominal.
DOCU	NOM	This details will be documented which will be done parallel to the project's progress. So far the documentation is right sized to the life-cycle needs.
CPLX	VLo	The Job listing features follows simple format which are easy to use for any novice user.
RUSE	Lo	Self-developed code, unlikely to be used elsewhere in the client's facilities
TIME	NOM	This module is not going to take much time as far as execution time is concerned.
STOR	NOM	The web site is not expected to take up large space.
PVOL	NOM	Since the team is dealing with a web based system the platform volatility is not going to change frequently like every month or so.
ACAP	NOM	Some of the analysts in the team have prior experience and hence overall, the team has good analysis and design capabilities, ability to communicate and cooperate.

PCAP	NOM	Not all team members have good programming skills required for the job listing module to complete but since they have seen this type of module, team members are somewhat comfortable
PCON	VLo	Personnel capability is low as 5 out of 6 team members are expected to leave after this semester and the remaining one is unsure about it.
APEX	Lo	The team does not have any prior experience in developing such type of system although they have seen such type of application before.
LTEX	NOM	About half the team knows MySQL and few knows PHP.
PLEX	NOM	Not all the developers on the team are familiar with the language or tools required such as MySQL and PHP.
TOOL	NOM	Each and everything will be coded manually, from scratch by the development team.
SITE	Hi	Most of the development team members are located within the two miles radius. The clients are located within 0.5 mile. There is a face to face meeting with the client every week at client's location.
SCED	NOM	Since the schedule of the project we are doing is fixed There is a one year timeline for the project.

Figure 3: Cost Drivers for Job Listing Module

Effort Adjust Factors

0.92

Cancel Save

Product:	RELY NOM 0%	DATA NOM 0%	DOCU NOM 0%	CPLX VLO 0%	RUSE LO 0%	
Platform:	TIME NOM 0%	STOR NOM 0%	PVOL NOM 0%			
Personnel:	ACAP NOM 0%	PCAP NOM 0%	PCON VLO 0%	APEX LO 0%	PLEX NOM 0%	LTEX NOM 0%
Project:	TOOL NOM 0%	SITE HI 0%	SCED NOM 0%			

Table 14: COTIPMO Cost Driver – Recruitment Module

Cost Driver	Value	Rationale
RELY	NOM	Minor inconvenience for users if website is temporarily down; some time loss, possible applicant loss, no risk of life loss.
DATA	NOM	The way DATA is calculated is by testing the database. To be able to come up with the data estimate it needs to be tested on the database by creating a test data. Right now for 577a projects the DATA value is not higher than nominal.
DOCU	NOM	This module contains lot of things which are required to be documented which will be done parallel to the project's progress. Details of the form and its contents will be extensively documented. The documentation is right sized to the life-cycle needs.
CPLX	VLo	The Recruitment module follows standard job application format not unlike many other application forms.
RUSE	Lo	Self-developed code, unlikely to be used elsewhere in the client's facilities
TIME	NOM	Time constraints for the system should be within reasonable limits, ie read/write from and to database, loading web pages, etc. The system is expected to use 50-60% of execution time for this module.
STOR	NOM	The web site is not expected to take up lots of space.
PVOL	NOM	Since the team is dealing with a web based system the platform volatility is not going to change frequently like

		every month or so.
ACAP	NOM	Some of the analysts in the team have prior experience and hence overall, the team has good analysis and design capabilities, ability to communicate and cooperate.
PCAP	NOM	Not all team members have good programming skills required for the recruitment module to complete.
PCON	VLo	Personnel capability is low as 5 out of 6 team members are expected to leave after this semester and the remaining one is still unsure about it.
APEX	Lo	The team does not have any prior experience in developing such type of system although they have seen such type of application before.
LTEX	NOM	About half the team knows .Net, ASP, and SQL.
PLEX	NOM	Not all the developers on the team are familiar with the language or tools required such as MySQL and PHP.
TOOL	Lo	Each and everything will be coded manually, from scratch.
SITE	Hi	Most of the development team members are located within the two miles radius. The clients are located within 0.5 mile. There is a face to face meeting with the client every week at client's location.
SCED	NOM	Since the schedule of the project we are doing is fixed There is a one year timeline for the project.

Figure 4: Cost Drivers for Recruitment Module

Effort Adjust Factors ✕

0.92 Cancel Save

Product:	RELY NOM ▼ 0% ▼	DATA NOM ▼ 0% ▼	DOCU NOM ▼ 0% ▼	CPLX VLO ▼ 0% ▼	RUSE LO ▼ 0% ▼	
Platform:	TIME NOM ▼ 0% ▼	STOR NOM ▼ 0% ▼	PVOL NOM ▼ 0% ▼			
Personnel:	ACAP NOM ▼ 0% ▼	PCAP NOM ▼ 0% ▼	PCON VLO ▼ 0% ▼	APEX LO ▼ 0% ▼	PLEX NOM ▼ 0% ▼	LTEX NOM ▼ 0% ▼
Project:	TOOL NOM ▼ 0% ▼	SITE HI ▼ 0% ▼	SCED NOM ▼ 0% ▼			

**Figure 5 COTIPMO Estimated for all modules
(Seventh Iteration)**

Iteration Details											
Iteration #:	7								Ballot Status: Closed		
Milestone?	<input type="checkbox"/>										
Start date:	11/30/1911										
End date:	12/7/1911										
Description:	Seventh Iteration go !										
Schedule:	NOM 0%										
Scale Factor:	16.46 Set										
Total PM:	11.14										
Total Hours:	1693 hrs										

Software Modules												Add Module
#	Name	Total SLOC	REVL	Adj. SLOC	EAF	PM	Equiv. Effort	% Developed	% Tested	% Integrated	Actions	
1	Authentication Module	619	5 %	650	0.81	Set	1.71	260 hrs	95 %	0 %	0 %	/ X
2	Recruitment Module	1750	25 %	2188	0.92	Set	6.62	1006 hrs	40 %	0 %	0 %	/ X
3	Job Listing Module	1241	10 %	1365	0.92	Set	4.09	622 hrs	70 %	0 %	0 %	/ X

COTIPMO Estimation Results:

It is clear from the above figure that the value of Total PM is 11.14. This means the total number of team members required to complete the project is $(11.14/1.67=6.67)$ which is approximately equal to 7 team members. But presently we are only 6 member team. This means that it will be difficult to complete the project within 24 weeks with 6 team members. The solution to this problem would be to reduce the project scope. We need to discuss with the clients about some requirements and need to reduce the complexity of the project so that the project can be completed in 24 weeks.