

## Group 10b Minutes of Meetings

Chairperson: Sneha Lata Umrit

Secretaries: Assigned on weekly basis

Date	1 <sup>st</sup> Feb	11 <sup>th</sup> Feb	18 <sup>th</sup> Feb	25 <sup>th</sup> Feb	4 <sup>th</sup> Mar	11 <sup>th</sup> Mar	18 <sup>th</sup> Mar
Member	Kwang Xi	CNY Break	Qian Kai	Hui Fang	Khai Chuin	Keitaro	Kwang Xi

Date	25 <sup>th</sup> Mar	1 <sup>st</sup> Apr	8 <sup>th</sup> Apr	15 <sup>th</sup> Apr	22 <sup>nd</sup> Apr	29 <sup>th</sup> Apr
Member	Qian Kai	Hui Fang	Khai Chuin	Keitaro	Kwang Xi	Study Week

Autumn Semester Meeting 1		
Date: 30 <sup>th</sup> September 2020	Time: 4 p.m.	Venue: MS Teams
Type	Formal ( <i>Supervised by Dr. Radu Muschevici</i> )	
Chairperson	Sneha Lata Umrit	
Secretary	Loh Qian Kai	
Attendees	Lee Hui Fang, How Khai Chuin, Sneha Lata Umrit, Loh Qian Kai, Keitaro Mirakel Wongso, Ong Kwang Xi	

### ***Meeting Objectives***

- Introductory meeting where supervisor and group members get to know each other and their abilities
- Clarify group tasks and initiate discussion about project requirements.
- Discuss on how to start the project and distribute tasks

Key Discussions		
No.	Topic	Member(s) Involved
1.	Research on Bluetooth Low Energy and Sound Synchronization	ALL
2.	Usage of Android Studio	Sneha
3.	Clarification of task	Qian Kai
4.	Programming language to be used	Kwang Xi
5.	Contents to include in Interim Report	Hui Fang

Action Plan			
No.	Action Items	Due Date	Member(s) Responsible
1.	Check out interim report samples	7 <sup>th</sup> October	ALL
2.	Learn how to create an Android app	7 <sup>th</sup> October	ALL
3.	Learn how to use GitHub to improve teamwork	7 <sup>th</sup> October	ALL

Autumn Semester Meeting 2		
Date: 7 <sup>th</sup> October 2020	Time: 4 p.m.	Venue: MS Teams
Type	Formal ( <i>Supervised by Dr. Radu Muschevici</i> )	
Chairperson	Sneha Lata Umrit	
Secretary	Ong Kwang Xi	
Attendees	Lee Hui Fang, How Khai Chuin, Sneha Lata Umrit, Loh Qian Kai, Keitaro Mirakel Wongso, Ong Kwang Xi	

### ***Meeting Objectives***

- Present project title and project description to supervisor
- Ensure project outline is correct
- Present research tasks to supervisor

Key Discussions		
No.	Topic	Member(s) Involved
1.	Implementation of application with regards to the following points. <ul style="list-style-type: none"> <li>• The App should be able to check whether the Bluetooth is available in the phone.</li> <li>• The App should be able to run in the background whenever the Bluetooth is enabled.</li> <li>• The App is able to scan nearby devices where it happens autonomously without user's involvement.</li> <li>• Create a method to play the song if the phone is muted.</li> </ul>	Supervisor and ALL
2.	Discussion about the maximum Bluetooth connection per device being seven. Method to play sound even when the phone is muted	Sneha
3.	Defining protocol to determine connection between phones. Exchanging data through an intermediate phone	Hui Fang
4.	Server used to store code. Sharing all codes in a place that can store different versions.	Kwang Xi
5.	Usage of agile development such as scrum methodology.	Khai Chuin
6.	Addition of new features or updated design after completion of all the basic requirements.	Qian Kai

Action Plan			
No.	Action Items	Due Date	Member(s) Responsible
1.	Research on method to play song even if the phone is muted	14 <sup>th</sup> October	Sneha
2.	Beginning with agile methodology	14 <sup>th</sup> October	ALL
3.	Improvising project description	14 <sup>th</sup> October	ALL
4.	Continuation of interim report	14 <sup>th</sup> October	ALL

Autumn Semester Meeting 3		
Date: 14 <sup>th</sup> October 2020	Time: 4 p.m.	Venue: MS Teams
<b>Type</b>	Formal ( <i>Supervised by Dr. Radu Muschevici</i> )	
<b>Chairperson</b>	Sneha Lata Umrit	
<b>Secretary</b>	How Khai Chuin	
<b>Attendees</b>	Lee Hui Fang, How Khai Chuin, Sneha Lata Umrit, Loh Qian Kai, Ong Kwang Xi	

### ***Meeting Objectives***

- Present use case body and use case diagram
- Q & A from team members to clear doubts about project implementation.

Key Discussions		
No.	Topic	Member(s) Involved
1.	Closing application after sound snippet is played and connection of devices having same number input.	Qian Kai
2.	Designing protocol to connect to which device first based on time or radius. Using database to save user data. Disconnection after snippet is played.	Kwang Xi
3.	Instructions on interim report format	Sneha

Action Plan			
No.	Action Items	Due Date	Member(s) Responsible
1.	Improve interim report	21 <sup>st</sup> October	ALL
2.	Bluetooth Low Energy Research	21 <sup>st</sup> October	Qian Kai and Khai Chuin
3.	Sound Synchronization Research	21 <sup>st</sup> October	Sneha and Hui Fang

Autumn Semester Meeting 4		
Date: 21 <sup>st</sup> October 2020	Time: 4 p.m.	Venue: MS Teams
Type	Formal ( <i>Supervised by Dr. Radu Muschevici</i> )	
Chairperson	Sneha Lata Umrit	
Secretary	Keitaro Mirakel Wongso	
Attendees	Lee Hui Fang, How Khai Chuin, Sneha Lata Umrit, Loh Qian Kai, Ong Kwang Xi, Keitaro Mirakel Wongso	

### Meeting Objectives

- Finalize project description before submission
- Confirm flow of app
- Check progress of activity diagram

Key Discussions		
No.	Topic	Member(s) Involved
1.	Addition of design implementation constraints and target audience	Sneha
2.	Using location services	Sneha and Qian Kai
3.	Using Companion Device Manager to enable BLE without location access permission	Qian Kai

Action Plan			
No.	Action Items	Due Date	Member(s) Responsible
1.	Verify importance of location permission for functioning of application	28 <sup>th</sup> October	Sneha
2.	Design of Application	28 <sup>th</sup> October	Keitaro and Kwang Xi
3.	Literature Review	30 <sup>th</sup> November	ALL

Autumn Semester Meeting 5		
Date: 28 <sup>th</sup> October 2020	Time: 4 p.m.	Venue: MS Teams
Type	Formal ( <i>Supervised by Dr. Radu Muschevici</i> )	
Chairperson	Sneha Lata Umrit	
Secretary	Lee Hui Fang	
Attendees	Lee Hui Fang, How Khai Chuin, Sneha Lata Umrit, Loh Qian Kai, Ong Kwang Xi, Keitaro Mirakel Wongso	

### Meeting Objectives

- Explanation of BLE scanning to supervisor and team members
- Implementation of location services and rolling proximity identifier
- Division of work among team members using scrum methodology

Key Discussions		
No.	Topic	Comments
1.	Reason required location service is when scanning through Bluetooth, it is getting the mac address. So, your location might get exposed. Let the user know that the application which enabling Bluetooth might cause your location exposed	Qian Kai
2.	<p>Discussions about rolling proximity identifier with supervisor</p> <ul style="list-style-type: none"> <li>• Rolling Proximity Identifier is 16 bytes address that changes every 15 minutes and obtain from Daily Tracing Key (changes every 24hours).</li> <li>• Once the connection is established, obtain the time of the phone and figure out is there offset between the phones.</li> <li>• Not sure about that companion device manager can be implemented as it requires custom protocol. Maybe will implement this after the advertising in connect works well.</li> </ul>	Sneha
3.	Confirming whether we need to implement Rolling Proximity Identifier as it is stated in project description	Hui Fang

Action Plan			
No.	Action Items	Due Date	Member Responsible
1.	Completing requirement specifications including functional and non-functional requirements	2 <sup>nd</sup> November	ALL
2.	Sequence Diagram	2 <sup>nd</sup> November	Hui Fang
3.	Activity Diagram	2 <sup>nd</sup> November	Sneha
4.	UML Class Diagram	20 <sup>th</sup> November	Kwang Xi



Spring Semester Meeting 1		
Date: 1 <sup>st</sup> February 2021	Time: 2 p.m.	Venue: MS Teams
Type	Formal ( <i>Supervised by Dr. Radu Muschevici</i> )	
Chairperson	Sneha Lata Umrit	
Secretary	Ong Kwang Xi	
Attendees	Lee Hui Fang, How Khai Chuin, Sneha Lata Umrit, Ong Kwang Xi, Keitaro Mirakel Wongso	

### ***Meeting Objectives***

- Discuss tasks completed during the Autumn Semester
- Demonstration of application progress
- Confirm time plan for upcoming weeks
- Check table of contents for final group report
- Discuss current issues regarding application development
- General Q&A from team members

Key Discussions		
No.	Topic	Member(s) Involved
1.	Demonstration of BlueKa application which allows user to select number of connections and use Bluetooth and location buttons	ALL
2.	Confirm contents of final group report with the supervisor. Overall content was satisfactory.	Sneha
3.	Discuss current scanning issues with the supervisor.	Sneha
4.	Synchronization issue raised by supervisor. The sleep function may not always be accurate.	Sneha

Action Plan			
No.	Action Items	Due Date	Member(s) Responsible
1.	Review sound synchronization codes/ Brainstorm/Research other ideas for sound synchronization	18 <sup>th</sup> February	Hui Fang and Sneha
2.	Find error causing scanning issues	18 <sup>th</sup> February	Khai Chuin and Qian Kai
3.	Add “Key Implementations” section in final group report where we must explain our codes and work done.	28 <sup>th</sup> April	ALL
4.	Demonstration of application with BLE part complete	18 <sup>th</sup> February	ALL

Spring Semester Meeting 2		
Date: 18 <sup>th</sup> February 2021	Time: 2 p.m.	Venue: MS Teams
Type	Formal ( <i>Supervised by Dr. Radu Muschevici</i> )	
Chairperson	Sneha Lata Umrit	
Secretary	Loh Qian Kai	
Attendees	Lee Hui Fang, How Khai Chuin, Sneha Lata Umrit, Ong Kwang Xi, Keitaro Mirakel Wongso, Loh Qian Kai	

### ***Meeting Objectives***

- Explanation of new synchronization method using atomic time, system time and offset (Detailed meeting notes and screenshots can be found on ClickUp Group Account).
- Brief demonstration of BLE codes merged with sound synchronization
- Short video demonstration showing BLE scanning/advertising and synchronization
- Dilemma of advertiser and scanner
- Current progress with BLE codes implementation for multiple connection
- Ideas for BlueKa UI
- Checking time plan for code writing and testing

Key Discussions		
No.	Topic	Member(s) Involved
1	Synchronization Method Explained	Sneha
2	First Simple Demonstration, 2 phones playing sound at the same time.	ALL
3	Advertiser and Scanner Dilemma	ALL
4	Testing Issues and Explaining Queue Implementation	Qian Kai

Action Plan			
No.	Action Items	Due Date	Member(s) Responsible
1	Add a countdown timer to play music.	25 <sup>th</sup> February	Sneha Lata Umrit, Ong Kwang Xi, Keitaro Mirakel Wongso, Lee Hui Fang
2	Implement queue for operations of multiple devices.	25 <sup>th</sup> February	Khai Chuin and Qian Kai
3	Solving the problem Advertiser and Scanner Dilemma	25 <sup>th</sup> February	ALL

Spring Semester Meeting 3		
Date: 25 <sup>th</sup> February 2021	Time: 2p.m.	Venue: MS Teams
Type	Formal ( <i>Supervised by Dr. Radu Muschevici</i> )	
Chairperson	Sneha Lata Umrit	
Secretary	Lee Hui Fang	
Attendees	Lee Hui Fang, How Khai Chuin, Sneha Lata Umrit, Ong Kwang Xi, Keitaro Mirakel Wongso, Loh Qian Kai	

### ***Meeting Objectives***

- Discuss tasks completed namely queue operations, merging BLE and sound synchronization, and adding condition based on user input.
- Current dilemma – whether or not it is an issue to include internet permission.
- SNTP client class – using apache.org license
- Tasks in progress namely completing disconnect operations, dark/light theme, solving minor bugs, final report writing
- Confirm contents of final report especially regarding requirements diagrams

Key Discussions		
No.	Topic	Member(s) Involved
1	Issue on having internet connection	Sneha
2	Issue on for advertiser & scanner	Qian Kai
3	Contents included in final report	ALL
4	Current progress for the whole project	Sneha

Action Plan			
No.	Action Items	Due Date	Member(s) Responsible
1	Allow user to change dark/light theme	1 <sup>st</sup> March	Kwang Xi & Keitaro
2	Document all the limitations especially on Advertiser & Scanner dilemma	11 <sup>th</sup> March	Qian Kai & Khai Chuin
3	Writing unit tests *Build file can be done if have time	11 <sup>th</sup> March	ALL
4	Writing final report	End of March	ALL

Spring Semester Meeting 4		
Date: 4 <sup>th</sup> March 2021	Time: 2 p.m.	Venue: MS Teams
<b>Type</b>	Formal ( <i>Supervised by Dr. Radu Muschevici</i> )	
<b>Chairperson</b>	Sneha Lata Umrit	
<b>Secretary</b>	How Khai Chuin	
<b>Attendees</b>	Lee Hui Fang, How Khai Chuin, Sneha Lata Umrit, Ong Kwang Xi, Keitaro Mirakel Wongso, Loh Qian Kai	

### ***Meeting Objectives***

- Tasks completed including requirement testing, disconnect operations.
- Tasks in progress including unit testing, user interface, and report writing.
- Future tasks including adding meaningful comments in codes, removing unnecessary lines of codes and refactoring.

Key Discussions		
No.	Topic	Member(s) Involved
1.	Explain current situation of project	Sneha
2.	Is presentation and software demo merge	Qian Kai
3.	Testing the Blueka application with more phone	ALL
4.	Whether testing for the third-party library is needed	Hui Fang

Action Plan			
No.	Action Items	Due Date	Member(s) Responsible
1.	Email requirement testing to Dr. Radu	11 <sup>th</sup> March	Sneha
2.	Continue carry out the testing	11 <sup>th</sup> March	ALL
3.	Writing on the final report	10 <sup>th</sup> April	ALL

Spring Semester Meeting 5		
Date: 11 <sup>th</sup> March 2021	Time: 2 p.m.	Venue: MS Teams
<b>Type</b>	Formal ( <i>Supervised by Dr. Radu Muschevici</i> )	
<b>Chairperson</b>	Sneha Lata Umrit	
<b>Secretary</b>	Keitaro Mirakel Wongso	
<b>Attendees</b>	Lee Hui Fang, How Khai Chuin, Sneha Lata Umrit, Ong Kwang Xi, Keitaro Mirakel Wongso, Loh Qian Kai	

### ***Meeting Objectives***

- Discuss amendments regarding requirements
- Video demonstration of 3 phones in concert
- Video demonstration of user interface
- Future tasks

Key Discussions		
No.	Topic	Member(s) Involved
1.	Explain the amendments of the requirements	Sneha Lata Umrit
2.	Showing some demonstration video	Sneha Lata Umrit
3.	Unstable Connection for 4 or more phones	Loh Qian Kai
4.	Should we do other testing other than unit testing	Lee Hui Fang

Action Plan			
No.	Action Items	Due Date	Member(s) Responsible
1.	Fix the unstable connection for 4 or more phones	After finishing final report	Loh Qian Kai
2.	Continue writing final report	10 <sup>th</sup> April	ALL
3.	Continue testing		ALL

Spring Semester Meeting 6		
Date: 18 <sup>th</sup> March 2021	Time: 2 p.m.	Venue: MS Teams
<b>Type</b>	Formal ( <i>Supervised by Dr. Radu Muschevici</i> )	
<b>Chairperson</b>	Sneha Lata Umrit	
<b>Secretary</b>	Lee Hui Fang	
<b>Attendees</b>	Lee Hui Fang, How Khai Chuin, Sneha Lata Umrit, Keitaro Mirakel Wongso, Loh Qian Kai	

### ***Meeting Objectives***

- Report writing including key implementation decisions, software implementation for both BLE and sound synchronization, literature review, project management.
- Future tasks including improving requirement diagrams and software testing part of report

Key Discussions		
No.	Topic	Member(s) Involved
1.	Report Writing	ALL
	- Section 6 on implementation of Blueka	ALL
	- Class Diagram of the application	ALL

Action Plan			
No.	Action Items	Due Date	Member(s) Responsible
1.	Continue writing in final report	10 <sup>th</sup> April	ALL
2.	Discussing in presentation for next week	10 <sup>th</sup> April	ALL

Spring Semester Meeting 7		
Date: 25 <sup>th</sup> March 2021	Time: 2.00pm	Venue: MS Teams
<b>Type</b>	Formal ( <i>Supervised by Dr. Radu Muschevici</i> )	
<b>Chairperson</b>	Sneha Lata Umrit	
<b>Secretary</b>	Loh Qian Kai	
<b>Attendees</b>	ALL	

### ***Meeting Objectives***

- Discussion on presentation contents and ideas
- Discussion on software demonstration video
- Discussion on software testing in report
- Meeting clash next week

Key Discussions		
No.	Topic	Member(s) Involved
1.	Demonstration of software testing methodologies	Sneha
2.	Discussion on presentation and software demonstration	ALL

Action Plan			
No.	Action Items	Due Date	Member(s) Responsible
1.	Prepare presentation slides	22/04/21	ALL
2.	Prepare demonstration videos	22/04/21	Sneha

Spring Semester Meeting 8		
Date: 9 <sup>th</sup> April 2021	Time: 10.30am	Venue: MS Teams
<b>Type</b>	Formal ( <i>Supervised by Dr. Radu Muschevici</i> )	
<b>Chairperson</b>	Sneha Lata Umrit	
<b>Secretary</b>	How Khai Chuin	
<b>Attendees</b>	ALL	

### ***Meeting Objectives***

- Obtain feedback for final report from the first draft emailed to supervisor
- Show presentation contents to supervisor and confirm structure of slides as well as content included. Get to know more about any additional information required for the presentation
- Discuss the application demonstration procedure with the supervisor and explain the process that the team intends to do
- Using APK file to install application
- General Q&A from team members

Key Discussions		
No.	Topic	Member(s) Involved
1.	Review of the final report	ALL
2.	Review on the presentation	Sneha, Qian Kai

Action Plan			
No.	Action Items	Due Date	Member(s) Responsible
1.	Continue in writing final report	25 April	ALL
2.	Continue on improving the presentation slides	15 April	Sneha, Qian Kai



Spring Semester Meeting 9		
Date: 15 <sup>th</sup> April 2021	Time: 2.15pm	Venue: MS Teams
<b>Type</b>	Formal ( <i>Supervised by Dr. Radu Muschevici</i> )	
<b>Chairperson</b>	Sneha Lata Umrit	
<b>Secretary</b>	Keitaro Mirakel Wongso	
<b>Attendees</b>	ALL	

### ***Meeting Objectives***

- Progress update on final report and codes
- Confirm presentation content with supervisor.
- Confirm application demonstration content with supervisor.
- General Q&A from members

Key Discussions		
No.	Topic	Member(s) Involved
1	Confirm the presentation content	Sneha, Qian Kai
2	Confirmation of final report	Qian Kai
3	Software Demo	Qian Kai

Action Plan			
No.	Action Items	Due Date	Member(s) Responsible
1	Add improvement on title (Presentation and Final Report)	Before 23 March	ALL
2	Improve the slide (Make it short and simple)	Before 23 March	Sneha