Nanyang Polytechnic

SCHOOL OF ENGINEERING

Diploma in

Electronics, Computer and Communications Engineering

Mobile Application Project Report

Project Title:

NFC Boarding System

Mobile Application Project Teacher:

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Project Students:

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Content:

Acknowledgement

We would like to express the deepest appreciation to our supervisor, Ms Tan Siew Ling, for her support and guidance while doing our project. She gave us clear guidelines on what the project is about and what we have to do using eclipse software. She also helped us to troubleshoot some problems.

In addition, we would also like to take this opportunity to thank our lecturer, Mr Yew Boon Kuan, for his lectures and suppots.

Abstract

This report outlines the design and development of a NFC Boarding system. The application was written in android programming, using eclipse development software, to run under Android operating system. SQLite database is used to store the users' data.

1. Introduction

a. *Background:*

Nowadays, there are more and more frequent travelers going all around the world. As a result, taking flights becomes more normal today. Nevertheless, paper air tickets bring a lot of troubles to travelers, airline companies and airports, such as loss of tickets, paper wastage, etc. Therefore, we came out this SMART NFC Boarding System solution.

b. *Sub-systems:*

1.1.1.1. Check-in System

The moment travellers came to the counter to check in. The stuff will enter the traveller’s personal information, flight information and boarding information, such as passport number, flight number, etc. A NFC Tag will be generated at the counter after the stuff confirmed all information with the traveller. Each traveller will be given a unique NFC Tag. This NFC Tag will be the E-Air Ticket during the journey. It will be much easier for travellers to keep.

Moreover, after the stuff issue the ticket, a record will be generated inside the database. So the database will record all information for each issued tag.

Comparing with traditional paper tickets, NFC Tags can be pasted/put to anywhere the customer feeling safe, such as your passport, your wallet, etc.

1.1.1.2. Traveler reminding and boarding system

In case the traveller forgot their flight details, or they need to set a reminder for the boarding time.

They could go into the “Boarding” page and login, then use the phone to tap the NFC Tag. The phone will read all the information and display on the screen. Meanwhile, the traveller can choose whether he/she needs to set an alarm to remind him/her the boarding time.

Our app is able to read out the important boarding information for the user. Moreover, by using GPS, the current location will be showed to users as well. They are able to know their location even in foreign countries without internet.

In general, this sub-system will prevent travellers from missing the flight, show travellers information and read out the important information if needed.

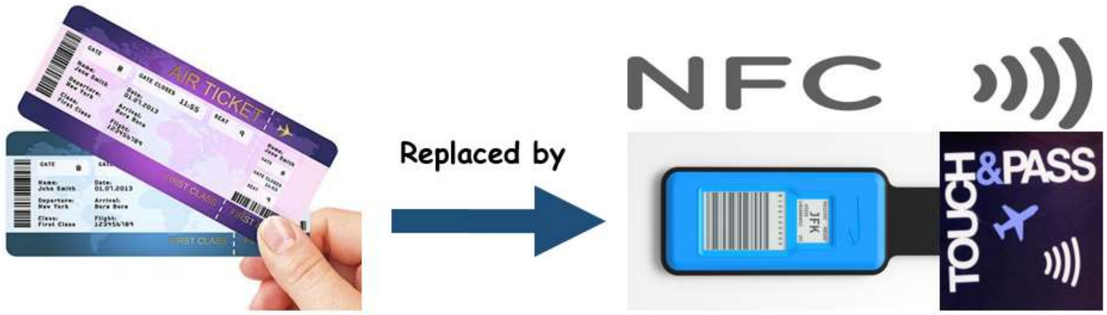
1.1.1.3. Contact system

Contact system is to allow passengers to save the different airline company's contact information based on their own preference. So the passenger can contact to the airline company more convenient.

Passengers may tap different companies' NFC-information tags before boarding the flight. After they tapped the tags, the contact information will be displayed on the screen. Users can add to database for future reference. They may delete the information from the database if they don't need it anymore.

Our app also simplify the contact process. The user may just choose one airline company from the database or tap one company's tag. Then proceed to 2nd page, which allows users to call, send SMS or send Email to the airline company.

2. Purpose



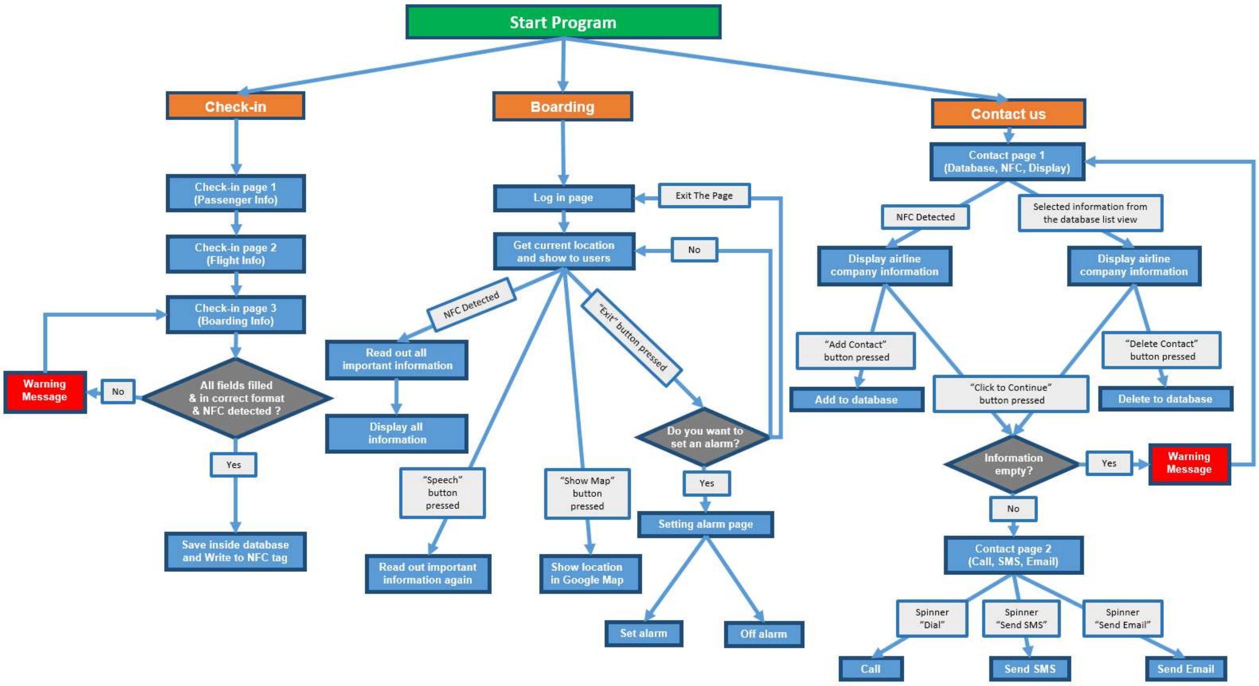
Our purpose is to replace current paper boarding pass with Smart NFC Tags

3. Benefits

3.1. Replace paper boarding pass with reusable NFC Tags (Environmental friendly)
3.2. Prevent loss of air tickets accidentally
3.3. Remind important information for travellers
3.4. The NFC Tag can be pasted to anywhere you feel secure
3.5. Store airline company's contact information
3.6. Simplify the process to contact airline companies
3.7. Get current location by using GPS
3.8. Read out the important boarding information

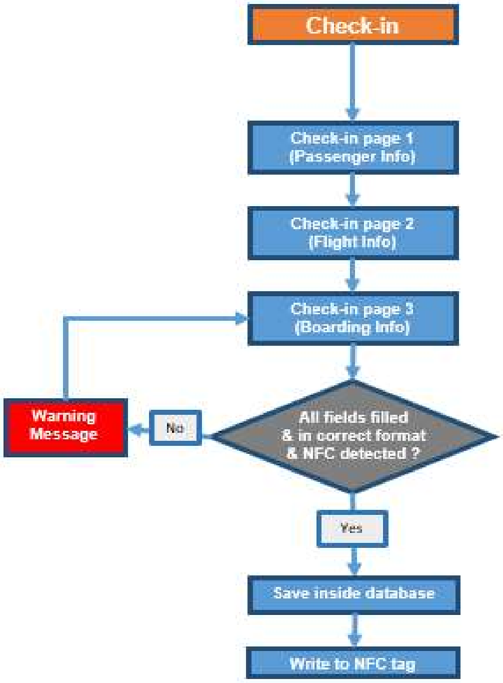
4. Flowchart

4.1. Overview

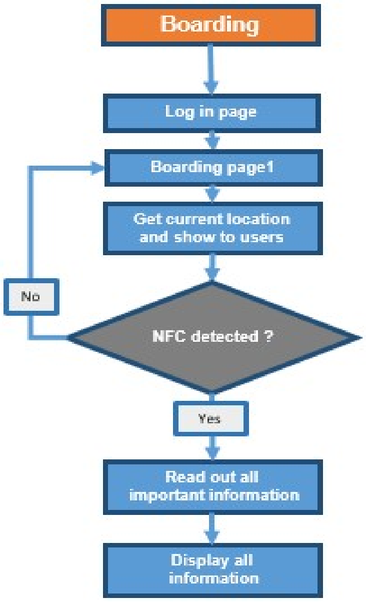

Start Program
Check-in
Boarding
Contact us
Check-in page 1 (Passenger Info)
Check-in page 2 (Flight Info)
Check-in page 3 (Boarding Info)
All fields filled & in correct format & NFC detected ?
No
Warning Message
Yes
Save inside database and Write to NFC tag
Log in page
Exit The Page
Get current location and show to users
No
NFC Detected
Read out all important information
Display all information
"Speech" button pressed
Read out important information again
"Show Map" button pressed
Show location in Google Map
"Exit" button pressed
Do you want to set an alarm?
Yes
Setting alarm page
Set alarm
Off alarm
Contact page 1 (Database, NFC, Display)
NFC Detected
Selected information from the database list view
Display airline company information
Display airline company information
"Add Contact" button pressed
Add to database
"Click to Continue" button pressed
"Delete Contact" button pressed
Delete to database
Information empty?
Yes
Warning Message
No
Contact page 2 (Call, SMS, Email)
Spinner "Dial"
Spinner "Send SMS"
Spinner "Send Email"
Call
Send SMS
Send Email

4.2. NFC Application in the project

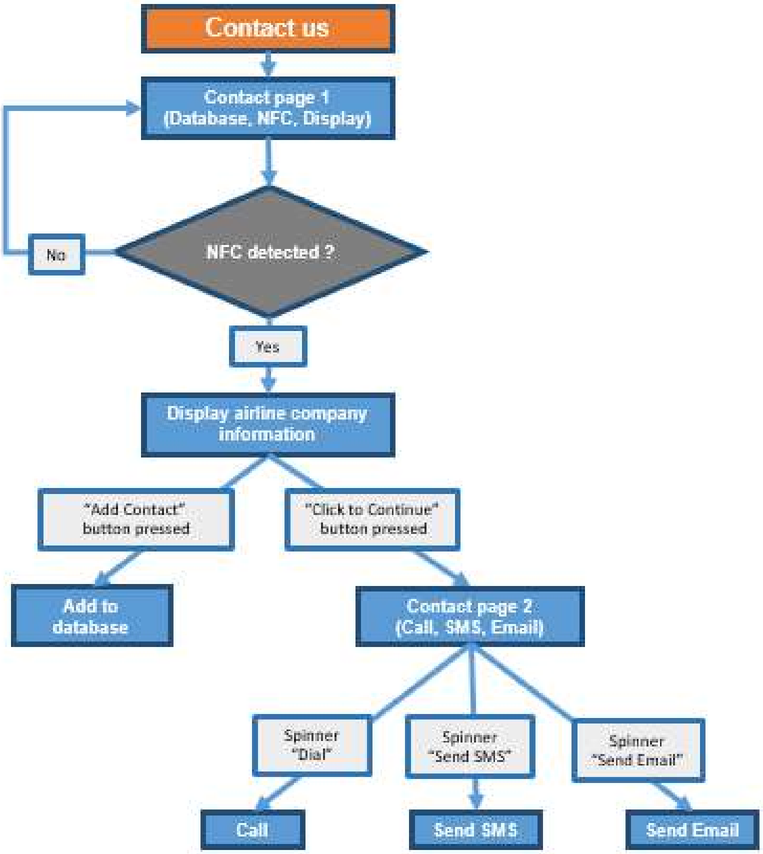
4.2.1. <u>Check-in system (Write information to NFC)</u>


Check-in
Check-in page 1 (Passenger Info)
Check-in page 2 (Flight Info)
Check-in page 3 (Boarding Info)
All fields filled & in correct format & NFC detected ?
No
Warning Message
Yes
Save inside database
Write to NFC tag

4.2.2. Boarding system (Read Information from NFC)



4.2.3. Contact system (Read information from NFC)


Contact us
Contact page 1 (Database, NFC, Display)
No
NFC detected ?
Yes
Display airline company information
"Add Contact" button pressed
"Click to Continue" button pressed
Add to database
Contact page 2 (Call, SMS, Email)
Spinner "Dial"
Spinner "Send SMS"
Spinner "Send Email"
Call
Send SMS
Send Email

5. Features:

5.1. Main Page

5.1.1. Set button's background to picture

5.1.2. Scroll View

5.2. Check-in System

5.2.1. Pass values among different pages

5.2.2. Save all records to database

5.2.3.Scroll View

5.2.4.Write information to NFC Tag

5.2.5.Check fields (any empty fileds?), date and boarding time format before saving to database and writing into NFC Tag

5.2.6. Change font size

5.3. Boarding System

5.3.1.Log-in Page

5.3.2. Disable button if enter wrong password for three times

5.3.3.Scroll View

5.3.4.Text to speech function

5.3.5.Get current address by using GPS

5.3.6.Call 3rd party app (Google Map)

5.3.7. Pop-up Alert dialog

5.3.8. Set alarm

5.3.9. Stop alarm

5.3.10. Change font size

5.3.11. Put different values in different fileds

5.3.12. Read information form NFC Tag

5.4. Contact System

5.4.1.Add data to database

5.4.2.Delete data form database

5.4.3.Display all database information in ListView

5.4.4. Check content's format before proceeding to 2nd page

5.4.5. Get specific data from database (eg. Email address of one specific airline company)

5.4.6. Dial

5.4.7. Send SMS

5.4.8. Send Email

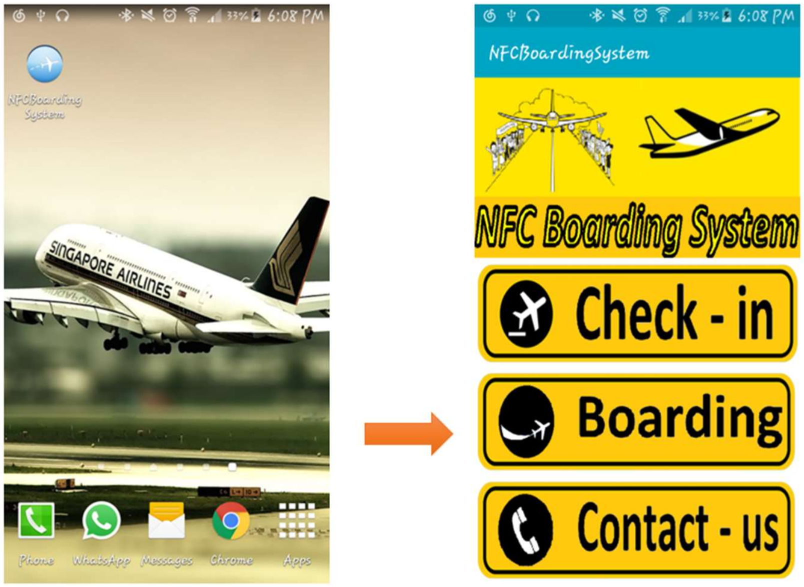
5.4.9.Read information from NFC Tag

6. User Manuals (Functions):

6.1. Contents for “User Manuals”

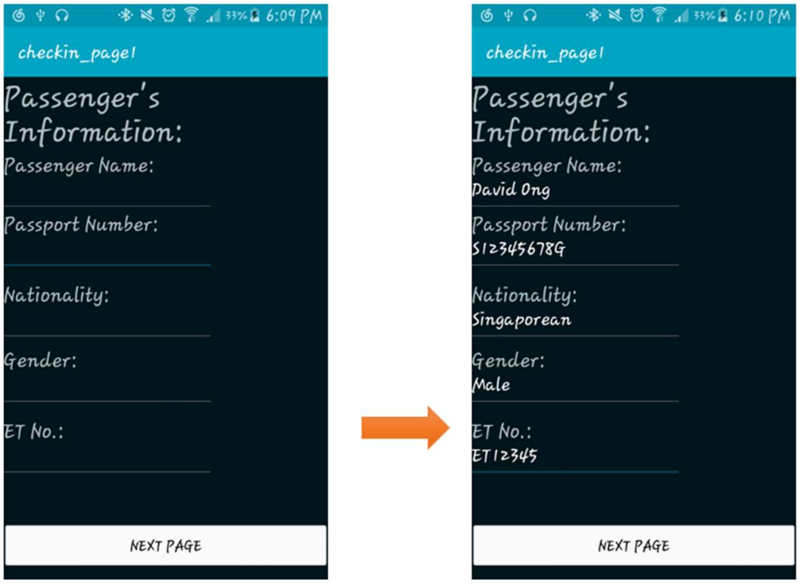
6.2. NFC Boarding System Logo & Main Page

Once users click the app logo, NFC Boarding System main page will be shown. Users can click anyone of the three buttons and get into different system to continue. The “Check-in” system is mainly designed for the airport staffs. As for “Boarding” system and “Contact-us” system, they are designed for passengers’ convenience.



6.3. NFC Boarding System Check-in Page

After the “Check-in” button in the main page had been chosen, the airport staffs will be able to write the passenger’s necessary information for the passengers in a NFC tag.



Passenger's Information:

Passenger Name:

Passport Number:

Nationality:

Gender:

ET No.:

Passenger's Information:

Passenger Name:
David Ong

Passport Number:
S12345678G

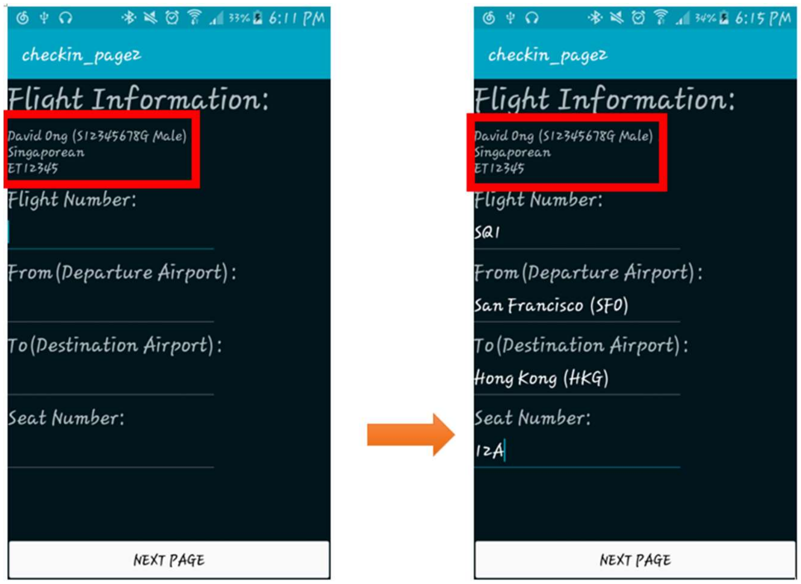
Nationality:
Singaporean

Gender:
Male

ET No.:
ET12345

6.3.1. Pass information from one activity to the other activity

The information the staff fill in checkin_page 1 will be passed and shown on the top of checkin_page2.



checkin_page2

Flight Information:

David Ong (S12345678G Male)
Singaporean
ET12345

Flight Number:

From(Departure Airport):

To(Destination Airport):

Seat Number:

NEXT PAGE

checkin_page2

Flight Information:

David Ong (S12345678G Male)
Singaporean
ET12345

Flight Number:
SQ1

From(Departure Airport):
San Francisco (SFO)

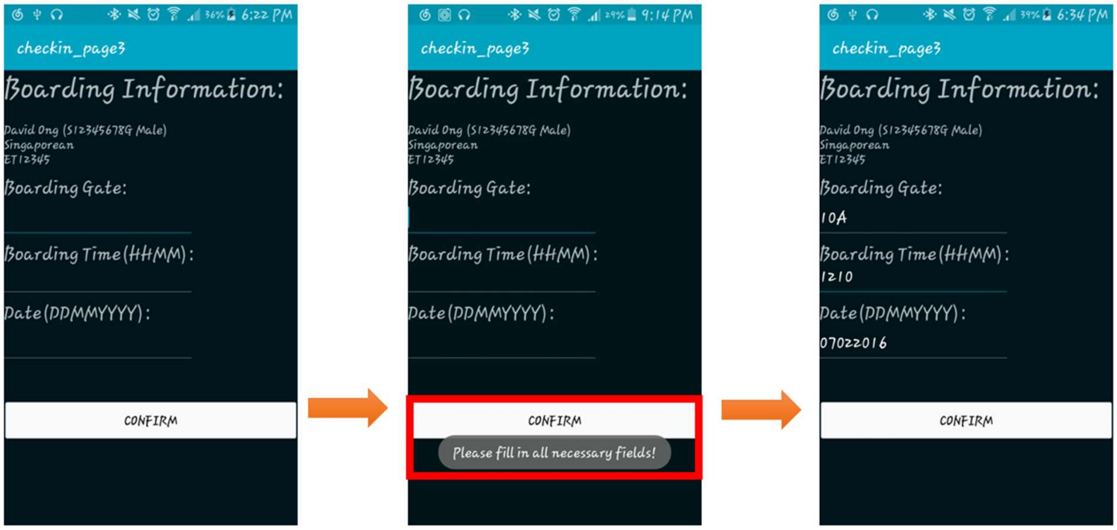
To(Destination Airport):
Hong Kong (HKG)

Seat Number:
12A

NEXT PAGE

6.3.2. Check the input automatically

The staffs are required to fill in all necessary fields in these three pages, otherwise, the program cannot be processed.



checkin_page3

Boarding Information:

David Ong (S12345678G Male)
Singaporean
ET12345

Boarding Gate:

Boarding Time(HHMM):

Date(DDMMYYYY):

CONFIRM

checkin_page3

Boarding Information:

David Ong (S12345678G Male)
Singaporean
ET12345

Boarding Gate:

Boarding Time(HHMM):

Date(DDMMYYYY):

CONFIRM

Please fill in all necessary fields!

checkin_page3

Boarding Information:

David Ong (S12345678G Male)
Singaporean
ET12345

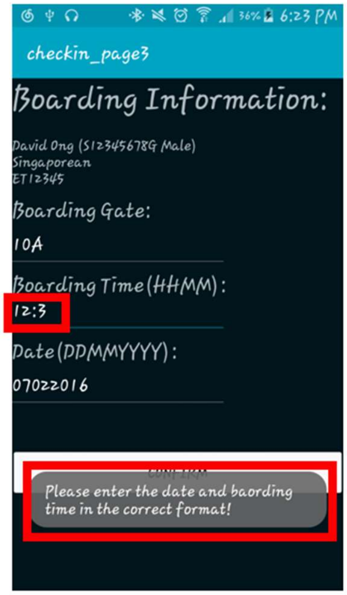
Boarding Gate:
10A

Boarding Time(HHMM):
1210

Date(DDMMYYYY):
07022016

CONFIRM

The program will be able to check the format and availability of the input. For example, if there is a special symbols (“:”) of the input, the program will remind the staff with the message box “Please enter the date and boarding time in the correct format”. Another example is if the staff accidentally input “25” for the hour part of the time, the message box “Please enter the hour from 01-23” will pop up also.


6:23 PM

checkin_page3

Boarding Information:

David Ong (S12345678G Male)
Singaporean
ET12345

Boarding Gate:

10A

Boarding Time(HHMM):

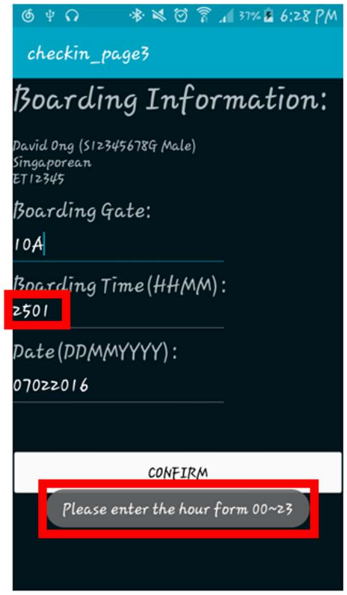
12:3

Date(DDMMYYYY):

07022016

CONFIRM

Please enter the date and baording time in the correct format!


6:28 PM

checkin_page3

Boarding Information:

David Ong (S12345678G Male)
Singaporean
ET12345

Boarding Gate:

10A

Boarding Time(HHMM):

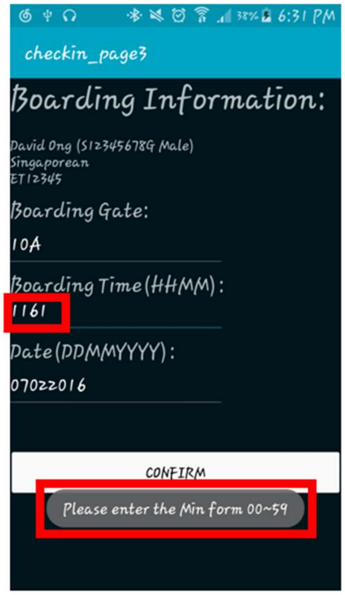
2501

Date(DDMMYYYY):

07022016

CONFIRM

Please enter the hour form 00~23


6:31 PM

checkin_page3

Boarding Information:

David Ong (S12345678G Male)
Singaporean
ET12345

Boarding Gate:

10A

Boarding Time(HHMM):

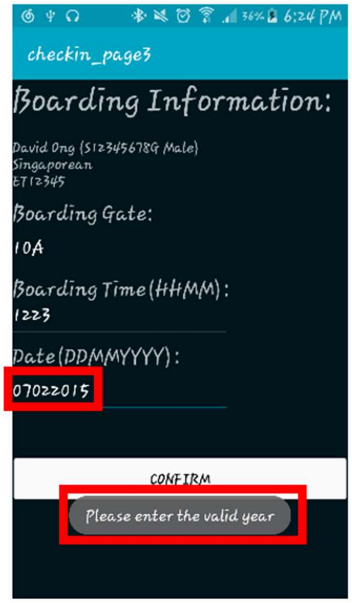
1161

Date(DDMMYYYY):

07022016

CONFIRM

Please enter the Min form 00~59


6:24 PM

checkin_page3

Boarding Information:

David Ong (S12345678G Male)
Singaporean
ET12345

Boarding Gate:

10A

Boarding Time(HHMM):

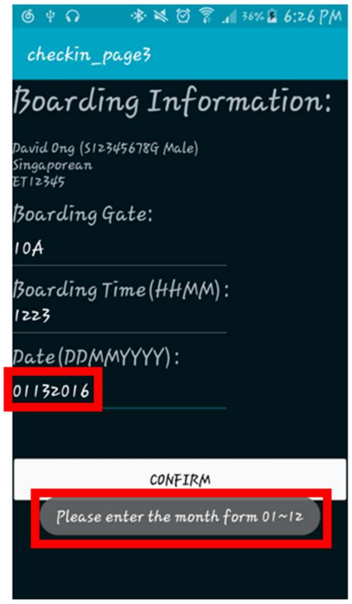
1223

Date(DDMMYYYY):

07022015

CONFIRM

Please enter the valid year


6:26 PM

checkin_page3

Boarding Information:

David Ong (S12345678G Male)
Singaporean
ET12345

Boarding Gate:

10A

Boarding Time(HHMM):

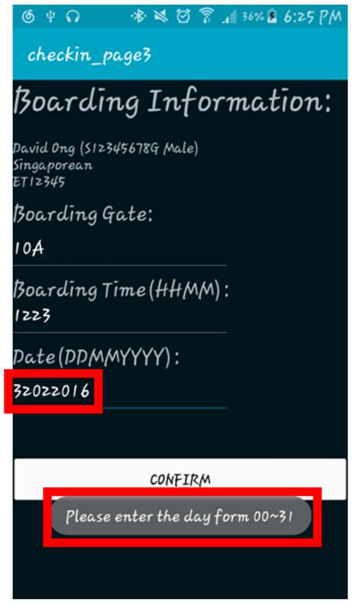
1223

Date(DDMMYYYY):

01132016

CONFIRM

Please enter the month form 01~12


6:25 PM

checkin_page3

Boarding Information:

David Ong (S12345678G Male)
Singaporean
ET12345

Boarding Gate:

10A

Boarding Time(HHMM):

1223

Date(DDMMYYYY):

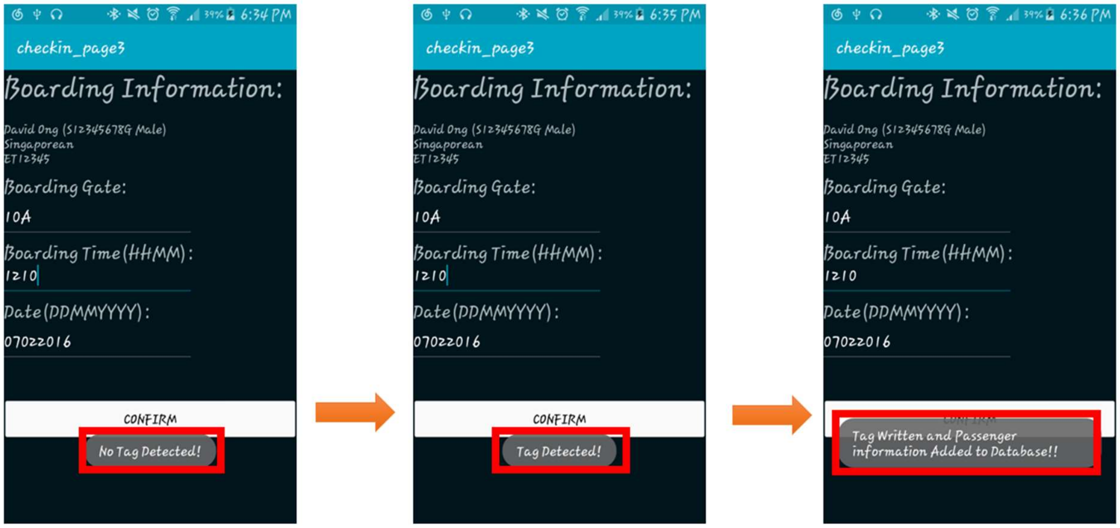
32022016

CONFIRM

Please enter the day form 00~31

6.3.3. Write information to NFC tag and database

When all the necessary information is filled in and the format & availability satisfy the requirement, the program will proceed to write the information to a NFC tag when the tag is detected. At the same time, the passenger information will be saved in database.



checkin_page3

Boarding Information:

David Ong (S12345678G Male)
Singaporean
ET12345

Boarding Gate:
10A

Boarding Time(HHMM):
1210

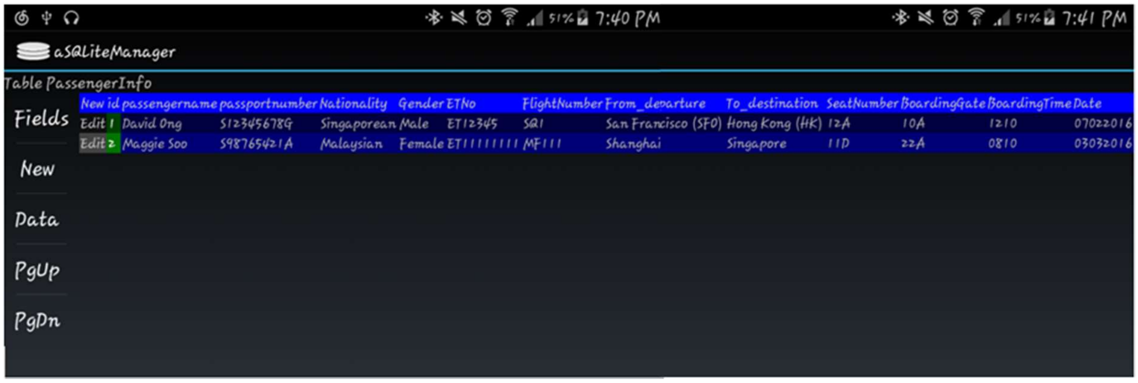
Date(DDMMYYYY):
07022016

CONFIRM

No Tag Detected!

Tag Detected!

Tag Written and Passenger information Added to Database!!



aSQLiteManager

Table PassengerInfo

New	id	passengername	passportnumber	Nationality	Gender	ETNo	FlightNumber	From_departure	To_destination	SeatNumber	BoardingGate	BoardingTime	Date
Edit	1	David Ong	S12345678G	Singaporean	Male	ET12345	SQ1	San Francisco (SFO)	Hong Kong (HK)	12A	10A	1210	07022016
Edit	2	Maggie Soo	S98765421A	Malaysian	Female	ET11111111	MF111	Shanghai	Singapore	11D	22A	0810	03032016

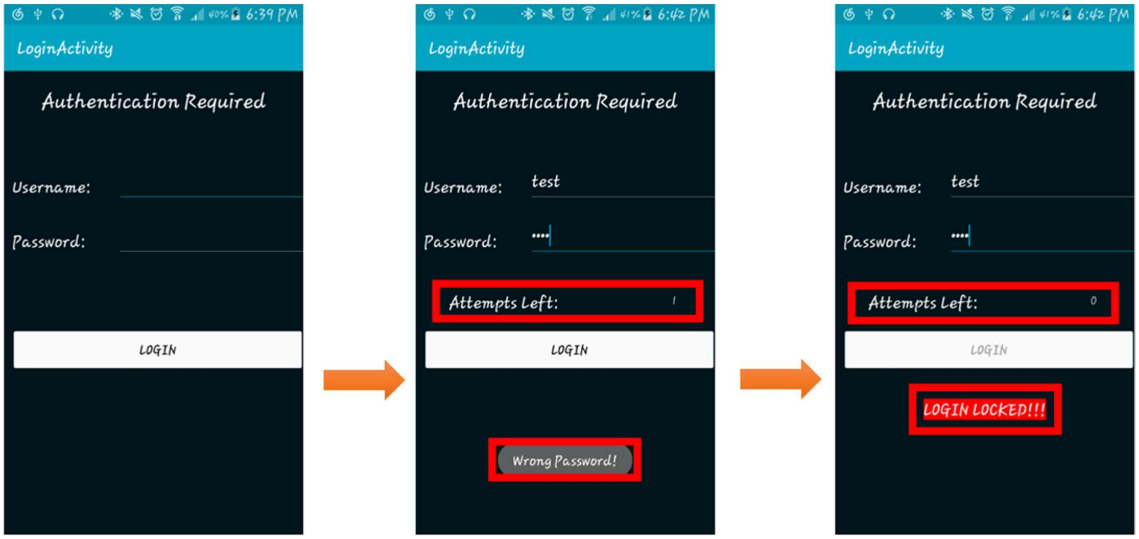
6.4. NFC Boarding System Boarding Page

After the "Boarding" button in the main page had been chosen, the passengers will be able to access their boarding information through the NFC tag.

6.4.1. Log in page

Since there is lots of sensitive and private information written in the NFC boarding pass, the passenger need to be authorized to process.

If the username and password aren't matched after three attempts, the "LOG IN" button will be disabled and the passenger need to go back last page to re-enter their authentication information.



Username: test

Password: ····

Attempts Left: 1

Wrong Password!

Username: test

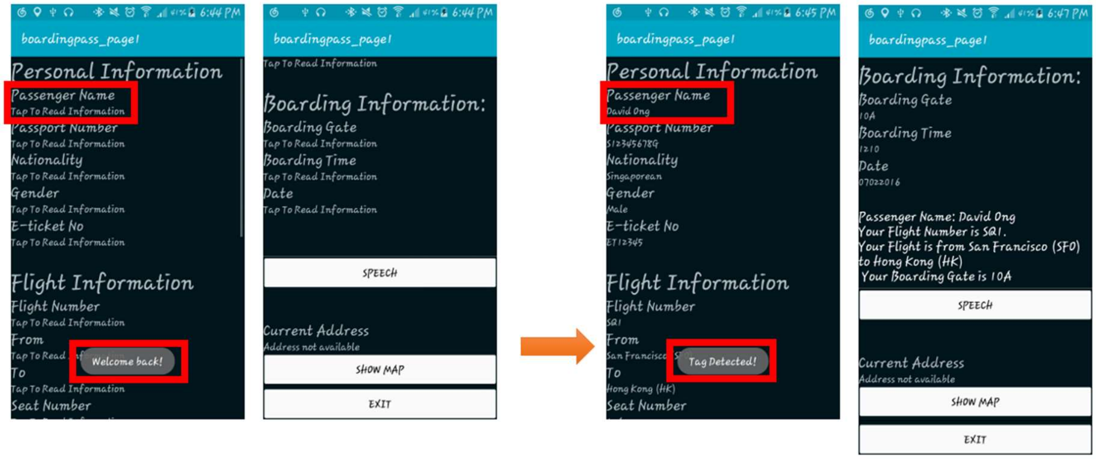
Password: ····

Attempts Left: 0

LOGIN LOCKED!!!

6.4.2. Read information from NFC tag

Once the NFC tag is detected, the information will be auto read and updated on this page.



Passenger Name
Tap To Read Information
Passport Number
Tap To Read Information
Nationality
Tap To Read Information
Gender
Tap To Read Information
E-ticket No
Tap To Read Information

Flight Number
Tap To Read Information
From
Tap To Read
To
Tap To Read Information
Seat Number

Welcome back!

Tap To Read Information

Boarding Gate
Tap To Read Information
Boarding Time
Tap To Read Information
Date
Tap To Read Information

Current Address
Address not available

Passenger Name
David Ong
Passport Number
S12345678G
Nationality
Singaporean
Gender
Male
E-ticket No
ET12345

Flight Number
SQ1
From
San Francisco
To
Hong Kong (HK)
Seat Number

Tag Detected!

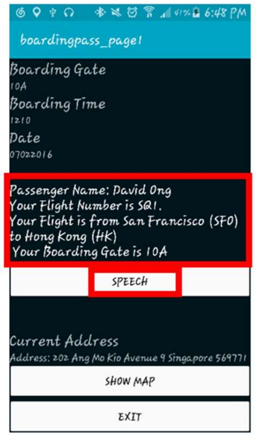
Boarding Gate
10A
Boarding Time
1210
Date
07022016

Passenger Name: David Ong
Your Flight Number is SQ1.
Your Flight is from San Francisco (SFO) to Hong Kong (HK)
Your Boarding Gate is 10A

Current Address
Address not available

6.4.3. Text to speech to read out the information

When "Speech" button is pressed, the program will sort out all important boarding information into text format at the bottom of this page and read out for passengers' convenience.



boardingpass_page1

Boarding Gate
10A
Boarding Time
1210
Date
07022016

Passenger Name: David Ong
Your Flight Number is SQ1.
Your Flight is from San Francisco (SFO) to Hong Kong (HK)
Your Boarding Gate is 10A

SPEECH

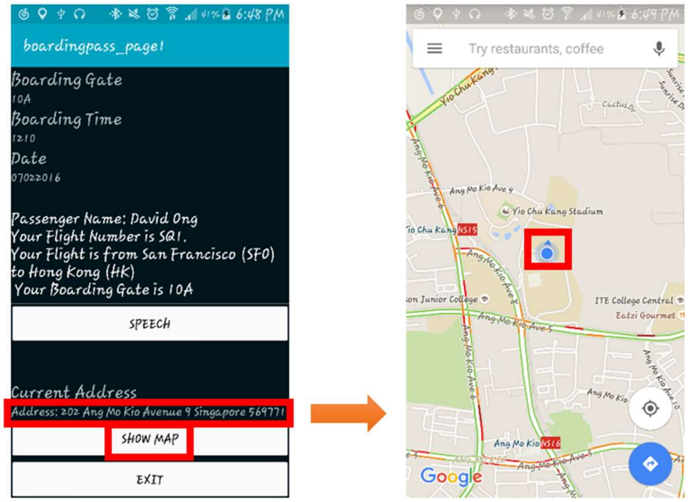
Current Address
Address: 202 Ang Mo Kio Avenue 9 Singapore 569771

SHOW MAP

EXIT

6.4.4. Retrieve current location

As passengers may transit at a new airport, the “Show Map” function will be helpful to locate themselves. The GPS function of phone will be accessible even the phone is not connected to wireless or 3G/4G network.



boardingpass_page1

Boarding Gate
10A
Boarding Time
1210
Date
07022016

Passenger Name: David Ong
Your Flight Number is SQ1.
Your Flight is from San Francisco (SFO) to Hong Kong (HK)
Your Boarding Gate is 10A

SPEECH

Current Address
Address: 202 Ang Mo Kio Avenue 9 Singapore 569771

SHOW MAP

EXIT

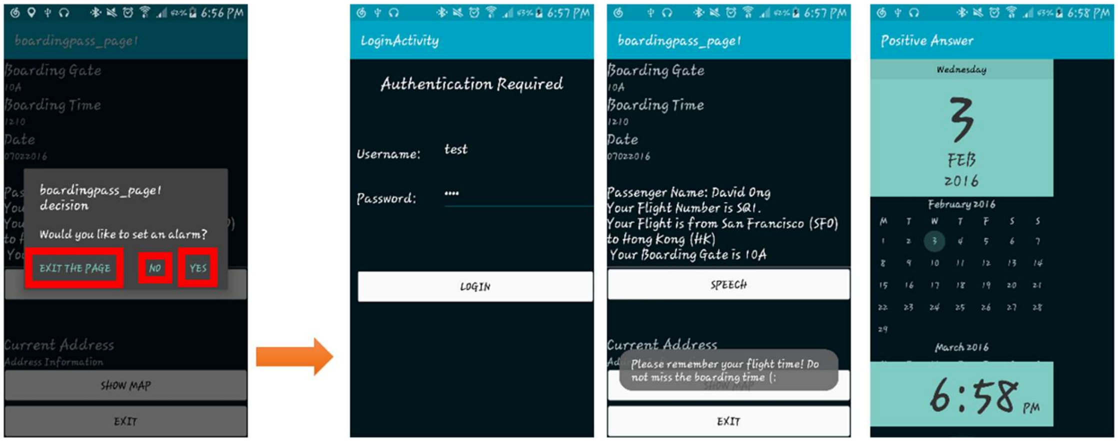
6.4.5. Alert dialog to double confirm users’ action

If the passenger decides to exit the page, an alert dialog will pop up and ask for the decision “Would you like to set an alarm?”

If “EXIT THE PAGE” is chosen, the program will finish boardingpass_page1 activity and the user will be back to last page (Login Activity).

If “No” is chosen, the program will stay in boardingpass_page1 activity, and message box “Please remember your flight time! Do not miss the boarding time” will be shown to remind the passenger.

If “Yes” is chosen, the program will process to set alarm page (Positive Answer).



boardingpass_page1 decision

Would you like to set an alarm?

Authentication Required

Username: test

Password: ••••

Boarding Gate 10A

Boarding Time 1210

Date 07022016

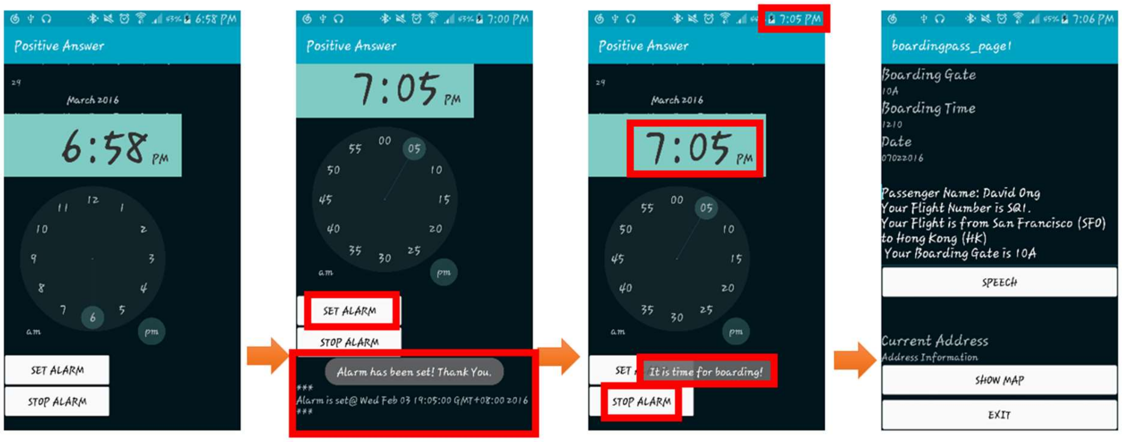
Passenger Name: David Ong
Your Flight Number is SQ1.
Your Flight is from San Francisco (SFO) to Hong Kong (HK)
Your Boarding Gate is 10A

Please remember your flight time! Do not miss the boarding time (:

3 FEB 2016

6.4.6. Alarm setting for reminder

Form the figure below, "7:05 pm" is the time that users choose to set for next alarm. When the alarm is set, "Alarm is set" message box and text "Alarm is set at@Wed Feb 03 19:05:00 +GMT +08:00n2016" will be shown. Once it is 7:05pm, the alarm is triggered and the user will hear the ringtone to remind him/her for the boarding time. The alarm will stop and the program will be back to "boardingpass_page1" after pressing the "STOP ALARM" button.



Alarm has been set! Thank You.

###
Alarm is set@ Wed Feb 03 19:05:00 GMT+08:00 2016
###

It is time for boarding!

Boarding Gate 10A

Boarding Time 1210

Date 07022016

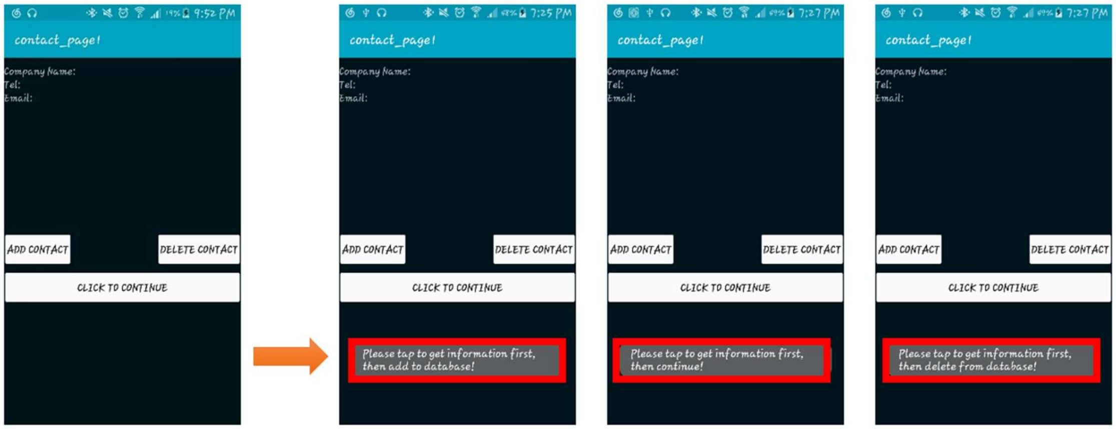
Passenger Name: David Ong
Your Flight Number is SQ1.
Your Flight is from San Francisco (SFO) to Hong Kong (HK)
Your Boarding Gate is 10A

6.5. NFC Boarding System Contact Us Page

After the "Contact" button in the main page had been chosen, passengers can tap the NFC tag with flight company information to save their contact for some emergency cases.

6.5.1. Read information from NFC tag and database

If there is no information stored in the database, the program will not be able to process.



Company Name:
Tel:
Email:

Please tap to get information first, then add to database!

Please tap to get information first, then continue!

Please tap to get information first, then delete from database!

Once the NFC with information is detected, the passenger can choose "ADD CONTACT" to add the information to database. Also, he/she can delete the contact from the database by clicking "DELETE CONTACT".

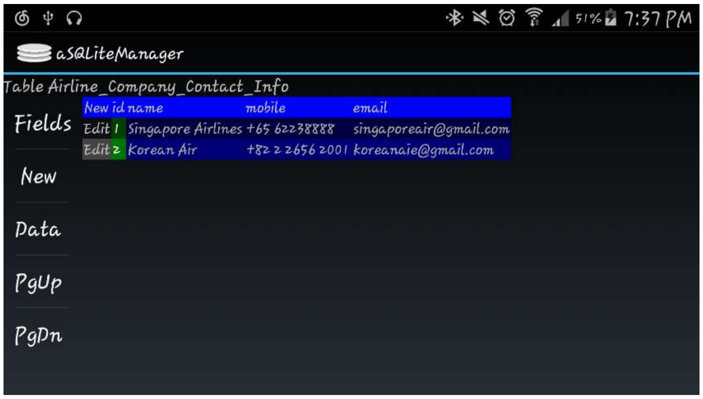
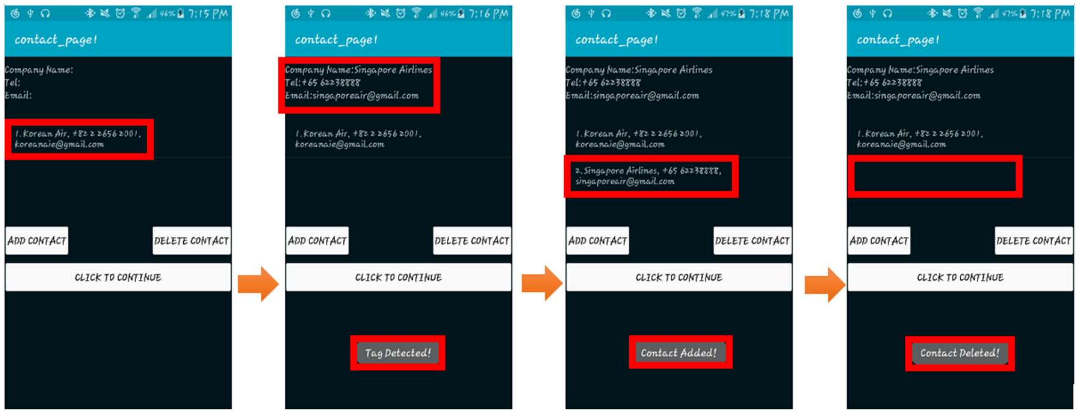


Table Airline_Company_Contact_Info

New	id	name	mobile	email
Edit	1	Singapore Airlines	+65 62238888	singaporeair@gmail.com
Edit	2	Korean Air	+82 2 2656 2001	koreanaie@gmail.com



Company Name:
Tel:
Email:

1. Korean Air, +82 2 2656 2001, koreanaie@gmail.com

Company Name:Singapore Airlines
Tel:+65 62238888
Email:singaporeair@gmail.com

2. Singapore Airlines, +65 62238888, singaporeair@gmail.com

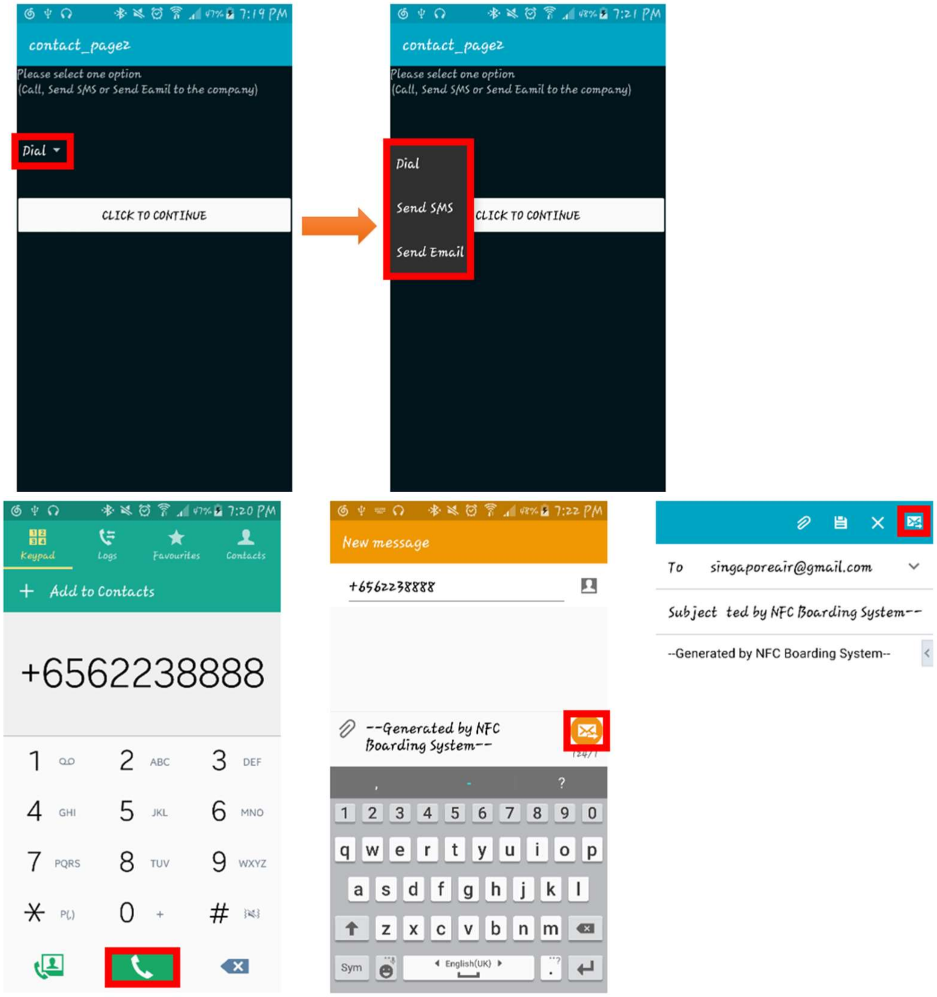
Tag Detected!

Contact Added!

Contact Deleted!

6.5.2. Implicit Intents (Call & SMS & EMAIL)

After adding contact of the flight company, the passenger will be able to choose the way to contact the company, "Dial", "SMS" or "EMAIL". The user will be guided to corresponding application after any one of the three being chosen.



Please select one option
(Call, Send SMS or Send Eamil to the company)

+6562238888

+6562238888

--Generated by NFC Boarding System--

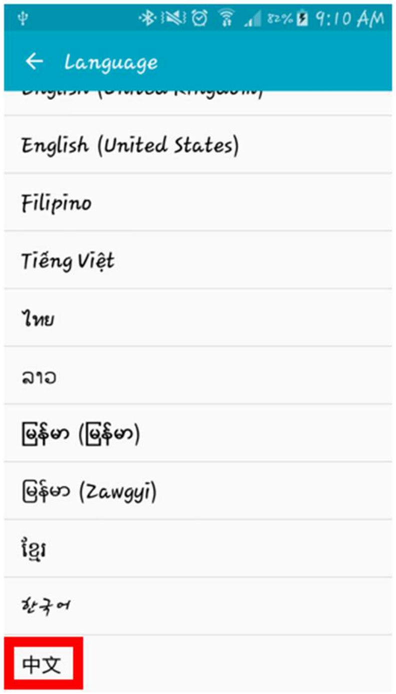
To singaporeair@gmail.com

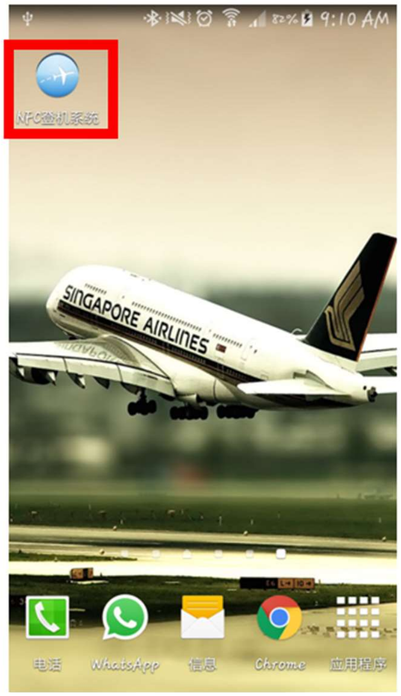
Subject ted by NFC Boarding System--

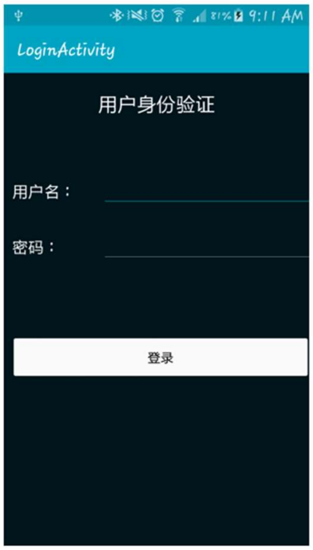
--Generated by NFC Boarding System--

6.6. Multi language function

The program is international since it will auto find the string.xml from value file and change to corresponding language. For example, if the user chose CHINESE（中文）in SETTING, the program will show all the button and message box in Chinses also.





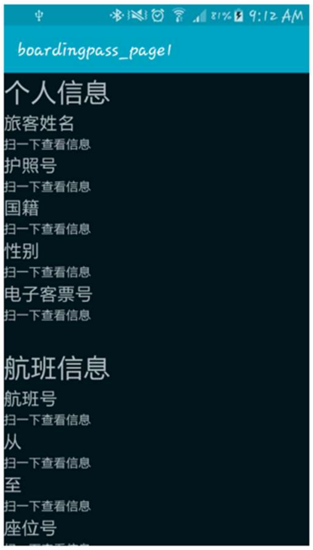


用户身份验证

用户名：

密码：

登录

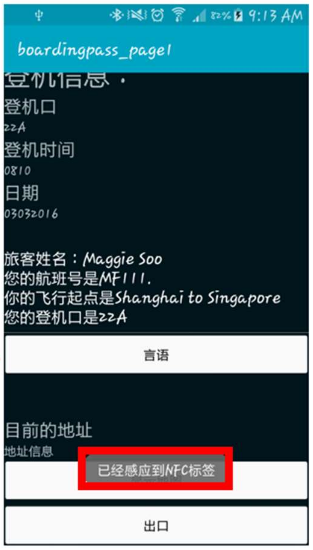


个人信息

旅客姓名
扫一下查看信息
护照号
扫一下查看信息
国籍
扫一下查看信息
性别
扫一下查看信息
电子客票号
扫一下查看信息

航班信息

航班号
扫一下查看信息
从
扫一下查看信息
至
扫一下查看信息
座位号



登机信息：

登机口
22A
登机时间
0810
日期
03032016

旅客姓名：Maggie Soo
您的航班号是MF111.
你的飞行起点是Shanghai to Singapore
您的登机口是22A

言语

目前的地址
地址信息

已经感应到NFC标签

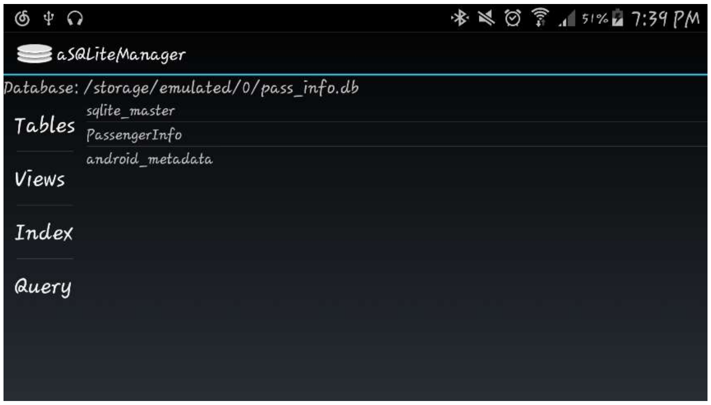
出口

7. Database Structure

7.1. Overview:

In this project, we are using two database. One is “Pass_Info” Database, the other one is “AirlineCompanyInfo” Database.

7.1.1. Pass_Info Database:



Database: /storage/emulated/0/pass_info.db

sqlite_master
PassengerInfo
android_metadata

Figure “Pass_Info Database”

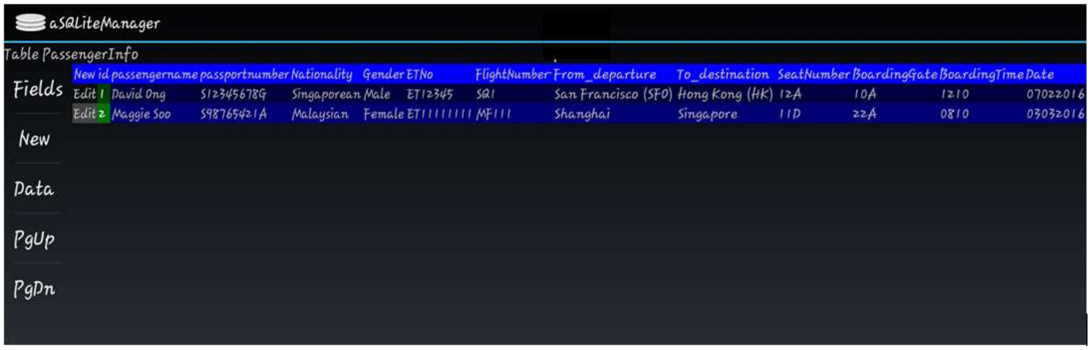


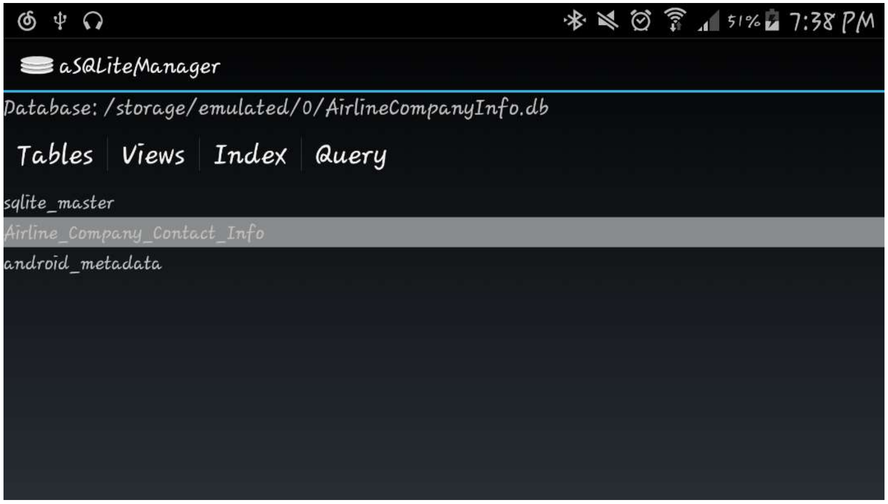
Table PassengerInfo

New	id	passengername	passportnumber	Nationality	Gender	ETNo	FlightNumber	From_departure	To_destination	SeatNumber	BoardingGate	BoardingTime	Date
Edit	1	David Ong	S12345678G	Singaporean	Male	ET12345	SQ1	San Francisco (SFO)	Hong Kong (HK)	12A	10A	1210	07022016
Edit	2	Maggie Soo	S98765421A	Malaysian	Female	ET11111111	MF111	Shanghai	Singapore	11D	22A	0810	03032016

Figure “Table_PassengerInfo_(Pass_Info Database)”

“Pass_Info” is the short term for “passenger information”. All the information are stored inside the table, called “PassengerInfo”. This database is used to store passenger’s information, flight information and boarding information. It’s to record all the passenger’s information, so that if the stuff want to check the records, they may come here to check all passenger’s information.

7.1.2. AirlineCompanyInfo Database:



Database: /storage/emulated/0/AirlineCompanyInfo.db

sqlite_master
Airline_Company_Contact_Info
android_metadata

Figure "AirlineCompanyInfo Database"

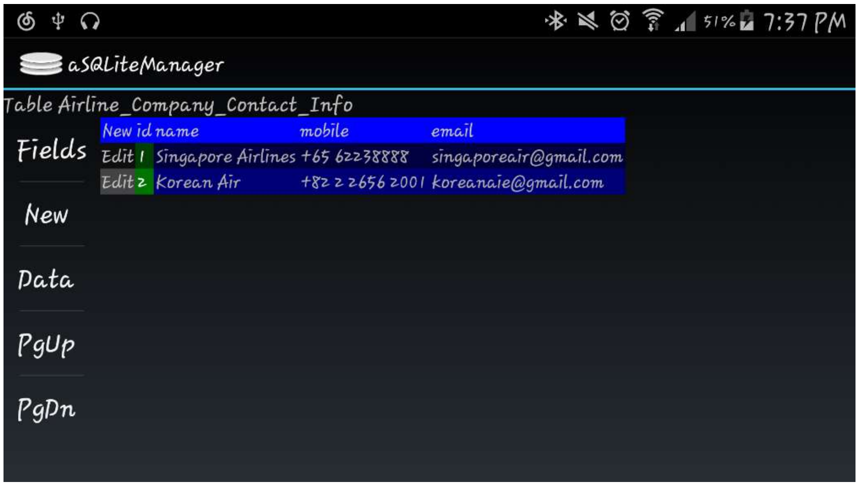


Table Airline_Company_Contact_Info

New	id	name	mobile	email
Edit	1	Singapore Airlines	+65 62238888	singaporeair@gmail.com
Edit	2	Korean Air	+82 2 2656 2001	koreanaie@gmail.com

Figure "Table_ Airline_Company_Contact_Info _(AirlineCompanyInfo Database)"

"AirlineCompanyInfo" Database is to store Airline Companies' names, contact numbers and email addresses. After users tap the Airline-Company-Information NFC tag, the relative airline company name, contact number and email address will be shown at the display area. If the user want to add this airline company's contact information to the database for future using, he/she may click "Add Contact" button. The relative information will be saved inside database, under table "Airline_Company_Contact_Info". If the user want to delete the records, he/she may select the information from the database listview, then click "Delete" button. The information will be removed from the database.

7.2. Database in codes:

7.2.1. PassengerInfo Database:

This database is mainly used in “Check-in” page.

There are three java files involved with “PassengerInfo” Database:

- Checkin_page3.java
- DatabaseHandler.java
- Database_info.java

It will be called in “checkin_page3.java”. After the user clicked the “Confirm” button, the program will check every field, the format of the boarding time and date. If all fields are filled and format are correct. The program will call the database part. It will create a new database structure first, then call the function called “db.addInfo(tmp)”. This function will call the “DatabaseHandler” and “database_info” to add the information.

7.2.2. Airline_Company_Contact_Info Database:

This database is mainly used in “contact us” page.

There are four java files involved with “PassengerInfo” Database:

- contact_page1.java
- contact_page2.java
- contact_databasehandler.java
- contact _info.java

“contact_page1.java” will call the “contact_databasehandler.java” and “contact _info.java” to add or delete data to/from “Airline_Company_Contact_Info” Database. At the same time, all the data inside “Airline_Company_Contact_Info” Database will be displayed in the ListView in “contact_page1.java”. “contact_page2.java” will get the information form “Airline_Company_Contact_Info” Database to call, send SMS or send Email to the airline company.

8. Source Codes

8.1. Java files:

8.1.1.“MainActivity”

```
package sg.edu.nyp.nfcboardingsystem;



import android.app.Activity;

import android.content.Intent;

import android.os.Bundle;

import android.view.View;

import android.widget.Button;


public class MainActivity extends Activity {


	Button btnCheckIn,btnBoardingPass,btnContactInfo;

	private static final int REQUEST_CODE = 10;


	@Override

	protected void onCreate(Bundle savedInstanceState) {

		super.onCreate(savedInstanceState);

		setContentView(R.layout.activity_main);


		btnCheckIn = (Button) findViewById(R.id.btnCheckIn);

		btnBoardingPass = (Button)
findViewById(R.id.btnBoardingPass);

		btnContactInfo= (Button) findViewById(R.id.btnContactInfo);


		btnCheckIn.setOnClickListener(new View.OnClickListener()

   {
        public void onClick(View v)
        {
        Intent intent = new Intent(getApplicationContext(),
checkin_page1.class);
        startActivityForResult(intent, REQUEST_CODE);
        }
        });

                btnBoardingPass.setOnClickListener(new
View.OnClickListener()
    {
        public void onClick(View v)
        {
        Intent intent = new Intent(getApplicationContext(),
LoginActivity.class);
        startActivityForResult(intent, REQUEST_CODE);
        }
        });

                btnContactInfo.setOnClickListener(new View.OnClickListener()
    {
        public void onClick(View v)
        {
        Intent intent = new Intent(getApplicationContext(),
contact_page1.class);
        startActivityForResult(intent, REQUEST_CODE);
        }
        });

        }
}
```

“MainActivity”_END

8.1.2.“checkin_page1”

```
package sg.edu.nyp.nfcboardingsystem;



import android.app.Activity;
import android.content.Intent;
import android.os.Bundle;
import android.view.View;
import android.widget.Button;
import android.widget.EditText;
import android.widget.TextView;

public class checkin_page1 extends Activity {
        TextView txtRead;
        EditText txtName, txtPassport, txtNationality, txtGender, txtETNo;
        Button btnNextPage;
        private static final int REQUEST_CODE=10;

    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.checkin_page1);

        txtName = (EditText) findViewById(R.id.editText1);
        txtPassport = (EditText) findViewById(R.id.editText2);
                txtNationality = (EditText) findViewById(R.id.editText3);
                txtGender = (EditText) findViewById(R.id.editText4);
```

```
            txtETNo = (EditText) findViewById(R.id.editText5);
            btnNextPage=(Button) findViewById(R.id.button2);



             btnNextPage.setOnClickListener(new View.OnClickListener() {
            public void onClick(View v) {
                  String strName = txtName.getText().toString();
                  String strPassport = txtPassport.getText().toString();
                  String strNationality = txtNationality.getText().toString();
                  String strGender = txtGender.getText().toString();
                  String strETNo = txtETNo.getText().toString();

                  Intent intent = new Intent(getApplicationContext(),
                                                     checkin_page2.class);
                              intent.putExtra("Name", strName);
                              intent.putExtra("Passport", strPassport);
                              intent.putExtra("Nationality", strNationality);
                              intent.putExtra("Gender", strGender);
                              intent.putExtra("ETNo", strETNo);

                              //REQUIST
CODE******************************************
                              startActivityForResult(intent, REQUEST_CODE);
            }
             });
  }

}
```

“checkin_page1”_END

8.1.3. “checkin_page2”

```
package sg.edu.nyp.nfcboardingsystem;



import android.app.Activity;
import android.content.Intent;
import android.os.Bundle;
import android.view.View;
import android.widget.Button;
import android.widget.EditText;
import android.widget.TextView;

public class checkin_page2 extends Activity{



    String strName, strPassport, strNationality, strGender, strETNo;


    String strFlightNo,strFrom,strTo,strSeatNo;
    EditText txtFlightNo, txtFrom, txtTo, txtSeatNo;
    Button btnNextPage;
    private static final int REQUEST_CODE=10;

     @Override
     protected void onCreate(Bundle savedInstanceState){
         super.onCreate(savedInstanceState);
         setContentView(R.layout.checkin_page2);
```

```
        //Getting inputs from previous Activity
          Bundle extras = getIntent().getExtras();


           strName = extras.getString("Name");
strPassport = extras.getString("Passport");
strNationality = extras.getString("Nationality");
strGender = extras.getString("Gender");
strETNo = extras.getString("ETNo");
        //write the info to the textview
          TextView textView1 = (TextView) findViewById(R.id.textView1);
          textView1.setText(strName +
                         " (" + strPassport +" "+ strGender + ") ." + "\n" +strNationality+
                         "\n" +strETNo);



        //Read info from this page
          txtFlightNo = (EditText) findViewById(R.id.FlightNumber);
          txtFrom = (EditText) findViewById(R.id.From);
          txtTo = (EditText) findViewById(R.id.To);
          txtSeatNo = (EditText) findViewById(R.id.SeatNo);


                btnNextPage=(Button) findViewById(R.id.button1);


                btnNextPage.setOnClickListener(new View.OnClickListener() {
        public void onClick(View v) {


                strFlightNo = txtFlightNo.getText().toString();
                strFrom = txtFrom.getText().toString();
```

```
            strTo = txtTo.getText().toString();

            strSeatNo = txtSeatNo.getText().toString();



            Intent intent = new Intent(getApplicationContext(),

                                        checkin_page3.class);

                    intent.putExtra("Name", strName);

                    intent.putExtra("Passport", strPassport);

                    intent.putExtra("Nationality", strNationality);

                    intent.putExtra("Gender", strGender);

                    intent.putExtra("ETNo", strETNo);

                    intent.putExtra("FlightNo", strFlightNo);

                    intent.putExtra("From", strFrom);

                    intent.putExtra("To", strTo);

                    intent.putExtra("SeatNo", strSeatNo);


                    //REQUIST
CODE*****************************************

                    startActivityForResult(intent, REQUEST_CODE);

        }

         });


    }

}
```

“checkin_page2”_END

8.1.4. “checkin_page3”

```
package sg.edu.nyp.nfcboardingsystem;
```

```
import java.io.IOException;
import java.nio.charset.Charset;
import java.util.ArrayList;
import java.util.Locale;

import android.app.Activity;
import android.app.PendingIntent;
import android.content.Context;
import android.content.Intent;
import android.nfc.FormatException;
import android.nfc.NdefMessage;
import android.nfc.NdefRecord;
import android.nfc.NfcAdapter;
import android.nfc.NfcManager;
import android.nfc.Tag;
import android.nfc.tech.Ndef;
import android.os.Bundle;
import android.view.View;
import android.widget.ArrayAdapter;
import android.widget.EditText;
import android.widget.TextView;
import android.widget.Toast;

public class checkin_page3 extends Activity{

        NfcAdapter nfcAdapter;
        PendingIntent pendingIntent;
        String strName, strPassport, strNationality, strGender, strETNo,
                  strFlightNo,strFrom,strTo,strSeatNo;
        Tag tag;
        String strBoardingTime,strDate,strBoardingGate;
        //for BoardingTime
        int hour,min,month,day,year;

        //Database
                private DatabaseHandler db;
                EditText txtPassengerName,
txtPassportNumber,txtNationality,txtGender,txtETNo,txtFlightNumber,txtFrom,
                          txtTo,txtSeatNumber,txtBoardingGate,txtBoardingTime,txtDate;
                ArrayList<String> ArrayofName = new ArrayList<String>();
                static ArrayAdapter<String> dbAdapter;
                //Database_end

        @Override
        protected void onCreate(Bundle savedInstanceState){
                super.onCreate(savedInstanceState);
                setContentView(R.layout.checkin_page3);

                //Getting inputs from previous Activity
                  Bundle extras = getIntent().getExtras();

                strName = extras.getString("Name");
        strPassport = extras.getString("Passport");
        strNationality = extras.getString("Nationality");
        strGender = extras.getString("Gender");
        strETNo = extras.getString("ETNo");
        strFlightNo= extras.getString("FlightNo");
        strFrom= extras.getString("From");
```

```
            strTo= extras.getString("To");
            strSeatNo= extras.getString("SeatNo");

           //Database
           db = new DatabaseHandler(this);
                      dbAdapter = new ArrayAdapter<String>(this,
                                            android.R.layout.simple_list_item_1, android.R.id.text1,
ArrayofName);
            //Database_end

                      //write the info to the textview
                         TextView textView1 = (TextView) findViewById(R.id.textView1);
                         textView1.setText(strName + " (" + strPassport +" "+ strGender + ")
\n"+strNationality + "\n"+strETNo);

                      //NFC
                       NfcManager manager = (NfcManager)
this.getSystemService(Context.NFC_SERVICE);
                                nfcAdapter = manager.getDefaultAdapter();
                      //Call Intent
                                pendingIntent = PendingIntent.getActivity(this, 0,
                                new
Intent(this,getClass()).addFlags(Intent.FLAG_ACTIVITY_SINGLE_TOP), 0);
            }

            @Override
                      protected void onResume() {
                                super.onResume();
                                nfcAdapter.enableForegroundDispatch(this, pendingIntent, null, null);
                      }
```

```
        @Override
        protected void onPause() {
            super.onPause();
            nfcAdapter.disableForegroundDispatch(this);
        }


        @Override
        protected void onNewIntent(Intent intent) {
            tag = intent.getParcelableExtra(NfcAdapter.EXTRA_TAG);
            Toast.makeText(getBaseContext(), R.string.tag_detected_,
Toast.LENGTH_LONG).show();
        }


        public void WritePassengerInfo(View v)
        //When btn Confirm Clicked, do these:
        {
            //Boarding Time
            EditText ed1=(EditText)findViewById(R.id.BoardingTime);
            strBoardingTime=ed1.getText().toString();

            EditText ed2=(EditText)findViewById(R.id.Date);
            strDate=ed2.getText().toString();

            EditText ed3=(EditText)findViewById(R.id.BoardingGate);
            strBoardingGate=ed3.getText().toString();




            //check any empty blanks
        if
((strName.length()<1)||(strPassport.length()<1)||(strNationality.length()<1)||(strGender.le
ngth()<1)

    ||(strETNo.length()<1)||(strFlightNo.length()<1)||(strFrom.length()<1)||(strTo.lengt
h()<1)

    ||(strSeatNo.length()<1)||(strBoardingGate.length()<1)||(strBoardingTime.length()<
1)||(strDate.length()<1))
            {
                //if there where any fields haven't been filled, show this:
                Toast.makeText(this,"Please fill in all necessary fields!",
Toast.LENGTH_LONG).show();
            }
        else{
            try
            {
                //see whether hour,min,month,day,year are in correct format
                //for boarding time (hhmm)
                //eg:2324/100=23
                hour= Integer.parseInt(strBoardingTime)/100;
                //eg:2324-2300=24
                min=Integer.parseInt(strBoardingTime)-hour*100;

                //for date (ddmmyyyy)
                day=Integer.parseInt(strDate)/1000000;
                month=(Integer.parseInt(strDate)-day*1000000)/10000;
                year=Integer.parseInt(strDate)-day*1000000-month*10000;

                //check boarding time in correct range (00~23)
                if ((hour>=0)&&(hour<=23))
                {
                    if ((min>=00)&&(min<=59))
                    {
                        if ((day>=00)&&(day<=31))
                        {
                            if ((month>=01)&&(month<=12))
                            {
                                if ((year>2015))
                                {
                                    //if all the time and date
format are correct:
                                    //write
                                    try {
                                        if (tag != null)
                                        {

    NdefRecord txtRecord1 = createTextRecord(strName,
    Locale.ENGLISH, true);
    NdefRecord txtRecord2 = createTextRecord(strPassport,
    Locale.ENGLISH, true);
    NdefRecord txtRecord3 = createTextRecord(strNationality,
    Locale.ENGLISH, true);
    NdefRecord txtRecord4 = createTextRecord(strGender,
    Locale.ENGLISH, true);
    NdefRecord txtRecord5 = createTextRecord(strETNo,
    Locale.ENGLISH, true);
    NdefRecord txtRecord6 = createTextRecord(strFlightNo,
    Locale.ENGLISH, true);
    NdefRecord txtRecord7 = createTextRecord(strFrom,
    Locale.ENGLISH, true);
    NdefRecord txtRecord8 = createTextRecord(strTo,
    Locale.ENGLISH, true);
    NdefRecord txtRecord9 = createTextRecord(strSeatNo,
    Locale.ENGLISH, true);
    NdefRecord txtRecord10 = createTextRecord(strBoardingGate,
    Locale.ENGLISH, true);
    NdefRecord txtRecord11 = createTextRecord(strBoardingTime,
    Locale.ENGLISH, true);
    NdefRecord txtRecord12 = createTextRecord(strDate,
    Locale.ENGLISH, true);
```

```
          NdefRecord[] ndefRecords = {txtRecord1,txtRecord2,txtRecord3,

          txtRecord4,txtRecord5,txtRecord6,txtRecord7,txtRecord8,

          txtRecord9,txtRecord10,txtRecord11,txtRecord12};
                                                                              write(tag,
ndefRecords);

                                                                              //Database

          //database_info tmp = new database_info("aa","11");

          database_info tmp = new database_info(

          strName,strPassport,strNationality,

          strGender,strETNo,strFlightNo,strFrom,strTo,strSeatNo,strBoardingGate,

          strBoardingTime,strDate);

          db.addInfo(tmp);


          //Database_end
                                                                        }
                                                                        else

          Toast.makeText(getBaseContext(), R.string.no_tag_detected_,

          Toast.LENGTH_LONG).show();
                                                                  } catch (IOException e) {

          e.printStackTrace();
```

```
                                    } catch (FormatException
e) {

    e.printStackTrace();
                                    }


                                    //if all the time and date
format are correct_END
                                }
                                else
                                {
                                    //if the year is smaller
2016, then show this msg:

    Toast.makeText(this,"Please enter the valid year", Toast.LENGTH_LONG).show();
                                }
                            }
                            else
                            {
                                //if the month is out of the
range, then show this msg:
                                Toast.makeText(this,"Please
enter the month form 01~12", Toast.LENGTH_LONG).show();
                            }
                        }
                        else
                        {
                            //if the day is out of the range, then
show this msg:
                            Toast.makeText(this,"Please enter the
day form 00~31", Toast.LENGTH_LONG).show();
```

```
                        }
                    }
                    else
                    {
                        //if the min is out of the range, then show this
msg:
                        Toast.makeText(this,"Please enter the Min form
00~59", Toast.LENGTH_LONG).show();
                    }
                }
                else
                {
                    //if the hour is out of the range, then show this msg:
                    Toast.makeText(this, "Please enter the hour form
00~23", Toast.LENGTH_LONG).show();
                }


            }
            catch (NumberFormatException e)
            {
                Toast.makeText(this, "Please enter the date and baording time
in the correct format!",
                        Toast.LENGTH_LONG).show();
            }
            }



        }


        private void write(Tag tag, NdefRecord[] ndefRecords) throws IOException,
FormatException {
        //write to the tag
            NdefMessage ndefMessage = new NdefMessage(ndefRecords);
            Ndef ndef = Ndef.get(tag);

            try{
                if (ndef != null) {
                    ndef.connect();
                    ndef.writeNdefMessage(ndefMessage);
                    ndef.close();


    Toast.makeText(this,R.string.tag_written_and_passenger_information_added_to_da
tabase_, Toast.LENGTH_LONG).show();
                }
                else
                    Toast.makeText(this,
R.string.tag_is_not_ndef_formatted_or_this_tag_is_ndef_ +

    R.string.formatted_but_under_a_vendor_specification_that_this_android_device_ +
                            R.string.does_not_implement_,
Toast.LENGTH_LONG).show();
            } catch (Exception e) {
                Toast.makeText(this, e.toString(),
Toast.LENGTH_LONG).show();
            }
        }


        public NdefRecord createTextRecord (String payload, Locale locale,
                boolean encodeInUtf8) {
```

```
            byte[] langBytes =
locale.getLanguage().getBytes(Charset.forName("US-ASCII"));
            Charset utfEncoding = encodeInUtf8 ?
            Charset.forName("UTF-8") : Charset.forName("UTF-16");
            byte[] textBytes = payload.getBytes(utfEncoding);
            int utfBit = encodeInUtf8 ? 0 : (1<<7);
            char status = (char) (utfBit + langBytes.length);

            byte[] data = new byte[1 + langBytes.length + textBytes.length];
            data[0] = (byte) status;
            System.arraycopy(langBytes, 0, data, 1, langBytes.length);
            System.arraycopy(textBytes, 0, data, 1 + langBytes.length,
textBytes.length);

            NdefRecord record = new
NdefRecord(NdefRecord.TNF_WELL_KNOWN,
            NdefRecord.RTD_TEXT, new byte[0], data);
            return record;
        }

}
```

“checkin_page3”_END

8.1.5. “DatabaseHandler”

```
package sg.edu.nyp.nfcboardingsystem;

import android.content.ContentValues;
import android.content.Context;
import android.database.sqlite.SQLiteDatabase;
import android.database.sqlite.SQLiteOpenHelper;
import android.os.Environment;

public class DatabaseHandler extends SQLiteOpenHelper{
	private static final int DATABASE_VERSION = 1;
	private static final String DATABASE_NAME =
				Environment.getExternalStorageDirectory().toString() +
"/pass_info.db";

	private static final String TABLE_CONTACT = "PassengerInfo";

	private static final String KEY_ID = "id";
	private static final String KEY_PASSENGERNAME = "passengername";
	private static final String KEY_PASSPORTNUMBER = "passportnumber";
	private static final String KEY_Nationality = "Nationality";
	private static final String KEY_Gender = "Gender";
	private static final String KEY_ETNo = "ETNo";

	private static final String KEY_FlightNumber = "FlightNumber";
	private static final String KEY_FromDeparture = "From_departure";
	private static final String KEY_ToDestination = "To_destination";
	private static final String KEY_SeatNumber = "SeatNumber";
	private static final String KEY_BoardingGate = "BoardingGate";
	private static final String KEY_BoardingTime = "BoardingTime";
	private static final String KEY_Date = "Date";

	public DatabaseHandler(Context context) {
		super(context, DATABASE_NAME, null, DATABASE_VERSION);
	}
```

```
    // Creating Tables
    @Override
    public void onCreate(SQLiteDatabase db) {
        String CREATE_CONTACTS_TABLE = "CREATE TABLE " + TABLE_CONTACT + "("
                + KEY_ID + " INTEGER PRIMARY KEY," + KEY_PASSENGERNAME
+ " TEXT,"
                + KEY_PASSPORTNUMBER


                +" TEXT," + KEY_Nationality+" TEXT,"
                + KEY_Gender +" TEXT," + KEY_ETNo + " TEXT,"
                + KEY_FlightNumber +" TEXT," + KEY_FromDeparture +" TEXT,"
                + KEY_ToDestination + " TEXT," + KEY_SeatNumber + " TEXT,"
                + KEY_BoardingGate + " TEXT," + KEY_BoardingTime + " TEXT,"
                + KEY_Date


                + " TEXT)";


        db.execSQL(CREATE_CONTACTS_TABLE);
    }


    // Upgrading database
    @Override
    public void onUpgrade(SQLiteDatabase db, int oldVersion, int newVersion) {


    }





    public void addInfo(database_info databaseinfo) {
        SQLiteDatabase db = this.getWritableDatabase();
        ContentValues values = new ContentValues();


        values.put(KEY_PASSENGERNAME, databaseinfo.getPassengerName());
        values.put(KEY_PASSPORTNUMBER, databaseinfo.getPassportNumber());
        values.put(KEY_Nationality, databaseinfo.getNationality());
        values.put(KEY_Gender, databaseinfo.getGender());
        values.put(KEY_ETNo, databaseinfo.getETNo());
        values.put(KEY_FlightNumber, databaseinfo.getFlightNumber());
        values.put(KEY_FromDeparture, databaseinfo.getFromDeparture());
        values.put(KEY_ToDestination, databaseinfo.getToDestination());
        values.put(KEY_SeatNumber, databaseinfo.getSeatNumber());
        values.put(KEY_BoardingGate, databaseinfo.getBoardingGate());
        values.put(KEY_BoardingTime, databaseinfo.getBoardingTime());
        values.put(KEY_Date, databaseinfo.getDate());


        db.insert(TABLE_CONTACT, null, values);
        db.close();
    }
}
```

“DatabaseHandler”_END

8.1.6. “database_info”

```
package sg.edu.nyp.nfcboardingsystem;


public class database_info {
    private int id;
    private String passenger_name,passport_number,Nationality,Gender,ETNo,FlightNumber,strFrom,strTo,SeatNumber;
    private String BoardingGate,BoardingTime,Date;
    public database_info(){

    }



    public database_info(String passenger_name, String passport_number
                ,String Nationality,
                String Gender, String ETNo,String FlightNumber, String strFrom,
                String strTo, String SeatNumber,String BoardingGate, String
BoardingTime,String Date){

            this.passenger_name = passenger_name;
            this.passport_number = passport_number;
            this.Nationality        = Nationality;
            this.Gender     = Gender;
            this.ETNo = ETNo;

            this.FlightNumber       = FlightNumber;
            this.strFrom = strFrom;
            this.strTo = strTo;
            this.SeatNumber = SeatNumber;
            this.BoardingGate       = BoardingGate;
            this.BoardingTime = BoardingTime;
            this.Date       = Date;

    }

    public database_info(int id, String passenger_name, String passport_number
                ,String Nationality,
                String Gender, String ETNo,String FlightNumber, String strFrom,
                String strTo, String SeatNumber,String BoardingGate, String
BoardingTime,String Date){

            this.id  = id;
            this.passenger_name  = passenger_name;
            this.passport_number = passport_number;
            this.Nationality           = Nationality;
            this.Gender      = Gender;
            this.ETNo = ETNo;
            this.FlightNumber        = FlightNumber;
            this.strFrom = strFrom;
            this.strTo          = strTo;
            this.SeatNumber = SeatNumber;
            this.BoardingGate        = BoardingGate;
            this.BoardingTime = BoardingTime;
            this.Date          = Date;
    }


    public int getId() {
            return id;
    }

    public void setId (int id){
            this.id = id;
    }


    public String getPassengerName() {
            return passenger_name;
```

```
}

public void setPassengerName(String passenger_name) {
        this.passenger_name = passenger_name;
}



public String getPassportNumber() {
        return passport_number;
}

public void setPassportNumber(String passport_number) {
        this.passport_number = passport_number;
}



public String getNationality() {
        return Nationality;
}

public void setNationality(String Nationality) {
        this.Nationality = Nationality;
}

public String getGender() {
        return Gender;
}

public void setGender(String Gender) {
    this.Gender = Gender;
}

public String getETNo() {
    return ETNo;
}

public void setETNo(String ETNo) {
    this.ETNo = ETNo;
}

public String getFlightNumber() {
    return FlightNumber;
}

public void setFlightNumber(String FlightNumber) {
    this.FlightNumber = FlightNumber;
}

public String getFromDeparture() {
    return strFrom;
}

public void setFromDeparture(String strFrom) {
    this.strFrom = strFrom;
}

public String getToDestination() {
    return strTo;
```

```
}

public void setToDestination(String strTo) {
        this.strTo = strTo;
}

public String getSeatNumber() {
        return SeatNumber;
}

public void setSeatNumber(String SeatNumber) {
        this.SeatNumber = SeatNumber;
}



public String getBoardingGate() {
        return BoardingGate;
}

public void setBoardingGate(String BoardingGate) {
        this.BoardingGate = BoardingGate;
}

public String getBoardingTime() {
        return BoardingTime;
}

public void setBoardingTime(String BoardingTime) {
        this.BoardingTime = BoardingTime;
```

```
    }

    public String getDate() {
        return Date;
    }

    public void setDate(String Date) {
        this.Date = Date;
    }
}
```

“database_info”_END

8.1.7. “boardingpass_page1”

```
package sg.edu.nyp.nfcboardingsystem;

import java.io.IOException;
import java.io.UnsupportedEncodingException;
import java.util.List;
import java.util.Locale;

import android.app.Activity;
import android.app.AlertDialog;
import android.app.PendingIntent;
import android.content.Context;
import android.content.DialogInterface;
import android.content.Intent;
import android.location.Address;
import android.location.Criteria;
import android.location.Geocoder;
import android.location.Location;
import android.location.LocationListener;
import android.location.LocationManager;
import android.net.Uri;
import android.nfc.NdefMessage;
import android.nfc.NdefRecord;
import android.nfc.NfcAdapter;
import android.nfc.NfcManager;
import android.nfc.Tag;
import android.os.Bundle;
import android.os.Parcelable;
import android.speech.tts.TextToSpeech;
import android.util.Log;
import android.view.View;
import android.view.View.OnClickListener;
import android.widget.Button;
import android.widget.EditText;
import android.widget.TextView;
import android.widget.Toast;

public class boardingpass_page1  extends Activity  implements LocationListener{

	NfcAdapter nfcAdapter;
	PendingIntent pendingIntent;
	Tag tag;
	TextView
txtRead,txtReadPassengerName,txtReadPassportNumber,txtReadNationality,txtReadGende
r,txtReadETNo,
txtReadFlightNo,txtReadFrom,txtReadTo,txtReadSeatNo,txtReadBoardingGate,txtReadBoar
dingTime,txtReadDate;
            //for Text To Speech==============================
            String speechContent;
    EditText editTextSpeech;
    TextToSpeech textToSpeech;
    //==================================================


    //For Address (Map)
    TextView txtAdd;
    LocationManager locationManager;
    String provider;
    double lat, lng;
    Button btnShowMap;
    private Button mainBtn;


    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.boardingpass_page1);


        //alert alarm
        mainBtn = (Button) findViewById(R.id.button);
                        mainBtn.setOnClickListener(new OnClickListener() {


                                    @Override
                                    public void onClick(View v) {
                                                // TODO Auto-generated method stub
                                                openAlert(v);
```

```
                    }
                });


        NfcManager manager = (NfcManager) this.getSystemService(Context.NFC_SERVICE);
                nfcAdapter = manager.getDefaultAdapter();


                pendingIntent = PendingIntent.getActivity(this, 0,
                    new
Intent(this,getClass()).addFlags(Intent.FLAG_ACTIVITY_SINGLE_TOP), 0);


                txtRead = (TextView) findViewById(R.id.PassengerName);


                txtReadPassengerName = (TextView) findViewById(R.id.PassengerName);
                txtReadPassportNumber = (TextView) findViewById(R.id.Passport_number);
                txtReadNationality = (TextView) findViewById(R.id.Nationality);
                txtReadGender = (TextView) findViewById(R.id.Gender);
                txtReadETNo = (TextView) findViewById(R.id.ETNo);


                txtReadFlightNo = (TextView) findViewById(R.id.FlightNo);
                txtReadFrom =(TextView) findViewById(R.id.From);
                txtReadTo = (TextView) findViewById(R.id.To);
                txtReadSeatNo = (TextView) findViewById(R.id.SeatNo);
                txtReadBoardingGate = (TextView) findViewById(R.id.BoardingGate);
                txtReadBoardingTime = (TextView) findViewById(R.id.BoardingTime);
                txtReadDate = (TextView) findViewById(R.id.Date);


                //for Text To Speech===============
                editTextSpeech=(EditText)findViewById(R.id.SpeechTextContant);
        textToSpeech=new TextToSpeech(boardingpass_page1.this, new
TextToSpeech.OnInitListener() {
```

```
          @Override
          public void onInit(int status) {
             if(status == TextToSpeech.SUCCESS){
                int result=textToSpeech.setLanguage(Locale.US);
                if(result==TextToSpeech.LANG_MISSING_DATA ||
                      result==TextToSpeech.LANG_NOT_SUPPORTED){
                   Log.e(getString(R.string.error),
getString(R.string.this_language_is_not_supported));
                }
                //else{
                //   ConvertTextToSpeech();
                //}
             }
             else
                Log.e(getString(R.string.error), getString(R.string.initilization_failed_));
          }
       });
                  //================================

       //For Address (Map)================
       txtAdd = (TextView) findViewById(R.id.Address);

       locationManager = (LocationManager) getSystemService(Context.LOCATION_SERVICE);

       Criteria criteria = new Criteria();
       provider = locationManager.getBestProvider(criteria, false);
       Location location = locationManager.getLastKnownLocation(provider);
       if (location != null) {
       Toast.makeText(this, R.string.provider_ + provider + R.string._has_been_selected_,
       Toast.LENGTH_SHORT).show();

       }  else

       {

           txtAdd.setText(R.string.address_not_available);

       }


           //btnShowMap pressed, then do these:

       btnShowMap = (Button) findViewById(R.id.btnMap);

       btnShowMap.setOnClickListener(new View.OnClickListener() {

                  public void onClick(View v) {

                            Intent intent = null;

                            intent = new Intent(Intent.ACTION_VIEW,

                        Uri.parse("geo:"+lat+","+lng));

                            startActivity(intent);

                  }

                  });

       //================================

    }


    private void openAlert(View view) {

                  AlertDialog.Builder alertDialogBuilder = new
AlertDialog.Builder(boardingpass_page1.this);


                  alertDialogBuilder.setTitle(this.getTitle()+ " decision");

                  alertDialogBuilder.setMessage(R.string.would_you_like_to_set_an_alarm_);

                  // set positive button: Yes message

                  alertDialogBuilder.setPositiveButton("Yes",new
DialogInterface.OnClickListener() {

                                        public void onClick(DialogInterface dialog,int id) {

                                                  // go to a new activity of the app
                                        Intent positveActivity = new
Intent(getApplicationContext(), PositiveActivity.class);

                        startActivity(positveActivity);

                                }

                         });

                // set negative button: No message

                alertDialogBuilder.setNegativeButton("No",new
DialogInterface.OnClickListener() {

                                public void onClick(DialogInterface dialog,int id) {

                                        // cancel the alert box and put a Toast to the user

                                        dialog.cancel();

                                        Toast.makeText(getApplicationContext(),
R.string.please_remember_your_flight_time_do_not_miss_the_boarding_time_,

                                                        Toast.LENGTH_LONG).show();

                                }

                        });

                // set neutral button: Exit the app message

                alertDialogBuilder.setNeutralButton(R.string.exit_the_app,new
DialogInterface.OnClickListener() {

                                public void onClick(DialogInterface dialog,int id) {

                                        // exit the app and go to the HOME

                        boardingpass_page1.this.finish();

                                }

                        });


                AlertDialog alertDialog = alertDialogBuilder.create();

                // show alert

                alertDialog.show();

        }
```

```
@Override
     protected void onResume() {
            super.onResume();

            nfcAdapter.enableForegroundDispatch(this, pendingIntent, null, null);

            locationManager.requestLocationUpdates(provider, 400, 1, this);
}

     @Override
     protected void onPause() {
            super.onPause();

            locationManager.removeUpdates(this);

            nfcAdapter.disableForegroundDispatch(this);
            //for Text To Speech==================
            if(textToSpeech != null){

     textToSpeech.stop();
     textToSpeech.shutdown();
  }
            //====================================
     }

     //for Text To Speech==============================================
     //when the btn "speech" pressed, do this

     public void SpeechContentOnClick(View v){
        ConvertTextToSpeech();


    }


            // read out the text content
    private void ConvertTextToSpeech() {
            speechContent = editTextSpeech.getText().toString();



        if(speechContent==null||"".equals(speechContent))
        {
            speechContent = getString(R.string.content_not_available);
            textToSpeech.speak(speechContent, TextToSpeech.QUEUE_FLUSH, null);
        }
        else
        {
            textToSpeech.speak(speechContent, TextToSpeech.QUEUE_FLUSH, null);
        //textToSpeech.speak("Passenger"+txtRead0+"    ", TextToSpeech.QUEUE_FLUSH, null);
            //textToSpeech.speak("Boarding Time"+txtRead5+"on the day of"+txtRead6,
TextToSpeech.QUEUE_FLUSH, null);
        }
    }
  //==================================================================


            @Override
            protected void onNewIntent(Intent intent) {
                    tag = intent.getParcelableExtra(NfcAdapter.EXTRA_TAG);
                    Toast.makeText(getBaseContext(), R.string.tag_detected_,
Toast.LENGTH_LONG).show();
```

```
        NdefMessage[] msgs;
        if (NfcAdapter.ACTION_NDEF_DISCOVERED.equals(intent.getAction())) {
            Parcelable[] rawMsgs =
intent.getParcelableArrayExtra(NfcAdapter.EXTRA_NDEF_MESSAGES);

            if (rawMsgs != null) {
                msgs = new NdefMessage[rawMsgs.length];
                String content = "";

                for (int i=0; i < rawMsgs.length; i++) {
                    msgs[i] = (NdefMessage) rawMsgs[i];
                    NdefRecord[] records = msgs[i].getRecords();

                    for (int j=0; j < records.length; j++) {
                        NdefRecord record = records[j];
                        byte[] payload = record.getPayload();
                        String recordType = new
String(record.getType());

                        if (recordType.equals("T")) {
                            String textEncoding = ((payload[0] &
0200) == 0) ? "UTF-8" : "UTF-16";
                            try {
                                int langCodeLen= payload[0] &
0077;
                                content += new String(payload,
langCodeLen + 1, payload.length - langCodeLen - 1, textEncoding) + "\n";

                            } catch (UnsupportedEncodingException
e) {
                                e.printStackTrace();
                            }
                        }

                        if (recordType.equals("U")) {
                            content += new String(payload) + "\n";
                        }
                    }
                }
                txtRead.setText(content);

                String[] tmp = txtRead.getText().toString().split("\n");

                txtReadPassengerName.setText(tmp[0]);
                txtReadPassportNumber.setText(tmp[1]);
                txtReadNationality.setText(tmp[2]);
                txtReadGender.setText(tmp[3]);
                txtReadETNo.setText(tmp[4]);


    //txtReadFlightNo,txtReadFrom,txtReadTo,txtReadSeatNo,txtReadBoardingGate
                txtReadFlightNo.setText(tmp[5]);
                txtReadFrom.setText(tmp[6]);
                txtReadTo.setText(tmp[7]);
                txtReadSeatNo.setText(tmp[8]);
                txtReadBoardingGate.setText(tmp[9]);
                txtReadBoardingTime.setText(tmp[10]);
                txtReadDate.setText(tmp[11]);



                //for Text To Speech===============
            editTextSpeech=(EditText)findViewById(R.id.SpeechTextContant);



            editTextSpeech.setText(getString(R.string.passenger_name_)+tmp[0]+"\n"+getString
    (R.string.your_flight_number_is_)+tmp[5]+".\n"+getString(R.string.your_flight_is_from_)+t
    mp[6]+" to "+tmp[7]+"\n" + getString(R.string._your_boarding_gate_is_)+tmp[9],
    TextView.BufferType.EDITABLE);


                            textToSpeech=new TextToSpeech(boardingpass_page1.this,
    new TextToSpeech.OnInitListener() {

                        @Override
                        public void onInit(int status) {
                            if(status == TextToSpeech.SUCCESS){
                                int result=textToSpeech.setLanguage(Locale.US);
                                if(result==TextToSpeech.LANG_MISSING_DATA ||
                                        result==TextToSpeech.LANG_NOT_SUPPORTED){
                                    Log.e(getString(R.string.error),
    getString(R.string.this_language_is_not_supported));
                                }
                                else{
                                    ConvertTextToSpeech();
                                }
                            }
                            else
                                Log.e(getString(R.string.error),
    getString(R.string.initilization_failed_));
                        }
                    });
                            //===============================
            }
        }
    }

    @Override
    public void onLocationChanged(Location location) {
        // TODO Auto-generated method stub
        lat = location.getLatitude();
        lng = location.getLongitude();

        Geocoder geoCoder = new Geocoder(getBaseContext(), Locale.getDefault());
         try {
        List<Address> addresses = geoCoder.getFromLocation(lat, lng, 1);
        if (addresses.size() > 0)
        txtAdd.setText("Address: " + addresses.get(0).getAddressLine(0)
        + " Singapore "+ addresses.get(0).getPostalCode());
         }
         catch (IOException e) {
        Toast.makeText(this, "Error in reverse geocoding",
         Toast.LENGTH_SHORT).show();
         }
    }

    @Override
    public void onStatusChanged(String provider, int status, Bundle extras) {
        // TODO Auto-generated method stub


    }
```

```
	@Override
	public void onProviderEnabled(String provider) {
		// TODO Auto-generated method stub

	}

	@Override
	public void onProviderDisabled(String provider) {
		// TODO Auto-generated method stub
		Toast.makeText(this, "Disabled provider " + provider,
				Toast.LENGTH_SHORT).show();
	}



}
```

“boardingpass_page1”_END

8.1.8. “LoginActivity”

```
package sg.edu.nyp.nfcboardingsystem;


import android.app.Activity;
import android.content.Intent;
import android.graphics.Color;
import android.os.Bundle;
import android.view.View;
import android.widget.Button;

import android.widget.EditText;

import android.widget.TextView;

import android.widget.Toast;



public class LoginActivity extends Activity {

	private EditText username;

	private EditText password;

	private Button login;

	private TextView loginLockedTV;

	private TextView attemptsLeftTV;

	private TextView numberOfRemainingLoginAttemptsTV;

	int numberOfRemainingLoginAttempts = 3;

	private static final int REQUEST_CODE = 10;


	@Override

	protected void onCreate(Bundle savedInstanceState) {

		super.onCreate(savedInstanceState);

		setContentView(R.layout.login_view);

		setupVariables();

	}


	public void authenticateLogin(View view) {

		if (username.getText().toString().equals("test") &&

				password.getText().toString().equals("test")) {

			//Call for next page if user name and password matching

			Toast.makeText(getApplicationContext(), R.string.welcome_back_,

			Toast.LENGTH_SHORT).show();
```

```
                        //Intent boardingpass_page1 = new Intent(getApplicationContext(),
boardingpass_page1.class);
        //startActivity(boardingpass_page1);
        Intent intent = new Intent(getApplicationContext(), boardingpass_page1.class);
        startActivityForResult(intent, REQUEST_CODE);
                        //********************
                } else {
                        Toast.makeText(getApplicationContext(), R.string.wrong_password_,
                                        Toast.LENGTH_SHORT).show();
                        numberOfRemainingLoginAttempts--;
                        attemptsLeftTV.setVisibility(View.VISIBLE);
                        numberOfRemainingLoginAttemptsTV.setVisibility(View.VISIBLE);

        numberOfRemainingLoginAttemptsTV.setText(Integer.toString(numberOfRemaining
LoginAttempts));

                        if (numberOfRemainingLoginAttempts == 0) {
                                login.setEnabled(false);
                                loginLockedTV.setVisibility(View.VISIBLE);
                                loginLockedTV.setBackgroundColor(Color.RED);
                                loginLockedTV.setText(R.string.login_locked_);
                        }
                }
        }

        private void setupVariables() {
                username = (EditText) findViewById(R.id.usernameET);
                password = (EditText) findViewById(R.id.passwordET);
                login = (Button) findViewById(R.id.loginBtn);
                loginLockedTV = (TextView) findViewById(R.id.loginLockedTV);
```

```
		attemptsLeftTV = (TextView) findViewById(R.id.attemptsLeftTV);

		numberOfRemainingLoginAttemptsTV = (TextView) findViewById(R.id.numberOfRemainingLoginAttemptsTV);


	numberOfRemainingLoginAttemptsTV.setText(Integer.toString(numberOfRemainingLoginAttempts));

	}


}
```

“LoginActivity”_END

8.1.9. “PositiveActivity”

```
package sg.edu.nyp.nfcboardingsystem;


import java.util.Calendar;




import android.app.Activity;

import android.app.AlarmManager;

import android.app.PendingIntent;

import android.content.Context;

import android.content.Intent;

import android.os.Bundle;

import android.view.View;

import android.view.View.OnClickListener;

import android.widget.Button;

import android.widget.DatePicker;

import android.widget.TextView;

import android.widget.TimePicker;
import android.widget.Toast;

public class PositiveActivity extends Activity {

        DatePicker pickerDate;
         TimePicker pickerTime;
         Button buttonSetAlarm,buttonStopAlarm ;
         TextView info;

         final static int RQS_1 = 1;
        @Override
        protected void onCreate(Bundle savedInstanceState) {
                super.onCreate(savedInstanceState);
                setContentView(R.layout.positive_view);

                info = (TextView)findViewById(R.id.info);
                pickerDate = (DatePicker)findViewById(R.id.pickerdate);
                pickerTime = (TimePicker)findViewById(R.id.pickertime);

                Calendar now = Calendar.getInstance();

                pickerDate.init(
                  now.get(Calendar.YEAR),
                  now.get(Calendar.MONTH),
                  now.get(Calendar.DAY_OF_MONTH),
                  null);

                pickerTime.setCurrentHour(now.get(Calendar.HOUR_OF_DAY));
                pickerTime.setCurrentMinute(now.get(Calendar.MINUTE));
```

```
 buttonSetAlarm = (Button)findViewById(R.id.setalarm);
 buttonStopAlarm = (Button)findViewById(R.id.stopalarm);



  buttonStopAlarm.setOnClickListener(new OnClickListener(){
  @Override
 public void onClick(View arg0) {
 // TODO Auto-generated method stub
 Intent myIntent = new Intent(getBaseContext(),
    AlarmReceiver.class);

  PendingIntent pendingIntent
   = PendingIntent.getBroadcast(getBaseContext(),
     0, myIntent, 0);

  AlarmManager alarmManager
    = (AlarmManager)getSystemService(ALARM_SERVICE);

  alarmManager.cancel(pendingIntent);

  /*Intent intent = new Intent();
  intent.setClass(PositiveActivity.this,AlarmReceiver.class);
  startActivity(intent);*/
  finish();
}});
```

```
 buttonSetAlarm.setOnClickListener(new OnClickListener(){

  @Override
  public void onClick(View arg0) {
   Calendar current = Calendar.getInstance();

   Calendar cal = Calendar.getInstance();
   cal.set(
     pickerDate.getYear(),
     pickerDate.getMonth(),
     pickerDate.getDayOfMonth(),
     pickerTime.getCurrentHour(),
     pickerTime.getCurrentMinute(),
     00);

   if(cal.compareTo(current) <= 0){
    //The set Date/Time already passed
       Toast.makeText(getApplicationContext(),
         "Invalid Date/Time",
         Toast.LENGTH_LONG).show();
   }else{
    setAlarm(cal);
   }

  }});
}
```

```
                private void setAlarm(Calendar targetCal){



                        Toast.makeText(getApplicationContext(),
R.string.alarm_has_been_set_thank_you_,
                              Toast.LENGTH_LONG).show();
                info.setText("\n\n***\n"
                  + "Alarm is set@ " + targetCal.getTime() + "\n"
                  + "***\n");


                Intent intent = new Intent(getBaseContext(), AlarmReceiver.class);
                PendingIntent pendingIntent =
PendingIntent.getBroadcast(getBaseContext(), RQS_1, intent, 0);
                AlarmManager alarmManager =
(AlarmManager)getSystemService(Context.ALARM_SERVICE);
                alarmManager.set(AlarmManager.RTC_WAKEUP,
targetCal.getTimeInMillis(), pendingIntent);


                }
                }
```

“PositiveActivity”_END

8.1.10. “AlarmReceiver”

```
package sg.edu.nyp.nfcboardingsystem;


import android.content.BroadcastReceiver;
import android.content.Context;
import android.content.Intent;
import android.media.Ringtone;
import android.media.RingtoneManager;
import android.net.Uri;

import android.widget.Toast;


public class AlarmReceiver extends BroadcastReceiver {



        @Override

        public void onReceive(Context arg0, Intent arg1) {

         Toast.makeText(arg0, R.string.it_s_time_for_boarding_,
Toast.LENGTH_LONG).show();

         Uri alarmUri=RingtoneManager.getDefaultUri(RingtoneManager.TYPE_ALARM);

                if (alarmUri ==null)

                {

        alarmUri=RingtoneManager.getDefaultUri(RingtoneManager.TYPE_NOTIFICATION);

                }


                Ringtone ringtone=RingtoneManager.getRingtone(arg0, alarmUri);

                ringtone.play();


        }

}
```

“AlarmReceiver”_END

8.1.11. “contact_page1”

```
package sg.edu.nyp.nfcboardingsystem;


import java.io.UnsupportedEncodingException;

import java.util.ArrayList;
import java.util.List;


import android.app.Activity;
import android.app.PendingIntent;
import android.content.Context;
import android.content.Intent;
import android.nfc.NdefMessage;
import android.nfc.NdefRecord;
import android.nfc.NfcAdapter;
import android.nfc.NfcManager;
import android.nfc.Tag;
import android.os.Bundle;
import android.os.Parcelable;
import android.view.View;
import android.widget.AdapterView;
import android.widget.AdapterView.OnItemClickListener;
import android.widget.ArrayAdapter;
import android.widget.Button;
import android.widget.ListView;
import android.widget.TextView;
import android.widget.Toast;


public class contact_page1 extends Activity{
	NfcAdapter adapter;
	PendingIntent pendingIntent;
	Tag tag;
	TextView txtRead;
	String text;
	String text2;
```

```
    String text3;
    TextView txtName,txtContact,txtEmail;
    TextView dataName,dataMobile,dataEmail;

    TextView txtTelNumber;
    TextView txtEmailAddress;
    //configurebuttontogonextpage
    Button btnContinue;

    //private static final int REQUEST_CODE = 10;

    //DATABASE-----------------------------------------------
          private contact_databasehandler db;
          ListView lvInfo;
          //EditText txtName, txtMobile;
          ArrayList<String> ArrayofName = new ArrayList<String>();
          List<contact_info> contacts;
          static ArrayAdapter<String> dbAdapter;
          //DATABASE_END------------------------------------------------

@Override
protected void onCreate(Bundle savedInstanceState) {
  super.onCreate(savedInstanceState);
  setContentView(R.layout.contact_page1);

 //BTNContinue Presses, then do this
  btnContinue = (Button) findViewById(R.id.btnContinue);
  btnContinue.setOnClickListener(new View.OnClickListener() {
    public void onClick(View v) {
        if ((txtName.getText().length() == 0) ||(txtContact.getText().length() ==
0)||(txtEmail.getText().length() == 0))
                {
                Toast.makeText(getApplication(), "Please tap to get information first, then
continue!", Toast.LENGTH_LONG).show();
                }
        else {
        // go to next page
        Intent intent = new Intent(getApplicationContext(), contact_page2.class);
        //startActivityForResult(intent, REQUEST_CODE);


        txtTelNumber=  (TextView) findViewById(R.id.textViewContact);
        // Receive number
        txtEmailAddress =(TextView) findViewById(R.id.textViewEmail);
        // For SPINNER------------------------------------------------------
        intent.putExtra("Phone",txtTelNumber.getText().toString());
        intent.putExtra("Email", txtEmailAddress.getText().toString());
        startActivity(intent);
        }
        }
        });

       //SPinner_END--------------------------------------------------------



  //read nfc tag and display
  txtRead = (TextView) findViewById(R.id.textView2);
  txtName=(TextView) findViewById(R.id.textView2);
  txtContact=(TextView) findViewById(R.id.textViewContact);
  txtEmail=(TextView) findViewById(R.id.textViewEmail);
```

```
NfcManager manager = (NfcManager) this.getSystemService(Context.NFC_SERVICE);
adapter = manager.getDefaultAdapter();

pendingIntent = PendingIntent.getActivity(this, 0, new
Intent(this,getClass()).addFlags(Intent.FLAG_ACTIVITY_SINGLE_TOP), 0);
//Display
lvInfo = (ListView) findViewById(R.id.listView1);
dataName = (TextView) findViewById(R.id.textView2);
dataMobile = (TextView) findViewById(R.id.textViewContact);
dataEmail = (TextView) findViewById(R.id.textViewEmail);



db = new contact_databasehandler(this);
dbAdapter = new ArrayAdapter<String>(this,
android.R.layout.simple_list_item_1, android.R.id.text1, ArrayofName);
lvInfo.setAdapter(dbAdapter);
lvInfo.setOnItemClickListener(new OnItemClickListener() {
public void onItemClick(AdapterView<?> parent, View view,
int position, long id) {
dataName.setText(contacts.get(position).getName());
dataMobile.setText(contacts.get(position).getMobile());
dataEmail.setText(contacts.get(position).getEmail());
}
});
DisplayAll();
}

//DATA--------------------------------------------------
```

```
   public void DisplayAll() {
        contacts = db.getAllContacts();
        ArrayofName.clear();
        for (contact_info cn : contacts) {
        ArrayofName.add(cn.getId() + ".\t" + cn.getName() + ", " + cn.getMobile()+ ", " +
cn.getEmail());
        }
        dbAdapter.notifyDataSetChanged();
        }


        public void AddContact(View view)
        {
        if ((txtName.getText().length() == 0) ||(txtContact.getText().length() ==
0)||(txtEmail.getText().length() == 0))


                {Toast.makeText(this, "Please tap to get information first, then add to
database!",
                 Toast.LENGTH_LONG).show();
                }
        else {
                contact_info tmp = new
contact_info(dataName.getText().toString(),dataMobile.getText().toString(),dataEmail.getTe
xt().toString());
                db.addContact(tmp);
                DisplayAll();
                Toast.makeText(this, "Contact Added!", Toast.LENGTH_LONG).show();
                }
        }


        public void DeleteContact(View view)
        {
```

```
                    if ((txtName.getText().length() == 0) ||(txtContact.getText().length() ==
0)||(txtEmail.getText().length() == 0))
                    {
                              Toast.makeText(this, "Please tap to get information first, then delete
from database!",
                    Toast.LENGTH_LONG).show();
                              }

             else {
                    contact_info tmp = new contact_info(dataName.getText().toString(),
                              dataMobile.getText().toString(),dataEmail.getText().toString());
                    db.deleteContact(tmp);
                    DisplayAll();
                    Toast.makeText(this, "Contact Deleted!", Toast.LENGTH_LONG).show();
             }
          }


   //DATA--------------------------------------------------




   @Override
   protected void onResume() {
   super.onResume();
   adapter.enableForegroundDispatch(this, pendingIntent, null, null);
   }
```

```
    @Override
    protected void onPause() {
    super.onPause();
    adapter.disableForegroundDispatch(this);
    }

    @Override
    protected void onNewIntent(Intent intent) {
        tag = intent.getParcelableExtra(NfcAdapter.EXTRA_TAG);
        Toast.makeText(getBaseContext(), "Tag Detected!", Toast.LENGTH_LONG).show();

        NdefMessage[] msgs;
        if (NfcAdapter.ACTION_NDEF_DISCOVERED.equals(intent.getAction())) {
            Parcelable[] rawMsgs =
intent.getParcelableArrayExtra(NfcAdapter.EXTRA_NDEF_MESSAGES);

        String content = "";
        if (rawMsgs != null) {
            msgs = new NdefMessage[rawMsgs.length];



            for (int i=0; i < rawMsgs.length; i++) {
                msgs[i] = (NdefMessage) rawMsgs[i];
                NdefRecord[] records = msgs[i].getRecords();
            for (int j=0; j < records.length; j++) {
                NdefRecord record = records[j];
                byte[] payload = record.getPayload();
                String recordType = new String(record.getType());
                if (recordType.equals("T")) {
                        String textEncoding = ((payload[0] & 0200) == 0) ? "UTF-8" : "UTF-16";
                        try {
                                int langCodeLen= payload[0] & 0077;
                                content += new String(   payload,  langCodeLen + 1  ,
payload.length -langCodeLen - 1, textEncoding) +  "\n";

                } catch (UnsupportedEncodingException e) {
                        e.printStackTrace();
   }
   }
                if (recordType.equals("U")) {
                        content += new String(payload) + "\n";
        }
   }
   }
        }
        //txtRead.setText(content);
        txtRead.setText(content);

        String[] array=txtRead.getText().toString().split("\n");

        txtName.setText(array[0]);
        txtContact.setText(array[1]);
        txtEmail.setText(array[2]);
        }
   }

}
```

“contact_page1”_END

8.1.12. contact_page2

```
package sg.edu.nyp.nfcboardingsystem;


import android.app.Activity;

import android.content.Intent;

import android.net.Uri;

import android.os.Bundle;

import android.view.View;

import android.widget.ArrayAdapter;

import android.widget.Button;

import android.widget.Spinner;


public class contact_page2 extends Activity{



        Spinner spinner;

        Button btnIntent;


        //TextView dataMobile,txtRead;


        protected void onCreate(Bundle savedInstanceState) {

                super.onCreate(savedInstanceState);

                setContentView(R.layout.contact_page2);
                //Populating the Spinner
                spinner = (Spinner) findViewById(R.id.spinner1);

                ArrayAdapter adapter = ArrayAdapter.createFromResource(this,
                                R.array.spinner, android.R.layout.simple_spinner_item);

                adapter.setDropDownViewResource(
                                android.R.layout.simple_spinner_dropdown_item);

                spinner.setAdapter(adapter);
                btnIntent = (Button) findViewById(R.id.button1);
        btnIntent.setOnClickListener(new View.OnClickListener() {




                        // TextView dataMobile = (TextView)
findViewById(R.id.textViewContact);






                        public void onClick(View v) {

                //**************Retrieve information from previous page to spinner
                                Bundle extras = getIntent().getExtras();
                                String strNumber = extras.getString ("Phone");
                                String strEmail = extras.getString ("Email");

                                //if (strNumber=="")
                                //{
                                    // Toast.makeText(this, "Contact Empty!",
Toast.LENGTH_LONG).show();
                                //}
                                //else
                                //{
                                int position = spinner.getSelectedItemPosition();
                                Intent intent = null;
                                switch (position) {
                                case 0:



                                    intent = new
Intent(Intent.ACTION_DIAL,Uri.parse("tel:" +  strNumber ));



                                    break;


                                case 1:
                                    intent = new
Intent(Intent.ACTION_VIEW,Uri.parse("smsto:" +  strNumber ));





                                    intent.putExtra("address", strNumber);
                                    intent.putExtra("sms_body", "--Generated by NFC
Boarding System--");
                                    intent.setType("vnd.android-dir/mms-sms");


                                    break;
                                case 2:
```

```
                                    intent = new Intent(Intent.ACTION_SEND);
                                    intent.putExtra(Intent.EXTRA_EMAIL,       new
String[] { strEmail });

                                    intent.putExtra(Intent.EXTRA_SUBJECT, "--Generated
by NFC Boarding System--");

                                    intent.putExtra(Intent.EXTRA_TEXT, "--Generated by
NFC Boarding System--");

                                    intent.setType("message/rfc822");


                                    break;
                  }


                  if (intent != null) {
                  startActivity(intent);
                  }
                 }
                 //}
                  });
                  }


}
```

“contact_page2”_END

8.1.13. “contact_databasehandler”

```
package sg.edu.nyp.nfcboardingsystem;


import java.util.ArrayList;
import java.util.List;
import android.content.ContentValues;
import android.content.Context;
import android.database.Cursor;
import android.database.sqlite.SQLiteDatabase;
import android.database.sqlite.SQLiteOpenHelper;
import android.os.Environment;

public class contact_databasehandler extends SQLiteOpenHelper {

private static final int DATABASE_VERSION = 1;

    private static final String DATABASE_NAME =
            Environment.getExternalStorageDirectory().toString() +
"/AirlineCompanyInfo.db";

    private static final String TABLE_CONTACT = "Airline_Company_Contact_Info";

    private static final String KEY_ID = "id";
    private static final String KEY_NAME = "name";
    private static final String KEY_MOBILE = "mobile";
    private static final String KEY_EMAIL = "email";

    public contact_databasehandler(Context context) {
        super(context, DATABASE_NAME, null, DATABASE_VERSION);
    }
    // Creating Tables
    @Override
    public void onCreate(SQLiteDatabase db) {
        String CREATE_CONTACTS_TABLE = "CREATE TABLE " + TABLE_CONTACT + "("
                + KEY_ID + " INTEGER PRIMARY KEY," + KEY_NAME + " TEXT,"
                + KEY_MOBILE + " TEXT,"+ KEY_EMAIL + " TEXT)";
        db.execSQL(CREATE_CONTACTS_TABLE);
}

    @Override
    public void onUpgrade(SQLiteDatabase db, int oldVersion, int newVersion) {
        // Drop older table if existed
        db.execSQL("DROP TABLE IF EXISTS " + TABLE_CONTACT);
        // Create tables again
        onCreate(db);
    }
    public contact_info getContact(int id) {
        SQLiteDatabase db = this.getReadableDatabase();
        Cursor cursor = db.query(TABLE_CONTACT, new String[]
{ KEY_ID,KEY_NAME,KEY_MOBILE,KEY_EMAIL}, KEY_ID + "=?",
                new String[] { String.valueOf(id) }, null, null, null, null);
        if (cursor != null)
            cursor.moveToFirst();
        contact_info contact;
        contact = new contact_info(Integer.parseInt(cursor.getString(0)),
                cursor.getString(1), cursor.getString(2), cursor.getString(3));
        return contact;
    }

    public List<contact_info> getAllContacts() {
        List<contact_info> contactList = new ArrayList<contact_info>();
        String selectQuery = "SELECT * FROM " + TABLE_CONTACT;
        SQLiteDatabase db = this.getWritableDatabase();
        Cursor cursor = db.rawQuery(selectQuery, null);
    // looping through all rows and adding to list
    if (cursor.moveToFirst()) {
            do {
                    contact_info contact = new contact_info();
                    contact.setId(Integer.parseInt(cursor.getString(0)));
                    contact.setName(cursor.getString(1));
                    contact.setMobile(cursor.getString(2));
                    contact.setEmail(cursor.getString(3));
                    contactList.add(contact);
            } while (cursor.moveToNext());
    }
    return contactList;
}

public int getContactsCount() {
    String countQuery = "SELECT * FROM " + TABLE_CONTACT;
    SQLiteDatabase db = this.getReadableDatabase();
    Cursor cursor = db.rawQuery(countQuery, null);
    cursor.close();
    return cursor.getCount();
}

public void addContact(contact_info contact) {
    SQLiteDatabase db = this.getWritableDatabase();
    ContentValues values = new ContentValues();
    values.put(KEY_NAME, contact.getName());
    values.put(KEY_MOBILE, contact.getMobile());
    values.put(KEY_EMAIL, contact.getEmail());
    db.insert(TABLE_CONTACT, null, values);
```

```
                db.close();
                }



                public void deleteContact(contact_info contact) {
                SQLiteDatabase db = this.getWritableDatabase();
                db.delete(TABLE_CONTACT, KEY_NAME + " = ?",
                                new String[] { contact.getName() });

                db.close();
                }
}
```

“contact_databasehandler”_END

8.1.14. contact_info

```
package sg.edu.nyp.nfcboardingsystem;

public class contact_info {
        private int id;
        private String name;
        private String mobile;
        private String email;
        public contact_info(){
        }

        public contact_info(String name, String mobile, String email){
                this.name = name;
                this.mobile = mobile;
        this.email = email;
}

public contact_info(int id, String name, String mobile, String email){
        this.id = id;
        this.name = name;
        this.mobile = mobile;
        this.email = email;
}
public int getId() {
      return id;
}

public void setId (int id){
        this.id = id;
}

public String getName() {
        return name;
}
public void setName(String name) {
        this.name = name;
}
public String getMobile() {
        return mobile;
}
public void setMobile(String mobile) {
        this.mobile = mobile;
}
```

```
        public String getEmail() {
                return email;
        }
        public void setEmail(String email) {
                this.email = email;
        }

}
```

“contact_info”_END

8.2. Layout (XML files):

8.2.1.activity_main

```
<RelativeLayout xmlns:android="http://schemas.android.com/apk/res/android"
    xmlns:tools="http://schemas.android.com/tools"
    android:layout_width="match_parent"
    android:layout_height="match_parent"
    tools:context="${relativePackage}.${activityClass}" >

<ScrollView
    android:layout_width="match_parent"
    android:layout_height="match_parent" >
    <RelativeLayout
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:orientation="vertical">


    <Button
```

```
   android:id="@+id/btnBoardingPass"
   android:layout_width="wrap_content"
   android:layout_height="120dp"
   android:layout_alignParentLeft="true"
   android:layout_alignParentRight="true"
   android:layout_below="@+id/btnCheckIn"
   android:background="@drawable/boardingpass" />

<Button
   android:id="@+id/btnContactInfo"
   android:layout_width="wrap_content"
   android:layout_height="120dp"
   android:layout_alignParentLeft="true"
  android:layout_below="@+id/btnBoardingPass"
   android:background="@drawable/contact"/>

<Button
   android:id="@+id/btnCheckIn"
   android:layout_width="wrap_content"
   android:layout_height="120dp"
   android:layout_below="@+id/imageView1"
   android:background="@drawable/checkin" />

<ImageView
   android:id="@+id/imageView1"
   android:layout_width="wrap_content"
   android:layout_height="200dp"
   android:layout_alignParentLeft="true"
   android:layout_alignParentTop="true"
```

```
    android:scaleType="fitXY"
    android:src="@drawable/flightpic" />

  </RelativeLayout>



  </ScrollView>

</RelativeLayout>
```

activity_main_END

8.2.2.checkin_page1

```
<?xml version="1.0" encoding="utf-8"?>
<RelativeLayout xmlns:android="http://schemas.android.com/apk/res/android"
  android:layout_width="match_parent"
  android:layout_height="match_parent" >

<ScrollView
  android:layout_width="match_parent"
  android:layout_height="match_parent" >
  <RelativeLayout
      android:layout_width="match_parent"
      android:layout_height="wrap_content"
      android:orientation="vertical">
  <TextView
    android:id="@+id/textView3"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:layout_alignParentLeft="true"
    android:layout_below="@+id/textView2"
    android:layout_marginTop="50dp"
    android:text="@string/nationality_"
    android:textSize="20sp"/>

<TextView
    android:id="@+id/textView4"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:layout_alignParentLeft="true"
    android:layout_below="@+id/textView3"
    android:layout_marginTop="44dp"
    android:text="@string/gender_"
    android:textSize="20sp"/>

<TextView
    android:id="@+id/textView5"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:layout_alignParentLeft="true"
    android:layout_below="@+id/textView4"
    android:layout_marginTop="50dp"
    android:text="@string/et_no_"
    android:textSize="20sp" />

<TextView
    android:id="@+id/textView2"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
```

```
   android:layout_alignParentLeft="true"
   android:layout_below="@+id/textView1"
   android:layout_marginTop="37dp"
   android:text="@string/passport_number_"
   android:textSize="20sp" />

<EditText
   android:id="@+id/editText2"
   android:layout_width="wrap_content"
   android:layout_height="wrap_content"
   android:layout_alignParentLeft="true"
   android:layout_below="@+id/textView2"
   android:ems="10" />

<EditText
   android:id="@+id/editText3"
   android:layout_width="wrap_content"
   android:layout_height="wrap_content"
   android:layout_alignParentLeft="true"
   android:layout_below="@+id/textView3"
   android:ems="10" />

<EditText
   android:id="@+id/editText4"
   android:layout_width="wrap_content"
   android:layout_height="wrap_content"
   android:layout_alignParentLeft="true"
   android:layout_below="@+id/textView4"
   android:ems="10" />
```

```
<EditText
    android:id="@+id/editText5"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:layout_alignParentLeft="true"
    android:layout_below="@+id/textView5"
    android:ems="10" />

<TextView
    android:id="@+id/textView6"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:layout_alignParentLeft="true"
    android:layout_alignParentTop="true"
    android:text="Passenger's Information:"
    android:textSize="30sp" />

<TextView
    android:id="@+id/textView1"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:layout_alignParentLeft="true"
    android:layout_below="@+id/textView6"
    android:layout_marginTop="2dp"
    android:text="@string/passenger_name_"
    android:textSize="20sp"/>

<EditText
```

```
    android:id="@+id/editText1"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:layout_alignParentLeft="true"
    android:layout_below="@+id/textView1"
    android:ems="10"
    android:inputType="textPersonName" />

  <Button
    android:id="@+id/button2"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:layout_alignParentLeft="true"
    android:layout_alignParentRight="true"
    android:layout_below="@+id/editText5"
    android:layout_marginTop="57dp"
    android:text="@string/next_page" />


   </RelativeLayout>



  </ScrollView>



</RelativeLayout>
```

checkin_page1_END

8.2.3.checkin_page2

```
<?xml version="1.0" encoding="utf-8"?>
```

```
<RelativeLayout xmlns:android="http://schemas.android.com/apk/res/android"
   android:layout_width="match_parent"
   android:layout_height="match_parent" >

 <ScrollView
   android:layout_width="match_parent"
   android:layout_height="match_parent" >
   <RelativeLayout
         android:layout_width="match_parent"
         android:layout_height="wrap_content"
         android:orientation="vertical">

     <TextView
       android:id="@+id/FlightInfo"
       android:layout_width="wrap_content"
       android:layout_height="wrap_content"
       android:layout_alignParentLeft="true"
       android:layout_alignParentTop="true"
       android:text="@string/flight_infomation_"
       android:textSize="30sp"
  />

   <TextView
      android:id="@+id/textView1"
      android:layout_width="wrap_content"
      android:layout_height="wrap_content"
      android:layout_below="@+id/FlightInfo"
      android:layout_marginTop="10dp"
      android:text="@string/textview" />
```

```
<TextView
    android:id="@+id/FlightNumber1"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:layout_below="@+id/textView1"
    android:layout_marginTop="10dp"
    android:text="@string/flight_number_"
    android:textSize="20sp" />

<EditText
    android:id="@+id/FlightNumber"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:layout_alignParentLeft="true"
    android:layout_below="@+id/FlightNumber1"
    android:layout_marginTop="10dp"
    android:ems="10" />

<TextView
    android:id="@+id/From1"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:layout_below="@+id/FlightNumber"
    android:layout_marginTop="10dp"
    android:text="@string/from_departure_airport_"
    android:textSize="20sp"/>

<EditText
```

```
    android:id="@+id/From"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:layout_alignParentLeft="true"
    android:layout_below="@+id/From1"
    android:layout_marginTop="10dp"
    android:ems="10" />

<TextView
    android:id="@+id/To1"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:layout_below="@+id/From"
    android:layout_marginTop="10dp"
    android:text="@string/to_destination_airport_"
    android:textSize="20sp"/>

 <EditText
    android:id="@+id/To"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:layout_alignParentLeft="true"
    android:layout_below="@+id/To1"
    android:layout_marginTop="10dp"
    android:ems="10" />

 <TextView
    android:id="@+id/SeatNo1"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:layout_below="@+id/To"
    android:layout_marginTop="10dp"
    android:text="@string/seat_number_"
    android:textSize="20sp"/>

  <EditText
    android:id="@+id/SeatNo"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:layout_alignParentLeft="true"
    android:layout_below="@+id/SeatNo1"
    android:layout_marginTop="10dp"
    android:ems="10" />

        <Button
          android:id="@+id/button1"
          android:layout_width="wrap_content"
          android:layout_height="wrap_content"
          android:layout_alignParentLeft="true"
          android:layout_alignParentRight="true"
          android:layout_below="@+id/SeatNo"
          android:layout_marginTop="80dp"
          android:text="@string/next_page" />



         </RelativeLayout>
  </ScrollView>
</RelativeLayout>
```

checkin_page2_END

8.2.4.boardingpass_page1

```
<?xml version="1.0" encoding="utf-8"?>
<RelativeLayout xmlns:android="http://schemas.android.com/apk/res/android"
  android:layout_width="match_parent"
  android:layout_height="match_parent"
  android:orientation="vertical" >



<ScrollView
  android:layout_width="match_parent"
  android:layout_height="match_parent" >
  <RelativeLayout
      android:layout_width="match_parent"
      android:layout_height="wrap_content"
      android:orientation="vertical">



  <TextView
    android:id="@+id/PersonalInfo1"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:layout_alignParentLeft="true"
    android:layout_alignParentTop="true"
    android:text="@string/personalinformation"
    android:textSize="30sp"
     />

<TextView
    android:id="@+id/PassengerName1"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:layout_below="@+id/PersonalInfo1"
    android:layout_marginTop="1dp"
    android:text="@string/passenger_name"
    android:textSize="20sp"
     />

<TextView
    android:id="@+id/PassengerName"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:layout_alignParentLeft="true"
    android:layout_below="@+id/PassengerName1"
    android:layout_marginTop="1dp"
    android:text="@string/tap_to_read_information"
    />

<TextView
    android:id="@+id/Passport_number1"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:layout_alignParentLeft="true"
    android:layout_below="@+id/PassengerName"
    android:text="@string/passport_number"
    android:textSize="20sp"
    />

<TextView
    android:id="@+id/Passport_number"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:layout_alignParentLeft="true"
    android:layout_below="@+id/Passport_number1"
    android:layout_marginTop="1dp"
    android:text="@string/tap_to_read_information"
    />

<TextView
    android:id="@+id/Nationality1"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:layout_alignParentLeft="true"
    android:layout_below="@+id/Passport_number"
    android:text="@string/nationality"
    android:textSize="20sp"
    />

<TextView
    android:id="@+id/Nationality"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:layout_alignParentLeft="true"
    android:layout_below="@+id/Nationality1"
    android:layout_marginTop="1dp"
    android:text="@string/tap_to_read_information"
    />

<TextView
    android:id="@+id/Gender1"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:layout_alignParentLeft="true"
    android:layout_below="@+id/Nationality"
    android:layout_marginTop="1dp"
    android:text="@string/gender"
    android:textSize="20sp"
     />

<TextView
    android:id="@+id/Gender"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:layout_alignParentLeft="true"
    android:layout_below="@+id/Gender1"
    android:layout_marginTop="1dp"
    android:text="@string/tap_to_read_information"
     />

<TextView
    android:id="@+id/ETNo1"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:layout_below="@+id/Gender"
    android:layout_marginTop="1dp"
    android:text="@string/et_no"
    android:textSize="20sp"
    />

<TextView
    android:id="@+id/ETNo"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:layout_alignParentLeft="true"
    android:layout_below="@+id/ETNo1"
    android:layout_marginTop="1dp"
    android:text="@string/tap_to_read_information"
    />

<TextView
    android:id="@+id/FlightInfo1"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:layout_alignParentLeft="true"
    android:layout_below="@+id/ETNo"
    android:layout_marginTop="30dp"
    android:text="@string/flight_information"
    android:textSize="30sp"
    />

<TextView
```

```
    android:id="@+id/FlightNo1"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:layout_below="@+id/FlightInfo1"
    android:layout_marginTop="1dp"
    android:text="@string/flight_number"
    android:textSize="20sp"
    />

<TextView
    android:id="@+id/FlightNo"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:layout_below="@+id/FlightNo1"
    android:layout_marginTop="1dp"
    android:text="@string/tap_to_read_information"
     />

<TextView
    android:id="@+id/From1"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:layout_below="@+id/FlightNo"
    android:layout_marginTop="1dp"
    android:text="@string/from"
    android:textSize="20sp"
     />

<TextView
```

```
     android:id="@+id/From"
     android:layout_width="wrap_content"
     android:layout_height="wrap_content"
     android:layout_below="@+id/From1"
     android:layout_marginTop="1dp"
     android:text="@string/tap_to_read_information"
     />

 <TextView
    android:id="@+id/To1"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:layout_below="@+id/From"
    android:layout_marginTop="1dp"
    android:text="@string/to"
    android:textSize="20sp" />

  <TextView
     android:id="@+id/To"
     android:layout_width="wrap_content"
     android:layout_height="wrap_content"
     android:layout_below="@+id/To1"
     android:layout_marginTop="1dp"
     android:text="@string/tap_to_read_information"
      />

  <TextView
     android:id="@+id/SeatNo1"
     android:layout_width="wrap_content"
```

```
   android:layout_height="wrap_content"
   android:layout_below="@+id/To"
   android:layout_marginTop="1dp"
   android:text="@string/seat_number"
    android:textSize="20sp"/>

<TextView
   android:id="@+id/SeatNo"
   android:layout_width="wrap_content"
   android:layout_height="wrap_content"
   android:layout_below="@+id/SeatNo1"
   android:layout_marginTop="1dp"
   android:text="@string/tap_to_read_information"
    />

 <TextView
   android:id="@+id/BoardingInfo"
   android:layout_width="wrap_content"
   android:layout_height="wrap_content"
   android:layout_below="@+id/SeatNo"
   android:layout_marginTop="30dp"
   android:text="@string/boardinginfo"
   android:textSize="30sp"
    />

 <TextView
    android:id="@+id/BoardingGate1"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
```

```
     android:layout_below="@+id/BoardingInfo"
     android:layout_marginTop="1dp"
     android:text="@string/boardinggate"
      android:textSize="20sp"/>

 <TextView
     android:id="@+id/BoardingGate"
     android:layout_width="wrap_content"
     android:layout_height="wrap_content"
     android:layout_below="@+id/BoardingGate1"
     android:layout_marginTop="1dp"
     android:text="@string/tap_to_read_information"
      />

<TextView
    android:id="@+id/BoardingTime1"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:layout_below="@+id/BoardingGate"
    android:layout_marginTop="1dp"
    android:text="@string/boardingtime"
     android:textSize="20sp"/>

 <TextView
     android:id="@+id/BoardingTime"
     android:layout_width="wrap_content"
     android:layout_height="wrap_content"
     android:layout_below="@+id/BoardingTime1"
     android:layout_marginTop="1dp"
    android:text="@string/tap_to_read_information"
     />

<TextView
    android:id="@+id/Date1"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:layout_below="@+id/BoardingTime"
    android:layout_marginTop="1dp"
    android:text="@string/date"
     android:textSize="20sp"/>

<TextView
    android:id="@+id/Date"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:layout_below="@+id/Date1"
    android:layout_marginTop="1dp"
    android:text="@string/tap_to_read_information"
     />

<EditText
        android:id="@+id/SpeechTextContant"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:layout_below="@+id/Date"
         android:layout_marginTop="30dp"
        android:layout_alignParentLeft="true"
                    android:layout_alignParentRight="true"
```

```
   android:ems="10" />


    <Button
android:id="@+id/btnSpeech"
android:layout_width="wrap_content"
android:layout_height="wrap_content"
android:layout_below="@+id/SpeechTextContant"
android:layout_marginTop="1dp"
android:layout_alignParentLeft="true"
android:layout_alignParentRight="true"
android:onClick="SpeechContentOnClick"
android:text="@string/speech" />




    <TextView
        android:id="@+id/Address1"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
                android:layout_below="@+id/btnSpeech"
android:layout_marginTop="50dp"
android:layout_alignParentLeft="true"
        android:layout_alignParentRight="true"
        android:text="@string/current_address"
        android:textSize="20sp"/>

    <TextView
        android:id="@+id/Address"
        android:layout_width="wrap_content"
```

```
            android:layout_height="wrap_content"
            android:layout_alignParentLeft="true"
            android:layout_alignParentRight="true"
            android:layout_below="@+id/Address1"
            android:layout_marginTop="1dp"
            android:text="@string/addressinfo" />

          <Button
            android:id="@+id/btnMap"
            android:layout_width="wrap_content"
            android:layout_height="wrap_content"
            android:layout_below="@+id/Address"
            android:layout_marginTop="1dp"
            android:layout_alignParentLeft="true"
            android:layout_alignParentRight="true"
            android:text="@string/showmap" />

          <Button
       android:id="@+id/button"
       android:layout_width="fill_parent"
       android:layout_height="wrap_content"
       android:layout_below="@+id/btnMap"
            android:layout_marginTop="5dp"
       android:text="@string/exit" />

</RelativeLayout>



  </ScrollView>
```

```
</RelativeLayout>
```

boardingpass_page1_END

8.2.5.Login_view

```
<?xml version="1.0" encoding="utf-8"?>
<RelativeLayout xmlns:android="http://schemas.android.com/apk/res/android"
   android:layout_width="match_parent"
   android:layout_height="match_parent"
   android:orientation="vertical" >

<TextView
                android:id="@+id/textView1"
                android:layout_width="wrap_content"
                android:layout_height="wrap_content"
                android:layout_alignParentTop="true"
                android:layout_centerHorizontal="true"
                android:layout_marginTop="20dp"
                android:text="@string/authentication_required"
                android:textAppearance="?android:attr/textAppearanceLarge" />

     <TextView
                android:id="@+id/textView2"
                android:layout_width="wrap_content"
                android:layout_height="wrap_content"
                android:layout_alignParentLeft="true"
                android:layout_below="@+id/textView1"
                android:layout_marginTop="75dp"
```

```
      android:layout_marginLeft="10dp"
      android:text="@string/username_"
      android:textAppearance="?android:attr/textAppearanceMedium" />

<EditText
  android:id="@+id/usernameET"
  android:layout_width="wrap_content"
  android:layout_height="wrap_content"
  android:layout_alignBottom="@+id/textView2"
  android:layout_alignParentRight="true"
  android:layout_marginLeft="35dp"
  android:layout_toRightOf="@+id/textView2" >

     <requestFocus />
     </EditText>

<TextView
      android:id="@+id/textView3"
      android:layout_width="wrap_content"
      android:layout_height="wrap_content"
      android:layout_alignLeft="@+id/textView2"
      android:layout_below="@+id/textView2"
      android:layout_marginTop="40dp"
      android:text="@string/password_"
      android:textAppearance="?android:attr/textAppearanceMedium" />

<EditText
  android:id="@+id/passwordET"
  android:layout_width="wrap_content"
  android:layout_height="wrap_content"
  android:layout_alignBottom="@+id/textView3"
  android:layout_alignLeft="@+id/usernameET"
  android:layout_alignParentRight="true"
  android:inputType="textPassword" />

<TextView
        android:id="@+id/attemptsLeftTV"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:layout_alignLeft="@+id/textView3"
        android:layout_below="@+id/textView3"
        android:layout_marginLeft="30dp"
        android:layout_marginTop="48dp"
        android:text="@string/attempts_left_"
        android:visibility="invisible"
        android:textAppearance="?android:attr/textAppearanceMedium" />

<Button
   android:id="@+id/loginBtn"
   android:layout_width="wrap_content"
   android:layout_height="wrap_content"
   android:layout_alignLeft="@+id/textView3"
   android:layout_alignParentRight="true"
   android:layout_below="@+id/passwordET"
   android:layout_marginTop="94dp"
   android:onClick="authenticateLogin"
   android:text="@string/login" />
```

```
    <TextView
            android:id="@+id/numberOfRemainingLoginAttemptsTV"
            android:layout_width="wrap_content"
            android:layout_height="wrap_content"
            android:layout_alignRight="@+id/textView1"
            android:layout_alignTop="@+id/attemptsLeftTV"
            android:visibility="invisible" />

    <TextView
            android:id="@+id/loginLockedTV"
            android:layout_width="wrap_content"
            android:layout_height="wrap_content"
            android:layout_below="@+id/loginBtn"
            android:layout_marginTop="35dp"
            android:layout_centerHorizontal="true"
            android:textAppearance="?android:attr/textAppearanceMedium"
            android:visibility="invisible" />

</RelativeLayout>
```

Login_view_END

8.2.6.positive_view

```
<?xml version="1.0" encoding="utf-8"?>
<LinearLayout xmlns:android="http://schemas.android.com/apk/res/android"
  android:layout_width="match_parent"
  android:layout_height="match_parent"
  android:orientation="vertical" >
```

```
<ScrollView

    android:layout_width="match_parent"
    android:layout_height="match_parent">
    <LinearLayout
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:orientation="vertical">

        <DatePicker
            android:id="@+id/pickerdate"
            android:layout_width="wrap_content"
            android:layout_height="wrap_content"/>

        <TimePicker
            android:id="@+id/pickertime"
            android:layout_width="wrap_content"
            android:layout_height="wrap_content" />

        <Button
            android:layout_height="wrap_content"
            android:layout_width="162dp"
            android:id="@+id/setalarm"
            android:text="@string/set_alarm"/>

        <Button
            android:layout_height="wrap_content"
            android:layout_width="162dp"
            android:id="@+id/stopalarm"
        android:text="@string/stop_alarm"/>

      <TextView
        android:id="@+id/info"
        android:layout_width="match_parent"
        android:layout_height="wrap_content"/>

    </LinearLayout>
  </ScrollView>

</LinearLayout>
```

positive_view_END

8.2.7.contact_page1

```
<?xml version="1.0" encoding="utf-8"?>
<RelativeLayout xmlns:android="http://schemas.android.com/apk/res/android"
  android:layout_width="match_parent"
  android:layout_height="match_parent" >

  <TextView
    android:id="@+id/textView3"
    android:layout_width="wrap_content"
    android:layout_height="match_parent"
    android:layout_alignBottom="@+id/textView2"
    android:layout_alignParentLeft="true"
    android:layout_alignTop="@+id/textView2"
    android:text="@string/company_name_"/>
```

```
<TextView
   android:id="@+id/textView5"
   android:layout_width="wrap_content"
   android:layout_height="wrap_content"
   android:layout_below="@+id/textView4"
   android:text="@string/email_" />

<TextView
   android:id="@+id/textViewContact"
   android:layout_width="wrap_content"
   android:layout_height="wrap_content"
   android:layout_below="@+id/textView2"
   android:layout_toRightOf="@+id/textView4"
   android:text="@string/contact1"/>

<TextView
   android:id="@+id/textViewEmail"
   android:layout_width="wrap_content"
   android:layout_height="wrap_content"
   android:layout_below="@+id/textView4"
   android:layout_toRightOf="@+id/textView5"
   android:text="@string/email1" />

<TextView
   android:id="@+id/textView2"
   android:layout_width="wrap_content"
   android:layout_height="wrap_content"
   android:layout_marginTop="10dp"
```

```
    android:layout_toRightOf="@+id/textView3"
    android:text="@string/name1" />

<TextView
    android:id="@+id/textView4"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:layout_alignParentLeft="true"
    android:layout_alignTop="@+id/textViewContact"
    android:text="@string/tel_"/>

<Button
    android:id="@+id/btnContinue"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:layout_alignLeft="@+id/textView5"
    android:layout_alignParentRight="true"
    android:layout_below="@+id/addData"
    android:layout_marginTop="10dp"
    android:text="@string/click_to_continue" />

<Button
    android:id="@+id/addData"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:layout_alignParentLeft="true"
    android:layout_below="@+id/listView1"
    android:onClick="AddContact"
    android:text="@string/add_data" />
```

```
  <Button
    android:id="@+id/deleteData"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:layout_alignParentRight="true"
    android:layout_below="@+id/listView1"
    android:onClick="DeleteContact"
    android:text="@string/delete_data" />

  <ListView
    android:id="@+id/listView1"
    android:layout_width="fill_parent"
    android:layout_height="500px"
    android:layout_alignParentLeft="true"
    android:layout_below="@+id/textViewEmail"
    android:layout_marginTop="30dp" >
  </ListView>

</RelativeLayout>
```

contact_page1_END

8.2.8.contact_page2

```
<?xml version="1.0" encoding="utf-8"?>
<RelativeLayout xmlns:android="http://schemas.android.com/apk/res/android"
  android:layout_width="match_parent"
  android:layout_height="match_parent" >
```

```
<Spinner
    android:id="@+id/spinner1"
        android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:layout_alignParentLeft="true"
    android:layout_alignParentTop="true"
    android:layout_marginTop="99dp" />

  <Button
    android:id="@+id/button1"
    android:layout_width="match_parent"
    android:layout_height="wrap_content"
    android:layout_alignParentLeft="true"
    android:layout_below="@+id/spinner1"
    android:layout_marginTop="49dp"
    android:text="@string/click_to_continue" />

  <TextView
    android:id="@+id/textView1"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:layout_alignParentLeft="true"
    android:layout_alignParentTop="true"
    android:text="@string/please_select_one_option" />

  <TextView
    android:id="@+id/textView2"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
```

```
        android:layout_alignParentLeft="true"

        android:layout_below="@+id/textView1"

        android:text="@string/_call_send_sms_or_send_eamil_to_the_company_" />


</RelativeLayout>
```

contact_page2_END

8.3. String (XML File)

8.3.1.res_Values_String.xml(ENGLISH)

```
<?xml version="1.0" encoding="utf-8"?>

<resources>

    <string name="app_name">NFCBoardingSystem</string>

    <string name="hello_world">Hello world!</string>

    <string name="personalinformation">Personal Information</string>

    <string name="passenger_name">Passenger Name</string>

    <string name="tap_to_read_information">Tap To Read Information</string>

    <string name="passport_number">Passport Number</string>

    <string name="nationality">Nationality</string>

    <string name="gender">Gender</string>

    <string name="et_no">E-ticket No</string>

    <string name="flight_information">Flight Information</string>

    <string name="flight_number">Flight Number</string>

    <string name="from">From</string>

    <string name="to">To</string>

    <string name="seat_number">Seat Number</string>

    <string name="boardinggate">Boarding Gate</string>

    <string name="boardingtime">Boarding Time</string>

    <string name="date">Date</string>

    <string name="speech">Speech</string>
```

```
<string name="exit">Exit</string>
<string name="current_address">Current Address</string>
<string name="addressinfo">Address Information</string>
<string name="showmap">Show Map</string>
<string name="nationality_">Nationality:</string>
<string name="gender_">Gender:</string>
<string name="et_no_">ET No.:</string>
<string name="passport_number_">Passport Number:</string>
<string name="passenger_name_">"Passenger Name: "</string>
<string name="next_page">Next Page</string>
<string name="flight_infomation_">Flight Information:</string>
<string name="textview">textview</string>
<string name="flight_number_">Flight Number:</string>
<string name="from_departure_airport_">From(Departure Airport):</string>
<string name="to_destination_airport_">To(Destination Airport):</string>
<string name="seat_number_">Seat Number:</string>
<string name="boardinginfo">Boarding Information:</string>
<string name="boarding_information_">Boarding Information:</string>
<string name="boarding_gate_">Boarding Gate:</string>
<string name="boarding_time_hhmm_">Boarding Time(HHMM):</string>
<string name="date_ddmmyyyy_">Date(DDMMYYYY):</string>
<string name="confirm">Confirm</string>
<string name="authentication_required">Authentication Required</string>
<string name="username_">Username:</string>
<string name="password_">Password:</string>
<string name="attempts_left_">Attempts Left:</string>
<string name="login">Login</string>
<string name="it_s_time_for_boarding_">It is time for boarding!</string>
<string name="error">error</string>
```

```
    <string name="this_language_is_not_supported">This Language is not supported</string>
    <string name="initilization_failed_">Initilization Failed!</string>
    <string name="provider_">"Provider "</string>
    <string name="_has_been_selected_">" has been selected."</string>
    <string name="address_not_available">Address not available</string>
    <string name="would_you_like_to_set_an_alarm_">Would you like to set an alarm?</string>
    <string name="please_remember_your_flight_time_do_not_miss_the_boarding_time_">Please remember your flight time! Do not miss the boarding time (:</string>
    <string name="exit_the_app">Exit the page</string>
    <string name="content_not_available">Content not available</string>
    <string name="tag_detected_">Tag Detected!</string>
    <string name="your_flight_number_is_">"Your Flight Number is "</string>
    <string name="your_flight_is_from_">"Your Flight is from "</string>
    <string name="_your_boarding_gate_is_">" Your Boarding Gate is "</string>
    <string name="no_tag_detected_">No Tag Detected!</string>
    <string name="tag_written_and_passenger_information_added_to_database_">Tag Written and Passenger information Added to Database!!</string>
    <string name="tag_is_not_ndef_formatted_or_this_tag_is_ndef_">"Tag is not NDEF formatted or this tag is NDEF "</string>
    <string name="formatted_but_under_a_vendor_specification_that_this_android_device_">"formatted but under a vendor specification that this Android device "</string>
    <string name="does_not_implement_">does not implement.</string>
    <string name="wrong_password_">Wrong Password!</string>
    <string name="login_locked_">LOGIN LOCKED!!!</string>
    <string name="welcome_back_">Welcome back!</string>
    <string name="alarm_has_been_set_thank_you_">Alarm has been set! Thank You.</string>
    <string name="set_alarm">Set Alarm</string>
```

```
  <string name="stop_alarm">Stop Alarm</string>

  <string-array name="spinner">
       <item>Dial</item>
       <item>Send SMS</item>
       <item>Send Email</item>
       </string-array>

       <string name="company_name_">Company Name:</string>
       <string name="email_">Email:</string>
       <string name="contact1"></string>
       <string name="email1"></string>
       <string name="name1"></string>
       <string name="tel_">Tel:</string>
       <string name="click_to_continue">Click To Continue</string>
       <string name="add_data">Add Contact</string>
       <string name="delete_data">Delete Contact</string>
       <string name="please_select_one_option">Please select one option</string>
       <string name="_call_send_sms_or_send_eamil_to_the_company_">(Call, Send SMS or Send Eamil to the company)</string>

</resources>
```

res_Values_String.xml(ENGLISH)_END

8.3.2.res_Values_zh_Stirng.xml(CHINESE)

```
<?xml version="1.0" encoding="utf-8"?>
<resources>
  <string name="app_name">"NFC 登机系统 "</string>
  <string name="hello_world">"你好，世界！"</string>
```

```
<string name="personalinformation">"个人信息"</string>
<string name="passenger_name">"旅客姓名"</string>
<string name="tap_to_read_information">"扫一下查看信息"</string>
<string name="passport_number">"护照号"</string>
<string name="nationality">"国籍"</string>
<string name="gender">"性别"</string>
<string name="et_no">"电子客票号"</string>
<string name="flight_information">"航班信息"</string>
<string name="flight_number">"航班号"</string>
<string name="from">"从"</string>
<string name="to">"至"</string>
<string name="seat_number">"座位号"</string>
<string name="boardinggate">"登机口"</string>
<string name="boardingtime">"登机时间"</string>
<string name="date">"日期"</string>
<string name="speech">"言语"</string>
<string name="exit">"出口"</string>
<string name="current_address">"目前的地址"</string>
<string name="addressinfo">"地址信息"</string>
<string name="showmap">"显示地图"</string>
<string name="nationality_">"国籍："</string>
<string name="gender_">"性别："</string>
<string name="et_no_">"ET编号："</string>
<string name="passport_number_">"护照号："</string>
<string name="passenger_name_">"旅客姓名："</string>
<string name="next_page">"下一页"</string>
<string name="flight_infomation_">"航班信息来源："</string>
<string name="textview">" "</string>
```

```
  <string name="flight_number_">"航班号："</string>
  <string name="from_departure_airport_">"从（出发机场）："</string>
  <string name="to_destination_airport_">"要（目的地机场）："</string>
  <string name="seat_number_">"座位号："</string>
  <string name="boardinginfo">登机信息：</string>
  <string name="boarding_information_">"登机信息："</string>
  <string name="boarding_gate_">"登机口："</string>
  <string name="boarding_time_hhmm_">"登机时间（小时，分钟）："</string>
  <string name="date_ddmmyyyy_">"日期（DDMMYYYY）："</string>
  <string name="confirm">"确认"</string>
  <string name="authentication_required">"用户身份验证"</string>
  <string name="username_">"用户名："</string>
  <string name="password_">"密码："</string>
  <string name="attempts_left_">"剩余尝试次数："</string>
  <string name="login">"登录"</string>
  <string name="it_s_time_for_boarding_">"是时候换登机牌！"</string><string
name="error">"错误"</string>
    <string name="this_language_is_not_supported">"不支持此语言"</string>
    <string name="initilization_failed_">"动初始化失败！"</string>
    <string name="provider_">"供应商"</string>
    <string name="_has_been_selected_">"已被选择。"</string>
    <string name="address_not_available">"地址不可用"</string>
    <string name="would_you_like_to_set_an_alarm_">"您想设置一个闹钟么？
"</string>
    <string name="yes">"是"</string>
    <string name="no">"没有"</string>
    <string
name="please_remember_your_flight_time_do_not_miss_the_boarding_time_">"请记住
您的航班时间！千万不要错过登机时间（："</string>
```

```
<string name="exit_the_app">"退出"</string>
<string name="content_not_available">"内容不可用"</string>
<string name="your_flight_number_is_">"您的航班号是"</string>
<string name="your_flight_is_from_">"你的飞行起点是"</string>
<string name="_your_boarding_gate_is_">"您的登机口是"</string>
<string name="_to_">"至"</string>
<string name="address_">"地址："</string>
<string name="error_in_reverse_geocoding">"反向地理编码错误"</string>
<string name="_singapore_">"新加坡"</string>
<string name="disabled_provider_">"运营商不支持 "</string>
<string name="name">"名称"</string>
<string name="passport">"护照"</string>
<string name="etno">"电子机票号码"</string>
<string name="e_ticket_no_">"电子机票编号："</string>
<string name="flightno">"航班号"</string>
<string name="seatno">"SeatNo"</string>
<string name="tag_detected_">"已经感应到 NFC 标签"</string>
<string name="no_tag_detected_">"无标签检测！"</string>
<string name="tag_written_and_passenger_information_added_to_database_">"标签书面和乘客信息添加到数据库！"</string>
<string name="tag_is_not_ndef_formatted_or_this_tag_is_ndef_">"标签不 NDEF 格式化或此标记 NDEF"</string>
<string name="formatted_but_under_a_vendor_specification_that_this_android_device_">"格式化但在供应商规范，这个 Android 设备"</string>
<string name="does_not_implement_">"没有实现。"</string>
<string name="passengerinfo">"乘客信息"</string>
<string name="wrong_password_">"密码错误！"</string>
<string name="login_locked_">"登录锁定！"</string>
```

```
    <string name="welcome_back_">欢迎回来！</string>

    <string name="alarm_has_been_set_thank_you_">“闹钟已经设定好了，谢谢。”
</string>

    <string name="set_alarm">“设定闹钟”</string>

    <string name="stop_alarm">”暂停闹钟“</string>

    <string-array name="spinner">

      <item>"拨号"</item>

      <item>"发送短信"</item>

      <item>"发电子邮件"</item>

      </string-array><string name="company_name_">"公司名："</string>

      <string name="email_">"电子邮件："</string>

      <string name="contact1">""</string>

      <string name="email1">""</string>

      <string name="name1">""</string>

      <string name="tel_">"联系电话："</string>

      <string name="click_to_continue">"点击继续"</string>

      <string name="add_data">"添加信息"</string>

      <string name="delete_data">"删除信息"</string>

      <string name="please_select_one_option">"请选择一个选项"</string>

      <string name="_call_send_sms_or_send_eamil_to_the_company_">"（打电话，发
短信或发电邮给公司）"</string>

  </resources>
```

res_Values_zh_Stirng.xml(CHINESE)_END

8.4. AndroidManifest.xml

```
<?xml version="1.0" encoding="utf-8"?>

<manifest xmlns:android="http://schemas.android.com/apk/res/android"

  package="sg.edu.nyp.nfcboardingsystem"

  android:versionCode="1"
```

```
    android:versionName="1.0" >

    <uses-sdk
        android:minSdkVersion="17"
        android:targetSdkVersion="21" />

    <uses-permission android:name="android.permission.SET_ALARM"/>
    <uses-permission android:name="android.permission.NFC"/>
             <uses-feature android:name="android.hardware.nfc"
             android:required="true" />

             <uses-permission
android:name="android.permission.WRITE_EXTERNAL_STORAGE"/>

             <uses-permission android:name="android.permission.INTERNET"/>
             <uses-permission android:name="android.permission.ACCESS_FINE_LOCATION"/>
             <uses-permission
android:name="android.permission.ACCESS_COARSE_LOCATION"/>

             <uses-permission android:name="android.permission.CALL_PHONE"/>
              <uses-permission android:name="android.permission.INTERNET"/>
              <uses-permission android:name="android.permission.SEND_SMS"/>



    <application
        android:allowBackup="true"
        android:icon="@drawable/ic_launcher"
        android:label="@string/app_name">

        <activity
```

```
  android:name=".MainActivity"
  android:label="@string/app_name" >
  <intent-filter>
    <action android:name="android.intent.action.MAIN" />

    <category android:name="android.intent.category.LAUNCHER" />
  </intent-filter>

  <intent-filter>
                <action android:name="android.nfc.action.NDEF_DISCOVERED" />
                <category android:name="android.intent.category.DEFAULT" />
                <data android:mimeType="text/plain" />
                </intent-filter>

</activity>

<activity
  android:label="checkin_page1"
                android:name=".checkin_page1" />
<activity
  android:label="checkin_page2"
                android:name=".checkin_page2" />
<activity
  android:label="checkin_page3"
                android:name=".checkin_page3" />
<activity
  android:label="LoginActivity"
                android:name=".LoginActivity" />
<activity
```

```
          android:label="boardingpass_page1"
                                android:name=".boardingpass_page1" />


       <activity
           android:name=".PositiveActivity"
           android:label="Positive Answer"/>


        <activity
          android:label="contact_page1"
                                android:name=".contact_page1" />


         <activity
          android:label="contact_page2"
                                android:name=".contact_page2" />



      <receiver android:name=".AlarmReceiver" android:process=":remote" />


    </application>


</manifest>
```

AndroidManifest.xml_END