Life Cycle Plan (LCP)

Go Grrrls App

Team #03

Sl. No.	Team Member	Roles		
1	Anurag Tiwari	Prototyper/Implementer/Software		
		Architect		
2	Aravind Bhimarasetty	Operational Concept Engineer/		
		Implementer		
3	David Tasky (Off-campus)	IIV & V/ Quality Focal Point		
4	Jeevan Byappa Reddy	Life Cycle Planner/ Implementer		
5	Pooja Doizode Raghavendra Rao	Project Manager/ UML Modeler		
6	Sudhishna Sendhivelan	Requirements Engineer/ Implementer		
7	Zhao Shi	Feasibility Analyst/ Builder		

12/04/2016

Version History

Date	Author	Version	Changes made	Rationale
10/10/16	Jeevan	1.0	• Original template for use with Gogrrrls v1.0	• Initial draft for use with GoGrrrls v1.0
10/17/16	Jeevan	1.1	• Modified Section 2.1 and 2.2	Made change based on FCR ARB feedback
12/04/16	Jeevan	2.0	• Section 6 added	Made changes for DC Package

Table of Contents

Life Cycle Plan (LCP)	
Version History	
Table of Tables	
Table of Figures Error!	Bookmark not defined.
1. Introduction	1
1.1. Purpose of the LCP	1
1.2. Status of the LCP	1
1.3. Assumptions	1
2. Milestones and Products	2
2.1. Overall Strategy	2
2.2. Project Deliverables	3
2.2.1. Exploration Phase	
2.2.2. Valuation Phase	
2.2.3. Foundations Phase	
3. Responsibilities	
3.1. Project-specific stakeholder's responsibilities	6
3.2. Responsibilities by Phase	7
3.3. Skills	
4. Approach	14
4.1. Monitoring and Control	14
4.1.1. Closed Loop Feedback Control	
4.1.2. Reviews	
4.2. Methods, Tools and Facilities	
5. Resources	
6. Iteration Plan	
6.1.1 Capabilities to be implemented	18
6.1.2 Capabilities to be tested	19
6.1.3 Capabilities not to be tested	20
6.1.4 CCD Preparation Plans	20
6.2 Iteration Assessment.	19
6.2.1 Capabilities Implemented, Tested, and Results	21
6.2.2 Core Capabilities Drive-Through Results	
6.3 Adharanca to Plan	22

Table of Tables

Cable 1: Artifacts Deliverables in Exploration Phase
Cable 2: Artifact deliverable in Valuation Phase
Cable 3: Artifact deliverable in Foundation Phase.
Sable 4: Artifact deliverable in Development Phase
Cable 5: Stakeholder's Responsibilities in each phase
Table 6: Team Members, Roles and Skills
Table 7: Methods Tools and Facilities
Table 8: Application Count: Screens
Table 9: Application Count: Reports
Table 10: Application Point Parameters
Table 11: Construction iteration capabilities to be implemented
Table 12: Capabilities to be tested
Table 13: Capabilities implemented, tested, and results

1. Introduction

1.1. Purpose of the LCP

The purpose of the LCP is to:

- Provide an overview of the plan for the project's development.
- Help in controlling and monitoring the progress of the project.
- It will serve as a record of progress over life cycle of the project.
- It helps in identifying the human resources, their skill set and their availability to work towards success of the project.
- Provide evidence to key stakeholders that major life cycle issues have been thought in advance

1.2. Status of the LCP

The LCP is currently at version 2.0. This version has been created for DC-ARB package.

1.3. Assumptions

- The duration of the project is to be completed in FALL 2016.
- There are 7 team members, 6 on-campus and 1 DEN student.
- All the team members will work on the project in FALL 2016.

2. Milestones and Products

2.1. Overall Strategy

The GoGrrrls app is following Architected Agile process because of the benefits of early verification and validation. This method also provides benefit of concurrent engineering. It has also adapted risk driven concepts from spiral model.

Exploration phase

Duration: 9/09/16 - 09/26/16

Concept: The GoGrrrls app has been developed from scratch to help girls make transition from middle school to high school. The idea behind this app is to help girls retain information and continue to engage with the program materials

Deliverables: Client Interaction Report, Win Conditions Report

Milestone: N/A

Strategy: One Incremental Commitment Cycle, Win-Win Negotiation Sessions.

Valuation phase

Duration: 09/26/2016 – 09/30/2016

Concept: Project operational concept, System and software Architecture, System and software requirements review. During this phase we prioritized the use cases based on high risk, we performed feasibility analysis and implemented the software prototype.

Deliverables: Prototype presentation **Milestone**: Top Risk Prototype

Strategy: One Incremental Commitment Cycle, Software Architecture review, Code

review **Foundations phase**

Duration: 10/01/2016 – 10/17/2016

Concept: Develop all the necessary features on top of the Top risk prototype which can be shown to the client to get quick feedback. Possibly have some girls who will use the app and respond to simplicity of the app. If certain features can be improved based on feed-back take the corresponding actions.

Deliverables: FC Package

Milestone: FC ARB Review & presentation **Strategy:** One Incremental Commitment Cycle

Development phase

Duration: 10/17/2016 – 12/02/2016

Concept: Develop all features on top of the prototype and add all the App content and begin testing and quality control. Review the app with client and IV&V team member and ensure that the App satisfies all the MVP features. Create documentation for the maintainers to maintain the app.

Deliverables: DC Package, Final Deliverables, Project Release, Close out Report

Milestone: DC Review

Strategy: Once Incremental Commitment Cycle

2.2. Project Deliverables

2.2.1. Exploration Phase

Table 1: Artifacts Deliverables in Exploration Phase

Artifact	Due Date	Format	Medium
Client Interaction Report	09/16/2016	.pdf file	Soft Copy
Win Condition Report	09/26/2016	.pdf file	Soft Copy
Progress Report	every alternate Wednesday	.xls file	Soft Copy
Project Plan	every alternate Wednesday	.mpp file	Soft Copy
Risk & Defect report	every alternate Wednesday	.xls file	Soft Copy

2.2.2. Valuation Phase

Table 2: Artifact deliverable in Valuation Phase

Artifact	Due Date	Format	Medium
Top Risk Prototype	09/30/2016	.ppt file	Soft Copy
Progress Report	every alternate Wednesday	.xls file	Soft Copy
Project Plan	every alternate Wednesday	.mpp file	Soft Copy
Risk & Defect	every alternate Wednesday	.xls file	Soft Copy

2.2.3. Foundations Phase

Table 3: Artifact deliverable in Foundation Phase

Artifact	Due Date	Format	Medium
FC Package- LCP, OCD, FED, SSAD, Prototype Details	10/17/2016	.pdf files, .doc files	Soft Copy
FCR ARB presentation	10/12/2016	.ppt file	Soft Copy
Progress Report	every alternate Wednesday	.xls file	Soft Copy
Project Plan	every alternate Wednesday	.mpp file	Soft Copy
Risk & Defect	every alternate Wednesday	.xls file	Soft Copy

2.2.4. Development Phase

Table 4: Artifact deliverable in Development Phase

Artifact	Due date	Format	Medium
DC package: Operational Concepts Document Prototype Document Software Architecture Document Life Cycle Plan Feasibility Evidence Document	12/05/16	Doc, pdf	Soft copy, team website
DCR ARB Presentation	12/02/2016	ppt	Soft copy, Team website
Project Plan	Bi Weekly	.mpp,	Soft copy, Team Website
Progress Report	BiWeekly	.xls	Soft copy, Team Website
Progress Report	Bi Weekly	.xlsx	Soft copy, Team Website
Technical Debt Report	Bi weekly	.xslx	Soft copy, Team Website
Project Release	12/07/16	IOS App	Deploy on Apple app store

3. Responsibilities

3.1. Project-specific stakeholder's responsibilities

The teenage girls are one of the important success critical stake holders for the GoGrrrls App. As teenage girls will be the end users for this App, after the prototype phase we have negotiated with the client to take feedback from the girls about the beta version of the app in the form of a questionnaire.

3.2. Responsibilities by Phase

Table 5: Stakeholder's Responsibilities in each phase

	Primary / Secondary Responsibility					
Team Member / Role	Exploration	Valuation	Foundations	Development- Construction Iteration	Development- Transition Iteration	
Name: Pooja Doizode Raghavendra Rao Role:Project Manager/UML modeler	Responsibility First point of contact for the client. Plan weekly activities and update bi- weekly progress report and project report Secondary Responsibility Divide the project into Modules. Explore the interactions between modules	Primary Responsibility Plan weekly activities and update bi-weekly progress report and project report Secondary Responsibility Evaluate the size of each module and explore the possibility if common there can be any common modules across the project.	Primary Responsibility Track the activities related to FCR ARB presentation and FCR ARB package. Plan weekly activities and update bi- weekly progress report and project report Secondary Responsibility Develop UML model of the class based XCODE project. Develop the use case diagram, class diagram, Sequence diagram and robustness diagram	Responsible to ensure that all the technical debts have been solved before delivering the app to the client. Also the point of contact for the client to give his feedback about the app and delegate the transition support work to the team.	Responsible for scheduling the final project review with the team before deploying the app on to app store	

Name: Anurag Tiwari Role: Prototyper, Software Architect	Primary Responsibility Explore the win-win requirements to check for all the infrastructure and resources required to build prototype Secondary Responsibility Create a basic software architecture document based on the win-win negotiation requirements	Primary Responsibility Analyze and prioritize capabilities, assess prototype design and components and build a high risk prototype. Secondary Responsibility Develop a detailed software design document based on the components identified from the high risk prototype document	Primary Responsibility Establish new design concept ,prepare for development / production. Secondary Responsibility Assist the implementers in understanding the software design document and release an incremental versions of the developmental items	Responsible for all the redesign of the software architecture suggested by the client as part of the Core capability drive presentation. He is also responsible to make sure that the developers are in sync with the software re architecture document to deliver the suggested changes	Responsible for submitting the info.plist to the maintenance team apple
---	--	---	--	--	---

Name: Aravind Bhimarasetty Role: Implementer, Operational Concept Engineer	Primary Responsibility Identify most appropriate process to be followed and help in identifying the software infrastructure and CTOS services needed for the project Secondary Responsibility Prepare the client interaction report and identify the main objectives of the project	Primary Responsibility Explore alternatives and provide conclusion and recommendation of the software design schema. Secondary Responsibility Analyze the proposed system and also the priorities of the project and help manager in the project plan.	Primary Responsibility Develop user manual and record individual project effort on terms of the developmental items of the project. Secondary Responsibility Prepare the operational concept descriptions and discuss it with the implementers for the developmental items.	Reviewed all the documents that are to be delivered to the client and is responsible for maintaining document quality	Responsible to ensure that the maintainers understand all the support documents
Name: David Tasky(off campus) Role: iiv&v , Quality focal point	Involved in winwin negotiation with the client and in initial phase of system design	Verify and validate initial prototypes	Develop detailed test plan and test cases for each use case of our app. Verify and validate all test cases to ensure that they meet win-win requirements	Responsible to provide the test plan document and test all the core capabilities before CCD	Executes all the black box testing before delivering the app to the client to ensure that App is free from bugs and has very good quality

Name: Jeevan Byappa reddy Role: Life cycle planner, Implementer Response Estimate project e and sche for both developn and also prototyp update b weekly r and defe report Seconda Response Identify appropri process t followed help in identifyi software infrastru and CTC services needed f project	Responsibility identify responsibilities and skills, provide process feasibility evidence ing update bi-week risk and defect report Secondary Responsibility Explore alternatives and provide conclusion and recommendation of the software design schema	Provide the detail project plan, develop support plan, develop transition plan dy update biweekly risk and defect report Secondary Responsibility Develop user manual and record	Responsible to design the maintenance and transition plan after the CCD presentation and also plan the Software development life cycle chart to ensure the completion of all the phases	Responsible for managing all the milestones to deploy the app on to the app store and to resolve any dependencies between team members to ensure that product is deployed on time
---	---	--	---	---

Sudhishna Sendhilvelan Responsibility Identify most appropriate Role: Implementer, Reqirements Engineer Identify most appropriate Followed and help in identifying the software infrastructure and CTOS services Ineeded for the project Secondary Responsibility Identify the requirements from the win-	Primary Responsibility Explore alternatives and provide conclusion and recommendation of the software design schema Secondary Responsibility Identify the high risk items based on win condition report and propose the use cases to be covered for the high risk prototype.	Primary Responsibility Develop user manual and record individual project effort on terms of the developmental items of the project. Secondary Responsibility Analyze the development plan and validate to check if the use cases are in line with the client requirements.	Responsible for preparing the user manual document which provides information like the software-hardware requirements, installations procedures, operational procedures and troubleshooting	Responsible to fix any sporadic bugs which might arise during the deployment on to the app store
---	--	--	---	--

Name: Zhao Shi Role: Builder, Feasibility analyst	Primary Responsibility Acquire NDI or NCS components as part of infrastructure required for the project after the win-win negotiation with the clients. Secondary Responsibility Involved in the win-win negotiations to identify all the use cases that might involve external COTS integration.	Primary Responsibility Preparing the feasibility evidence based on analysis of software ,ROI, COTS, risk assessment, and prepare a detail plan about the risks involved in the project and their category and also prepare detail plan to mitigate all the risks. Secondary Responsibility Fix defects during the initial prototype phase and also eliminate redundant components that increase build time.	Primary Responsibility Preparing the Feasibility Evidence document and check the inter- operability of all the COTS services used in the project. Secondary Responsibility Assist in preparing the build cycles for the project and also assist the testers with the automation tools to trigger builds for sanity testing and regression testing.	Responsible to develop the build cycle and automated build plan to test all the core capabilities and integration test cases.	Responsible for preparing the maintenance document to ensure good product support to the client. This document provides a step by step guide to be followed by the maintainer for all the maintenance aspects of the app

3.3. Skills

Table 6: Team Members, Roles and Skills

Team members	Role	Skills
Pooja Doizode Raghavendra Rao	Project Manager/UML modeler	Current skills: Java , Java script, Android development , web technologies Required skills: Visual paradigm, UML modeling
Anurag Tiwari	Prototyper, Software Architect	Current skills: Objective-C, Cocoapods, Django (Python), Java, Java script, Android development, web technologies Required skills: Swift,xcode
Aravind Bhimarasetty	Implementer, Operational Concept Engineer	Current skills: C,C++, MySQL Required skills: <i>Swift,xcode</i>
David Tasky(off campus)	iv&v , Quality focal point	Current skills: C,C++, MySQL Required skills: Swift, Swift test framework
Jeevan Byappa reddy	Life cycle planner, Implementer	Current skills: C,C++, MySQL Required skills: Swift,xcode
Sudhishna Sendhilvelan	Implementer, Requirements Engineer	Current skills: Java , Java script, Android development , web technologies, MYSQL Required skills: Swift,xcode
Zhao Shi	Builder, Feasibility analyst	Current skills: Java , Java script, Android development , web technologies, MYSQL Required skills: Swift,xcode

4. Approach

4.1. Monitoring and Control

The team uses Progress Report, Risk and Defect Report and Project plan in monitoring and controlling of project.

Team uses Git - version control system for software development and other version control tasks.

4.1.1. Closed Loop Feedback Control

The team uses "Whatsapp" group for quick chats and updates.

Documents, Diagrams and Charts done by each team member would be shared and reviewed by other team members via "E-mail alias group"

The team uses "slack" to take inputs from the client and seek clarifications to ensure that the project is in accordance with his expectations.

Documents, Diagrams and Charts done by each team member would be shared and reviewed by other team members and feedback on what can be improved is given.

4.1.2. Reviews

- The team meets once in the beginning of the week to prioritize the tasks to make sure deliverables are delivered on time.
- The team meets once a week after class for a quick sync-up to track the progress of all the project deliverables and assign more resources if we are behind the schedule.
- The team performs over the shoulder Code Reviews, where the developers present their code and the team collectively reviews and gives feedback about the code.
- Feedback is taken from client at regular intervals to make sure we are aligned with the client's expectation.

4.2. Methods, Tools and Facilities

Table 7: Methods Tools and Facilities

Tools	Usage	Provider
Jira	Used to create sprint user stories and features, estimate time and log work	Jira
Github	Used to version control source code and host it.	Github
Google Docs	Used to store presentation slides, and other documents for review (progress report, risk and defect report, project plan, etc.)	Google
XCODE	An IDE which is the center of the Apple development experience. Tightly integrated with the Cocoa and Cocoa Touch frameworks, Xcode is an incredibly productive environment for building apps for Mac, iPhone, iPad, Apple Watch, and Apple TV	Apple Inc.
Google Hangouts	Used for online team meetings as well as communication with DEN student	Google
Microsoft Word and Project Plan	Used to create documentation and project plan	Microsoft
Slack	Used as source for team communication with the client	Slack
WhatsApp	To quickly communicate with all the team members	Facebook Inc
WinBook	Used to prioritize the use cases which the product is to have by using the win conditions discussed during the client meetings and win-win negotiation sessions	USC Center for Software Engineering
Visual Paradigm	Used to create diagrams used for (Domain Model, Use Case Diagram, Robustness Diagram, Sequence Diagram, Class Diagram)	Visual paradigm
Microsoft Project	To create Project plans	Microsoft Inc.

5. Resources

Table 8: Application Count: Screens

Screen	Number of views	Number of source of data tables	Complexity level	Rationale
Home Screen	1	5	Nominal	It is easy to implement in general. Proper connections need to be made to other views
Chapter menu	1	7-8	Nominal	It is easy to implement in general. Proper connections need to be made to each chapter
Chapter view	2	1	Very high	It has to play an inline YouTube video and also proper connections to be made to Menu section and to enter the Quiz section
Quiz View	1	1	High	Multiple Choice Auto Loading Q&A with hints provided for each Question.

Table 9: Application Count: Reports

Report	Number of sections	Number of source of data tables	Complexity level	Rationale
Quiz Score	1	Depends on number of Questions in the chapter	Medium	Quiz score must be accurate to decide whether to proceed to next chapter or not

Table 10: Application Point Parameters

Parameter	Value	Rationale
Developer's Experience and Capability	Low	Only one out of Seven people have previous expertise with the technologies which we must use for the APP development
ICASE Maturity and Capability	Nom	The project has cleared the prototype phase and is in the intermediate stage of development i.e. mainly adding the APP content.

6. Iteration Plan

6.1 Plan

GoGrrls app is a one semester project. The iteration plan is intended to successfully deliver all the features of the App to the client. The iterations have been incremental which began with foundation steps of the project and ended by the DCR presentation. The foundation step of the project had a sub cycle focused on building the prototype which was ended by the Progress on Prototype iteration. This was followed by Core Capability Drive through where client tested all the core capabilities of the app agreed in the win book. This was marked with client feedback about the styling of the app. The final phase as part of the development commitment package is to handover the app to the client with all the necessary maintenance documents.

6.1.1 Capabilities to be implemented

The development commitment package is the final phase of the project in which we will deliver the app to the client, it is of utmost importance to make sure that all the necessary win conditions have been met.

Table 11: Construction iteration capabilities to be implemented

ID	Capability	Description	Priority	Iteration
<1>	Media Management	User should be able to play YouTube video and audio inline from within each chapter of the app.	HIGH	1
<2>	Content Management	User should be able to access all the chapters with in the app and return to home page from any chapter	HIGH	3
<3>	Content Management in Home Page	User should be able to see the girl bill of rights as part of the home page	MED	1
<4>	Quiz Management	Users should be able to assess themselves by taking quiz in a collaborative environment at the end of each chapter.	HIGH	2

<5>	Providing Hints for the Quiz	Users should be able to view the hints when they select wrong answer	MED	2
<6>	Social Media Sharing	Users should be able to share the YouTube videos of each chapter on social media platforms like (FaceBook,Google+,Twitter)	MED	3

6.1.2 Capabilities to be tested

Our final iteration is delivering the App to the client with all the core capabilities functioning and all the Win Win Conditions being satisfied. As part of this phase, our focus is to test the capabilities which involve user experience. However, the main responsibility in this phase is to deliver the app with minimal defects, as the client does not have a maintainer.

Table 9: Construction iteration capabilities to be tested

Table 12: Capabilities to be tested

ID	Capability	Description	Priority	Iteration
1	Full Functionality of the App on "Apple APP STORE"	As we did our development on XCODE and testing on XCODE simulator and few local IOS devices we must publish the app on APP store. In this publishing phase we have to test in such a way that APP functionality is preserved	HIGH	Transition iteration
2	Test Performance of the App	We need to make sure that the performance of the app is consistent in terms of (Power, CPU, network usage) and make sure that there are no significant delays in the app functionalities which affect will affect the user experience	HIGH	Transition iteration
3	Quality check on the content of the App	We need to make sure that text content of the app is grammatically correct and we must also ensure that styling of the app is in line with the client's design	HIGH	Transition iteration
4	Compatibility testing of the App	We need to make sure that the all features of the App associated with the external API packages are backward compatible to older IOS versions	MED	Transition iteration

6.1.3 Capabilities not to be tested

This being the final phase of the app all the core capabilities have been implemented. As part of core capability presentation our client tested each of the core capabilities and all the win win conditions have been satisfied. The focus in the transition iteration is successful deployment of the app in APP store and deliver all the maintenance documents to the client.

6.1.4 CCD Preparation Plans

- As part of the core capability drive through presentation we had prepared a list of use cases associated with each of the core capability. Client tested each of these use cases on an I-phone and gave us valuable feedback. The feedback was mostly related to the styling of the App like (text alignment, highlighting certain content of the text, padding of the slide bar, add some additional links for navigation etc). Based on this feedback we released multiple baseline versions of the app with quick time videos to make sure that App was in line with the client's vision.
- As part of transition iteration/ Development package review presentation we want to make sure that app is deployed on the APP store. Successful execution of all the core capability use cases after deployment.
- As Part of DCR review we will also deliver all the maintenance related documents for App maintenance and user centric documents like user manual. Our main aim is to deliver the App seamlessly to the client.

6.2 Iteration Assessment

6.2.1 Capabilities Implemented, Tested, and Results

Table 13: Capabilities implemented, tested, and results

ID	Capability	Test Case	Test Results	If fail, why?
1	Ensure that users can play the inline YouTube videos in each chapter	TC-01	Pass	
2	Ensure that the users can return to home page from any chapter	TC-02	Pass	
3	Ensure that users should be able to assess themselves by taking quiz at the end of each chapter	TC-03	Pass	
4	Ensure that users can see hints for correct answer in the quiz section of each chapter whenever they select wrong answer	TC-04	Pass	
5	Ensure that users can share the YouTube videos on Facebook, Twitter, Google+	TC-05	Pass	
6	Ensure that touch functionality associated with each of the buttons are completely functional	TC-06	Pass	
7	Verify the consistency of the app across different screen sizes and mobile devices	TC-07	Pass	
8	Verify the performance of the app (playing YouTube video) in low power mode	TC-08	Pass	

6.2.2 Core Capabilities Drive-Through Results

Client feedback that we received as part of the CCD presentation is as below:

Client feedback:

- GoGrrrls Inc. logo should be at the top of home scree.
- Client wanted to check the feasibility of sharing the video s of the chapter on Instagram.
- Better styling for the Quiz section with round edge corners for the options of the quiz and final scores of the quiz should be lined up and bold in font.
- Create a shortcut link to the chapter "Our experience & bodies" from the home page.
- Add colored bullet points wherever applicable in all the chapters.
- Client asked to check if we can fix the bug related to selecting multiple chapters at the same time on home page.
- Client suggested to use a high-resolution icon for the APP logo.

Action items on the client:

- Provide the team with High resolution logo to be used for the APP icon
- YouTube video titles to be changed to chapter names for easy mapping of chapter with the YouTube video.
- The CCD meeting was very successful as the team got useful insights in to the styling changes to be incorporated for the final baseline delivery of the APP and also the timeline for the deployment of the APP in the APP store.

6.3 Adherence to Plan

For our current iteration for the Development commitment package presentation and submission we are completely in line with the timelines. Our development team has made the App deployment ready for publishing the APP in to the APP store by clearing all the build cycle and regression cycle of the Apple APP maintenance team. Our test team has successfully tested all the test cases identified for the APP by tracing the test cases to their associated win conditions.

We stuck to the budget allotted by the client in terms of APP developers license and another technical infrastructure to be used for the APP.

There are no further development or test iterations for the app. we will be releasing a user manual, maintenance document and quick time maintenance video. The video would give a demo of each aspect of the APP maintenance that a maintainer must follow. Thereby it would be very easy for for a maintainer to maintain the app in future.