Software Architecture

COMP806-Research-Proposal

Mobile Computing System Architecture for Centralising Multiple Smartcards

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1. What is the project about?

This project is about finding a way to centralise multiple smartcard systems into one system. The reason that this project interests us is when we are looking at so many different smartcard on the market, there is a need to centralise them into one system. So users would not feel overwhelmed by many cards in their pockets, and strugling with finding the right card to use it for the right store.

2. What are we going to investigate?

By going through literature review, we are going to investigate how the smart card systems look like today, how much percentage of people are strugling about overwhelmed numbers of smartcards they are holding, what are the potential solutions or methods out there to solve this problem.

3. What is our research question?

Our main research question is from a software achitechture perspective, with multiple smartcard system existing today, how to find a properate way to centralise all systems into one system?

Some of the sub questions are:

a. What are the challenges of centralising smartcards into one system from ?

b. What are the protential solutions for centralising smartcards into one system?

c. By finding out the suitable solution, how do we protentially implement it?

4. Who is going to do what?

Our team has four people:

- JiaYang, Yao
- Udit Choudhary
- Shuang He
- Islam, Rashedul

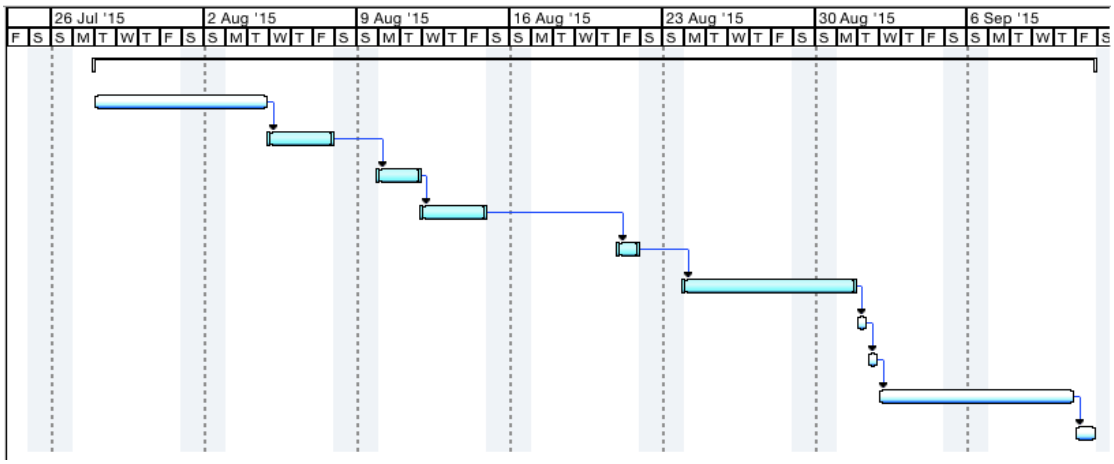
Each of us will proactively involved in the work. Our responsibilities can be defined as below:

Tasks	Participants
Go through literature review	• JiaYang, Yao • Udit Choudhary • Shuang He • Islam, Rashedul
Work out ppt for Presentation	• Udit Choudhary
Practicing the presentation	• JiaYang, Yao • Udit Choudhary • Shuang He • Islam, Rashedul
Create Proposal draft version	• JiaYang, Yao • Shuang He
Final Presentation	• Udit Choudhary
Internal Review and modification of Proposal Draft Version	• JiaYang, Yao • Udit Choudhary • Shuang He • Islam, Rashedul
Proposal - peer marking	• JiaYang, Yao • Udit Choudhary • Shuang He • Islam, Rashedul
Final deliverables – Report – Draft Version	• JiaYang, Yao • Udit Choudhary • Shuang He • Islam, Rashedul
Final deliverables – Report- Final Version	• JiaYang, Yao • Udit Choudhary • Shuang He • Islam, Rashedul

Final deliverables – Presentation	• JiaYang, Yao • Udit Choudhary • Shuang He • Islam, Rashedul
Final deliverables – Development Demonstration	• JiaYang, Yao • Udit Choudhary • Shuang He • Islam, Rashedul
Final deliverables – Peer Evaluation	• JiaYang, Yao • Udit Choudhary • Shuang He • Islam, Rashedul

5. What is the plan (Gantt chart)?

	Task Mode	Task Name	Duration	Start	Finish	Predecessors
0	**Auto**	**Assignment 1**	**34 days?**	**Tue 28/7/15**	**Fri 11/9/15**	
1	Auto	**Literature Review**	**6 days**	**Tue 28/7/15**	**Tue 4/8/15**	
2	Manual	**Proposal draft**	**3 days**	**Wed 5/8/15**	**Fri 7/8/15**	1
3	Manual	**Presentation**	**2 days**	**Mon 10/8/15**	**Tue 11/8/15**	2
4	Manual	**Proposal final**	**3 days**	**Wed 12/8/15**	**Fri 14/8/15**	3
5	Manual	**Peer marking**	**1 day**	**Fri 21/8/15**	**Fri 21/8/15**	4
6	Manual	**Final Report Draft**	**6 days**	**Mon 24/8/15**	**Mon 31/8/15**	5
7	Auto	**Final Deliverables-Presentation**	**0.5 days**	**Tue 1/9/15**	**Tue 1/9/15**	6
8	Auto	**Final Deliverables-Development Demonstration**	**0.5 days**	**Tue 1/9/15**	**Tue 1/9/15**	7
9	Auto	**Final Report**	**7 days**	**Wed 2/9/15**	**Thu 10/9/15**	8
10	**Auto**	**Final Deliverables - Peer Evaluation**	**1 day?**	**Fri 11/9/15**	**Fri 11/9/15**	**9**



6. What methodology are you going to follow?

We will use two different methodologies:

- Literature review

- Case Study

7. What have you done already and what are the next-steps?

We have already finished below tasks:

1) Go through literature review, we have read articles below:
   - Modeling and Architecture of Mobile Computing Systems, (Christos Anagnostopoulos)
   - Rethinking the smart technology, (Akram and Markantonakis 2014)
   - Mobile Computing Architecture for Smart Card, (Serhrouchni)
   - Smart Card Distribution for E-Government Digital Identity Promotion: Problems and Solutions, (Corradini, Paganelli et al. 2006)
   - Mobile Computing Middleware, (Mascolo, Capra et al. 2002)
   - A survey of mobile cloud computing: architecture, applications, and approaches, (Dinh, Lee et al. 2013)
2) Group discussion for many times to finalise the topic and make the research plan for the following tasks.

Next Step:

We have divided the task to each team member, which means that each of us will do research and find out an existing solution. Therefore, we can discuss and analyse together to find a best solution.