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1. Introduction

Alfresco is an open source Enterprise Content Management system, which provides these services: document management, collaboration, records management, knowledge management, Web content management and image. The strength of Alfresco is document management. Alfresco store document in a unified and robust repository, bring team collaboration, content categorization, advance search, data transformation and security.

Alfresco mobile client running on Android devices connected to Alfresco Server has these main functionalities:

- **Account management**: manage related information to users, including personal information, site information, task information, searching people information and other activities.
- **Site management**: manage site including type of site, members of site, document library.
- **Document management**: including document operations such as upload, download, update newer version, view, copy, edit, delete documents and manage permission.
- **Task management**: control tasks and assign tasks to members.

2. Project organization

- Stakeholders:
  - "Creative Summer" Organizing Committee
  - Mentor Linh Hoang Chi
  - Mentor Hung Nguyen Vu
  - EcoIT Company

- Development team:
  - Student Thinh Nguyen Khanh (leader)
  - Student Thuy Dong Xuan
  - Student Cuong Nguyen Manh

3. Constraints and process decision

- Consider team development as these details:
  - **Disadvantage:**
    - Team members are students, moderate experience
  - **Advantage:**
    - Team members have already had some experience in developing small size project, finished Software Engineering course at university and well-qualified English
    - Team members all have high self-study skill, good thinking, creative, active, and hard working
    - Whole heart assistance from mentors and organizing committee
- Development team decides to work on **Agile Process**:

- We break down project into small iterations. Deciding which iteration to develop as its priority then complete it, including integration and test. Continue loop until we finish project.(Figure 1)

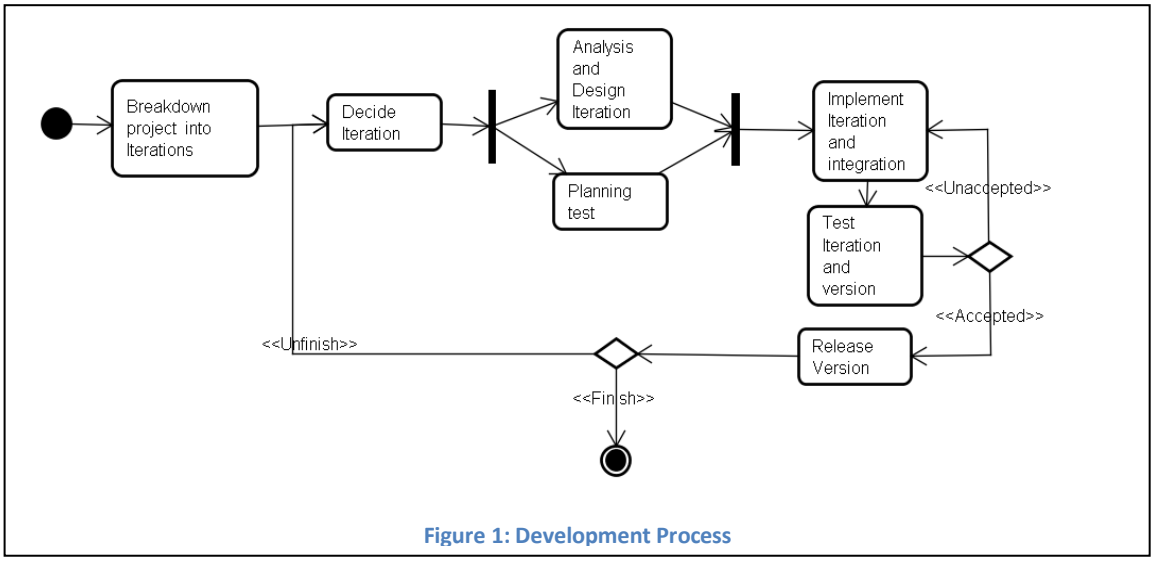

Figure 1: Development Process

4. Risk Analysis

a. People Risk

Risk type	Risk	Probability	Affection	Solution
People Risk	Member cannot follow knowledge for project.	Low	Serious	Look for assistance from mentors and co-mentors. Members help each other.
	One member is ill during project.	Moderate	Tolerable	Make schedule with a free time before deadline for avoidance. Calculate latency and expect other members works more time a day to guarantee schedule.
	One member stops continuing project because of personal reason.	Low	Serious	Calculate latency then decide If at early of project and then find a new member If at late of project then change schedule Other members work more

				time.
	Member cannot complete assigned task	Moderate	Tolerable	Member request support from other members If development cannot solve problem then ask mentors for help

Table 1: People Risk

b. Organizational Risk

Risk type	Risk	Probability	Affection	Solution
Organizational Risk	"Creative Summer" organizing committee and EcoIT Company do not support for project from beginning.	Moderate	Catastrophic	Development team members discuss to decide solution. Try to estimate opportunity If OK, then develop with self-budget. If Fail, then stop project.
	"Creative Summer" Organizing Committee and EcoIT Company do not continue to support for project after developing.	Low	Catastrophic	Hold development team discussion to find out reason. Leaders motivate each member to continue project with self-budget. Try to release good version and propose to mentor and expect for support.
	Mentors do not have time for project when development team faces challenge.	Low	Serious	Find help from other specialist, such as Dr. Hoang Truong Anh from University of Engineering and Technology. Try to find out solution by other source especially Internet.
	Occur change about policy of Organizing Committee or EcoIT Company	Low	Serious	Estimate affection and change project to follow new policy.

Table 2: Organizational Risk

c. Technology Risk

Risk type	Risk	Probability	Affection	Solution

Technology Risk	Server does not fulfill expectation.	Low	Serious	Report to mentor for help. Try not to create delay time.
	Android change or Alfresco change	Low	Insignificant	Alfresco and Android are both dependable system. Its change will not seriously affect to development.
	Internet connection are under performance	Low	Tolerable	Use other Internet connection alternative
	Android device are not available	Moderate	Serious	Use Android Emulator alternative to reduce delay Report mentor for Android device

Table 3: Technology Risk

d. Tools Risk

Risk type	Risk	Probability	Affection	Solution
Tool Risk	SDK is hard to use	Low	Serious	Ask for help from mentors
	Low budget for support tool	High	Tolerable	Totally use free support tool

Table 4: Tools Risk

e. Requirement Risk

Risk type	Risk	Probability	Affection	Solution
Requirement Risk	Design does not meet requirement	Low	Serious	Redesign If difficult then ask mentors for help
	Requirement of project change	Low	Serious	Research Alfresco system carefully Plan project carefully with full functions, high quality code
	Mentor complaint	High	Tolerable	Ask to understand mentors' expectation deeply.

Table 5: Requirement Risk

f. Estimation Risk

Risk type	Risk	Probability	Affection	Solution
Estimation Risk	Time required to develop is underestimate	High	Serious	Schedule with a free time before deadline for avoidance If schedule are late, calculate delay to work more

	Quality of product is underestimate	High	Tolerable	Before decide important development ask mentor carefully Do as the best to get high quality code Redevelopment if necessary
	The rate of defect repair is underestimate	High	Tolerable	Take advantage of mentors
	Functions is unrealistic on Android device	High	Tolerable	Remove that function Reassign work to team members

Table 6: Estimation Risk

5. Hardware and software resource

a. Android devices for developing and testing:

- Android emulator has low speed. Therefore, company should support Android devices to development team.
- Each developer should receive a device for the best.

b. Server:

- Company should support a server and mentors should guild development team to use. This will reduce time.

c. Environment working:

- Project may use GitHub to store code. It is efficiently for mentor to monitor.
- Development team should work at company for guarantee quality. However, mentors can also monitor project as report of team leader and code storage online.

d. SDK and tools

- Android SKD
- Alfresco SDK
- Eclipse IDE and Android ADT plug-in
- UML drawing tools
- Project management tools

6. Work breakdown

At the beginning of development process task will require more time to complete than usual because development team requires time to study carefully system and to use familiarly tools. Task is divide by implement a function, including find solution, prepare test, and test.

Task	Description and function completed	Group function	Effort(person-days)	Dependency
T1	Design User Interface	Common	2	
T2	Log in/ Log out	Account	6	T1
T3	Create Site/Edit site	Site	6	T2
T4	Upload/Download document	Document	6	T3
T5	Create task/Edit task	Site	6	T4
T6	Invite People to member	Site	4	T4
T7	Remove member	Site	4	T4
T8	Leave site	Site	4	T4
T9	Delete site	Site	3	T4
T10	View document in browser	Document	3	T4
T11	Edit document properties	Document	3	T4
T12	Upload new document version	Document	3	T4
T13	Copy to/ Move to	Document	3	T4
T14	Delete Document	Document	3	T4
T15	Manage document permission	Document	3	T4
T16	View task	Task	3	T4
T17	View task history	Task	3	T4
T18	Cancel task	Task	3	T4
T19	Register	Account	3	T4
T20	Edit profile	Account	3	T4
T21	Forgot password	Account	3	T4
T22	View associated information	Account	3	T4
T23	Account setting	Account	3	T4
T24	Record activities	Account	3	T4
T25	Notification	Account	3	T4
T26	Change password	Account	3	T4
T27	Add a site to favorite	Site	3	T4
T28	Add to favorite documents	Document	3	T4
T29	Add tag document	Document	3	T4
T30	Comment document	Document	3	T4

Table 7: Tasks table

7. Project schedule

	Name	Duration	Start	Finish	Predecessors	Resource Names
1	**Version 1.0**	**14 days**	**7/2/12 8:00 AM**	**7/19/12 5:00 PM**		
2	T1	2 days	7/2/12 8:00 AM	7/3/12 5:00 PM		Thinh;Thuy;Cuong
3	T2	3 days	7/4/12 8:00 AM	7/6/12 5:00 PM	2	Thinh;Thuy;Cuong
4	T3	3 days	7/9/12 8:00 AM	7/11/12 5:00 PM	3	Thinh;Thuy;Cuong
5	T4	3 days	7/12/12 8:00 AM	7/16/12 5:00 PM	4	Thinh;Thuy;Cuong
6	T5	3 days	7/17/12 8:00 AM	7/19/12 5:00 PM	5	Thuy;Cuong
7	**Version 1.1**	**7 days**	**7/20/12 8:00 AM**	**7/30/12 5:00 PM**		
8	T6	4 days	7/20/12 8:00 AM	7/25/12 5:00 PM		Thuy
9	T7	4 days	7/20/12 8:00 AM	7/25/12 5:00 PM		Cuong
10	T8	4 days	7/20/12 8:00 AM	7/25/12 5:00 PM		Thinh
11	T9	3 days	7/26/12 8:00 AM	7/30/12 5:00 PM		Thuy;Cuong
12	**Version 1.2**	**7 days**	**7/31/12 8:00 AM**	**8/8/12 5:00 PM**		
13	T10	4 days	7/31/12 8:00 AM	8/3/12 5:00 PM		Thinh
14	T11	4 days	7/31/12 8:00 AM	8/3/12 5:00 PM		Thuy
15	T12	4 days	7/31/12 8:00 AM	8/3/12 5:00 PM		Cuong
16	T13	3 days	8/6/12 8:00 AM	8/8/12 5:00 PM		Thinh
17	T14	3 days	8/6/12 8:00 AM	8/8/12 5:00 PM		Thuy
18	T15	3 days	8/6/12 8:00 AM	8/8/12 5:00 PM		Cuong
19	**Version 1.3**	**3 days**	**8/9/12 8:00 AM**	**8/13/12 5:00 PM**		
20	T16	3 days	8/9/12 8:00 AM	8/13/12 5:00 PM		Thinh
21	T17	3 days	8/9/12 8:00 AM	8/13/12 5:00 PM		Thuy
22	T18	3 days	8/9/12 8:00 AM	8/13/12 5:00 PM		Cuong
23	**Version 1.4**	**9 days**	**8/14/12 8:00 AM**	**8/24/12 5:00 PM**		
24	T19	3 days	8/14/12 8:00 AM	8/16/12 5:00 PM		Thinh
25	T20	3 days	8/14/12 8:00 AM	8/16/12 5:00 PM		Thuy
26	T21	3 days	8/14/12 8:00 AM	8/16/12 5:00 PM		Cuong
27	T22	3 days	8/17/12 8:00 AM	8/21/12 5:00 PM		Thinh
28	T23	3 days	8/17/12 8:00 AM	8/21/12 5:00 PM		Thuy
29	T24	3 days	8/17/12 8:00 AM	8/21/12 5:00 PM		Cuong
30	T25	3 days	8/22/12 8:00 AM	8/24/12 5:00 PM		Thuy
31	T26	3 days	8/22/12 8:00 AM	8/24/12 5:00 PM		Cuong
32	**Version 1.5**	**5 days**	**8/25/12 8:00 AM**	**8/31/12 5:00 PM**		
33	T27	3 days	8/25/12 8:00 AM	8/29/12 5:00 PM		Thinh
34	T28	3 days	8/25/12 8:00 AM	8/29/12 5:00 PM		Thuy
35	T29	3 days	8/25/12 8:00 AM	8/29/12 5:00 PM		Cuong
36	T30	2 days	8/30/12 8:00 AM	8/31/12 5:00 PM		Thinh;Thuy;Cuong

Figure 2: Work Schedule (created by OpenProj)

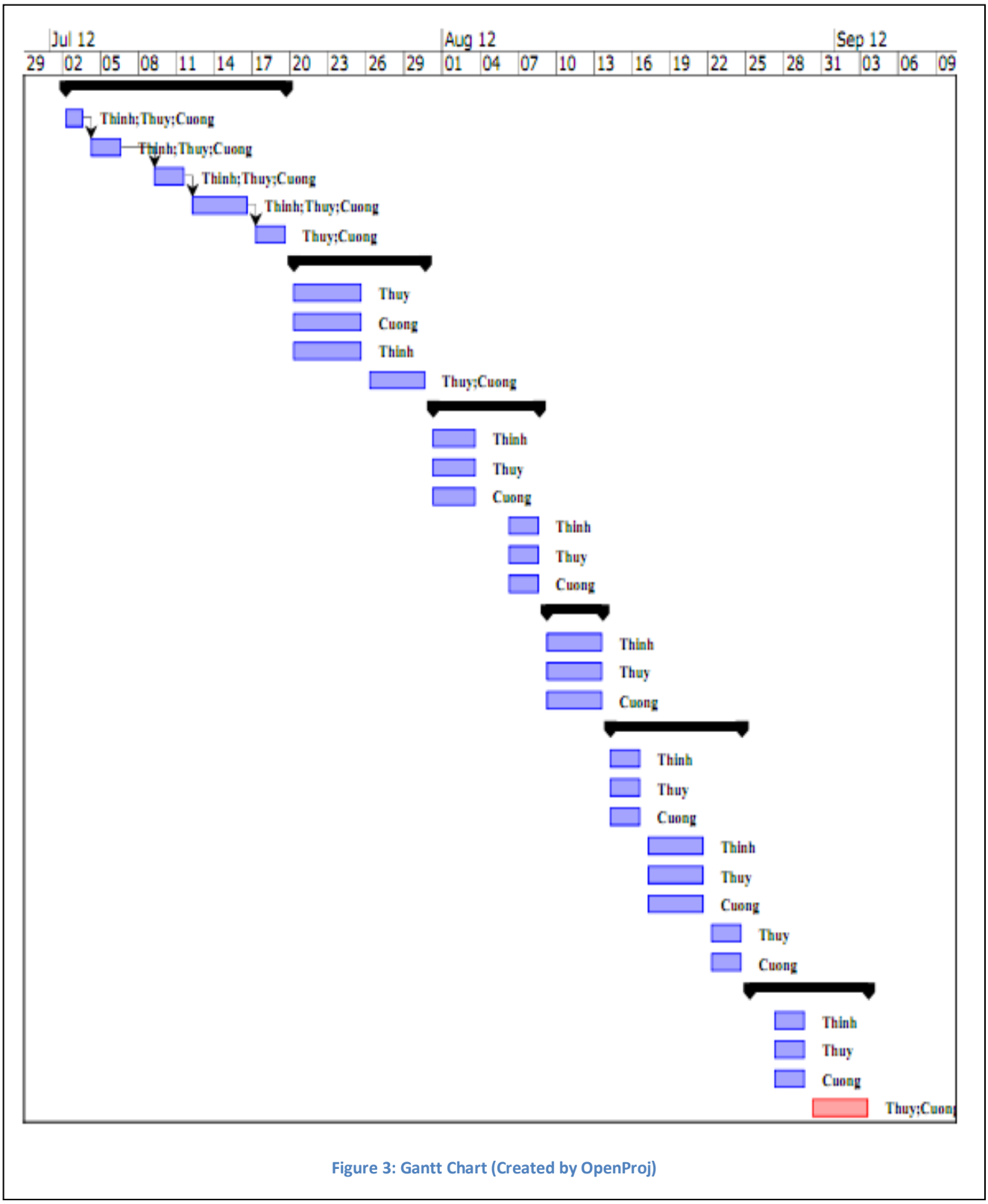

Figure 3: Gantt Chart (Created by OpenProj)

Project will release as version. Each version completes with a group of functions. In case underestimating the time or unrealistic functions, development team will not release version with full functions or even change version.

Version(Iteration)	Start date	End date	Tasks completed
1.0	July 2, 2012	July 19, 2012	T1 - T5
1.1	July 20, 2012	July 30, 2012	T6 - T9
1.2	July 31, 2012	August 8, 2012	T10 - T15
1.3	August 9, 2912	August 13, 2012	T16 - T18
1.4	August 14, 2012	August 24, 2012	T19 - T26
1.5	August 25, 2012	August 31, 2012	T27 - T30

Table 8: Iterations Schedule

Project starts running on July 2, 2012 and finish August 31, 2012.

8. Monitoring and reporting mechanisms

- Development team store all code and related documents on Github Repository. Team leader adds mentors into the repository. Team leader creates issue to assign work to members. Team members create issue when meet difficult problem and report work progress.
- Development team communicates with mentors by email.
- Team leader completes Project Dairy and reports to mentor after iteration.
- Mentors monitor project by issue on Github and Project Diary.
- Organizing Committee monitors project by Project Diary.