

## REPORT STATUS DECLARATION FORM

Title: PRESENTATION SYSTEM FOR CAPTURING AUDIENCE  
FEEDBACK USING ANDROID-BASED SMARTPHONE  
\_\_\_\_\_

Academic Session: JAN 2014

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Date: \_\_\_\_\_

Date: \_\_\_\_\_

**PRESENTATION SYSTEM FOR CAPTURING AUDIENCE FEEDBACK USING  
ANDROID-BASED SMARTPHONE**

By

Lee Chang Eu

A REPORT

SUBMITTED TO

University Tunku Abdul Rahman

In partial fulfillment of the requirements

for the degree of

BACHELOR OF COMPUTER SCIENCE (HONS)

Faculty of Information and Communication Technology

(Perak Campus)

JAN 2014

## DECLARATION OF ORIGINALITY

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**FACULTY OF INFORMATION COMMUNICATION AND TECHNOLOGY**

Date: 11/4/2014

**SUBMISSION OF FINAL YEAR PROJECT /DISSERTATION/THESIS**

It is hereby certified that Lee Chang Eu (ID No: 11ACB06912 ) has completed this final year project/ dissertation/thesis\* entitled “Presentation System for Capturing Audience Feedback Using Android-based Smartphone” under the supervision of Dr. Ooi Boon Yaik (Supervisor) from the Department of Computer Science, Faculty of Information Communication and Technology, and \_\_\_\_\_ (Co-Supervisor)\* from the Department of \_\_\_\_\_, Faculty of \_\_\_\_\_.

I understand that University will upload softcopy of my final year project / dissertation/ thesis\* in pdf format into UTAR Institutional Repository, which may be made accessible to UTAR community and public.

Yours truly,

## **ACKNOWLEDGEMENT**

I would like to express my sincere thanks and appreciation to my supervisors, Dr Ooi Boon Yaik who has given me this great and bright opportunity to engage in Presentation System. It is my first step to establish a career in creating a mobile application and utilizing the programming languages I have learnt. Dr Ooi Boon Yaik has given me the best quote since the beginning which is “It doesn’t matter which kind of programming languages you know, it is how you utilize your programming logic.” A million thanks to you.

I must say thanks to my parents for their love, support and continuous encouragement throughout the course. With their support, I have the motivation to push myself to my limit, the limit which I have given the chance for me to learn more things and they have taught me that my future is created by what I do today not tomorrow.

## **ABSTRACTS**

This project is a Presentation System by using the most commonly use device - Android Mobile integrates Java Server into a Presentation System. The methodology that applied in this project is throwaway prototyping where several prototypes were produced, but at the end of the day a complete system is produced. The project includes the use of Networking, Database and Programming just to solve the problems faced by audience during every presentation sessions. The flow of whole presentation is important as it can allow most of the audience to understand better. To achieve this objective, the flow of the presentation should not be interrupted so that it can produce superior results. Issues include inability to ask question during an on-going presentation and content uncertainties. Audience wants a clearer understanding on the contents that has been carried out by the presenter but it is not polite to ask questions during an on-going presentation. This system will provide audience to have the opportunities to get an instant response from the presenter just by using few easy steps. With the use of this helpful presentation system, audience can just depend on it to ask question without any problem. The system will help presenter to get instant feedback from every audience within half minute time. At the end of the day, useful information can be extracted out from the input from device. All of these problems can be solved by using the latest technology which is android-based smart phone.

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## CHAPTER 1 INTRODUCTION

### 1.1 Project Background and Motivation

Presentation is a practice of showing or explaining contents of a particular topic to audience or learner. Few years back from year 2012, giving presentation is a best way of showing and expressing their ideas to audience. Thus, to make sure that all audience understands what is being presented is very important.

There are certain things that as an audience wishes to do during a presentation session. Trying to ask question regarding the particular point that was presented, but of course it is an impolite way to do so. Human is the most curious creature, as they will try to know more details on what they are interested. However, during presentation session, it is not right to stand up and request the presenter just to explain the point in details. As the technology keep on advancing, many people rely more on it and wish that useful information can be generated with the help of technology.

On top of that, to make sure that the presentation flow is smooth. One of the most effective way to solve it is to prevent interruption in the middle of the presentation. By allowing audience giving a quick response with just a click, an instant action is more than enough to solve the problem. The motivation of making this system is to make the presentation flow smoother and to improve the effectiveness and efficiency of the presentation.

## 1.2 Problem Statement

According to an article (Courses.essex.ac.uk ,2012), there is one difference between Asian people and Western people, which is that most of the Asian people are more shy in the way that they are shy to ask questions or give responds during presentations. Asian people are generally quiet when they meet someone they are not known. During a normal presentation session, there are a few problems that frequently faced by audience and presenter, these problems can be solved and further improved. Problems that are faced by audience and presenter are as below:

- i) Inability for audience to ask question during an on-going presentation
  - As usual, it is not so convenient to ask questions during an on-going presentation session as it may interrupt the whole presentation flow.
- ii) Presenter unable to judge whether audience is understanding about the content
  - Presenter may not judge it correctly from the expression of audience whether they know what the presenter is trying to bring out.
- iii) Presenter having problem on generating useful reports from audience
  - In most of the presentation, presenter fails to generate useful reports from audience because the system they are using unable to keep track the action done by audience.

One of latest technologies can definitely solve all the problems that are facing by audience which is Android-based smartphone.

### 1.3 Project Objectives

The objectives of the project is as following:

- i. To allow audience to ask question during on-going presentation
  - By giving audience the opportunity to ask question by texting question to presenter which make sure audience get the correct point without interrupting the whole presentation.
- ii. To make sure presenter gets instant feedback from the audience
  - By “pulling” quick response question from the server with the purpose to collect the information and evaluate or gauge how much information have the audience absorbed.
- iii. To make sure that at the end of the presentation, useful reports can be generated from the server.
  - By using the information collected during the presentation sessions, the system able to produce several useful reports.

### 1.4 Project Scope

The overall concept of the project is to ensure the flow of the presentation is smooth and efficient by solving the issues that facing by audience nowadays or faced by audience in the old days. The main focus of the project is to bring convenient to all audience and to ensure that all audience is clear and fully understand the content of the presentation without interfering the flow of the presentation. This project is also to enable audience will pay more attention to the attention.

### 1.5 Contribution

The project will bring convenient to not only audience but also presenters. The project will boost the flow of the presentation by allowing audience to ask question through texting method using smart phone without interfering the on-going presentation. The project will allow the audience gets the correct information of the content that being presented out. Not only that, the quick response question “pushed” by the presenter can allow audience can test their understanding based on the content of the presentation. The answers that are collected from the quick response question will evaluate which

part of the content that the audience does not clear about in order to free those question marks on the head of each audience.

The most important is that all the features are instant just to smoothen the whole presentation session for academic presentation, business presentation and so on. It can help to enhance the way of presenting as the system will generate reports based on the audience responds. It actually kills two birds with a stone, not only able to prevent interruption during presentation sessions and can help presenter to change their presentation style with the help of the system.

### **1.6 Technologies Involved**

- OS for Laptop/Desktop: Windows 7 x64bit
- OS Smart Phone ( Presenter ) : Android 2.3 Gingerbread and above
- OS Smart Phone ( Audience ) : Android 2.3 Gingerbread and above
- Software involved : Eclipse, MySQL Workbench 6.0 CE
- Hardware involved : Router (allowing clients to connect to server)
- Others : Wi-Fi , Portable Wi-Fi hotspot (allowing transferring of information)

## CHAPTER 2 LITERATURE REVIEW

### 2.1 Literature Review

There are certain existing systems were reviewed and different systems have their strengths and also weaknesses. Those 6 existing systems are mQlicker, ResponseWare, Eclicker, Moars, Webkeypad and let'sfeedback. They may be different in features but they serve one similarity which is they are designed for audience.

#### 2.1.1 mQlicker

**mQlicker** allows audience to respond the presenter in front of the stage. Audience can choose to reply the question(s) that asked by the presenter with different ways. For example, multiple choices, true or false, essay type or even alphanumeric. mQlicker supports unlimited audience size and unlimited number of open sessions which it can help the presentation to be held in a spacious environment. Next, it does support any web or html capable devices which eases a lot of users because nowadays with the current technology many electronic devices support web and html. In addition, it will secure the connections for respondent confidentiality. Besides that, mQlicker has a special feature which is so called "anonymity guaranteed". With this special feature, audience can stay anonymous. Some of the people would prefer to stay low profile and do not want others to know their name. Moreover, it is Wi-Fi based and it also supports IOS, Androids and Pc (Mqlicker.com ,n.d.). mQlicker lack of one feature which is prevent flooding from the audience. mQlicker should integrate flood prevention feature to prevent multiple submission from same person.



Figure 2.1: mQlicker



(Mqlicker.com ,n.d.)

### 2.1.2 ResponseWare

The next existing system that was reviewed is **ResponseWare**. Almost all features similar to mQlicker, ResponseWare allows audience to respond the presenter with multiple choices, true or false, essay type or even alphanumeric as well. Besides that, it supports javascript enabled web browsers, which means that it supports almost all electronic devices. It is Wi-Fi based and does support IOS and androids. One and the only one different is that ResponseWare has an interactive polling session using web browser in which mQlicker does not mention about this feature (Turningtechnologies.com ,n.d.)). Unfortunately, ResponseWare cannot prevent flooding act by users and only support limited size of audience. Meaning to say, ResponseWare can only be use in a less spacious environment unlike mQlicker. ResponseWare should include this feature into it to expand the size of the audience.

### 2.1.3 Ecliker

The third existing system that was reviewed is **Ecliker**. Unlike mQlicker and ResponseWare, Ecliker only allows audience to respond the presenter with multiple choices, true or false and agree or disagree. Ecliker is more to web based, so students can participate with any internet-enabled devices they owned. Furthermore, questions are delivered directly to users' devices without the need of projector which allows the ease of viewing from anywhere in the room or lecture hall. After a quiz results will be displayed immediately so that users can see how they did in the quiz. Ecliker supports Wi-Fi as well and it supports IOS and PC(Ecliker.com, 2012). Similar to mQlicker, Ecliker should implement flood prevention guard in order to stop multiple submission from the same person,otherwise, results would be inaccurate.



Figure 2.2: Ecliker

(Eclicker.com, 2012)

#### 2.1.4 Moars

The next existing system that was reviewed is **Moars**. Moars only allows users to reply the presenter with multiple choices. However, it has many languages available, user can configure to the language they desired. Besides that, Moars requires users to login so that as a student he or she able to access to their own grade book to see a history of their quiz grades. In addition, it will also allow student to see the latest results of the quiz. It also contains a special feature that other existing systems were reviewed do not have, which is the flood protection guards. With this flood protection guards, multiple survey submissions from one student will be forbidden (Moars.com ,2012). Moars only compatible with IOS this is the disadvantage of it. Moars should make it compatible with other devices like androids.

#### 2.1.5 Meridia Audience Response System

**Meridia Audience Response System** is similar to Moars, it only allows users to respond presenter with multiple choices. Furthermore, it integrates with Meridia Multisite and Remotepoll service which enables multiple website connection and compare site results. Because of Meridia Multisite and Remote poll service it allows unlimited web participants. It supports IOS and android. The advantage of webkeypad is that it only allows users to reply with multiple choices (Meridiaars.com,2012). Meridia Audience Response System should integrate more responding ways like mQlicker and ResponseWare. Because it limits the choice of audience to make any responses to the presenter.

#### 2.1.6 let'sfeedback

**let'sfeedback** is developed by german people in which this application is for academic purpose.



Figure 2.3: let'sfeedback

(Letsfeedback.net,n.d.)

Whenever the lecturer wants to initiate a talk event, he/she is required to give students the talk code in order to allow students to join the talk. The talk codes that given out by the lecturer can keep the anonymity of the students. The application contains feedback function which is used to get students to evaluate the talk or topic that has been carried out. Similar to all of the reviewed system, it is consider a user friendly system because the interface is easy to understand. It supports IOS, Android and PCs. (Letsfeedback.net,n.d.). However, in order to join the talk, one is required to get the talk code which is quite troublesome. Besides that, this system only has limited ways to reply the presenter which is the system only support multiple choices.

## 2.2 Criteria Mark

### 2.2.1 Criteria Evaluation

	Response Type	Audience Size	Web based	Anonymity Guaranteed	Login	Question Delivery	Meridia Multisite and Remote Poll Service	Result Checking
mQlicker	M/Y/E/A	$\infty$	✓	✓	-	✓	-	-
Responseware	M/Y/E/A	Limited	✓	-	-	✓	-	-
Ecliker	M/Y	Limited	✓	-	✓	✓	-	✓
Moars	M	Limited	✓	-	✓	✓	-	✓
Meridia Audience Response System	M	Unlimited	✓	✓ (using authentication key)	✓ (using authentication key)	✓	✓	-
let'sfeedback	M	Limited	-	✓	✓	✓	-	-

Table 2.1: Evaluation criteria based on literature review

Representation:

M - Multiple choices	Y - Yes/No + True False	E - Essay	A - Alphanumeric
----------------------	-------------------------	-----------	------------------

	Flood Protection Guard	No Installation	Other Language availability	Support
mQlicker	-	✓	-	iOS, Android, Pc
Responseware	-	✓	-	Android, iOS, Smartphones
Ecliker	-	-	-	iOS ,pc
Moars	✓	-	✓	iOS
Meridia Audience Response System	-	-	-	iOS and android
let'sfeedback	-	-	-	iOS, android,pc

Table 2.2: Evaluation criteria based on literature review (cont)

2.2.2 Criteria Elaboration

Criteria	Details
Response Type	The way how audience reply presenter through device.
Audience Size	The capacity that can hold the audience.
Web-based	Supports html and web using the device.
Anonymity Guaranteed	Ability to conceal the identity of audience.
Login	Credentials required to obtain access to the system.
Question Delivery	Ability to get the question from the presenter instantly.
Meridia Multisite and Remote Poll	Ability to connect multiple websites to make comparison and connect to the presentation session.
Result Checking	Ability to check result right after the quiz session.
Flood Protection Guard	Prevent multiple submission from the same person.
No installation	No setup is needed or required.
Other Language Availability	Languages other than English is available.
Support	The compatibility of the system itself.

Table 2.3: Criteria Elaboration

## CHAPTER 3 METHODOLOGY AND TOOLS

### 3.1 System Architecture

The architecture design that going to use is generic layered architecture, in which it is used to model the interfacing of sub-systems (Wong Chim Chwee 2012). Regarding architecture design of a system or application). The diagram below shows the generic layered architecture of the project.

#### For Client Side

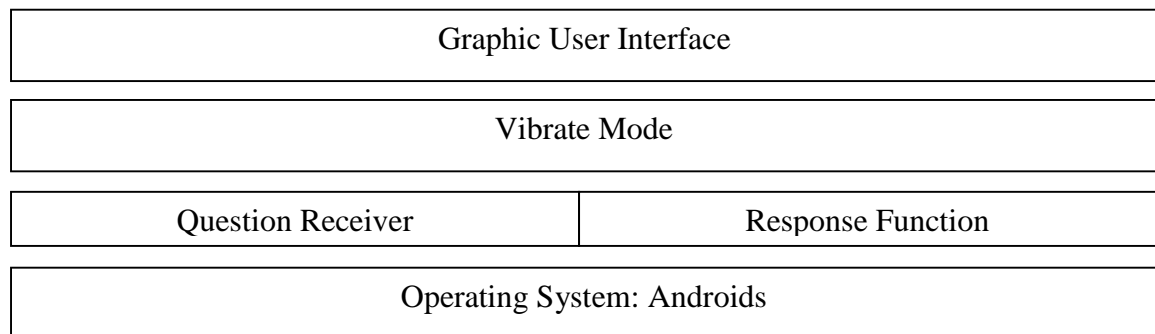


Figure 3. 1 Client Side System Architecture

#### For Presenter Side

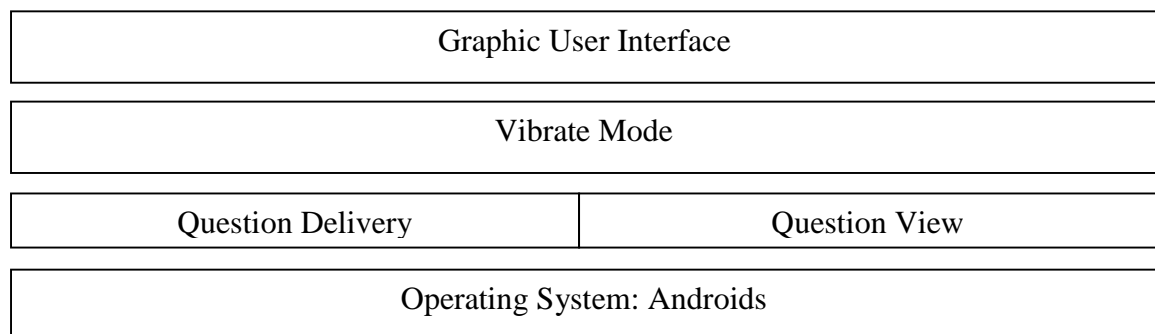


Figure 3. 2 Presenter Side System Architecture

#### For Server Side

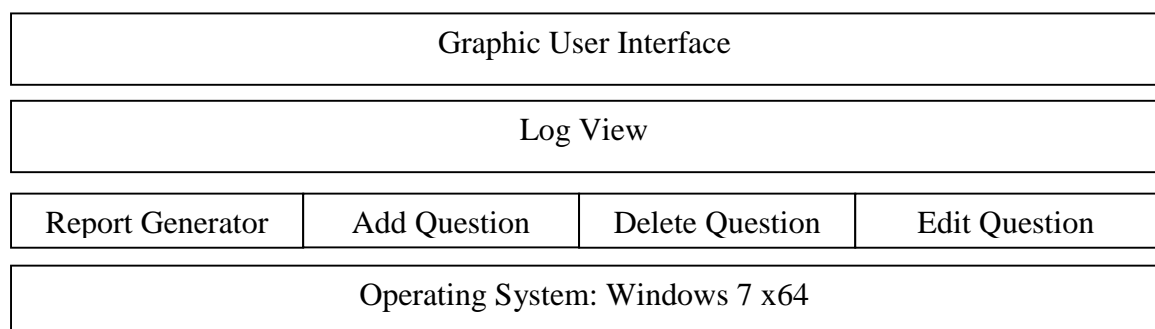


Figure 3. 3Server Side System Architecture

Elaboration

Add Question	Function for adding quick response question
Delete Question	Function for deleting quick response question
Edit Question	Function for editing quick response question
Log View	Displaying the processes among audience, presenter and server
Question Delivery	Function for sending out quick response question to audience
Question Receiver	Function for receiving quick response question from presenter
Question View	Function for viewing the question asking by audience
Response Function	Function for giving reply to presenter (for quick response purpose).
Report Generator	Function for generating reports

**3.2 Structure of the System**

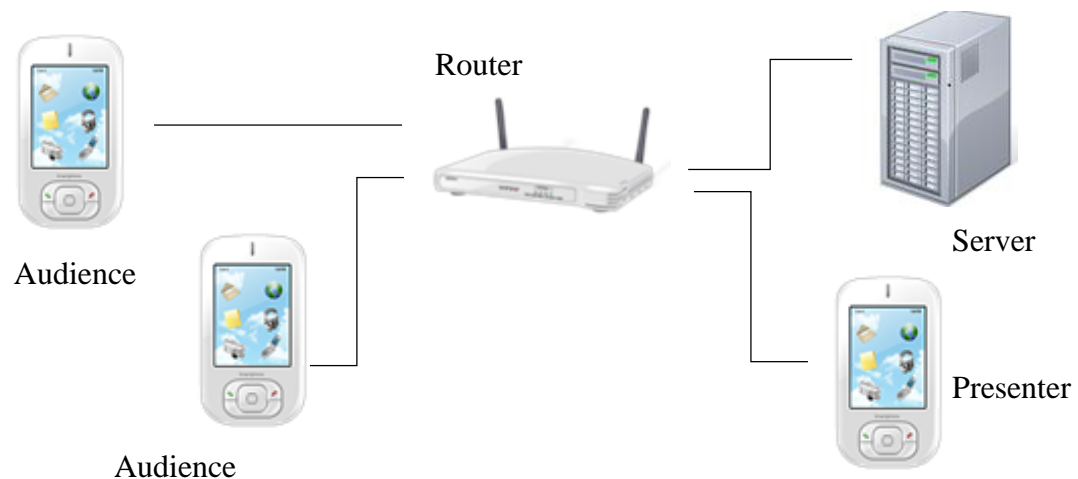


Figure 3. 4 System Structure



### 3.3 Methodology

The development method that will be using for the project is throwaway prototyping. Because there will be several prototype to prove the concepts and ideas are workable before proceed complete the system.

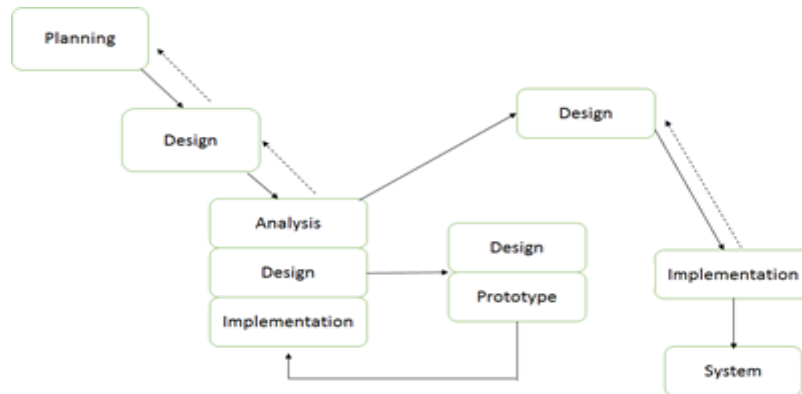


Figure 3. 5 Throwaway Prototyping

#### 1<sup>st</sup> Planning Phase

- To develop a presentation system for audience using android-based smart phone.
- The hardware that should be included for the system.
- The software that should for the environment.
- Planning the modules to be done.

#### 1<sup>st</sup> Design Phase

- Generic layered architecture
- Use case diagram
- Use case specification
- Class Diagram
- Sequence Diagram
- Activity Diagram
- Collaborative Diagram
- State Machine Diagram

### 2<sup>nd</sup> Planning Phase

- Planning on which module should be done first and so on

### 2<sup>nd</sup> Design Phase

- Audience can use android based phone to communicate with presenter during presentation session without interruption.
- Server able to retrieve the message and display it on the question view on the server
- Presenter able to retrieve the message and display it on the presenter's android mobile
- Server able to broadcast the message sent by clients to all clients and presenter
- Database design for chat logs
- All messages from clients will be store in database as chat logs

### 2<sup>nd</sup> Analysis Phase

- Concepts and ideas for 2<sup>nd</sup> design phase are workable

### 2<sup>nd</sup> Implementation Phase

- Code the audience sending question to the server.
- Code the server receiving question from audience
- Code the presenter receiving question from the server
- Code the broadcast function into the server
- Testing on the communication among audience, presenter and server
- Code the database connection to the prototype
- Testing the messages sent from clients able to store into database as chat logs
- First version of prototype finished

### 3<sup>rd</sup> Design Phase

- Database design for quick response question
- Client able to retrieve quick response question from the database through server
- Server able to receive a flag from presenter
- Presenter able to use a flag to trigger clients to get quick response question
- Flags for receiving and sending quick response question

### 3<sup>rd</sup> Analysis Phase

- Concepts and ideas for 3<sup>rd</sup> design phase are workable

### 3<sup>rd</sup> Implementation Phase

- Code the clients receiving quick response question from the database through server
- Code the server able to send quick response question from presenter
- Second version of prototype finished

### 4<sup>th</sup> Design Phase

- Server able to collect quick response replied by clients
- Server able to generate chart after it has collected quick response answers within 30 seconds

### 4<sup>th</sup> Analysis Phase

- Concepts and ideas for 4<sup>th</sup> design phase are workable

### 4<sup>th</sup> Implementation Phase

- Code timer in the server so that it can total up all the data received from clients
- Code the chart function when server has collected quick response answers
- Third version of prototype finished

### 5<sup>th</sup> Design Phase

- Type of reports that should be included in the report generation from the server
- Ability to add, delete and edit the quick response question from the server

### 5<sup>th</sup> Analysis Phase

- Concepts and ideas for 5<sup>th</sup> design phase are workable
- Prevent interruption quick response question should be add, delete and edit in the server (before the presentation begins)

### 5<sup>th</sup> Implementation Phase

- Code the reports by writing SQL query into server side
- Code the reports generation at the server side
- Code the add, delete and edit for quick response at the server side
- Fourth version of prototype finished
- Integrate all of the modules and finalize them into a complete system

### 3.4 Use Case Diagram

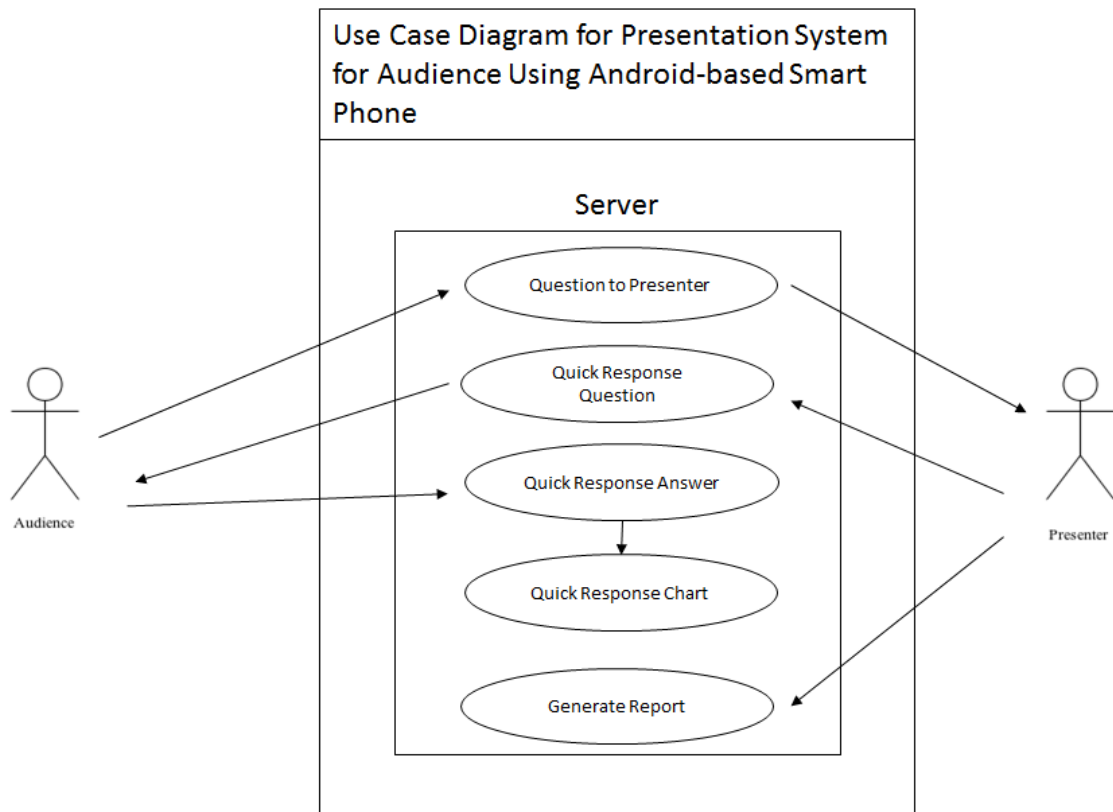


Figure 3. 6 Test Case Diagram

### 3.5 Use Case Specification

#### Question to Presenter

<b>Brief Description</b>
Allow audience to ask question without exposing his/her identity. Question that was asked by audience will not interfere the presentation.
<b>Actor</b>
Audience
<b>Pre-condition</b>
Audience has not as any question.
<b>Post-condition</b>
Question that was asked reaches to presenter side.
<b>Basic Flow of Events</b>
<ol style="list-style-type: none"><li>1. Audience asks question as anonymous.</li><li>2. Question reaches presenter side without interfering the whole presentation.</li></ol>

#### Quick Response Question

<b>Brief Description</b>
Presenter send a signal to server then server send quick response question to audience
<b>Actor</b>
Audience, Presenter
<b>Pre-condition</b>
Audience mobile only show the application interface
<b>Post-condition</b>
Audience get the quick response question
<b>Basic Flow of Events</b>
<ol style="list-style-type: none"><li>1. Audience mobile only show the application interface</li><li>2. Presenter retrieve the quick response question from the database through server</li><li>3. Presenter chooses which quick response question to send to audience</li><li>4. Server retrieve the information from presenter</li><li>5. Server send information to audience</li><li>6. Audience get the quick response question</li></ol>

Quick Response Answer

<b>Brief Description</b>
Allow audience to responds to the quick response question
<b>Actor</b>
Audience
<b>Pre-condition</b>
Audience receives the quick response question from the presenter
<b>Post-condition</b>
Server receives the responds from audience
<b>Basic Flow of Events</b>
1. Audience receives the quick response question from the presenter
2. Audience responds to quick response question
3. Server receives the responds from audience

Quick Response Chart

<b>Brief Description</b>
Server generate a chart based on the collected information from the audience
<b>Actor</b>
Audience
<b>Pre-condition</b>
Nothing happens on the server side
<b>Post-condition</b>
Server generate chart from the responds of audience after 20 seconds
<b>Basic Flow of Events</b>
1. Nothing happens on the server side
2. Audience responds to the quick response question
3. Server starts to collect the responds from the audience for 20 seconds
4. Server generate chart from the responds of audience after 20 seconds

Generate Report

<b>Brief Description</b>
Server generate reports at the end of the presentation
<b>Actor</b>
Audience
<b>Pre-condition</b>
Nothing happens on the server side
<b>Post-condition</b>
Server generate reports on presenter's needs
<b>Basic Flow of Events</b>
1. Nothing happens on the server side
2. Presenter wants generate certain useful reports
3. Server retrieve information from database based on the presenter's input
4. Server generate reports on presenter's needs

### 3.6 Class Diagram

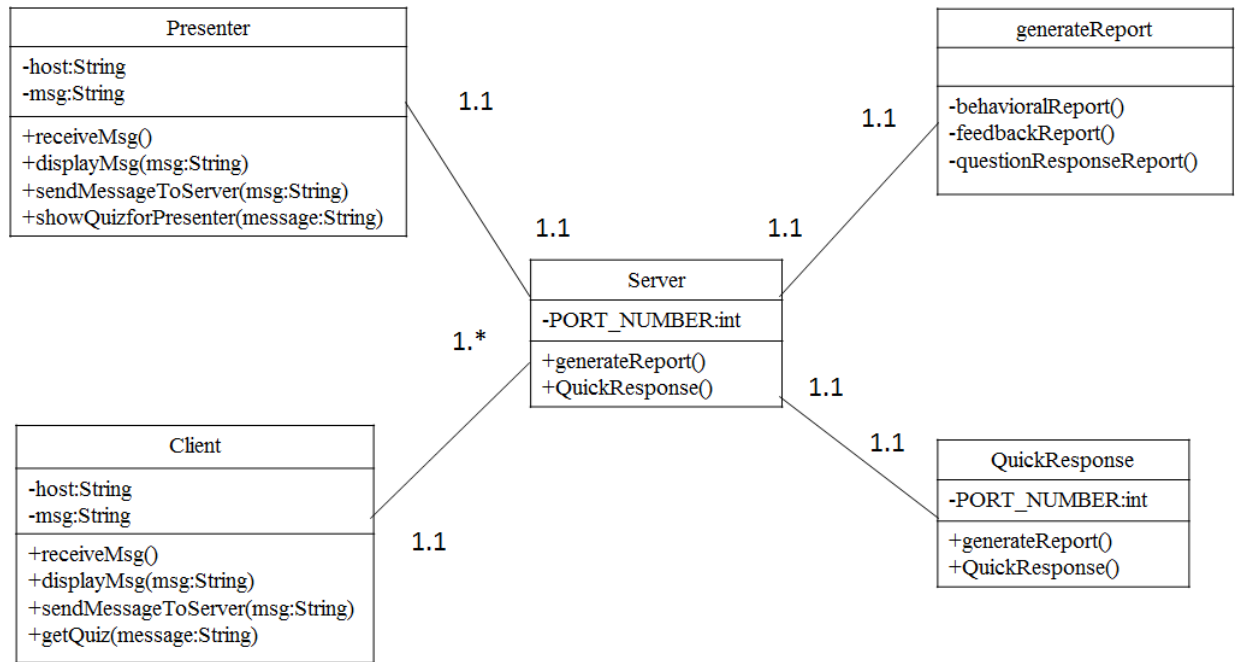


Figure 3. 7 Class Diagram



### 3.7 Sequence Diagram

#### For Audience

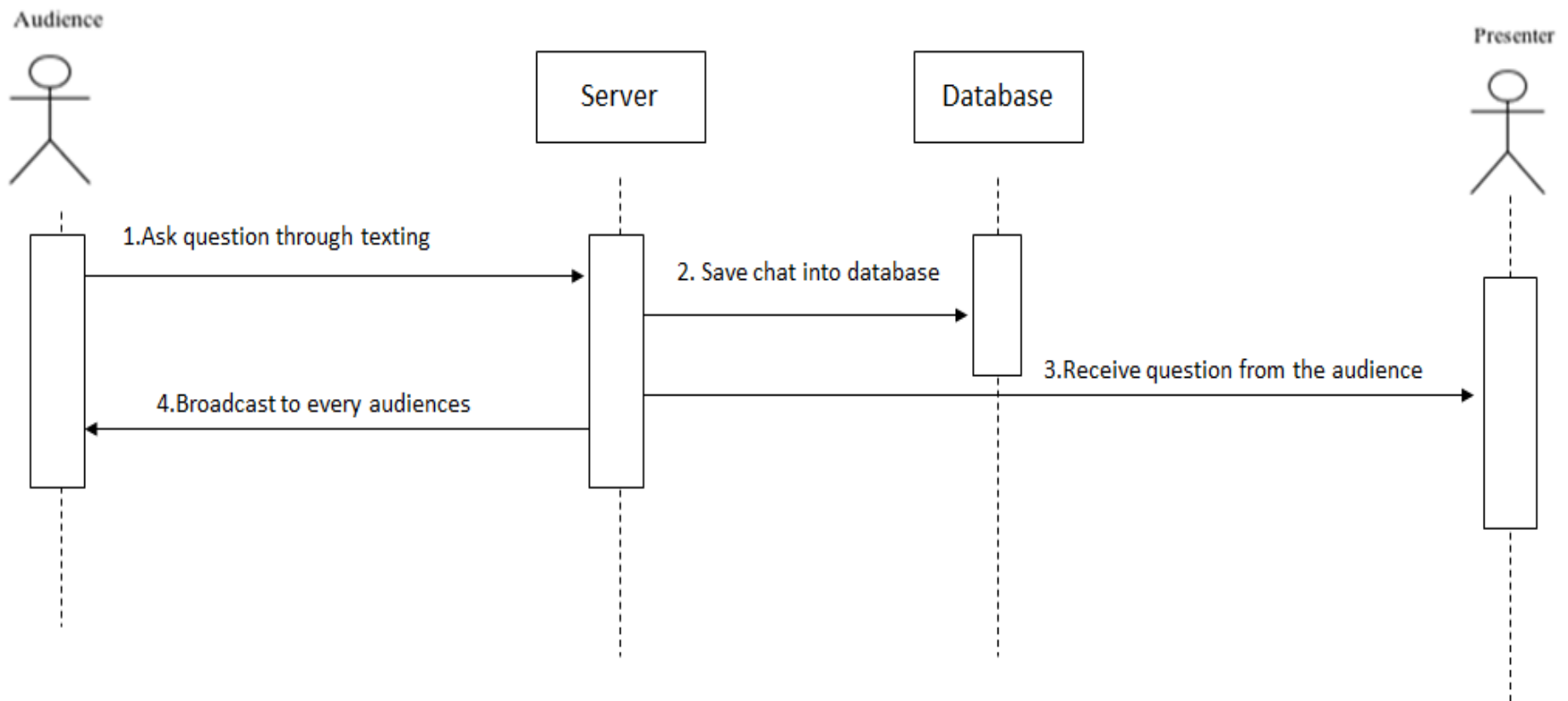


Figure 3. 8 Sequence Diagram for Audience

For Presenter

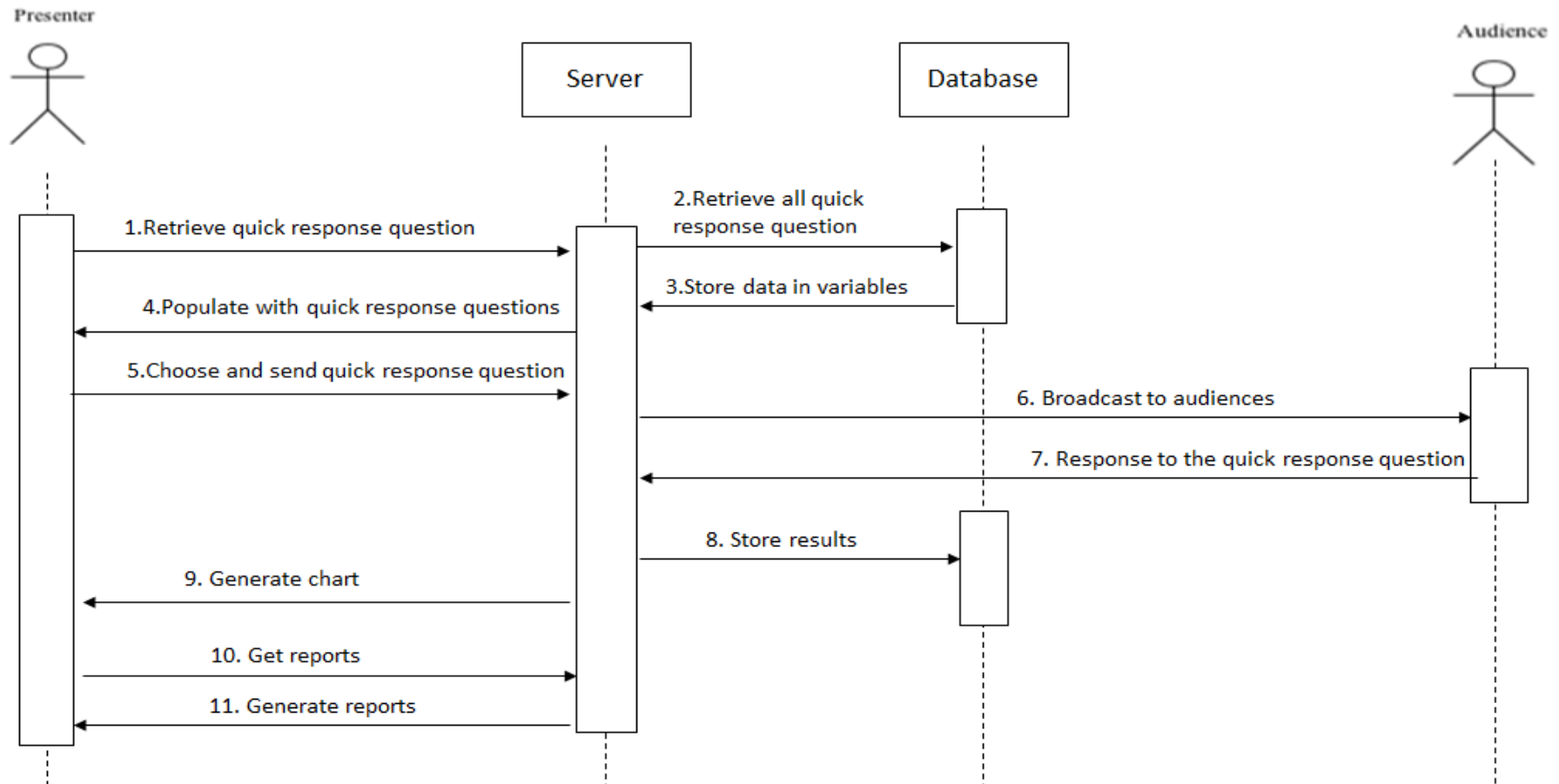


Figure 3. 9 Sequence Diagram for Presenter

### 3.8 Activity Diagram

For Audience

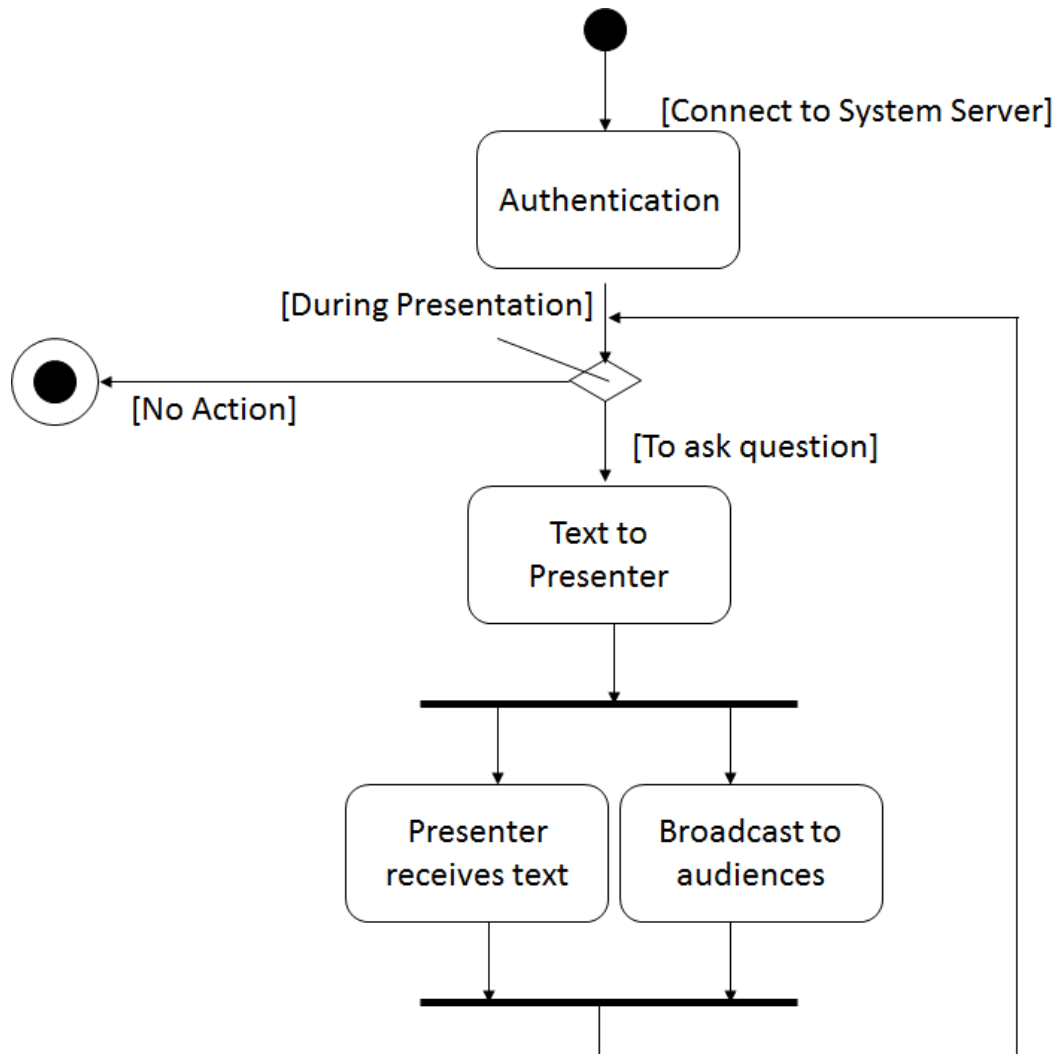


Figure 3. 10 Activity Diagram for Audience

For Presenter

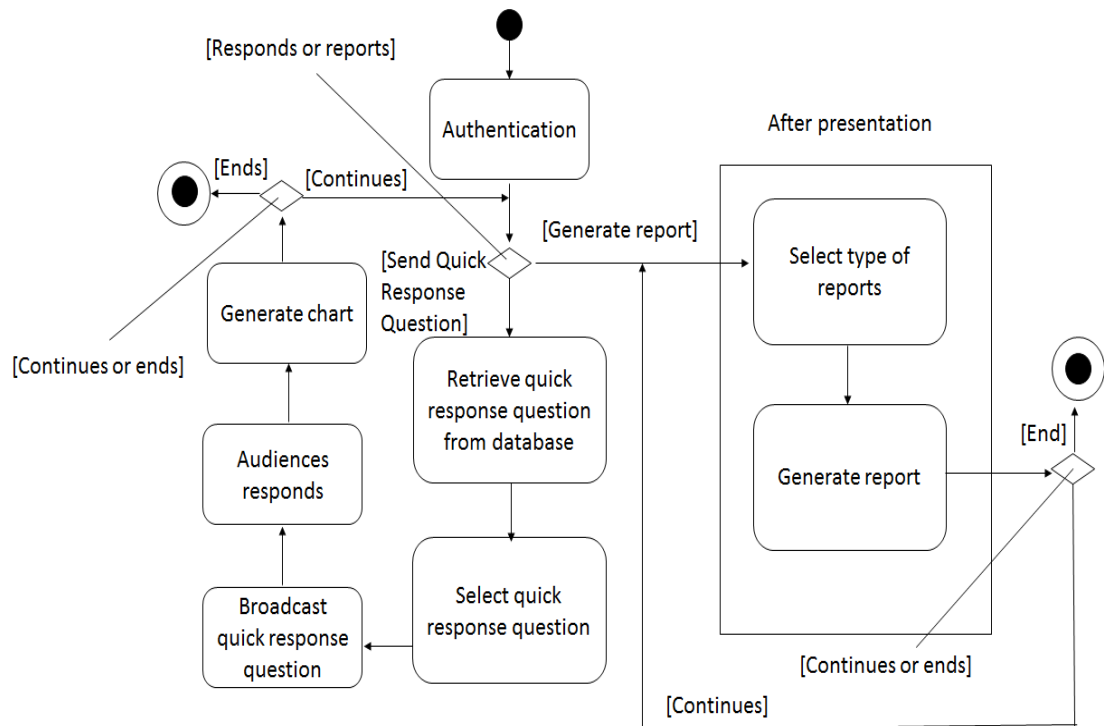


Figure 3. 11 Activity Diagram for Presenter

### 3.9 Collaboration Diagram

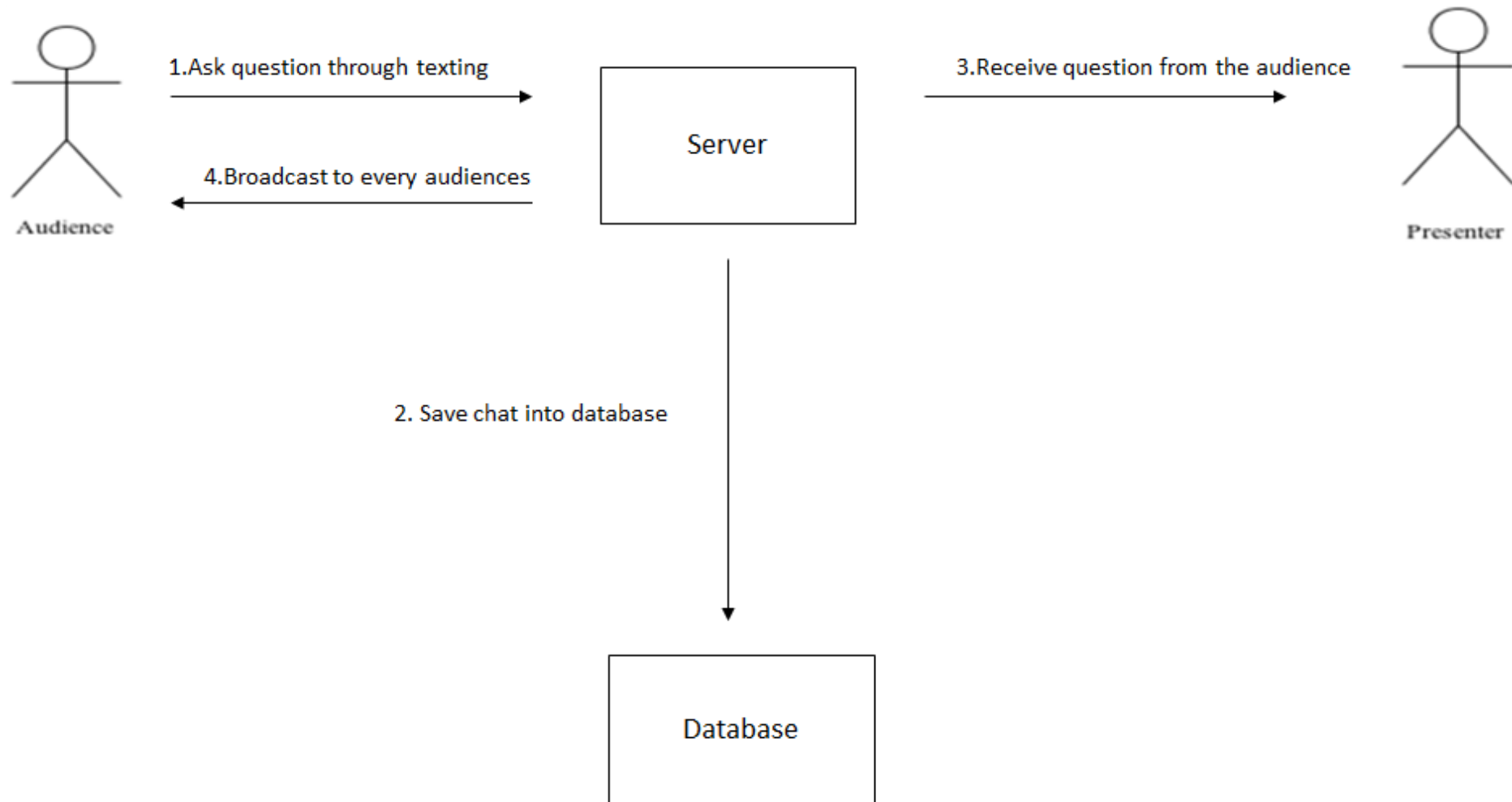


Figure 3. 12 Collaboration Diagram for Audience

For Presenter

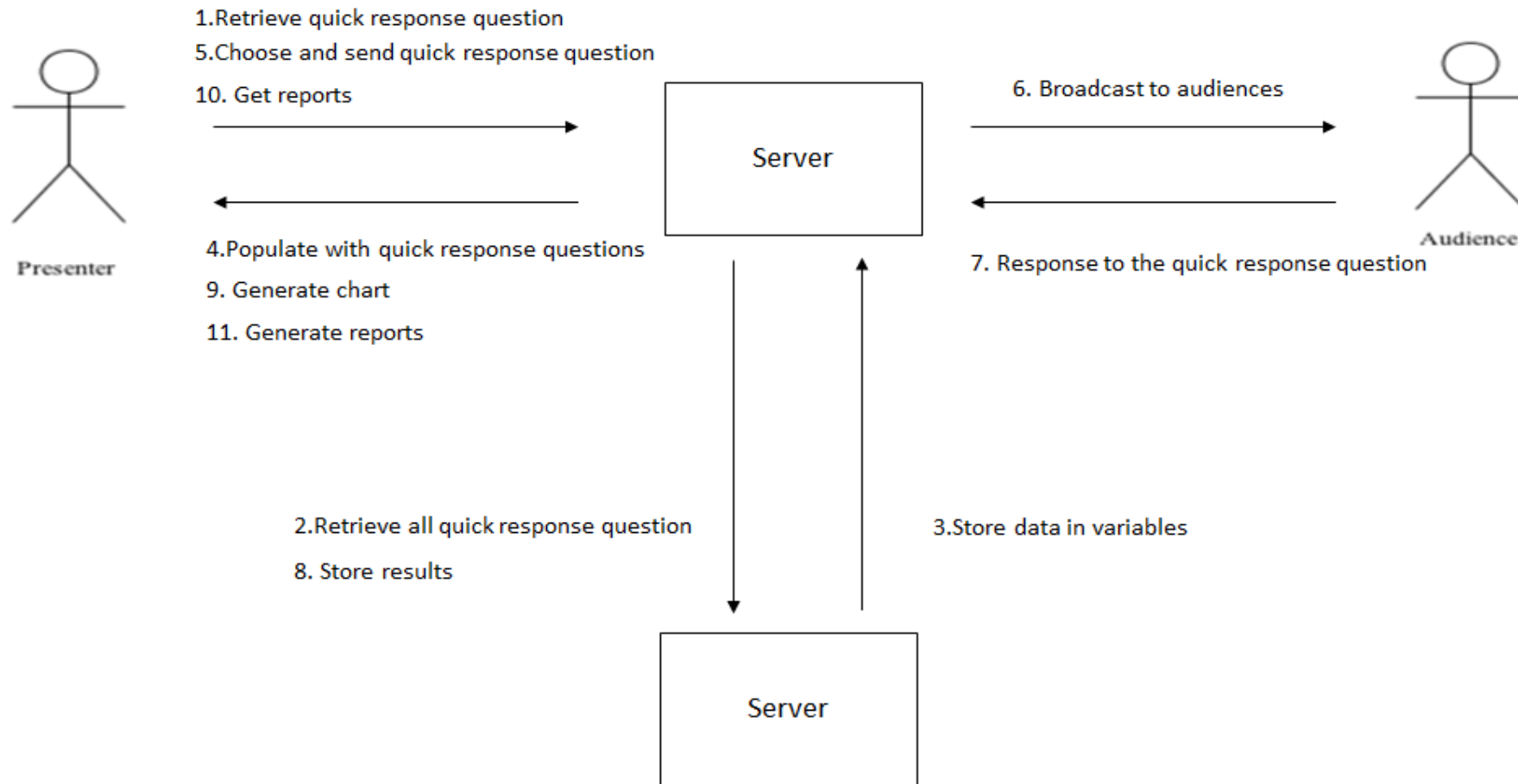


Figure 3. 13 Collaboration Diagram for Presenter

### 3.10 State Machine Diagram

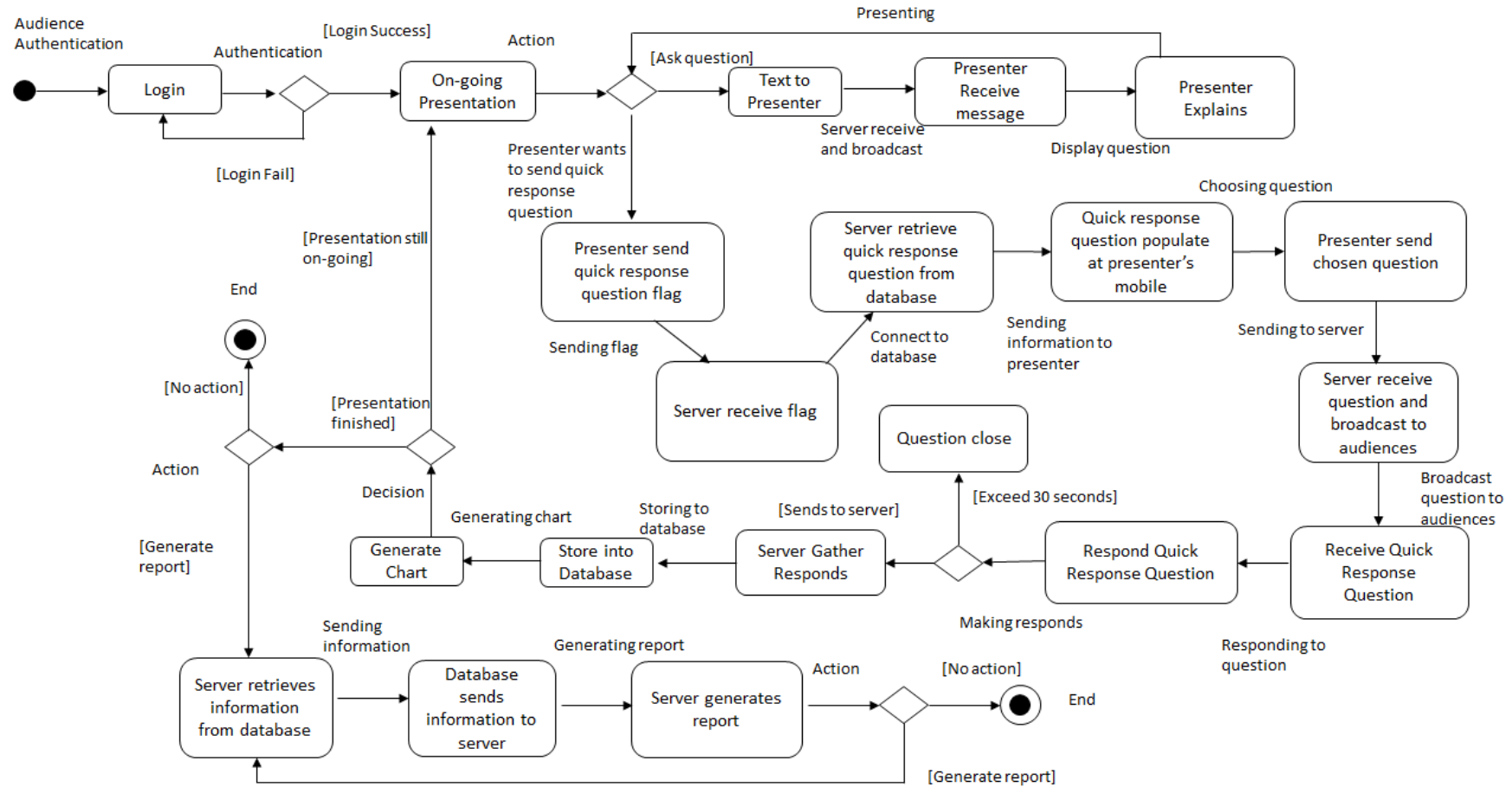


Figure 3. 14 State Machine Diagram of Presentation System

### 3.11 Timeline

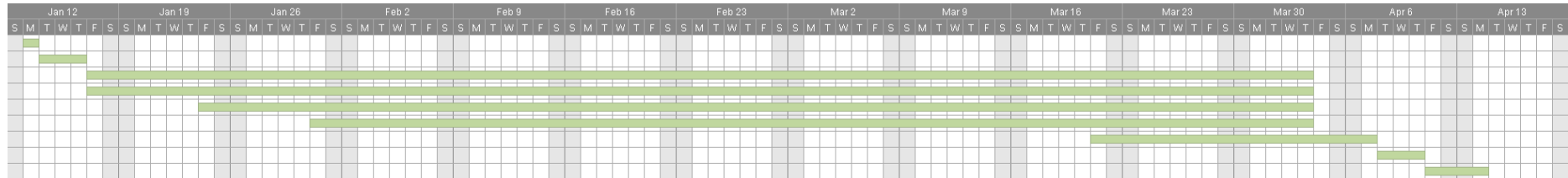


Figure 3. 15 Timeline for Project 2

	Task Name	Duration	Start	Finish
1	Data Collection	1	01/13/14	01/13/14
2	Review previous work and update review	3	01/14/14	01/16/14
3	Project documentation	55	01/17/14	04/03/14
4	Project analysis and design	55	01/17/14	04/03/14
5	Project implementation	50	01/24/14	04/03/14
6	Debugging and testing	45	01/31/14	04/03/14
7	Deployment	12	03/21/14	04/07/14
8	Finalizing project	3	04/08/14	04/10/14
9	Preparation for presentation	2	04/11/14	04/14/14

Figure 3. 16 Gantt chart for Project 2



No.	Task	Description
1.	Data Collection	Update the latest information with supervisor. Discuss on the task to be done, things should be include in project 2.
2.	Review previous work and update review	Review the latest and previous work. After reviewed, update the reviewed system.
3.	Project documentation	Project documentation will be started from the beginning of the project until the end of the project.
4.	Project analysis and design	Discuss with supervisor by analyzing every related technologies, environment and so on. Continue the program from the prototype of project 1 and will be more focus on the interface of the project.
5.	Project implementation	Implementation of functionalities of the project that have stated in project 1. Update with supervisor weekly on the progression.
6.	Debugging and testing	Test the final result of the program and make sure that the developed program fulfills the objectives of the project. Diagnose issues in the program.
7.	Deployment	Integration of program and deploy it on the android-based smart phone.
8.	Finalizing project	Perform final checking and make appropriate changes to the documentation. Make sure that the program is working fine.
9.	Preparation for presentation	Prepare for the presentation about the demonstration part to moderator.

**Table 3.2 Elaboration for project 2 task in Gantt chart**

### 3.12 Requirement Specification

#### 3.12.1 User requirement

- User should able to send message to presenter during an on-going presentation.
- User should able to reply presenter when quick response question have been given out.
- Server able to generate chart from the quick response answer collected.
- Server able to generate report at the end of the presentation.

#### 3.12.2 Test Plan

##### Android

- i. The function of “**pulling**” information from the server should be tested in such way:
  - Create a server
  - Connect smart phone to the server
  - Create sample quick response question
  - Check whether server synchronize with smart phone
  - Check whether the information has sent to smart phone
- ii. The function of **response presenter** should be tested in such way:
  - Assume smart phone has connected to the server
  - Check whether smart phone able to press the response presenter button in the interface
  - Check whether server receive message
  - Check whether server synchronize the information
  - Check whether presenter receive the message
  - Check whether the message able to update itself on both server and presenter’s side

### Server

- i. The function of **generate informative chart** should be tested in such way:
  - Assume clients have connected to the server
  - Clients “pull” quick response question from the server
  - Clients respond to the quick response question
  - Server gather data
  - Generate chart based on data gathered
  
- ii. The function of **generate report** should be tested in such way:
  - Assume clients have connected to server
  - Server keep all the chat logs of the clients
  - Server keep all the quick response question from the clients
  - Generate report based on the data collected

### 3.12.3 Test Script

Presenter Side			
No	Scenario	Test Description	Status
1	Presenter wants to run the Presenter application	<ul style="list-style-type: none"> <li>-The application will switch the android mobile to vibrate mode.</li> <li>-The application will ask the presenter to type in the IP address of the server.</li> <li>-If successful, connect to the server.</li> </ul>	Passed
2	Presenter able to receive the question asked by audience	<ul style="list-style-type: none"> <li>-Audience sends text.</li> <li>-Server receive the message from audience.</li> <li>-Server send to presenter and at the same time broadcast the message to all audience.</li> </ul>	Passed
3	Presenter want to retrieve quick response question and list them in the dialog box of presenter's mobile	<ul style="list-style-type: none"> <li>-Presenter sends a retrieve quick response question flag.</li> <li>-Server runs the query in database to retrieve necessary information.</li> <li>-Server sends the list of quick response question to presenter.</li> <li>-The presenter's mobile receive the list of quick response question then populate at the screen of the mobile.</li> </ul>	Passed

4	Presenter wants to push out the quick response question to all audience	<ul style="list-style-type: none"> <li>-Presenter choose the on screen quick response question.</li> <li>-Presenter press Submit button then the server receive the quick response question to be sent out.</li> <li>-Server broadcast the message to all audience.</li> </ul>	Passed
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Table 3. 1 Presenter Side Test Script

Audience Side			
No	Scenario	Test Description	Status
1	Audience wants to run the Client application	<ul style="list-style-type: none"> <li>-The application will switch the android mobile into vibrate mode.</li> <li>-The application will ask user to type in the IP address of the server.</li> <li>If successful, connect to the server</li> </ul>	Passed
2	Audience wants to send question to the presenter	<ul style="list-style-type: none"> <li>-User type in the question he/she wants to ask and press Send button.</li> <li>-If the message successfully send out, the message sent will display on user's screen, presenter's screen and all audience' screen.</li> </ul>	Passed
3	Audience able to receive quick response question from the presenter	<ul style="list-style-type: none"> <li>-User able to receive the signal from the presenter.</li> </ul>	Passed

		-Dialog box able to display out with quick response question together with the selections. -User able to choose the selections and send it back to the server. -If user did not reply within 15 seconds, the dialog box will dismiss itself.	
--	--	--	--

Table 3. 2 Audience Side Test Script

Server Side			
No	Scenario	Test Description	Status
1	Server starts up	-Server able to display IP address and Port Number used.	Passed
2	Server transmit signals or messages among presenter and audience	-Server able to receive message from audience. -Server able to receive message from presenter -Server able to broadcast message to all audience -Server able to receive flag from presenter to execute database query -Server able to receive flag from audience	Passed
3	Server able to prompt out chart when finish counting the quick response question	-Server able to run timer and stop timer when reaches 20 seconds -Server able to generate chart	Passed

		<ul style="list-style-type: none"> <li>-Server able to generate chart when it hits 15 seconds.</li> <li>-Server able to dismiss the chart when it hits 20 seconds.</li> </ul>	
4	Server able to allow presenter to generate graph	<ul style="list-style-type: none"> <li>-Server able to generate static graph first</li> <li>-Server able to execute query</li> <li>-Server able to retrieve data from database</li> <li>-Server able to generate the flexible graph from user's inputs.</li> <li>-User able to save the graph as reports</li> </ul>	Passed
5	Server able to allow presenter to add, edit and delete quick response question	<ul style="list-style-type: none"> <li>-User able to add quick response question and store in database</li> <li>-User able to edit quick response question and alter the information in database</li> <li>-User able to delete quick response question and delete the information in database</li> </ul>	Passed

Table 3. 3 Server Side Test Script

## CHAPTER 4 SYSTEM IMPLEMENTATION

### 4.1 Setup and Configuration

#### 4.1.1 Download database application on desktop/laptop

In order to store useful information into the database through system, database base installation is needed. To database the database please go to: <http://dev.mysql.com/downloads/tools/workbench/>

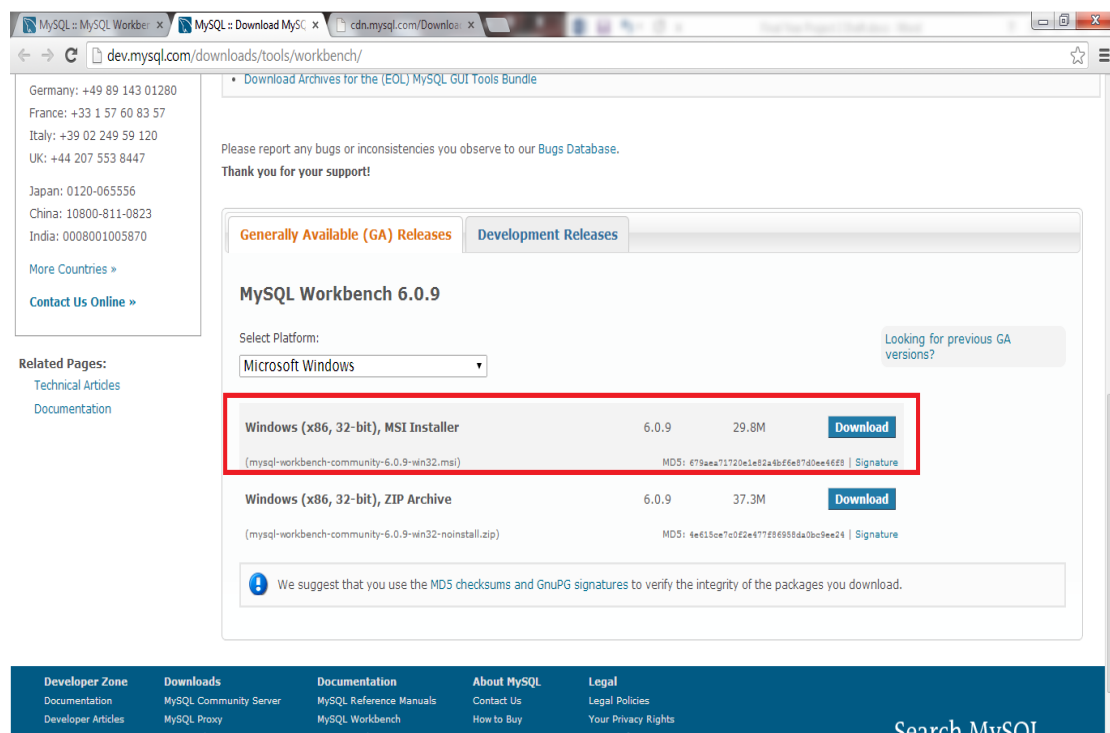


Figure 4. 1 Selection of file to be downloaded

After the file has been successfully downloaded to computer. Please double-click the installer to undergo installation. Key in the root of the database as “root” and key in password.



#### 4.1.2 Install MySQL Workbench 6.0 CE

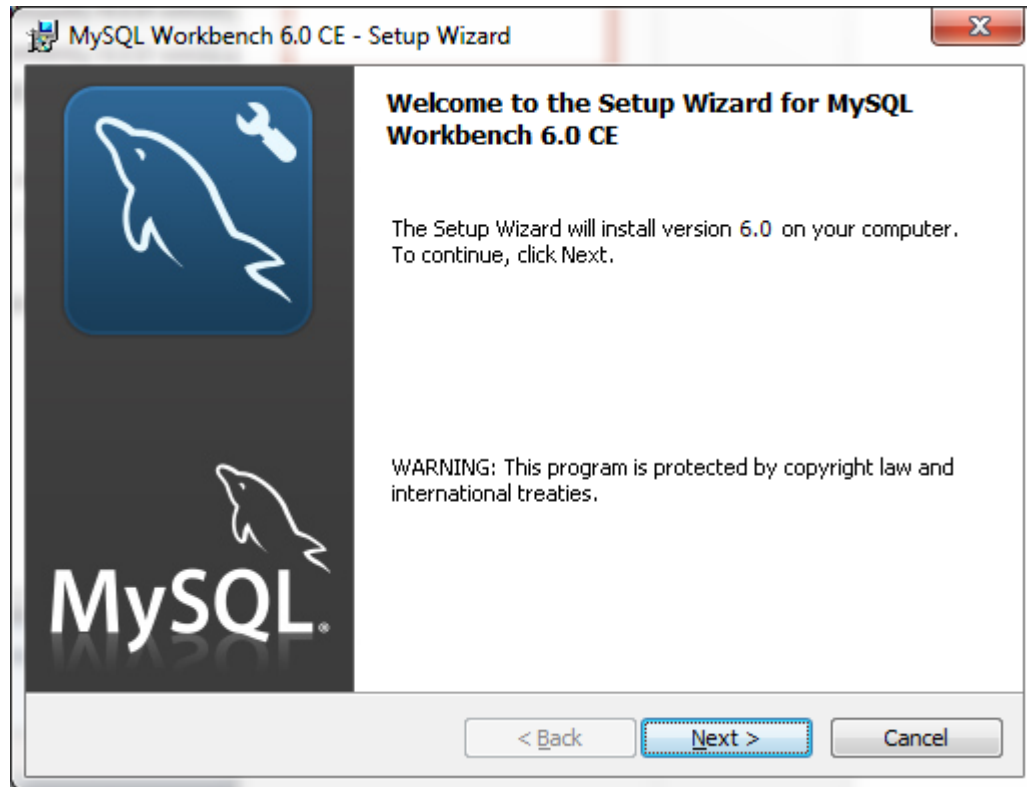


Figure 4. 2 Installation wizard for MySQL Workbench 6.0 CE

After the installation finish. Please go to control panel to do setting so that the system able to do linking between the system and the database.

#### 4.1.3 Configuring the database in the desktop/laptop (Windows 7)

Go to Start menu and go to Control Panel. In the control panel, select System and Security then scroll to the very bottom and click on the Administrative Tools.



Figure 4. 3 Selecting System and Security in the Control Panel

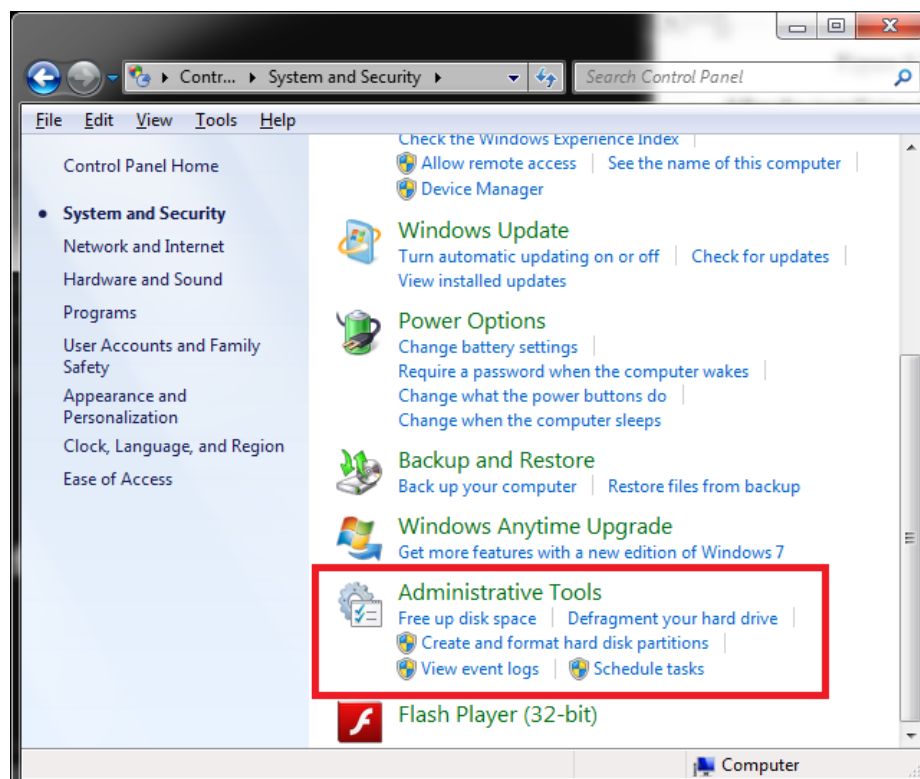


Figure 4. 4 Selecting Administrative Tools in the System and Security

Select Data Sources (ODBC) to add new database information into the system.

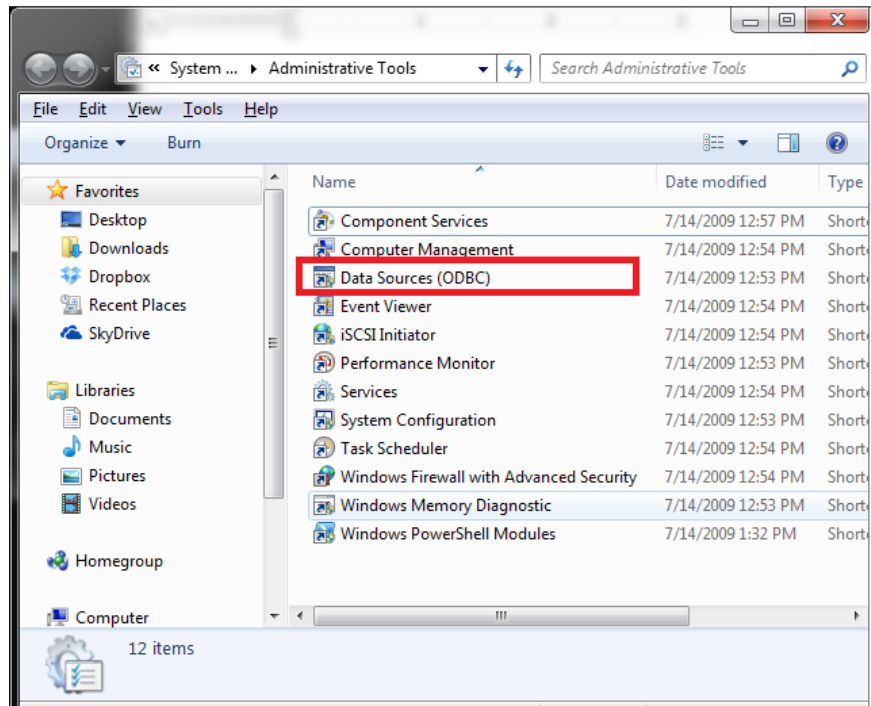


Figure 4. 5 Selecting Data Sources (ODBC) in the Administrative Tools

In this ODBC Data Source Administrator, it allows the system to connect to the correct database. To do so, go to the System DSN tab and choose Add to add a new system database.

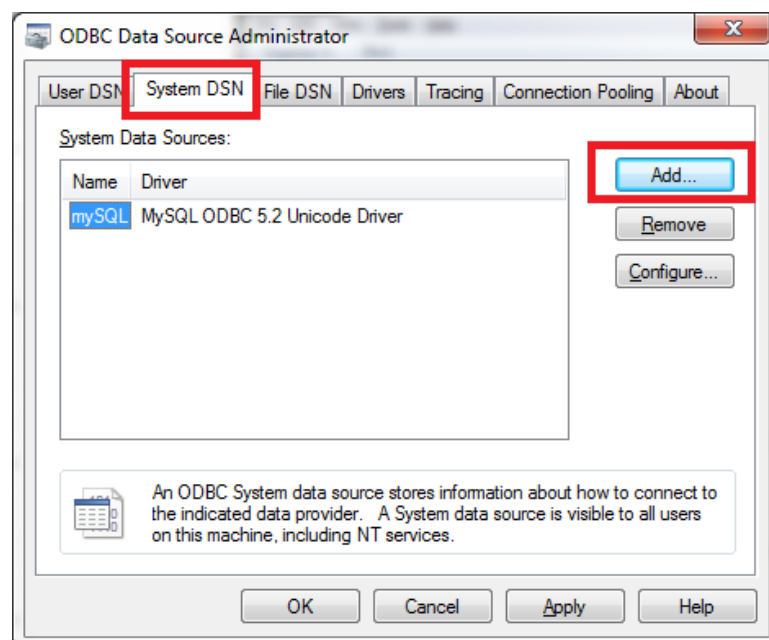


Figure 4. 6 Adding database into System DSN list

After Add button has been clicked, a new window will prompt to ask user to choose which database to use. Select MySQL ODBC 5.2 Unicode Driver

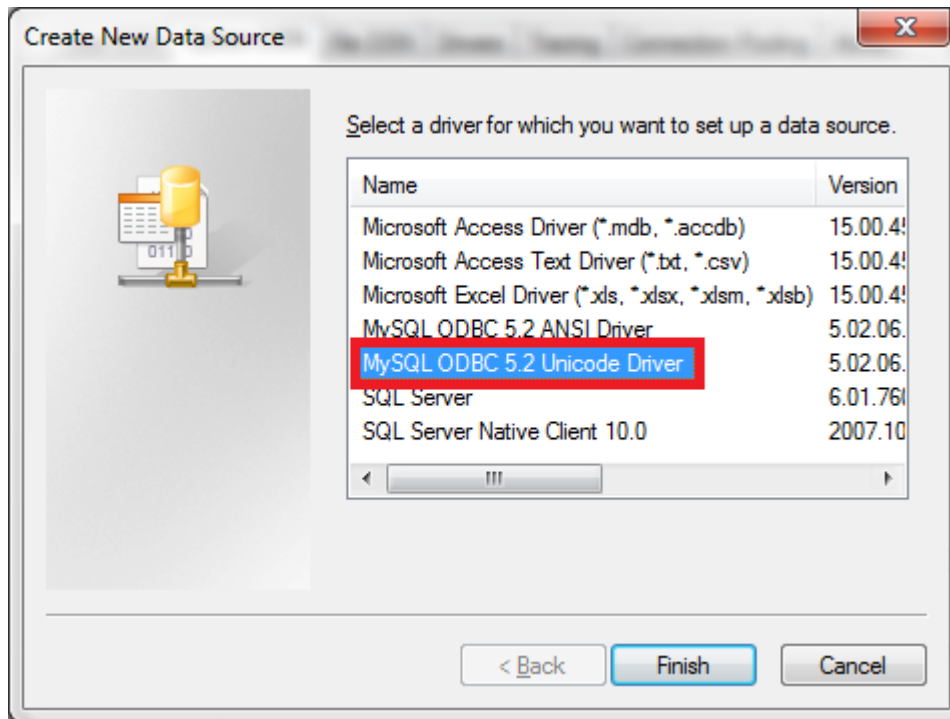


Figure 4. 7 Selecting MySQL ODBC

After choosing the database driver, click Finish button. Then there will be another window will prompt up, this time there are few fields that needed be filled up. Data Source Name, User, Password and Database as shown in figure 4.8

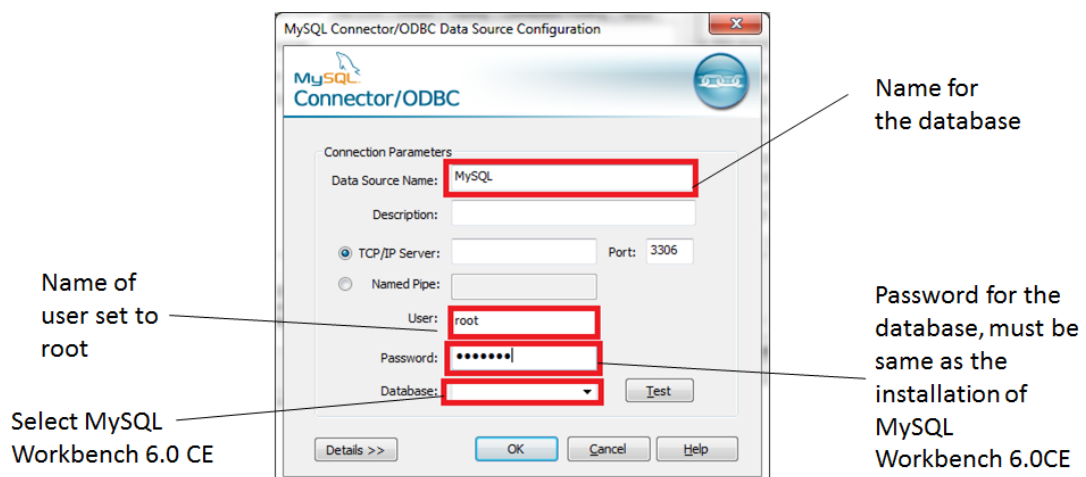


Figure 4. 8 Configuring the Connector for MySQL Workbench 6.0 CE

### For Windows XP users

Click Windows Start button then go to Control Panel, and then click Performance and Maintenance. After that, click Administrative Tools then Data Sources (ODBC).

### For Windows Vista users

Click Windows Start button then go to Control Panel, and then click Additional Options. After that click Data Sources (ODBC).

### 4.1.4 Install Java (Skip this if desktop/laptop already installed with Java)

To install Java, please go to <https://www.java.com/en/download/>

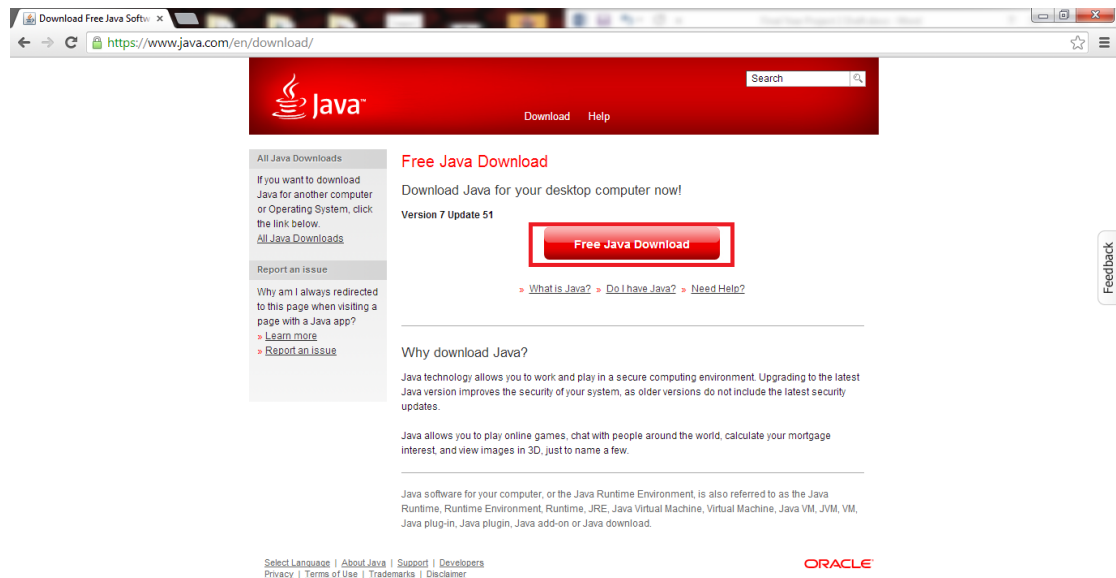


Figure 4. 9 Downloading Java

Click the download button as shown in figure 4.9 to download Java installer. After agree with the terms and conditions of the installer, the installer will be downloaded in

a short while. It takes around 10 seconds to download finish. Run the installer after the installer has been successfully downloaded.



Figure 4. 10 Java Installation

Click Install to undergo installation. After Java has been installed into desktop/laptop.

#### 4.1.5 Firewall Configuration (Skip this if the system able to communicate among presenter and audience)

For windows 7 users, please press the Windows Start button. In the search field, type in Firewall as shown in figure 4.11 then choose Windows Firewall with Advanced Security.

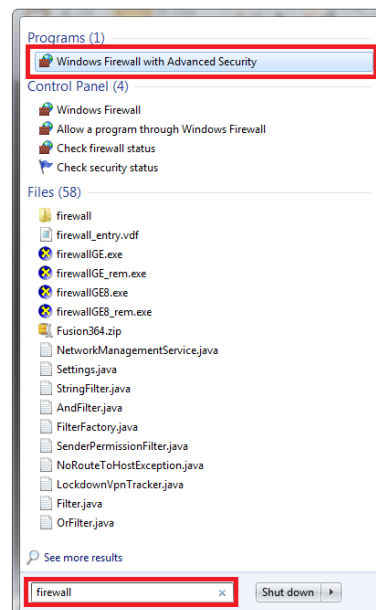


Figure 4. 11 Configuring Firewall

## Chapter 4 System Implementation

After clicked Windows Firewall with Advanced Security, a window will prompt out as shown figure 4.12. Select Inbound Rules and do some setting then select Outbound Rules or vice versa.

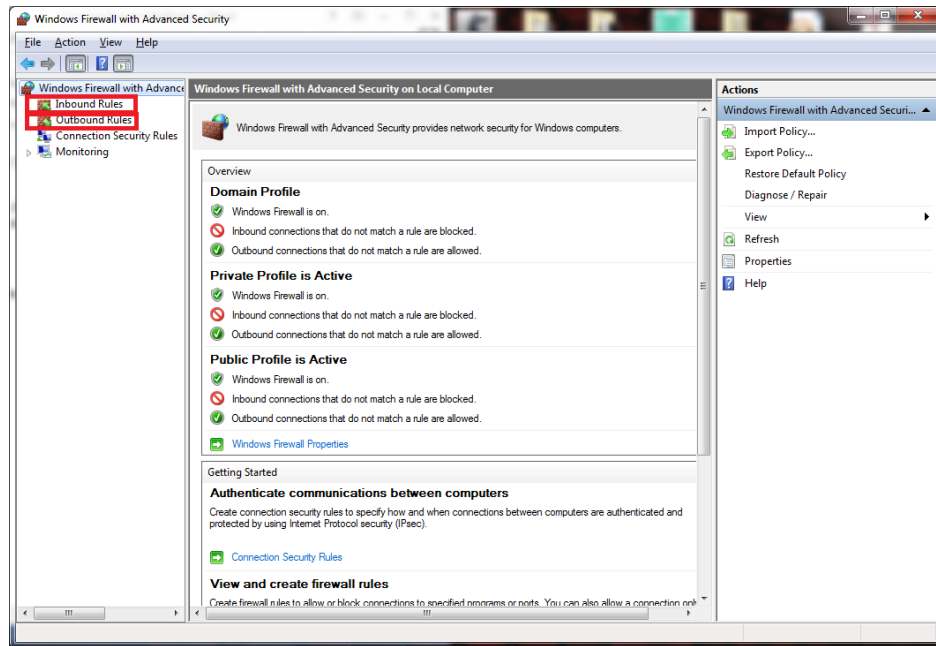


Figure 4. 12 Inbound and Outbound Rules

After click Inbound Rules, please click New Rule which located on the top right hand corner of the window.

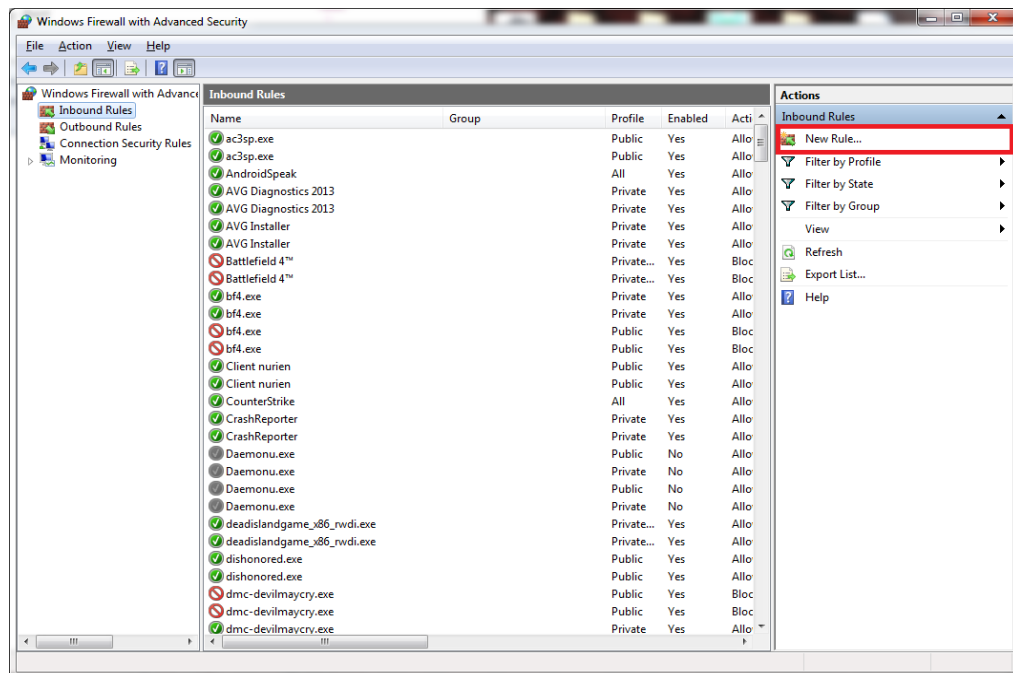


Figure 4. 13 Setting new rule for inbound rules



When click new rule, a new window will prompt out. Initially the system will ask user to choose which type of rule to set. For allowing the presenter and audience to communicate with the system, user need to choose the Port as shown in figure 4.14 and click Next to proceed to the next configuration.

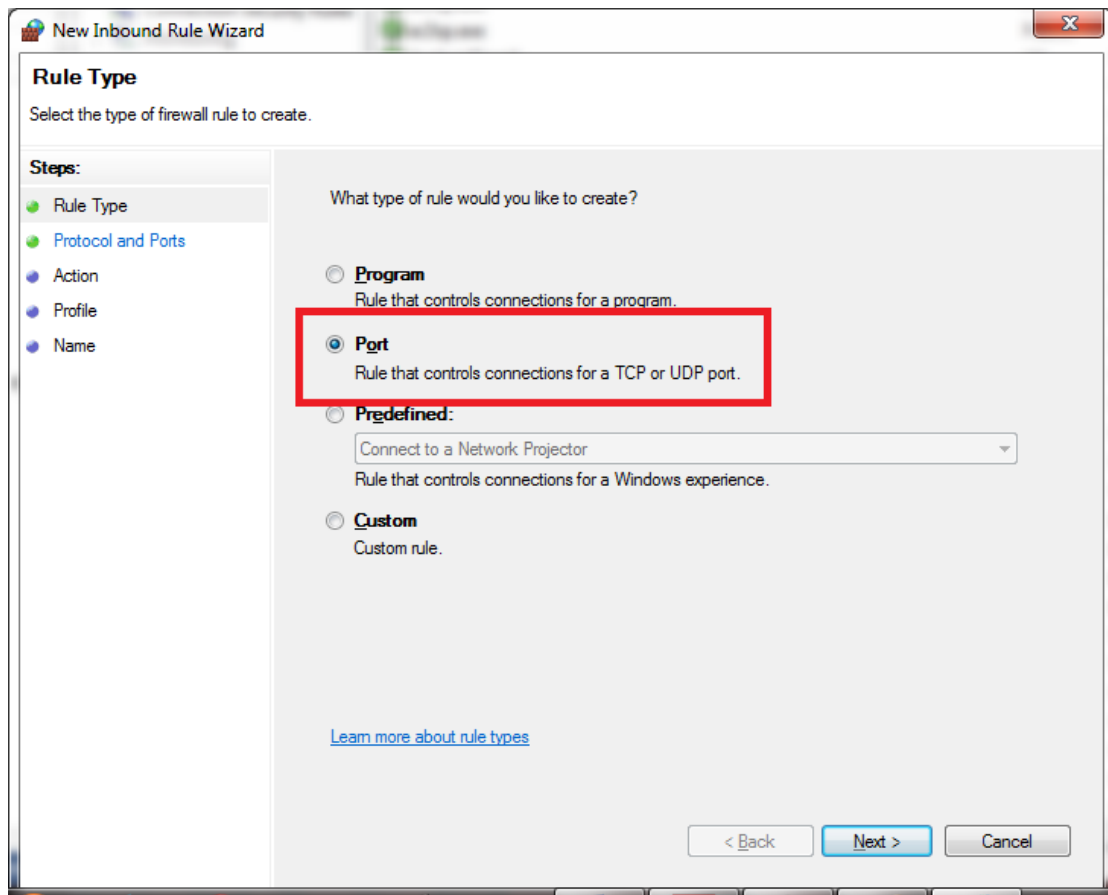


Figure 4. 14 Configuring type of rules

After the user has clicked Next button, it will lead user to the Protocol and Ports Configuration Panel. In this panel, user only need to key in the port number. For the presentation system, the port number being used is 11069. So user has to key in 11069 in the field as shown in figure 4.15. Click Next button when port number has been keyed in to proceed to next the setting.

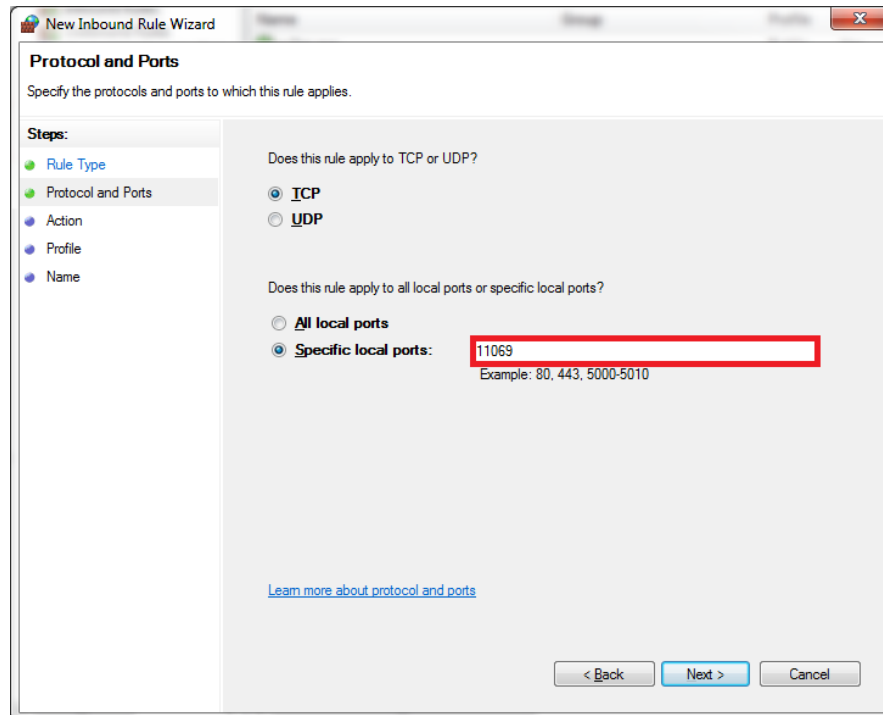


Figure 4. 15 Setting up the Port Number

In the action panel, user have to choose Allow the connection to enable the communication among presenter and audience with the server. Click Next button when the user has selected Allow the connection as shown in figure 4.16.

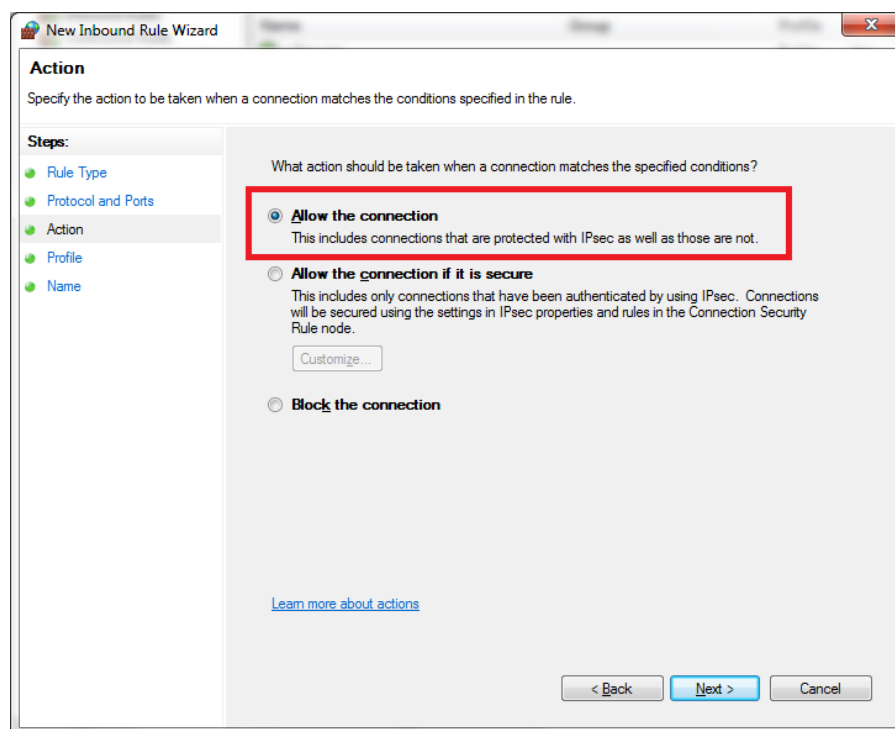


Figure 4. 16 Allows connection

In the profile panel, the setting will show three types of profiles for user to choose.

This setting has to base on the user, because the presentation system can be used in any conditions as long as it has a connection. In this profile setting, it will allow the user to choose which type of network that the user connected to. If user is going to give the presentation only for academic purpose, only tick the private which only workable in private network location. Otherwise, it is recommended to tick all three options as it can be usable at any networks. After the user has decided which profile to use, proceed to the last setting by clicking the Next button.

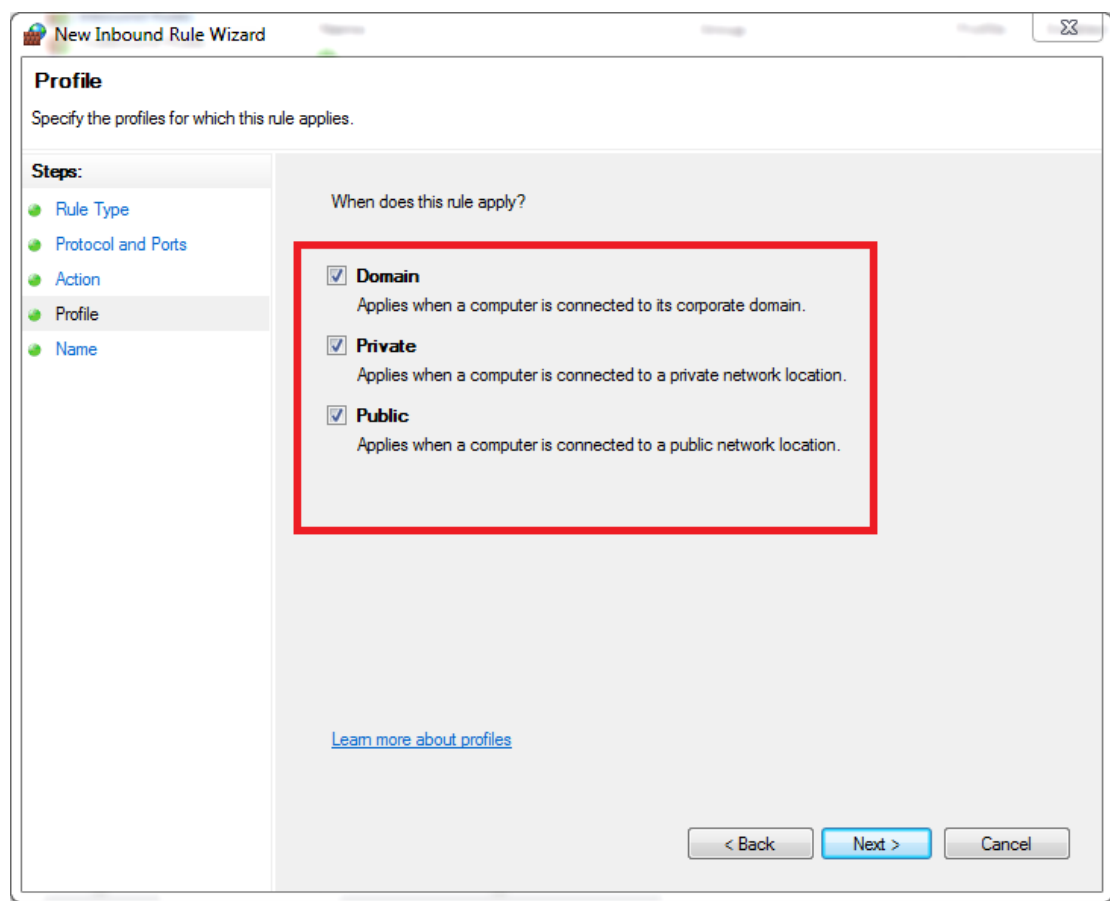


Figure 4. 17 Setting up the profile

In this last panel, it is mandatory to key in the name of the rule. As for the description, user can choose to fill it up or leave it blank. Click Finish button and do the same setting as Inbound Rule to the **Outbound Rule**.

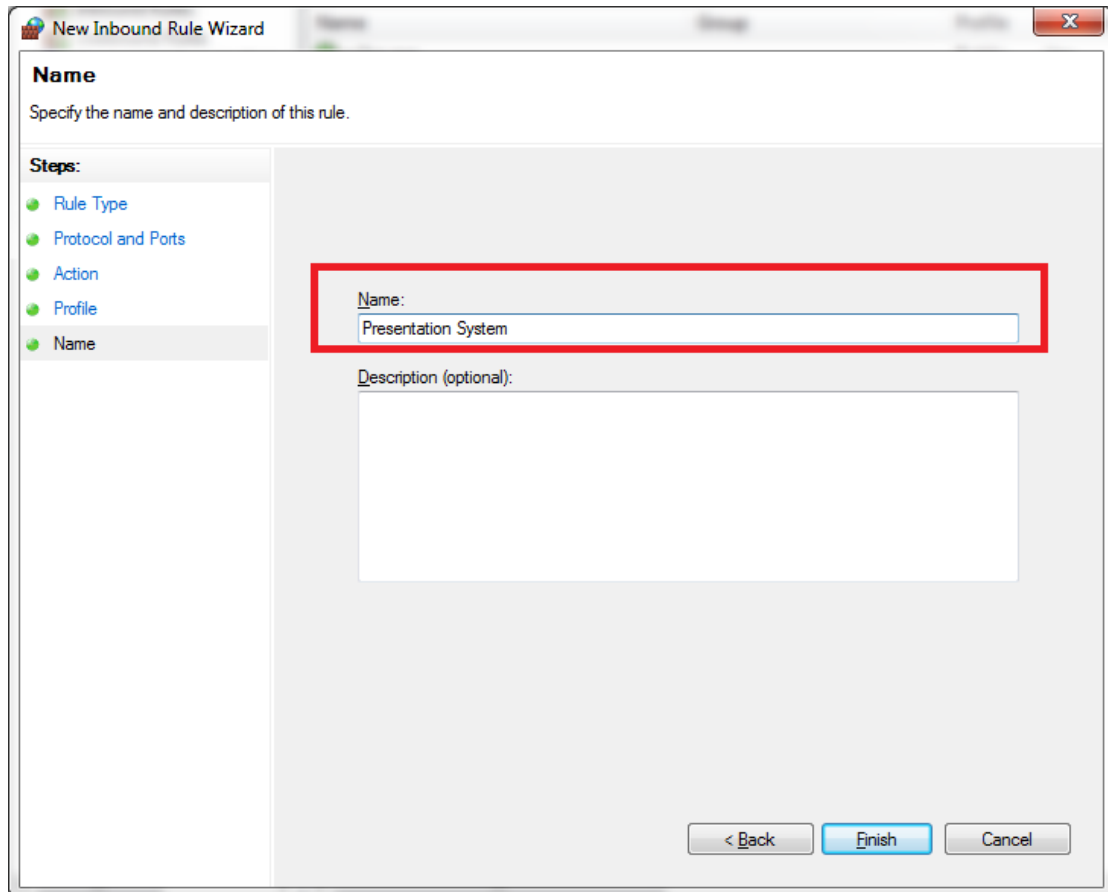


Figure 4. 18 Naming the rule

## 4.2 Interface and Function Descriptions

Click on the Server.jar to run the server

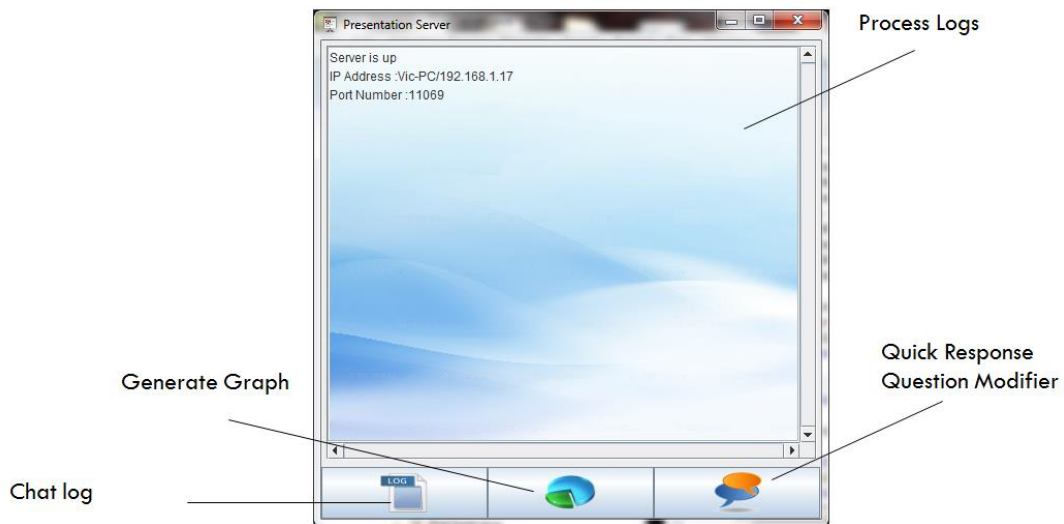


Figure 4. 19 Presentation System Server

The above figure shows the Presentation System Server. It contains the process logs, generate graph button and quick response question modifier button. The process log will show the activity made by presenter and audience. For the generate graph, it will allow presenter to generate reports at the end of the presentation. Whereas for the quick response question modifier button, it will allow presenter to add, edit and delete the quick response question. A timer will show in the bottom right corner of the screen every time the system is being launch. This is to measure the duration of the presentation.

When the user clicks on the chat log, it will display all the chat logs for the specific date and time from user inputs. Besides that, user can choose to view or to export as report

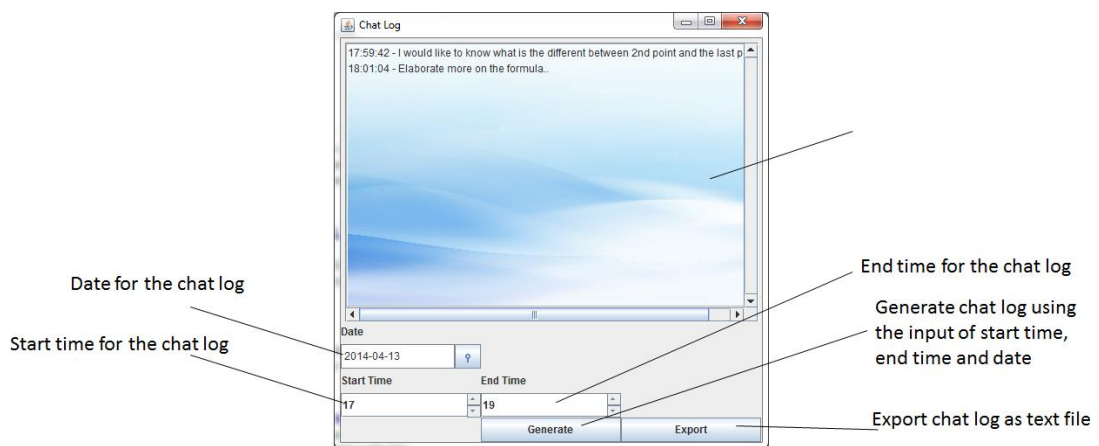


Figure 4. 20 Interface for Chat log

When the user clicks on the generate graph button in figure 4.19, the system will direct the user to a window in figure 4.21. In this window, user can generate three types of graphs. The three types of graphs include Questioning Chart, Response Question Chart and Ignorance Chart. Questioning Chart allows the user to retrieve the information on the audience questioning part. For Ignorance Chart, it will allow user to retrieve the replies from the audience when the presenter pushes out the quick response question. When combining Question Chart and Ignorance Chart, user can determine certain information such as whether the audience is still listening to the presentation, gauge the understanding of the audience on the content of the presentation and so on. Whereas for Response Question Chart, it will allow user to retrieve the quick response question and the replies made by the audience based on time, date and question being asked by the presenter. User can choose to save the graph as an Image format (PNG format).

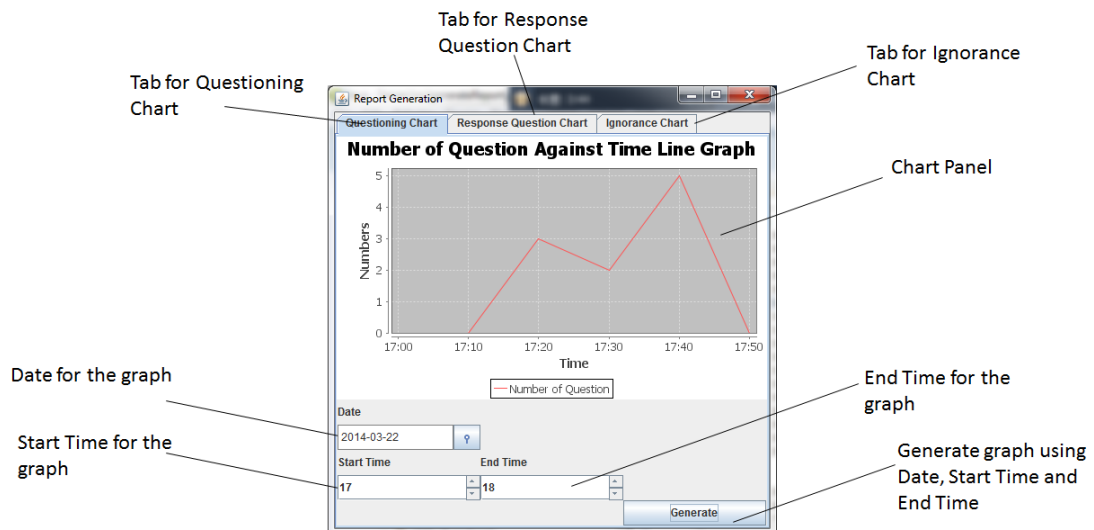


Figure 4. 21 Questioning Chart

In the Questioning Chart, user able to retrieve the Number of Question Against Time Line Graph by selecting Date, Start Time and End Time. The graph will be generated per 10 minute basis. The user just need to click the Generate button on the bottom right hand corner of the window to generate the graph based on the chosen Date, Start Time and End Time.

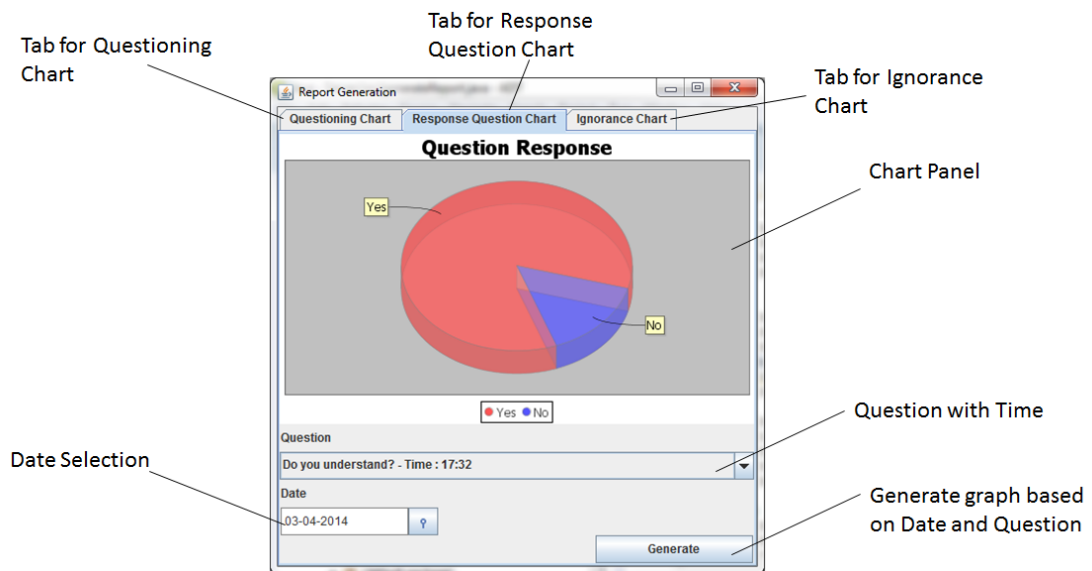


Figure 4. 22 Response Question Chart

In the Response Question Chart, user able to retrieve the Question Response by selecting the Question and Date. The graph will be generated once the user click the Generate button on the bottom right hand corner of the window.

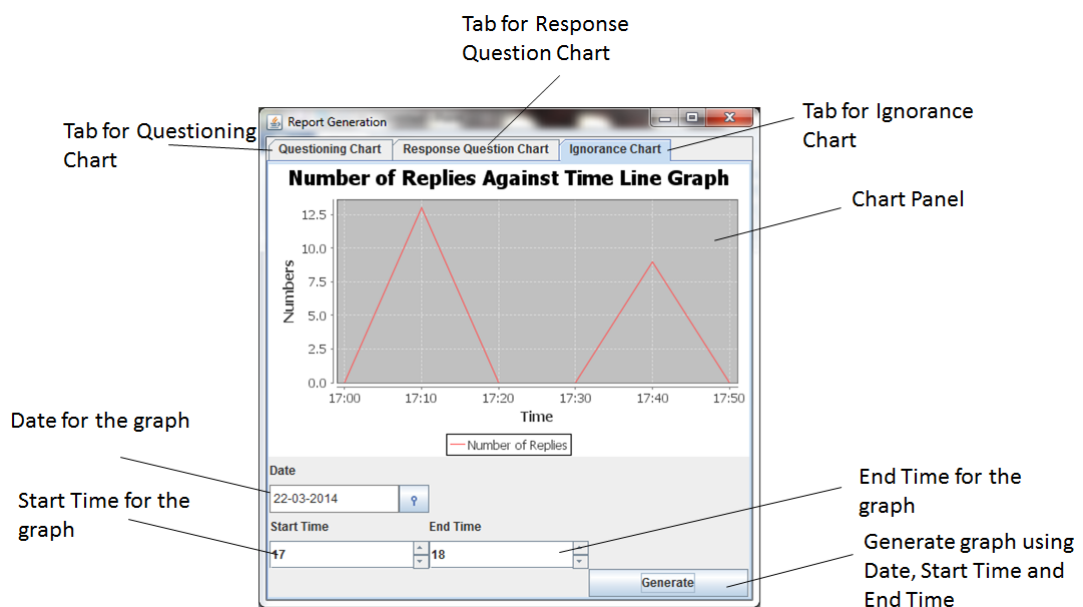


Figure 4. 23 Ignorance Chart

In the Ignorance Chart, user able to retrieve the information regarding the replies on the quick response question. The graph will be generated once the user click the Generate

button on the bottom right hand corner of the window with the important details – Date, Start Time and End Time.

To add, edit or delete quick response question user should click the quick response question modifier button as shown in figure 4.19. The interface is shown in figure 4.24.

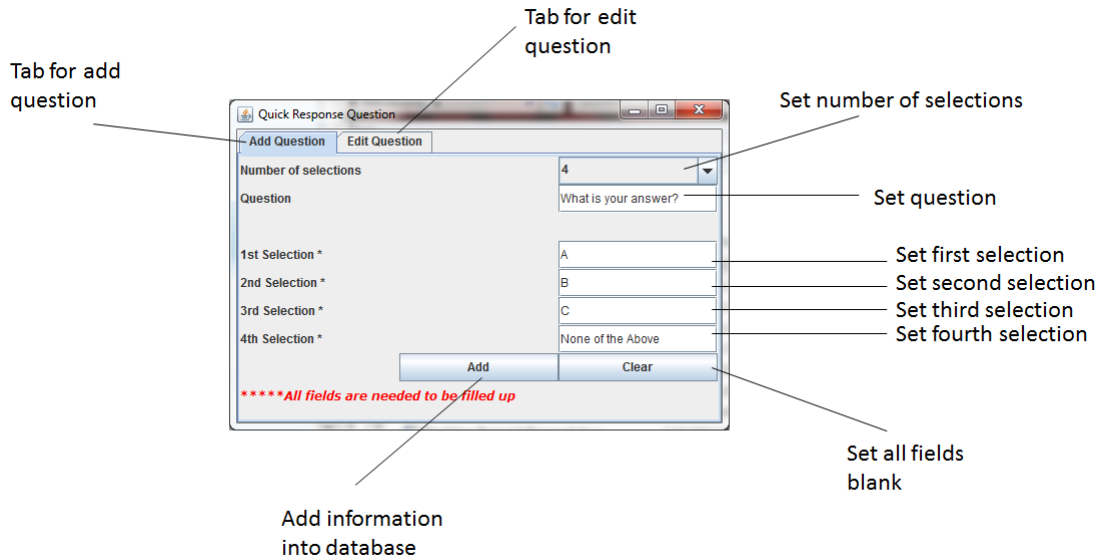


Figure 4. 24 Quick Response Question Modifier – Add Question

The quick response question interface contains two tabs which consist of **Add Question** and **Edit Question**. In the Add Question tab, user can add new quick response question into the database. The feature will allow user to set number of selections with maximum number of selections of 4 and set question in the **Question** field. If the user does not satisfy with the question to be added, user can empty all the fields with **Clear** button which located at the lower right hand corner of the interface. If the user has confirmed all the selections and question, click **Add** button to send all the information to the database.



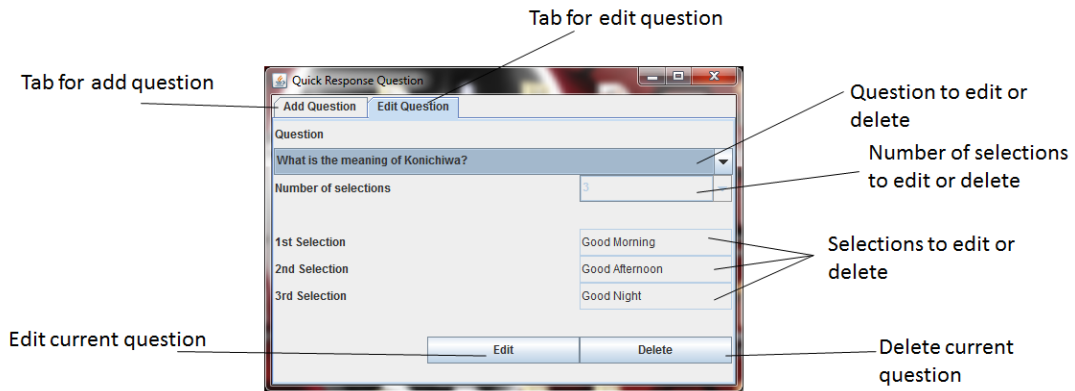


Figure 4. 25 Quick Response Question Modifier – Edit Question

In the Edit Question tab, user is allow to edit or to delete the question that has been stored in the database. To edit or to delete the quick response question, user need to choose the question in the **Question dropdown** list. If Edit button is clicked, **Number of selections** and **selection field(s)** will be enabled which allow user to edit the quick response question. On the other hand, if Delete button is clicked instead, the current quick response question will be deleted from the database.

Run Presenter.apk from android mobile.

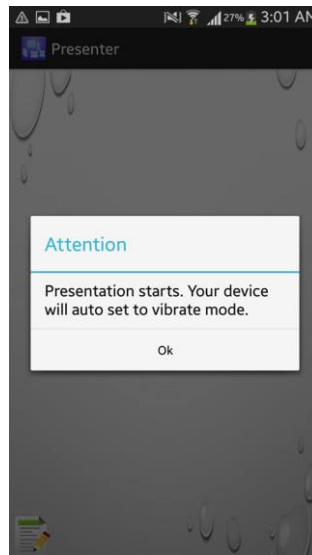


Figure 4. 26 Presenter application startup

Each time user runs the application, the application will change the user's sound, system, media and notification volumes to avoid the phone from ringing and causes interruption to the presentation.



Figure 4. 27 Entering IP Address

User is required to key in the IP address of the server. The IP address will display in the process log, just follow exactly the IP address to connect to the server. When user successfully log into the server. User is free to receive question from audience during the presentation.

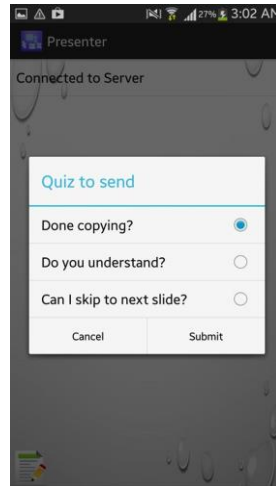


Figure 4. 28 Initiate Quick Response Question

Presenter can push out the quick response question to all audience who log in into the server by clicking the paper and pencil icon on the bottom left hand corner of the screen. A dialog box will prompt out as shown in figure 4.27. All of the information is retrieve from the database and populated in the dialog box. Presenter just have to choose the quick response question and press Submit button to push out to all audience.

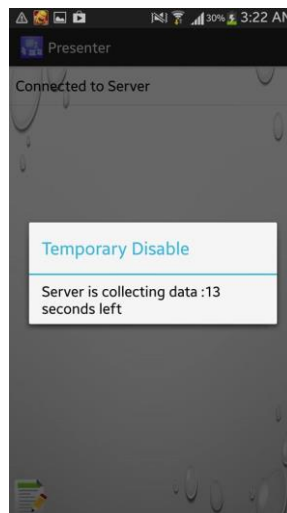


Figure 4. 29 Server Collecting Data

In figure 4.29, the application will disable all action from user for 15 seconds as the server is gathering all the information from the audience. This is to ensure that the server will get the correct information and at the same time this will prevent confusion of information as well.

Run Client.apk from android mobile.



Figure 4. 30 Client application startup

Each time user runs the application, the application will change the user's sound, system, media and notification volumes to avoid the phone from ringing and causes interruption to the presentation.



Figure 4. 31 Entering IP Address

User is required to key in the IP address of the server. The IP address will display in the process log, just follow exactly the IP address to connect to the server. When user successfully log into the server. User is free to ask presenter question during the presentation.

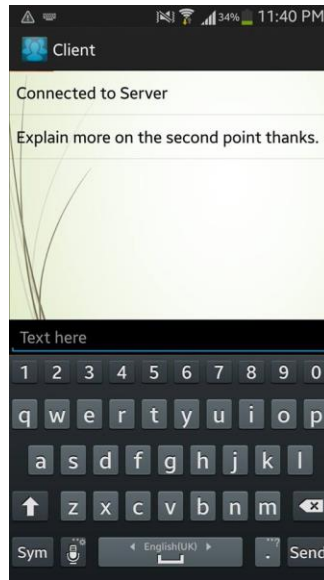


Figure 4. 32 Asking question and broadcasting

The question asked by the audience will be sent to the presenter side and at the same time, the question asked will also be broadcasted to all of the audience which use the application. This is to prevent the repeated question from being asked.

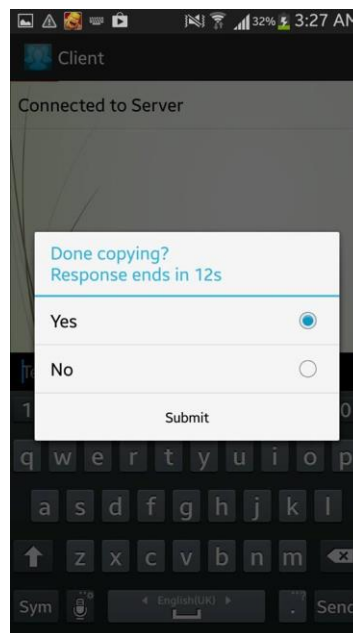


Figure 4. 33 Receiving Quick Response Question

The audience will receive quick response question once presenter has pushed out the question from his/her side. Each of the audience has 15 seconds to answer or to reply the quick response question. Otherwise, the dialog box will auto dismiss to prevent confusion of information.

When audience replies the quick response question, the server will undergo a process call gathering information. After the server has finish counting the replies, it will then display a chart for presenter to know how many votes from audience responding to the quick response question that has been sent out. Chart example is as shown in figure 4.33.

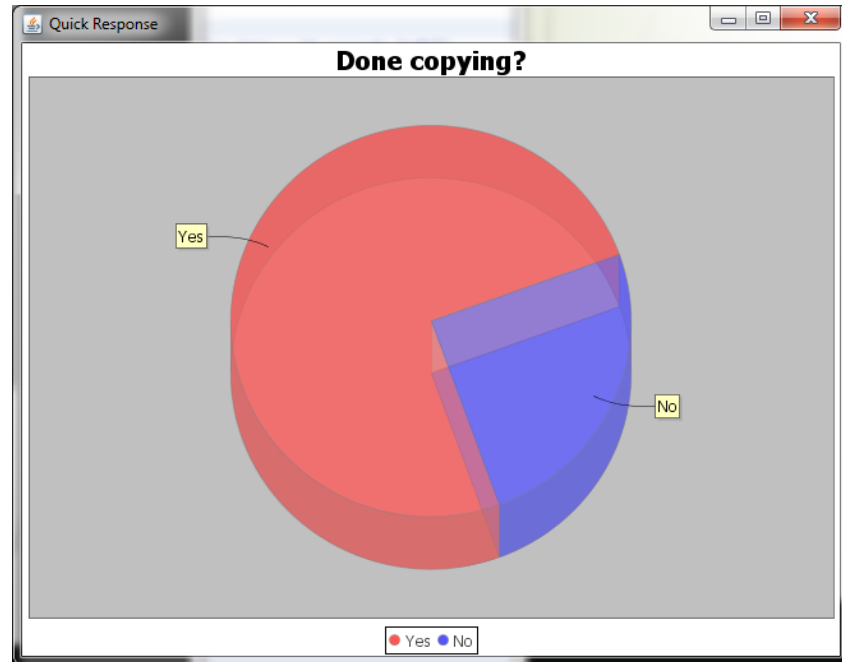


Figure 4. 34 Chart Display for Quick Response Question during Presentation

## CHAPTER 5 PROJECT REVIEW AND DISCUSSION

### 5.1 Project Feature

In this project, there are several useful features that will help presenter and audience in many perspective ways. The first objective that need to be achieved is that allowing audience to question presenter during the on-going presentation session. This objective has been achieved and the problem has been solved by implementing the idea similar to chatting system. Just that the presenter is not allow to send back the question. With the help of a Java server, it allows presenter and audience to be able to communicate among each other. When the server startup, it will run this function and wait for client connection.

```
public void start() throws UnknownHostException, SocketException {
    try {
        InetAddress inet =
InetAddress.getLocalHost();
        InetAddress[] ips =
InetAddress.getAllByName(inet.getCanonicalHostName());
        if (ips != null) {
            for (int i = 0; i < ips.length; i++) {
                if(ips[i].toString().matches("(.*).192.168.1\\.(.*)"))
                    showMessage("Server is up \nIP
Address :"+ips[i].toString()+"\n"+"Port Number :"+PORT_NUMBER+"\n");
            }
        }
    } catch (UnknownHostException e) {
    }
    try {
        ServerSocket s = new ServerSocket(PORT_NUMBER,100);

        for (;;) {
            Socket incoming = s.accept();
            new ClientHandler(incoming).start();
        }
    } catch (Exception e) {
        e.printStackTrace();
    }
    showMessage("Server stopped.\n");
}
```

After client has connected to the server, it will be handled by the thread of the system so that it can have many connections at the same time. Using the code below, the server will add the clients into the thread and allow communication among each other. All the questions asked by audience will be stored in database as this information can be extracted out as useful data.

```
public void run() {
    PrintWriter out = null;
    String getQuiz= null;
    try {
        out = new PrintWriter(
            new
OutputStreamWriter(incoming.getOutputStream()));
        finalServer.this.addClient(out);
        out.println("Connected to Server");
        out.flush();
        BufferedReader in = new BufferedReader(
            new InputStreamReader(incoming.getInputStream()));
        for (;;) {
            String msg = in.readLine();
            if (msg == null) {
                break;
            } else {
                if(msg.equals("Audience - Break"))
                    break;

                finalServer.this.broadcast(msg);
                if(msg.matches("sendToServerForChartPurpose(.*)") || msg.m
atches("quickForPresenter(.*)") ||
msg.matches("sendSignalToAudience(.*)") ||
msg.matches("quicktoPresenter(.*)") || msg.matches("quizSi
gnalToAudience(.*)")){}
                else{
                    try{
                        Class.forName("sun.jdbc.odbc.JdbcOdbcDriver
");
                        connection=DriverManager.getConnection(dbUR
L,"","");
                        statement = connection.createStatement();
                        statement.execute("INSERT INTO chatlog VALUES
(2,now(),'"+msg+"',now(),'');");
                        statement.close();
                        connection.close();
                    }
                    catch(Exception e){
                        e.printStackTrace();
                    }
                }
            }
        }
        incoming.close();
        finalServer.this.removeClient(out);
        countUser--;    countClient.setText("Attendance
:"+countUser);
    } catch (Exception e) {
        if (out != null) {
            finalServer.this.removeClient(out);
        }
        e.printStackTrace();
    }
}
```



The next objective that has been achieved is that allowing presenter to push out quick response question to all audience that have connected to the server. This solution has solved the mysteries of the audience, as sometimes presenter unable to deliver out the content which is understandable by the audience. By implementing the quick response question into the system, presenter can easily gauge how much the audience know.

```
public void getQuiz(String message){
    final String[] filtering = message.split("\\|");
    String[] selections = filtering[1].split(",");
    final AlertDialog alert = new AlertDialog.Builder(this)
        .setTitle(""+filtering[0]+"\\n Response ends in 15s")
        .setCancelable(false)
        .setSingleChoiceItems(selections, 0, new
DialogInterface.OnClickListener() {
    public void onClick(DialogInterface dialog, int item) {
        switch(item)
        {
            case 0:
                selectChoice=0;
                break;
            case 1:
                selectChoice=1;
                break;
            case 2:
                selectChoice=2;
                break;
            case 3:
                selectChoice=3;
                break;
        }
    }
})
        .setPositiveButton("Submit", new
DialogInterface.OnClickListener() {
    public void onClick(DialogInterface dialog, int whichButton)
    {
        sendMessageToServer("sendToServerForChartPurpose"+filtering[0]+","+selectChoice);
    }
})
        .create();
    alert.show();
    Vibrator vibrate = (Vibrator)
this.getSystemService(Context.VIBRATOR_SERVICE);
    vibrate.vibrate(1000);
    new CountDownTimer(15000, 1000) {
        @Override
        public void onTick(long countdown) {
            alert.setTitle(""+filtering[0]+"\\nResponse ends in
"+(countdown/1000)+"s");
        }
        @Override
        public void onFinish() {
            alert.dismiss();
        }
    }.start();
}
```

Next is the third objective, when both parties run the application the application will switch the android mobile into vibrate mode. This feature seems to be easy to implement but unfortunately in most of the review system this feature has not been implemented before. This feature is to avoid interruption among presenter and audience during presenter. This feature solve one of the problem statement which is most of the presenter and audience forgotten to switch their phone to silent mode or vibrate mode, which has causes interruption to the presentation. The code below is to set the vibration when presenter and audience log into server. Therefore, the objective has been achieved.

```
private void setVibrate(){

    AlertDialog.Builder alert = new AlertDialog.Builder(this);

    alert.setTitle("Attention");
    alert.setMessage("Presentation starts. Your device will
auto set to vibrate mode.");
    // USE AudioManager for Setting ringing from vibration
    final AudioManager aManager =
(AudioManager)getSystemService(Context.AUDIO_SERVICE);
    alert.setCancelable(false);
    alert.setPositiveButton("Ok", new
DialogInterface.OnClickListener() {
        public void onClick(DialogInterface dialog, int
whichButton) {
            aManager.setRingerMode(AudioManager.RINGER_MODE_VIBRATE)
;
            aManager.setStreamMute(AudioManager.STREAM_ALARM, true);
            aManager.setStreamMute(AudioManager.STREAM_MUSIC, true);
            Toast.makeText(getApplicationContext(), "Changed to
vibrate mode", Toast.LENGTH_SHORT).show();
            dialogBox();
        }
    });
    alert.show();
}
```

The last objective is to make sure that at the end of the presentation, presenter able to extract out the useful information from the database to generate reports. As these reports are very useful for the presenter to know which content that the audience does not understand, which part is making the audience confuses and so on.

```
do {
try {
Class.forName("sun.jdbc.odbc.JdbcOdbcDriver");
connection = DriverManager.getConnection(dbURL, "",
"");
statement = connection.createStatement();
ResultSet result = statement.executeQuery("SELECT ADDTIME('"
+ temp
+ "','00:10:00') AS timeFromDatabase,count(*) AS countRow
FROM dbpresentation.chatlog WHERE chatlog.Time >' "
+ temp
+ "' AND chatlog.Time <= ADDTIME(' "
+ temp
+ "','00:10:00') AND chatlog.Date = ' "
+ dateFormat.format(startPicker.getDate())
+ "';");
while (result.next()) {
getTime = result.getTime("timeFromDatabase").toString();
System.out.println("" + getTime);
count = result.getInt("countRow");
if (setMinute > 5) {
setMinute = 0;
combineTime = ""
+ (Integer.parseInt(combineTime) + 1);
}
if (Integer.parseInt(combineTime) > 23) {
combineTime = "0";
}
series.add(new Minute(setMinute * 10, new Hour(
Integer.parseInt(combineTime),
new Day()), count);
setMinute++;
temp = getTime;
}
statement.close();
connection.close();
} catch (Exception ex) {
ex.printStackTrace();
}
} while (temp.equals(endTemp) != true);
setMinute = 0;
```

### **5.2 Future work**

Everything has pros and cons, it is believe that this system can be used not only in private network but in public network. Therefore in future, this system can be used anywhere. This is the first enhancement to be made.

Whereas for the second improvement that can be made is that audience able to retrieve the slide as well so that presenter does not need to distribute the notes to every audience but by only one click. All of these ideas are to ease audience, what they really need is only a smart phone.

The last improvement need to be made is that, this system can be ran in IOS smart phone rather than only android-based smart phone.

## **CHAPTER 6 CONCLUSION**

### **6.1 Conclusion**

In a nutshell, presentation is a best way to present or share the knowledge, experiences and ideas but in order to make it to be more effective it requires the participants of audience. The current presentation system does not have the ability to send a short message to presenter in order to explain more details on the contents that have been presented. In this project audience is able to so, this is not only to solve the problems but also to improve the efficiency and effectiveness of the presentation. In this project, it will give out quick response question to gauge the audience understanding, this is actually an important information for both audience and presenter. This can be done by allowing the server to get the things done. By making the server to collect the quick response answer from clients who respond to the quick response question, the server able to generate a chart to let the presenter knows that how much the audience knows about the presentation contents. With the help of the server and database, several useful reports can be generated. The reports are very useful as it can know the behavior, the fatigue level and the understanding of the audience from the data collected during every presentation sessions. Using these information, presenter can enhance the presentation style to boost the effectiveness of the presentation. With information, it can be known that whether audience gets the correct information from the presenter. All of the proposed solutions are beneficial to audience, what audience needs is just an existing device.

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# APPENDICES