**Android Workshop 5**

**Club Management Example :**

public class AddBookingActivity extends AppCompatActivity {

private Spinner spnMember, spnFacility;

private EditText etDate, etStrtTime, etEndTime;

private Button btnSave;

private SimpleDateFormat dateFormatter = new SimpleDateFormat("dd MMM yyyy", Locale.getDefault());

private SimpleDateFormat timeFormatter = new SimpleDateFormat("hh:mm a", Locale.getDefault());

Calendar currentCal = Calendar.getInstance();

Calendar selectedDate = Calendar.getInstance();

@Override protected void onCreate(Bundle savedInstanceState) {

super.onCreate(savedInstanceState);

setContentView(R.layout.activity\_add\_booking);

spnMember = (Spinner) findViewById(R.id.spn\_member);

spnFacility = (Spinner) findViewById(R.id.spn\_facility);

etDate = (EditText) findViewById(R.id.et\_select\_date);

etStrtTime = (EditText) findViewById(R.id.et\_select\_strt\_time);

etEndTime = (EditText) findViewById(R.id.et\_select\_end\_time);

btnSave = (Button) findViewById(R.id.btn\_save);

List<Member> memberList = App.club.getMembers();

List<String> spnMemList = new ArrayList<>();

spnMemList.add("<Select Member>");

for (Member member : memberList) {

spnMemList.add(member.toString());

}

ArrayAdapter<String> spnMemAdapter =

new ArrayAdapter<>(this, android.R.layout.simple\_spinner\_dropdown\_item, spnMemList);

spnMember.setAdapter(spnMemAdapter);

List<Facility> facilityList = App.club.getFacilities();

List<String> spnFacList = new ArrayList<>();

spnFacList.add("<Select Facility>");

for (Facility facility : facilityList) {

spnFacList.add(facility.toString());

}

ArrayAdapter<String> spnFacAdapter =

new ArrayAdapter<>(this, android.R.layout.simple\_spinner\_dropdown\_item, spnFacList);

spnFacility.setAdapter(spnFacAdapter);

etDate.setText(dateFormatter.format(selectedDate.getTime()));

etDate.setOnClickListener(new View.OnClickListener() {

@Override public void onClick(View v) {

DatePickerDialog.OnDateSetListener onDateSetListener =

new DatePickerDialog.OnDateSetListener() {

@Override

public void onDateSet(DatePicker view, int year, int monthOfYear, int dayOfMonth) {

Calendar calendar = Calendar.getInstance();

calendar.set(year, monthOfYear, dayOfMonth);

selectedDate = calendar;

etDate.setText(dateFormatter.format(calendar.getTime()));

}

};

DatePickerDialog datePickerDialog =

new DatePickerDialog(AddBookingActivity.this, onDateSetListener,

currentCal.get(Calendar.YEAR), currentCal.get(Calendar.MONTH),

currentCal.get(Calendar.DAY\_OF\_MONTH));

datePickerDialog.show();

}

});

etStrtTime.setText(timeFormatter.format(currentCal.getTime()));

Calendar timeCalendar = Calendar.getInstance();

timeCalendar.setTime(currentCal.getTime());

timeCalendar.set(Calendar.HOUR, currentCal.get(Calendar.HOUR));

timeCalendar.set(Calendar.MINUTE, currentCal.get(Calendar.MINUTE));

timeCalendar.set(Calendar.AM\_PM, currentCal.get(Calendar.AM\_PM));

timeCalendar.add(Calendar.HOUR, 1);

etEndTime.setText(timeFormatter.format(timeCalendar.getTime()));

View.OnClickListener timeClickListener = new View.OnClickListener() {

@Override public void onClick(final View v) {

final EditText editText = (EditText) v;

TimePickerDialog.OnTimeSetListener timeSetListener =

new TimePickerDialog.OnTimeSetListener() {

@Override public void onTimeSet(TimePicker view, int hourOfDay, int minute) {

Calendar calendar = Calendar.getInstance();

calendar.set(calendar.get(Calendar.YEAR), calendar.get(Calendar.MONTH),

calendar.get(Calendar.DAY\_OF\_MONTH), hourOfDay, minute);

editText.setText(timeFormatter.format(calendar.getTime()));

}

};

Calendar timeCalendar = Calendar.getInstance();

try {

timeCalendar.setTime(timeFormatter.parse(editText.getText().toString()));

} catch (ParseException e) {

Toast.makeText(AddBookingActivity.this, R.string.generic\_error, Toast.LENGTH\_SHORT)

.show();

}

TimePickerDialog timePickerDialog =

new TimePickerDialog(AddBookingActivity.this, timeSetListener,

timeCalendar.get(Calendar.HOUR\_OF\_DAY), timeCalendar.get(Calendar.MINUTE), false);

timePickerDialog.show();

}

};

etStrtTime.setOnClickListener(timeClickListener);

etEndTime.setOnClickListener(timeClickListener);

btnSave.setOnClickListener(new View.OnClickListener() {

@Override public void onClick(View v) {

if (isValid()) {

Toast.makeText(AddBookingActivity.this, "Proceed booking!", Toast.LENGTH\_SHORT).show();

}

}

});

}

private boolean isValid() {

boolean isValid = true;

if (spnMember.getSelectedItemPosition() == 0) {

Toast.makeText(this, R.string.mem\_select\_validation\_msg, Toast.LENGTH\_SHORT).show();

isValid = false;

} else if (spnFacility.getSelectedItemPosition() == 0) {

Toast.makeText(this, R.string.fac\_select\_validation\_msg, Toast.LENGTH\_SHORT).show();

isValid = false;

}

try {

Calendar selectedStTime = Calendar.getInstance();

selectedStTime.setTime(timeFormatter.parse(etStrtTime.getText().toString()));

Calendar convertedStTime = Calendar.getInstance();

convertedStTime.set(Calendar.HOUR, selectedStTime.get(Calendar.HOUR));

convertedStTime.set(Calendar.MINUTE, selectedStTime.get(Calendar.MINUTE));

convertedStTime.set(Calendar.AM\_PM, selectedStTime.get(Calendar.AM\_PM));

Calendar selectedEtTime = Calendar.getInstance();

selectedEtTime.setTime(timeFormatter.parse(etEndTime.getText().toString()));

Calendar convertedEtTime = Calendar.getInstance();

convertedEtTime.set(Calendar.HOUR, selectedEtTime.get(Calendar.HOUR));

convertedEtTime.set(Calendar.MINUTE, selectedEtTime.get(Calendar.MINUTE));

convertedEtTime.set(Calendar.AM\_PM, selectedEtTime.get(Calendar.AM\_PM));

if (currentCal.getTime().compareTo(selectedDate.getTime()) > 0) {

Toast.makeText(this, R.string.date\_validation\_msg, Toast.LENGTH\_SHORT).show();

isValid = false;

} else if (currentCal.compareTo(convertedStTime) > 0) {

Toast.makeText(this, R.string.time\_validation\_msg, Toast.LENGTH\_SHORT).show();

isValid = false;

} else if (convertedStTime.compareTo(convertedEtTime) >= 0) {

Toast.makeText(this, R.string.st\_time\_et\_time\_validation\_msg, Toast.LENGTH\_SHORT).show();

isValid = false;

}

} catch (ParseException e) {

Toast.makeText(this, R.string.generic\_error, Toast.LENGTH\_SHORT).show();

}

return isValid;

}

}

**Main Activity:**

public class MainActivity extends AppCompatActivity {

@Override protected void onCreate(Bundle savedInstanceState) {

super.onCreate(savedInstanceState);

setContentView(R.layout.activity\_main);

Toolbar toolbar = (Toolbar) findViewById(R.id.toolbar);

setSupportActionBar(toolbar);

final ViewPager viewPager = (ViewPager) findViewById(R.id.pager);

PagerAdapter pagerAdapter = new PagerAdapter(getSupportFragmentManager(), 3);

viewPager.setAdapter(pagerAdapter);

final TabLayout tabLayout = (TabLayout) findViewById(R.id.tab\_layout);

tabLayout.addTab(tabLayout.newTab().setText("Members"));

tabLayout.addTab(tabLayout.newTab().setText("Facilities"));

tabLayout.addTab(tabLayout.newTab().setText("Bookings"));

tabLayout.setOnTabSelectedListener(new TabLayout.OnTabSelectedListener() {

@Override public void onTabSelected(TabLayout.Tab tab) {

viewPager.setCurrentItem(tab.getPosition());

}

@Override public void onTabUnselected(TabLayout.Tab tab) {

}

@Override public void onTabReselected(TabLayout.Tab tab) {

}

});

viewPager.addOnPageChangeListener(new TabLayout.TabLayoutOnPageChangeListener(tabLayout));

}

@Override protected void onStop() {

App.clubStore.saveAll(this);

super.onStop();

}

}

**Activity\_main.xml**

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

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

xmlns:tools="http://schemas.android.com/tools"

xmlns:app="http://schemas.android.com/apk/res-auto"

android:layout\_width="match\_parent"

android:layout\_height="match\_parent"

android:paddingLeft="@dimen/activity\_horizontal\_margin"

android:paddingRight="@dimen/activity\_horizontal\_margin"

android:paddingTop="@dimen/activity\_vertical\_margin"

android:paddingBottom="@dimen/activity\_vertical\_margin"

tools:context="activity.MainActivity"

>

<android.support.v7.widget.Toolbar

android:id="@+id/toolbar"

android:layout\_width="match\_parent"

android:layout\_height="wrap\_content"

android:layout\_alignParentTop="true"

android:background="?attr/colorPrimary"

android:elevation="6dp"

android:minHeight="?attr/actionBarSize"

android:theme="@style/ThemeOverlay.AppCompat.Dark.ActionBar"

app:popupTheme="@style/ThemeOverlay.AppCompat.Light"

/>

<android.support.design.widget.TabLayout

android:id="@+id/tab\_layout"

android:layout\_width="match\_parent"

android:layout\_height="wrap\_content"

android:layout\_below="@+id/toolbar"

android:background="?attr/colorPrimary"

android:elevation="6dp"

android:minHeight="?attr/actionBarSize"

android:theme="@style/ThemeOverlay.AppCompat.Dark.ActionBar"

/>

<android.support.v4.view.ViewPager

android:id="@+id/pager"

android:layout\_width="match\_parent"

android:layout\_height="fill\_parent"

android:layout\_below="@id/tab\_layout"

/>

</RelativeLayout>

**add\_booking\_activity.xml**

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

<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="sg.edu.nus.clubmanagement.activity.AddBookingActivity"

>

<ScrollView

android:layout\_width="match\_parent"

android:layout\_height="wrap\_content"

>

<RelativeLayout

android:layout\_width="match\_parent"

android:layout\_height="wrap\_content"

>

<TextView

android:layout\_width="match\_parent"

android:layout\_height="wrap\_content"

android:text="@string/txt\_member"

android:layout\_marginLeft="22dp"

android:layout\_marginStart="22dp"

android:layout\_marginTop="20dp"

android:id="@+id/tv\_member"

android:textStyle="bold"

/>

<Spinner

android:id="@+id/spn\_member"

android:layout\_below="@id/tv\_member"

android:layout\_width="match\_parent"

android:layout\_height="wrap\_content"

android:layout\_marginStart="20dp"

android:layout\_marginLeft="20dp"

android:layout\_marginRight="20dp"

android:layout\_marginEnd="20dp"

android:layout\_marginTop="10dp"

>

</Spinner>

<TextView

android:layout\_width="match\_parent"

android:layout\_height="wrap\_content"

android:text="@string/txt\_facility"

android:layout\_below="@id/spn\_member"

android:layout\_marginLeft="22dp"

android:layout\_marginStart="22dp"

android:layout\_marginTop="20dp"

android:id="@+id/tv\_facility"

android:textStyle="bold"

/>

<Spinner

android:id="@+id/spn\_facility"

android:layout\_width="match\_parent"

android:layout\_height="wrap\_content"

android:layout\_marginStart="20dp"

android:layout\_marginLeft="20dp"

android:layout\_marginRight="20dp"

android:layout\_marginEnd="20dp"

android:layout\_marginTop="10dp"

android:layout\_below="@id/tv\_facility"

>

</Spinner>

<RelativeLayout

android:layout\_width="match\_parent"

android:layout\_height="wrap\_content"

android:layout\_below="@id/spn\_facility"

>

<TextView

android:layout\_width="wrap\_content"

android:layout\_height="wrap\_content"

android:id="@+id/tv\_date"

android:text="@string/date\_select"

android:textStyle="bold"

android:layout\_marginLeft="22dp"

android:layout\_marginStart="22dp"

android:layout\_marginTop="30dp"

android:layout\_alignParentLeft="true"

android:layout\_alignParentStart="true"

/>

<EditText

android:id="@+id/et\_select\_date"

android:layout\_width="wrap\_content"

android:layout\_height="wrap\_content"

android:hint="@string/date\_select"

android:layout\_below="@id/tv\_date"

android:layout\_alignLeft="@id/tv\_date"

android:layout\_alignStart="@id/tv\_date"

android:inputType="date"

android:focusable="false"

/>

<TextView

android:layout\_width="wrap\_content"

android:layout\_height="wrap\_content"

android:id="@+id/tv\_stTime"

android:text="@string/strt\_time\_select"

android:textStyle="bold"

android:layout\_centerHorizontal="true"

android:layout\_alignBaseline="@id/tv\_date"

/>

<EditText

android:id="@+id/et\_select\_strt\_time"

android:layout\_width="wrap\_content"

android:layout\_height="wrap\_content"

android:hint="@string/strt\_time\_select"

android:layout\_toRightOf="@id/et\_select\_date"

android:layout\_toEndOf="@id/et\_select\_date"

android:layout\_alignStart="@id/tv\_stTime"

android:layout\_alignLeft="@id/tv\_stTime"

android:focusable="false"

android:inputType="datetime"

android:layout\_alignBaseline="@id/et\_select\_date"

/>

<EditText

android:id="@+id/et\_select\_end\_time"

android:layout\_width="wrap\_content"

android:layout\_height="wrap\_content"

android:focusable="false"

android:hint="@string/end\_time\_select"

android:layout\_marginEnd="20dp"

android:layout\_marginRight="20dp"

android:layout\_alignParentRight="true"

android:layout\_alignParentEnd="true"

android:layout\_alignBaseline="@id/et\_select\_date"

android:inputType="datetime"

/>

<TextView

android:layout\_width="wrap\_content"

android:layout\_height="wrap\_content"

android:id="@+id/tv\_etTime"

android:text="@string/end\_time\_select"

android:layout\_alignBaseline="@id/tv\_stTime"

android:textStyle="bold"

android:layout\_marginTop="30dp"

android:layout\_alignLeft="@id/et\_select\_end\_time"

android:layout\_alignStart="@id/et\_select\_end\_time"

/>

</RelativeLayout>

</RelativeLayout>

</ScrollView>

<Button

android:id="@+id/btn\_save"

android:layout\_width="match\_parent"

android:layout\_height="wrap\_content"

android:layout\_alignParentBottom="true"

android:layout\_margin="20dp"

android:background="@color/colorPrimary"

android:text="@string/save"

android:textColor="@android:color/white"

/>

</RelativeLayout>

**Add Member Activity:**

public class AddMemberActivity extends AppCompatActivity {

private EditText etFirstName, etSecondName, etSurname;

@Override protected void onCreate(Bundle savedInstanceState) {

super.onCreate(savedInstanceState);

setContentView(R.layout.activity\_add\_member);

etFirstName = (EditText) findViewById(R.id.et\_first\_name);

etSecondName = (EditText) findViewById(R.id.et\_second\_name);

etSurname = (EditText) findViewById(R.id.et\_sur\_name);

Button btnSave = (Button) findViewById(R.id.btn\_save);

btnSave.setOnClickListener(new View.OnClickListener() {

@Override public void onClick(View v) {

if (isValid()) {

App.club.addMember(etSurname.getText().toString().trim(),

etFirstName.getText().toString().trim(), etSecondName.getText().toString().trim());

Toast.makeText(AddMemberActivity.this, getString(R.string.save\_successful),

Toast.LENGTH\_SHORT).show();

finish();

}

}

});

}

private boolean isValid() {

boolean isValid = true;

if (TextUtils.isEmpty(etFirstName.getText().toString().trim())) {

etFirstName.setError(getString(R.string.first\_name\_validation\_msg));

isValid = false;

}

if (TextUtils.isEmpty(etSecondName.getText().toString().trim())) {

etSecondName.setError(getString(R.string.second\_name\_validation\_msg));

isValid = false;

}

if (TextUtils.isEmpty(etSurname.getText().toString().trim())) {

etSurname.setError(getString(R.string.sur\_name\_validation\_msg));

isValid = false;

}

return isValid;

}

}

**Add\_member\_activity.xml :**

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

<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="sg.edu.nus.clubmanagement.activity.AddMemberActivity"

>

<ScrollView

android:layout\_width="match\_parent"

android:layout\_height="wrap\_content"

android:layout\_marginBottom="20dp"

>

<RelativeLayout

android:layout\_width="match\_parent"

android:layout\_height="match\_parent"

android:layout\_marginBottom="20dp"

>

<TextView

android:id="@+id/tv\_first\_name"

android:layout\_width="match\_parent"

android:layout\_height="wrap\_content"

android:text="@string/first\_name"

android:layout\_marginTop="10dp"

android:layout\_marginStart="20dp"

android:layout\_marginEnd="20dp"

android:paddingLeft="4dp"

/>

<EditText

android:id="@+id/et\_first\_name"

android:layout\_width="match\_parent"

android:layout\_height="wrap\_content"

android:layout\_marginStart="20dp"

android:layout\_marginEnd="20dp"

android:layout\_below="@id/tv\_first\_name"

android:hint="@string/first\_name"

/>

<TextView

android:id="@+id/tv\_second\_name"

android:layout\_width="match\_parent"

android:layout\_height="wrap\_content"

android:text="@string/second\_name"

android:layout\_below="@id/et\_first\_name"

android:layout\_marginTop="20dp"

android:layout\_marginStart="20dp"

android:layout\_marginEnd="20dp"

android:paddingLeft="4dp"

/>

<EditText

android:id="@+id/et\_second\_name"

android:layout\_width="match\_parent"

android:layout\_height="wrap\_content"

android:layout\_marginStart="20dp"

android:layout\_marginEnd="20dp"

android:hint="@string/second\_name"

android:layout\_below="@id/tv\_second\_name"

/>

<TextView

android:id="@+id/tv\_sur\_name"

android:layout\_width="match\_parent"

android:layout\_height="wrap\_content"

android:text="@string/sur\_name"

android:layout\_marginStart="20dp"

android:layout\_marginRight="20dp"

android:layout\_marginTop="20dp"

android:layout\_below="@id/et\_second\_name"

android:paddingLeft="4dp"

/>

<EditText

android:id="@+id/et\_sur\_name"

android:layout\_width="match\_parent"

android:layout\_height="wrap\_content"

android:layout\_marginLeft="20dp"

android:layout\_marginRight="20dp"

android:layout\_below="@id/tv\_sur\_name"

android:hint="@string/sur\_name"

/>

</RelativeLayout>

</ScrollView>

<Button

android:id="@+id/btn\_save"

android:layout\_width="match\_parent"

android:layout\_height="wrap\_content"

android:layout\_alignParentBottom="true"

android:layout\_margin="20dp"

android:background="@color/colorPrimary"

android:text="@string/save"

android:textColor="@android:color/white"

/>

</RelativeLayout>

**Fragment\_booking.xml**

<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"

xmlns:app="http://schemas.android.com/apk/res-auto"

tools:context="fragment.BookingFragment"

>

<ListView

android:layout\_width="match\_parent"

android:layout\_height="match\_parent"

android:id="@+id/lv\_booking\_list"

>

</ListView>

<android.support.design.widget.FloatingActionButton

android:layout\_width="wrap\_content"

android:layout\_height="wrap\_content"

android:id="@+id/fab"

android:src="@android:drawable/ic\_input\_add"

android:layout\_alignParentRight="true"

android:layout\_alignParentBottom="true"

android:layout\_margin="20dp"

app:backgroundTint="@color/colorPrimary"

android:tint="@android:color/white"

/>

<TextView

android:layout\_width="match\_parent"

android:layout\_height="wrap\_content"

android:id="@+id/tv\_empty\_value"

android:layout\_centerInParent="true"

android:gravity="center"

android:textSize="20sp"

android:textStyle="bold"

android:text="@string/empty\_value"

/>

</RelativeLayout>

**Fragment Booking Activity:**

public class BookingFragment extends Fragment {

private TextView tvEmpty;

private BookingListAdapter bookingListAdapter;

@Override public void onCreate(Bundle savedInstanceState) {

super.onCreate(savedInstanceState);

}

@Override public View onCreateView(LayoutInflater inflater, ViewGroup container,

Bundle savedInstanceState) {

// Inflate the layout for this fragment

View fragmentView = inflater.inflate(R.layout.fragment\_booking, container, false);

ListView bookingList = (ListView) fragmentView.findViewById(R.id.lv\_booking\_list);

tvEmpty = (TextView) fragmentView.findViewById(R.id.tv\_empty\_value);

bookingListAdapter = new BookingListAdapter(getActivity());

bookingList.setAdapter(bookingListAdapter);

FloatingActionButton floatingActionButton =

(FloatingActionButton) fragmentView.findViewById(R.id.fab);

floatingActionButton.setOnClickListener(new View.OnClickListener() {

@Override public void onClick(View v) {

getActivity().startActivity(new Intent(getActivity(), AddBookingActivity.class));

}

});

return fragmentView;

}

}

**Member Fragment Activity:**

public class MemberFragment extends Fragment {

private MemberListAdapter memberListAdapter;

private TextView tvEmpty;

@Override public void onCreate(Bundle savedInstanceState) {

super.onCreate(savedInstanceState);

}

@Override public View onCreateView(LayoutInflater inflater, ViewGroup container,

Bundle savedInstanceState) {

// Inflate the layout for this fragment

View fragmentView = inflater.inflate(R.layout.fragment\_member, container, false);

ListView memberList = (ListView) fragmentView.findViewById(R.id.lv\_member\_list);

tvEmpty = (TextView) fragmentView.findViewById(R.id.tv\_empty\_value);

memberListAdapter = new MemberListAdapter(getActivity());

memberList.setAdapter(memberListAdapter);

FloatingActionButton floatingActionButton =

(FloatingActionButton) fragmentView.findViewById(R.id.fab);

floatingActionButton.setOnClickListener(new View.OnClickListener() {

@Override public void onClick(View v) {

getActivity().startActivity(new Intent(getActivity(), AddMemberActivity.class));

}

});

return fragmentView;

}

@Override public void onResume() {

super.onResume();

memberListAdapter.refreshMembers();

tvEmpty.setVisibility(memberListAdapter.getCount() == 0 ? View.VISIBLE : View.GONE);

}

}

**Pager adapter to switch fragment :**

public class PagerAdapter extends FragmentStatePagerAdapter {

int numOfTabs;

public PagerAdapter(FragmentManager fm, int numOfTabs) {

super(fm);

this.numOfTabs = numOfTabs;

}

@Override public Fragment getItem(int position) {

switch (position) {

case 0:

MemberFragment memberFragment = new MemberFragment();

return memberFragment;

case 1:

FacilityFragment facilityFragment = new FacilityFragment();

return facilityFragment;

default:

BookingFragment bookingFragment = new BookingFragment();

return bookingFragment;

}

}

@Override public int getCount() {

return numOfTabs;

}

}