Life Cycle Plan (LCP)

Populic

Team No.4

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Version History

Date	Author	Version	Changes made	Rationale
10/08/17	Lin	1.0	Original template for use with Populic v1.0	Initial draft for use with Populic v1.0
10/11/17	Lin	1.1	Add COCOMO Estimation	Add scale factor according to COCOMO II

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1. Introduction

1.1 Purpose of the LCP

The Life Cycle Plan(LCP) document acts as a primary management tool to satisfy Populic's Project Requirement. The document includes all the artifacts of each phase, the team members' contribution at each stage and the milestone of five phases.

The Objectives of the Life Cycle Plan:

1. Aids in the construction and transitioning of the project.
2. Helps in maximizing the utility of people and resources throughout the life cycle of the project.
3. Will manage and control the progress of the project and ensure timely execution of each of the phases.
4. Ensure quality of project and feasibility through business-case analysis and resources available.

1.2 Status of the LCP

The status of the LCP is currently at version 1.1. The latest version that will be delivered to the client.

1.3 Assumptions

- The duration of the project is 16 weeks which is entire 2017 Fall Semester.

2. Milestones and Products

2.1 Overall Strategy

The Populic project is following Architected Agile process because there is no Non-Development Item or Web service that would fit to most of the core capabilities.

Exploration phase

Duration: 09/12/2017-09/22/2017
Concept: identify initial scope of the product through the analysis of previous version. Understand the application architecture and life-cycle plan through client meetings and win-win negotiation. Based on capability of each member decide the team roles.
Deliverables: Valuation Report and Team Website, Client Interaction Report, Project Plan, Progress Report
Milestone: Valuation Commitment Review
Strategy: One Incremental Commitment Cycle

Valuation phase

Duration: 09/22/2017-10/2/2017
Concept: Negotiate with client to plan the final function and requirement. Seek the potential COTS which could be used in the later development phase according to the determined requirement. Identify all the risks and rank them. Attempt to implement the high risk prototype and discus the method to mitigate those risks.
Deliverables: Win-Condition Report, High Risk Prototype, Project Plan, Progress Report.
Milestone: Foundation Commitment Review
Strategy: One Incremental Commitment Cycle

Foundation phase

Duration: 10/02/2017- 10/18/2017
Concept: According to determined COTS and requirement, finish the whole High risks function prototype. Discuss with client and improve the prototype. Select the NDI and finish the life-cycle plan and architecture.
Deliverables: Development Commitment Package, Risk and Defect Report, Project Plan, Progress Report.
Milestone: Development Commitment Review
Strategy: One Incremental Commitment Cycle

Development phase

Duration: 10/19/2017- 09/12/2017
Concept: Each team member implements their individual part according to the prototype and test each subsystem and function. After finishing the peer code review, Have the team

member who is charge of IV&V and client review the whole system and function to check all the functions which are discussed in previous phase
Deliverables: Core Capability Drive-Through Report, Risk and Defect Report, Progress Report, Technical Debt Report
Milestone: Transition Readiness Review, Core Capability Drive-Through
Strategy: One 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	9/17/2017	.doc, .pdf	Soft copy
Evaluation of Valuation Commitment Package	09/27/2017	.xls	Soft copy
Project Effort	Every Sunday	Text	ER system
Project Plan	Every other Sunday	.mpp, .pdf	Soft copy
Progress Report	Every other Sunday	.xls	Soft copy
Jira	Every Friday	Text/ticket	Jira Website

2.2.2 Valuation Phase

Table 2: Artifact deliverable in Valuation Phase

Artifact	Due date	Format	Medium
Win-Condition Report	09/27/2017	.pdf	soft copy
High Risk Prototype	09/27/2017	.pdf	soft copy
Progress Report	Every other Sunday	.pdf	soft copy
Jira	Every Friday	Text/ticket	Jira Website
Project Plan	Every other Sunday	.pdf	soft copy

2.2.3 Foundations Phase

Table 2: Artifact deliverable in Foundations Phase

Artifact	Due date	Format	Medium
Project Plan	Every other Sunday	.pdf	soft copy
Risk and Defect Report	Every other Sunday	.xls	soft copy
Jira	Every Friday	Text/ticket	Jira Website
Progress Report	Every other Sunday	.pdf	soft copy
FC Package ● Feasibility Evidence Description(FED) ● Operational Concept Description(OCD) ● Life Cycle Plan(LCP) ● Prototype Report ● System and Software Architecture Description (SSAD)	10/15/2017	.doc,.pdf	soft copy
On-Campus Technical Debt Report	Every other Friday	.xls	soft copy
QFP Technical Debt Report	Every other Friday	.xls	soft copy

2.2.4 Development Phase

Table 3: Artifact deliverable in Development Phase

Artifact	Due date	Format	Medium
Progress Report	Every other Sunday	.xls	soft copy
Risk and Defect Report	Every other Sunday	.xls	soft copy
Project Plan	Every other Sunday	.mpp ,.pdf	soft copy
Jira	Every Friday	text	Jira Website
DC Package	12/05/2017	.doc,.pdf	soft copy
Project Archive	12/05/2017	.doc,.pdf	soft copy
Individual Critique	12/05/2017	.doc,.pdf	soft copy
On-Campus Technical Debt Report	Every other Friday	.xls	soft copy
QFP Technical Debt Report	Every other Friday	.xls	soft copy

3. Responsibilities

3.1 Project-specific stakeholder's responsibilities

this project doesn't have any project-specific stakeholder.

3.2 Responsibilities by Phase

The following table is a template for stakeholder's responsibilities in each phase.

Table 4: Stakeholder's Responsibilities in each phase

Team Member / Role	Primary / Secondary Responsibility				
	Exploration	**Valuation**	**Foundations**	**Development-** Construction Iteration	**Development-** Transition Iteration
Name: Villi Vaananen (Client)	**Primary Responsibility** Give the overview and description of the application	**Primary Responsibility** Negotiate the requirements and team responsibility with team members	**Primary Responsibility** Review the project progress	**Primary Responsibility** Check the prototype and project schedule and support the feedback	**Primary Responsibility** Negotiate with the all team member for transition of the project
Name: chengyu Shen (Product Manager)	**Primary Responsibility** Learn the project and negotiate with client. Finish the project reports. Organize the team meeting **Secondary Responsibility** Develop Website	**Primary Responsibility** Negotiate with client to decide the requirement **Secondary Responsibility** Maintain the website	**Primary Responsibility** Design application prototype Organize the team meeting. Report the project schedule **Secondary Responsibility** Develop Website	**Primary Responsibility** Finish the development assignment Keep a track of the progress schedule	**Primary Responsibility** Help client finish transition job.
Name: Shiji Zhou (Designer/Prototyper)	**Primary Responsibility** Learn the project. Participate in win-win negotiation	**Primary Responsibility** Analysis the COTS and risk, identify the high risk part of project. Reports	**Primary Responsibility** Finish the prototype design and live demo **Secondary Responsibility** Create OCD document	**Primary Responsibility** Develop the challenge display function.	**Primary Responsibility** Submit relative document and help with transition of the project
Name:	**Primary**	**Primary**	**Primary**	**Primary**	**Primary**

Yufei Hong (Requirements Engineer)	**Responsibility** Learn the project. Participate in win-win negotiation	**Responsibility** Negotiate with client identify the accurate requirements better	**Responsibility** Finish related documents.	**Responsibility** Develop the daily challenge part of the application.	**Responsibility** Submit relative document and help with transition of the project
Name: Guanghe Cao (Software Architecture)	**Primary Responsibility** Learn the project. Participate in win-win negotiation	**Primary Responsibility** Analysis the COTS and design the software architecture	**Primary Responsibility** Work on SSAD document and development	**Primary Responsibility** Develop camera function of the application	**Primary Responsibility** Submit relative document and help with transition of the project
Name: Yang Wei (Software Developer)	**Primary Responsibility** Learn the project. Participate in win-win negotiation	**Primary Responsibility** Analysis the potential COTS and divide the whole system into sub part according to functionality	**Primary Responsibility** Work on OCD document and set up system integration	**Primary Responsibility** Develop the contact list page and invite function	**Primary Responsibility** Submit relative document and help with transition of the project
Name: Lin Xia (Software Developer)	**Primary Responsibility** Learn the project. Participate in win-win negotiation **Secondary Responsibility** Develop team Website	**Primary Responsibility** Analysis the potential COTS and divide the whole system into sub part according to functionality	**Primary Responsibility** Work on LCP document and set up system integration	**Primary Responsibility** Develop the daily challenge UI page and design API to get data from the server.	**Primary Responsibility** Submit relative document and help with transition of the project
Name: William Goishi (Quality Focal Point)	**Primary Responsibility** Learn the project. Participate in win-win negotiation	**Primary Responsibility** Analyze risk and rationality of requirement and offer some solutions mitigate the risk	**Primary Responsibility** Work on FED document	**Primary Responsibility** Design the usage case and test cases for testing	**Primary Responsibility** Submit relative document and help with transition of the project

3.3 Skills

Team members	Role	Skills
Chengyu Shen	Product Manager	Current skills: Designing Prototype, UML Diagram, Web Development, IOS

		application development Required skills: react native developing ,Management
Shiji Zhou	Designer/Prototyper	Current skills: Designing Prototype, Web Development, IOS application development Required skills: react native developing ,Management
Name: Yufei Hong (Requirements Engineer)	Requirements Engineer	Current skills: UML Diagram, Web Development, IOS application development Required skills: react native developing ,Management
Name: Guanghe Cao (Software Architecture)	Software Architecture	Current skills: Designing Prototype, UML Diagram, Web Development, IOS application development Required skills: react native developing ,Management
Name: Yang Wei (Software Developer)	Software Developer	Current skills: Designing Prototype, UML Diagram, Web Development, IOS application development Required skills: react native developing
Name: Lin Xia (Software Developer)	Software Developer	Current skills: Designing Prototype, UML Diagram, Web Development, Android application development Required skills: react native developing ,negotiation skill
Name: William Goishi (Quality Focal Point)	Quality Focal Point	Current skills: Designing Prototype, UML Diagram, Web Development, IOS/ Android application development Required skills: negotiation skill

4. Approach

4.1 Monitoring and Control

We use five methods to monitor and control the project.

1. Progress Reports are used to keep a track of the project schedule and project plan which made in last week
2. Project Plan is used to record the deadline of each document and development schedules
3. Weekly Team Meetings are for discussion progress detail with all the team members
4. Slack is used to communicate with client and their engineer.
5. Communication outside of team meetings is done using a group chat on Wechat

4.1.1 Closed Loop Feedback Control

Our teams take following steps to get and provide feedback:

1. Each team member is in the Wechat group if they have any problem they can directly ask for help
2. We use team website to share all the documents created by any team member
3. We use Github to record and review the code and check the development schedules.
4. Email is used to send reminder about the meetings and deadline of submitting document

4.1.2 Reviews

Each task and function is finished, we will have code review and arrange all the related documents. After that, we will clarify all the development process and discussion if there are some parts we can improve upon. All the module based functions will undergo individual testing and then integration testing in which will provide feedback on whether another review is required or not.

4.2 Methods, Tools and Facilities

Tools	Usage	Provider
Xcode	Used to develop react native development	Apple
Webstorm	Used to develop react native development	JetBrains

Github	Used to record the version control.	Github
Wechat	Used for source code management	Tencent
Microsoft Office Visio	Used to design and draw UML and workflow	Microsoft

5. Resources

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

- Estimated CSCI577a Effort : X team members at X hrs/week for 12 weeks
- Total estimated effort: 672 hours
- Budget information: $0
- Project duration: 12 weeks
- Component modules in your development project: Invitation Module, Challenge Module, Score Module.
- Programming language used: JavaScript node.js

Table 5: COCOMOII Scale Driver

Scale Driver	Value	Rationale
PREC	LOW	The team has no experience in developing application base on the
FLEX	HIGH	The client is flexible about the requirements
RESL	LOW	Team don't have much knowledge and experience to identify the COTS and risk
TEAM	HIGH	Less interaction and collaboration among team members
PMAT	LOW	SEI CMM process maturity
Total Scale Factor = 18.97		

Table 6: COCOMOII Challenge Cost Driver

Cost Driver	Value	Rationale
TOOL	VHI	We just use Xcode to development
RELY	NOM	This is separate function and don't have much dependency
PCON	NOM	The developers are continuity, all of them will work on this project until the end of this semester
APEX	LOW	None of the developers have react native development experience
LTEX	LOW	Some developers have no JavaScript development experience
DOCU	LOW	The react native is new technic, there are few document which we can use
ACAP	HIGH	On one in this team has experience about designing pop box UI

DATA	HIGH	There is no any API which we can fetch data from server
SITE	NOM	The client's developers are not in American， so they can not give much help.
CPLX	HIGH	The logic flow between different users is easy to design, but it still need do much effort on it
RUSE	LOW	The client didn't offer any previous code about the challenge display
PCAP	NOM	The programmer needs more programming experience about the react native.
PVOL	LOW	React native framework updates at irregular intervals.
SCED	LOW	This project needs to be finished in 12 weeks
TIME	NOM	This module does not have huge impact on execution time
STOR	NOM	The client doesn't offer any place to store the challenge content data
PLEX	NOM	The team members don't have any develop experience on react native.

Table 9: COCOMOII Score Cost Driver

Cost Driver	Value	Rationale
TOOL	VHI	We just use Xcode to development
RELY	NOM	This is separate function and don't have much dependency
PCON	NOM	The developers are continuity, all of them will work on this project until the end of this semester
APEX	LOW	None of the developers have react native development experience
DATA	LOW	The is no API we can access the users information
RUSE	LOW	The client didn't offer any previous code about the online shop
LTEX	LOW	Some developers have no JavaScript development experience
DOCU	LOW	The react native is new technic, but there are a lot documents which we can use
SITE	NOM	The client's developers are not in American， so they can not give much help.
ACAP	HIGH	On one in this team has experience about designing online shop.

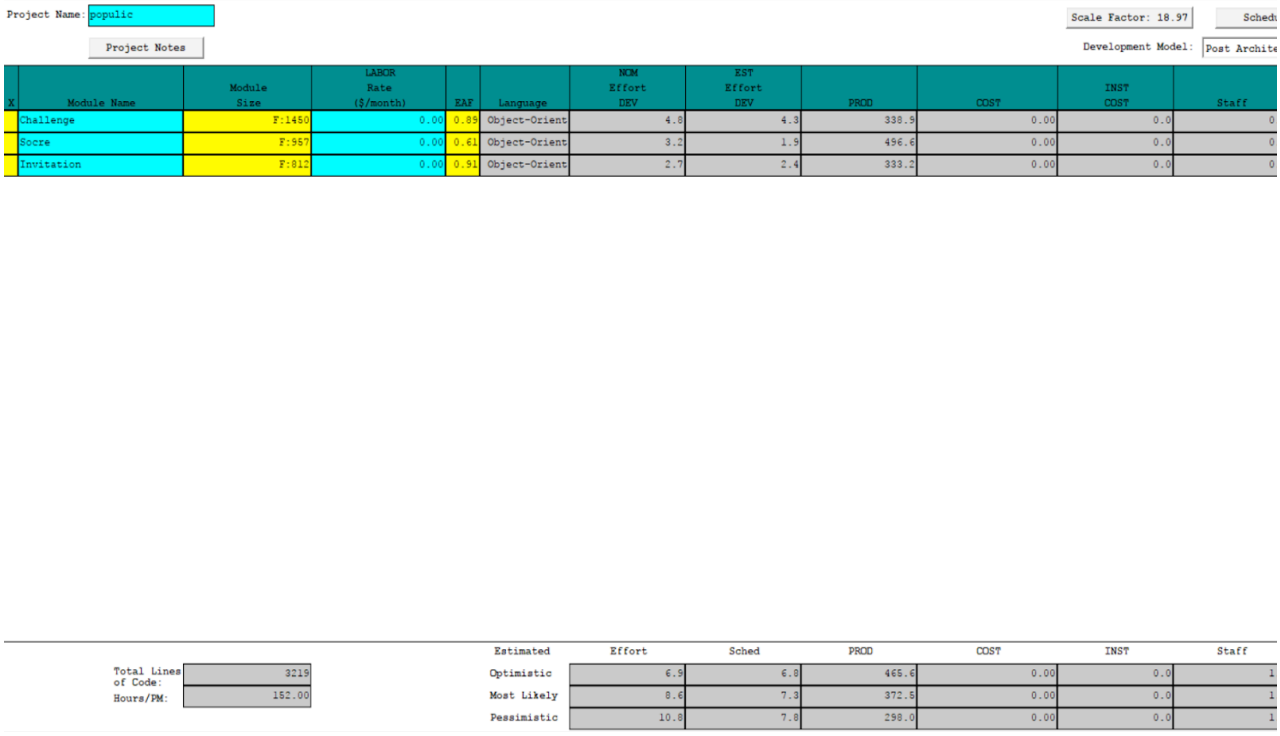
DATA	HIGH	There is no any API which we can fetch data from server
STOR	NOM	The client doesn't offer any place to store the online shop data.
CPLX	NOM	The logic flow between different users is not easy to design
PLEX	NOM	The team members don't have any develop experience on react native, but we can learn it quickly
PCAP	HIGH	Some of team members are not graduate students with Computer Science background
TIME	NOM	This module does not have much requirement on execution time
PVOL	NOM	React native framework updates at irregular intervals.
SCED	LOW	This project needs to be finished in 12 weeks

Table 10: COCOMOII Invitation Cost Driver

Cost Driver	Value	Rationale
TOOL	VHI	We just use Xcode to development
RELY	NOM	This is separate function and don't have much dependency
PCON	NOM	The developers are continuity, all of them will work on this project until the end of this semester
APEX	LOW	None of the developers have no react native development experience
RUSE	LOW	The client didn't offer any previous code about the invitation function
LTEX	LOW	Some developers have no JavaScript development experience
PCAP	HIGH	The programmer needs more programming experience about the react native.
TIME	NOM	This module does not have huge impact on execution time
DOCU	LOW	The react native is new technic, but there are a lot document which we can use
PLEX	NOM	The team members don't have any develop experience on react native, but it's not very difficult to learn.
SITE	NOM	The client's developers are not in American， so they can not give much help and communication.
ACAP	NOM	On one in this team has experience about using Listview component
DATA	HIGH	The IOS don't allow application get users all contact information

PVOL	NOM	React native framework updates at irregular intervals.
STOR	NOM	The client doesn't offer any place to store contact list
SCED	LOW	This project needs to be finished in 12 weeks
CPLX	NOM	The function can display all the contact list of user offer check book which users can check and send messages to their friends to invite them, this logic is not work flow to design

Overall COINCOMO Result



Project Name: populic

Project Notes

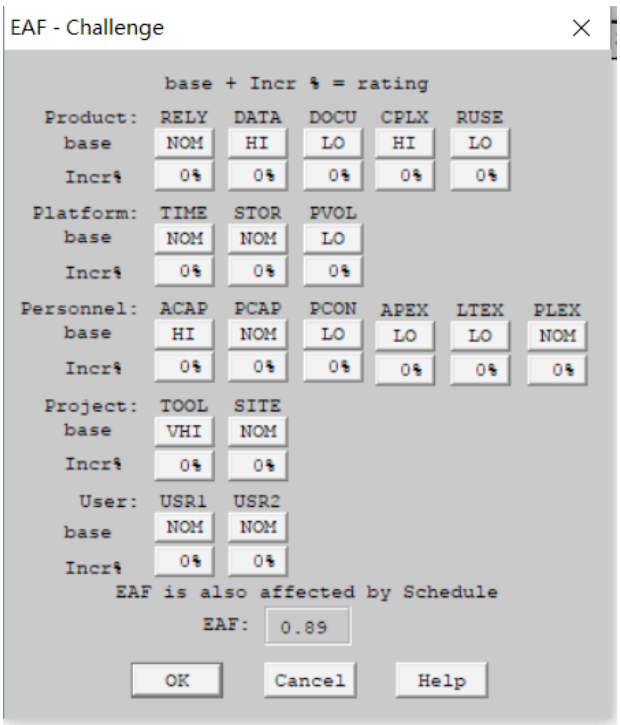
Scale Factor: 18.97

Development Model: Post Archite

X	Module Name	Module Size	LABOR Rate ($/month)	EAF	Language	NOM Effort DEV	EST Effort DEV	PROD	COST	INST COST	Staff
	Challenge	F:1450	0.00	0.85	Object-Orient	4.8	4.3	338.9	0.00	0.0	0
	Socre	F:987	0.00	0.61	Object-Orient	3.2	1.9	496.6	0.00	0.0	0
	Invitation	F:812	0.00	0.91	Object-Orient	2.7	2.4	333.2	0.00	0.0	0

		Estimated	Effort	Sched	PROD	COST	INST	Staff
Total Lines of Code:	3219	Optimistic	6.9	6.8	465.6	0.00	0.0	1
Hours/PM:	152.00	Most Likely	8.6	7.3	372.5	0.00	0.0	1
		Pessimistic	10.8	7.8	298.0	0.00	0.0	1

COINCOMO Cost Driver


EAF - Challenge
base + Incr % = rating
Product: RELY DATA DOCU CPLX RUSE
base NOM HI LO HI LO
Incr% 0% 0% 0% 0% 0%
Platform: TIME STOR PVOL
base NOM NOM LO
Incr% 0% 0% 0%
Personnel: ACAP PCAP PCON APEX LTEX PLEX
base HI NOM LO LO LO NOM
Incr% 0% 0% 0% 0% 0% 0%
Project: TOOL SITE
base VHI NOM
Incr% 0% 0%
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Incr% 0% 0%
EAF is also affected by Schedule
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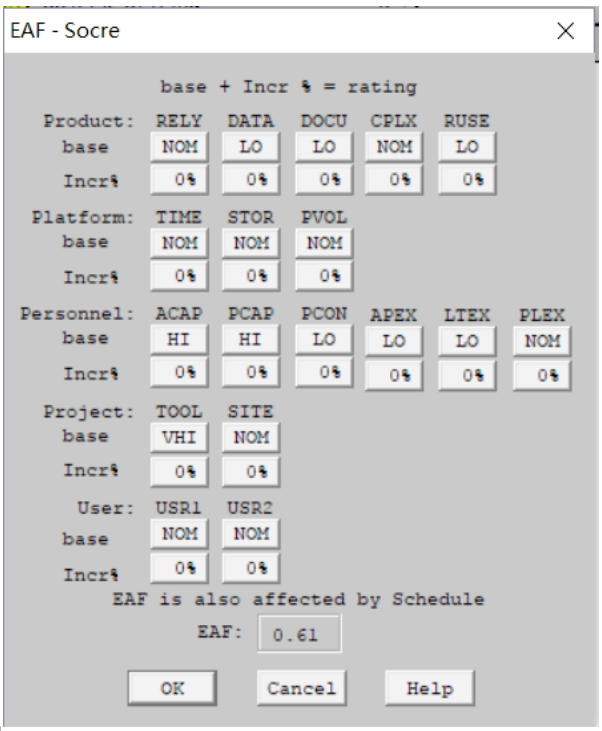
OK Cancel Help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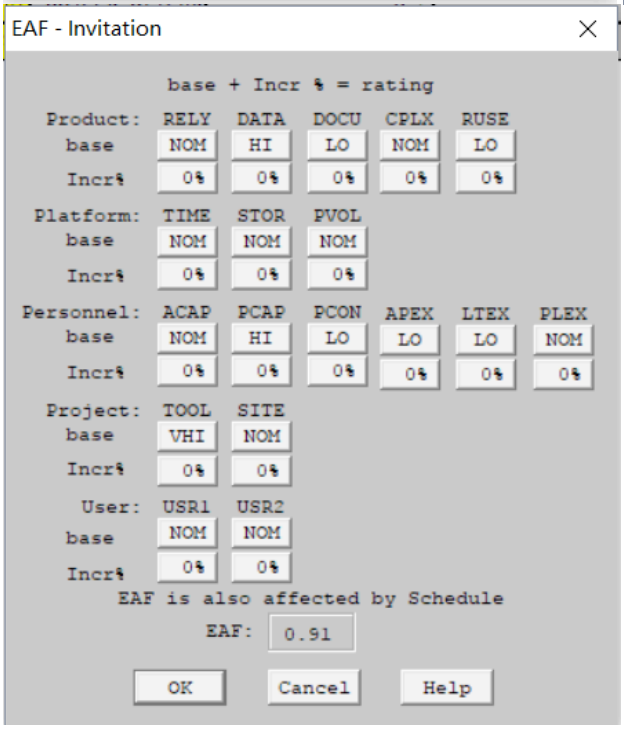
EAF: 0.61
OK Cancel Help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User: USR1 USR2
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EAF is also affected by Schedule
EAF: 0.91
OK Cancel Help

6. Iteration Plan

6.1 Plan

We plan use two cycles to finish the development phase. The first cycles will aim at finishing all the frontend part including all page's UI, UX and the API of getting the data. And we will ensure all the front-end part can work well for the Core Capability Drive. During this phase, we need do some improvement according to client's feedback and test result. This feedback would be very helpful for our next stage.

The second cycle will focus on back end. We will learn to use node.js to write API of support data to front-end and test the full functionality of the application. We will also help the client fix other functional bugs and improve our development schedule according the previous stage's feedback.

After the development phase, our team members will focus on transitioning the system smoothly, finishing all the relative documents and list all the key point which the following development should be noticed.

6.1.1 Capabilities to be implemented

Table 7: Construction iteration capabilities to be implemented

ID	Capability	Description	Priority	Iteration
1	Challenge Photos and Videos Post	The user can post challenge photos and videos on communities	High	1
2	Challenge Complete Competition	The user can choose one friend to compete the time of finishing daily challenge	High	1
3	Challenge Game Suggestion	The user can send their feedback and challenge ideas to client	Medium	2
4	upcoming 4 Days Daily Challenge Post	The system will post further 4 days daily challenge.	High	1
5	View, Approve or Decline Challenge:	The users are capable of viewing, approve or decline their friends challenge post.	High	1
6	Challenge Game Pop	The user will touch the pop screen to get all daily challenge information	High	1

	Screen			
7	Offline & Online Notification	The user will get notification from populic.	High	1
8	Competition Reward	The user will get reward points from challenge competition	Medium	1

6.1.2 Capabilities to be tested

Table 8: Construction iteration capabilities to be tested

ID	Capability	Description	Priority	Iteration
1	Challenge Photos and Videos Post	The user can post challenge photos and videos on communities	High	2
2	Challenge Complete Competition	The user can choose one friend to compete the time of finishing daily challenge	High	2
3	Challenge Game Suggestion	The user can send their feedback and challenge ideas to client	Medium	2
4	upcoming 4 Days Daily Challenge Post	The system will post further 4 days daily challenge.	High	2
5	View, Approve or Decline Challenge	The users are capable of viewing, approve or decline their friends challenge post.	High	2
6	Challenge Game Pop Screen	The user will touch the pop screen to get all daily challenge information	High	2
7	Offline & Online Notification	The user will get notification from populic.	High	2
8	Competition Reward	The user will get reward points from challenge competition	Medium	2

6.1.3 Capabilities not to be tested

All the capabilities were test to ensure the application work well in any situation.

6.1.4 CCD Preparation Plans

CCD is scheduled around November 5th to 10th. The client and his development team member will take part in. The clients will test all the challenge functions and give the feedback. And we will plan our next iteration according to that feedback. The client and his team members will act as a user and follow the instruction to run all the relative function to challenge each other.

Given below are the our team member preparation plan for Core Capability Drive through session:
1. Make sure that the challenge content which fetch from server is correct and display perfectly.
2. Make sure that we can upload all the user's challenge information and the data passing to the database is clear and conforming to the specification
3. Make sure that the server and database are up
4. Make sure all the pages are responsive.
5. Make sure that we have done a dry run with the whole team before the actual CCD session.
6. Ensure all of the client's requirements have been implemented and tested.