MAP524 – Midterm

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GAM524NSA

1. Explain in detail how exactly you complete this project, what are the used classes and objects and how did you use them.

First of all, I used ***MainActivity.class*** to handle the widgets on the ***activity\_main.xml*** file.

**upload*()*** function is used to taking a picture using implicit intent functionality which does not require components parameter as it does implement outside of an app.

***addNewCarModelAndYear()*** function is used to make an instance of ***AddYearAndModelDialog.class*** which is in charge of handling a dialog fragment to show.

***saveCar()*** fuction is triggered when user clicks “SAVE CAR” button which is located very bottom of the ***activity\_main*** view. Once you click, it does get all the objects data of car information that you have saved.

***onActivityResult()*** function checks whether a picture is taken or not. Once the picture is taken, then it set the ImageView section to a picture that user took.

Inside the ***activity\_main.xml***, it does have EditText where you can type your name, ImageView where it would be replacing the picture by taking a picture by pressing the button “YOUR CAR IMAGE”, button called “ADD MODEL AND YEAR” which generates a dialog fragment to get specific information of car, and “SAVE CAR” button which redirects to next page displaying a list of car objects that you have saved.

Secondly, I used ***AddYearAndModelDialog.class*** to generate a dialog fragment when user clicks the “ADD MODEL AND YEAR” button. Inside this class, it handles widgets which are supposed to be displaying on the dialog fragment.

Third, I used ***Car.class*** which handles the object of car information. It does have Ownername, imageData, year, model.

Fourth, I used ***ReportActivity.class*** which gets the information that is sent from MainActivity and it is connected to activity\_report.xml which is a new page that user is going to be when user clicks the “SAVE CAR” button.

On Fifth, I make a new class called “CarAdapter” which handles an element of array of car and set the position based on the car\_listitem\_layout.xml which I newly made to set the position of each information.

1. Explain how the data transferred between your application’s components.

Basically, the data is transferred through adapter. In my case, I make a ***CarAdapter.class*** to handle the adapter and set the position of each element of object of array of car. With this class the element will be positioned based on the location set I made on the ***car\_listitem\_layout.xml***.

**Codes are starting from next page**:

**package** com.example.midterm\_map524nsa\_sanghyuklee;

**public class** AddYearAndModelDialog **extends** DialogFragment {  
  
 NumberPicker **year\_picker**;  
 Spinner **modelSpinner**;  
 Button **save\_btn**;  
  
 **private** SaveClickListener **saveClickListener**;  
  
 **int year**;  
 String **model**;  
 Bitmap **image**;  
 String **owner**;  
  
 **public** AddYearAndModelDialog(Bitmap image, String owner) {  
 **this**.**image** = image;  
 **this**.**owner** = owner;  
 }  
  
 @Override  
 **public void** onViewCreated(@NonNull View view, @Nullable Bundle savedInstanceState) {  
 **super**.onViewCreated(view, savedInstanceState);  
 **modelSpinner**.setOnItemSelectedListener(**new** AdapterView.OnItemSelectedListener() {  
 @Override  
 **public void** onItemSelected(AdapterView<?> parent, View view, **int** position, **long** id) {  
 **model** = (String) parent.getItemAtPosition(position);  
 }  
  
 @Override  
 **public void** onNothingSelected(AdapterView<?> parent) {  
 **model** = (String) parent.getItemAtPosition(0);  
 }  
 });  
  
 **year\_picker**.setMinValue(2010);  
 **year\_picker**.setMaxValue(2020);  
 **year\_picker**.setValue(2019);  
 **year** = **year\_picker**.getValue();  
  
 **save\_btn**.setOnClickListener(**new** View.OnClickListener() {  
 @Override  
 **public void** onClick(View v) {  
  
 **saveClickListener**.onSaveClicked(**new** Car(**owner**, **year\_picker**.getValue(), **model**), **image**);  
 getDialog().dismiss();  
 }  
 });  
  
  
 }  
  
 **interface** SaveClickListener {  
 **void** onSaveClicked(Car item, Bitmap img);  
 }  
  
 **public void** setSaveClickListener(SaveClickListener saveClickListener) {  
 **this**.**saveClickListener** = saveClickListener;  
 }  
  
 @Nullable  
 @Override  
 **public** View onCreateView(@NonNull LayoutInflater inflater, @Nullable ViewGroup container, @Nullable Bundle savedInstanceState) {  
 View view = inflater.inflate(R.layout.***add\_year\_level***, container);  
  
 **year\_picker** = view.findViewById(R.id.***numberPicker***);  
 **modelSpinner** = view.findViewById(R.id.***carnamespinner***);  
 **save\_btn** = view.findViewById(R.id.***savebutton***);  
  
 getDialog().getWindow().requestFeature(Window.***FEATURE\_NO\_TITLE***);  
  
  
 **return** view;  
 }  
}

**public class** Car **implements** Serializable {  
  
 String **OwnerName**;  
 Bitmap **imageData**;  
 **int year**;  
 String **model**;  
  
 **public** Car(String OwnerName, Bitmap imageData, **int** year, String model) {  
 **this**.**OwnerName** = OwnerName;  
 **this**.**imageData** = imageData;  
 **this**.**year** = year;  
 **this**.**model** = model;  
 }  
  
 **public** Car(String ownerName, **int** year, String model) {  
 **OwnerName** = ownerName;  
 **this**.**year** = year;  
 **this**.**model** = model;  
 }  
  
 **public** String getOwnerName() {  
 **return OwnerName**;  
 }  
  
 **public** Bitmap getImageData() {  
 **return imageData**;  
 }  
  
 **public int** getYear() {  
 **return year**;  
 }  
  
 **public** String getModel() {  
 **return model**;  
 }  
}

**public class** CarAdapter **extends** BaseAdapter {  
  
 ArrayList<Car> **carArrayList** = **new** ArrayList<>();  
 View **view**;  
  
 @Override  
 **public int** getCount() {  
 **return carArrayList**.size();  
 }  
  
 @Override  
 **public** Car getItem(**int** position) {  
 **return carArrayList**.get(position);  
 }  
  
 @Override  
 **public long** getItemId(**int** position) {  
 **return** position;  
 }  
  
 @Override  
 **public** View getView(**int** position, View convertView, ViewGroup parent) {  
 CarViewHolder holder;  
  
 **if** (convertView == **null**) {  
 convertView = LayoutInflater.*from*(parent.getContext()).inflate(R.layout.***car\_listitem\_layout***, **null**, **false**);  
 holder = **new** CarViewHolder();  
 holder.**imageview\_id** = (ImageView) convertView.findViewById(R.id.***imageview\_id***);  
 holder.**studentname\_id** = (TextView) convertView.findViewById(R.id.***studentname\_id***);  
 holder.**model\_id** = (TextView) convertView.findViewById(R.id.***model\_id***);  
 holder.**year\_id** = (TextView) convertView.findViewById(R.id.***year\_id***);  
 convertView.setTag(holder);  
 } **else** {  
 holder = (CarViewHolder) convertView.getTag();  
 }  
 Car car = **carArrayList**.get(position);  
  
 holder.**studentname\_id**.setText(car.getOwnerName());  
 holder.**model\_id**.setText(car.getModel());  
 holder.**year\_id**.setText(car.getYear()+**""**);  
 holder.**imageview\_id**.setImageBitmap(car.getImageData());  
  
 **return** convertView;  
 }  
  
 **class** CarViewHolder {  
 ImageView **imageview\_id**;  
 TextView **studentname\_id**;  
 TextView **model\_id**;  
 TextView **year\_id**;  
 }  
  
 **public void** addItem(Car item) {  
 **carArrayList**.add(item);  
 }  
}

**public class** MainActivity **extends** AppCompatActivity {  
  
 **private static final** String ***TAG*** = **""**;  
 ImageView **myImage**;  
 Button **takeAPhotoButton**;  
 Button **addCarInfo**; *//alert dialog fragment* Button **saveCarInfo**;  
 EditText **myName**;  
 **static final int *REQUEST\_IMAGE\_CAPTURE*** = 1;  
 ArrayList<Car> **cItem** = **new** ArrayList<>();  
 ArrayList<Bitmap> **cImg** = **new** ArrayList<>();  
  
 @Override  
 **protected void** onCreate(Bundle savedInstanceState) {  
 **super**.onCreate(savedInstanceState);  
 setContentView(R.layout.***activity\_main***);  
  
  
 **myName** = (EditText) findViewById(R.id.***studentName***);  
 **myImage** = (ImageView) findViewById(R.id.***personalImageID***);  
 **takeAPhotoButton** = (Button) findViewById(R.id.***button1***);  
 **addCarInfo** = (Button) findViewById(R.id.***button2***);  
 **saveCarInfo** = (Button) findViewById(R.id.***button3***);  
  
  
 }  
  
 **public void** upload(View view) {  
 Intent takePictureIntent = **new** Intent(MediaStore.***ACTION\_IMAGE\_CAPTURE***);  
 **if** (takePictureIntent.resolveActivity(getPackageManager()) != **null**) {  
 startActivityForResult(takePictureIntent, ***REQUEST\_IMAGE\_CAPTURE***);  
 }  
 }  
  
 **public void** addNewCarModelAndYear(View view) {  
 Drawable tmp = **myImage**.getDrawable();  
 Bitmap img = ((BitmapDrawable) tmp).getBitmap();  
 AddYearAndModelDialog dialog = **new** AddYearAndModelDialog(img, **myName**.getText().toString());  
 dialog.show(getSupportFragmentManager(), **""**);  
 dialog.setSaveClickListener(**new** AddYearAndModelDialog.SaveClickListener() {  
 @Override  
 **public void** onSaveClicked(Car item, Bitmap img) {  
 **cImg**.add(img);  
 **cItem**.add(item);  
 }  
  
 });  
  
 }  
  
 **public void** saveCar(View view) {  
 Intent intent = **new** Intent(MainActivity.**this**, ReportActivity.**class**);  
 intent.putExtra(**"selectedCarList"**, **cItem**);  
 intent.putExtra(**"img"**, **cImg**);  
 startActivity(intent);  
 }  
  
 **protected void** onActivityResult(**int** requestCode, **int** resultCode, Intent data) {  
 **super**.onActivityResult(requestCode, resultCode, data);  
 **if** (requestCode == ***REQUEST\_IMAGE\_CAPTURE*** && resultCode == ***RESULT\_OK***) {  
 Bundle extras = data.getExtras();  
 Bitmap imageBitmap = (Bitmap) extras.get(**"data"**);  
 **myImage**.setImageBitmap(imageBitmap);  
 }  
 }  
}

**public class** ReportActivity **extends** AppCompatActivity {  
  
 ArrayList<Car> **carList**;  
 ArrayList<Bitmap> **imgList**;  
 ArrayList<Car> **items**;  
 ListView **allcarlist**;  
  
 @Override  
 **protected void** onCreate(Bundle savedInstanceState) {  
 **super**.onCreate(savedInstanceState);  
 setContentView(R.layout.***activity\_report***);  
  
 **allcarlist** = findViewById(R.id.***allcarlist***);  
 CarAdapter adapter = **new** CarAdapter();  
  
 **imgList** = getIntent().getParcelableArrayListExtra(**"img"**);  
 **carList** = (ArrayList<Car>) getIntent().getSerializableExtra(**"selectedCarList"**);  
  
 **for** (**int** i = 0; i < **carList**.size(); i++) {  
 Car car = **carList**.get(i);  
 System.***out***.println(car.getModel());  
 adapter.addItem(**new** Car(car.getOwnerName(), **imgList**.get(i), car.getYear(), car.getModel()));  
 }  
  
 **allcarlist**.setAdapter(adapter);  
  
 }  
}

**activity\_main.xml**

*<?***xml version="1.0" encoding="utf-8"***?>*<**LinearLayout xmlns:android="http://schemas.android.com/apk/res/android"  
 xmlns:app="http://schemas.android.com/apk/res-auto"  
 xmlns:tools="http://schemas.android.com/tools"  
 android:layout\_width="match\_parent"  
 android:layout\_height="match\_parent"  
 android:orientation="vertical"  
 android:gravity="center"  
 tools:context=".MainActivity"**>  
 <**EditText  
 android:id="@+id/studentName"  
 android:hint="Enter Your Name"  
 android:gravity="center"  
 android:layout\_width="match\_parent"  
 android:layout\_height="wrap\_content"**/>  
  
 <**ImageView  
 android:id="@+id/personalImageID"  
 android:layout\_width="wrap\_content"  
 android:layout\_height="wrap\_content"  
 app:srcCompat="@drawable/car"**>  
  
 </**ImageView**>  
 <**Button  
 android:id="@+id/button1"  
 android:layout\_width="wrap\_content"  
 android:layout\_height="wrap\_content"  
 android:onClick="upload"  
 android:text="Your car Image"**>  
  
 </**Button**>  
 <**Button  
 android:id="@+id/button2"  
 android:onClick="addNewCarModelAndYear"  
 android:layout\_width="wrap\_content"  
 android:layout\_height="wrap\_content"  
 android:text="Add model and Year"**>  
  
 </**Button**>  
  
 <**Button  
 android:id="@+id/button3"  
 android:text="Save Car"  
 android:onClick="saveCar"  
 android:layout\_width="wrap\_content"  
 android:layout\_height="wrap\_content"**>  
  
 </**Button**>  
</**LinearLayout**>

**activity\_report.xml**

*<?***xml version="1.0" encoding="utf-8"***?>*<**androidx.constraintlayout.widget.ConstraintLayout xmlns:android="http://schemas.android.com/apk/res/android"  
 xmlns:app="http://schemas.android.com/apk/res-auto"  
 xmlns:tools="http://schemas.android.com/tools"  
 android:layout\_width="match\_parent"  
 android:layout\_height="match\_parent"  
 tools:context=".ReportActivity"**>  
  
 <**ListView  
 android:id="@+id/allcarlist"  
 android:layout\_width="match\_parent"  
 android:layout\_height="match\_parent"  
 app:layout\_constraintBottom\_toBottomOf="parent"  
 app:layout\_constraintEnd\_toEndOf="parent"  
 app:layout\_constraintStart\_toStartOf="parent"  
 app:layout\_constraintTop\_toTopOf="parent"** />  
  
</**androidx.constraintlayout.widget.ConstraintLayout**>

**add\_year\_level.xml**

*<?***xml version="1.0" encoding="utf-8"***?>*<**androidx.constraintlayout.widget.ConstraintLayout  
 xmlns:android="http://schemas.android.com/apk/res/android"  
 xmlns:app="http://schemas.android.com/apk/res-auto"  
 xmlns:tools="http://schemas.android.com/tools"  
 android:layout\_width="match\_parent"  
 android:layout\_height="match\_parent"**>  
  
  
 <**TextView  
 android:id="@+id/carmodel"  
 android:layout\_width="wrap\_content"  
 android:layout\_height="wrap\_content"  
  
 android:layout\_gravity="center\_horizontal|center\_vertical"  
 android:text="@string/carmodeltxt"  
 android:textSize="20sp"  
 app:layout\_constraintEnd\_toEndOf="parent"  
 app:layout\_constraintStart\_toStartOf="parent"  
 app:layout\_constraintTop\_toTopOf="@+id/guideline3"** />  
  
 <**Spinner  
 android:id="@+id/carnamespinner"  
 android:layout\_width="wrap\_content"  
 android:layout\_height="wrap\_content"  
 android:entries="@array/carlist"  
 app:layout\_constraintBottom\_toTopOf="@+id/guideline4"  
 app:layout\_constraintEnd\_toEndOf="parent"  
 app:layout\_constraintStart\_toStartOf="parent"  
 app:layout\_constraintTop\_toBottomOf="@+id/carmodel"**>  
  
 </**Spinner**>  
  
 <**TextView  
 android:id="@+id/caryear"  
 android:layout\_width="wrap\_content"  
 android:layout\_height="wrap\_content"  
 android:layout\_gravity="center\_horizontal|center\_vertical"  
 android:text="@string/caryeartxt"  
 android:textSize="20sp"  
 app:layout\_constraintEnd\_toEndOf="parent"  
 app:layout\_constraintStart\_toStartOf="parent"  
 app:layout\_constraintTop\_toTopOf="@+id/guideline4"**></**TextView**>  
  
  
 <**NumberPicker  
 android:id="@+id/numberPicker"  
 android:layout\_width="wrap\_content"  
 android:layout\_height="wrap\_content"  
 app:layout\_constraintBottom\_toTopOf="@+id/savebutton"  
 app:layout\_constraintEnd\_toEndOf="parent"  
 app:layout\_constraintStart\_toStartOf="parent"  
 app:layout\_constraintTop\_toBottomOf="@+id/caryear"**></**NumberPicker**>  
  
 <**Button  
 android:id="@+id/savebutton"  
 android:layout\_width="wrap\_content"  
 android:layout\_height="wrap\_content"  
 android:text="@string/save"  
 app:layout\_constraintBottom\_toBottomOf="parent"  
 app:layout\_constraintEnd\_toEndOf="parent"  
 app:layout\_constraintStart\_toStartOf="parent"**>  
  
 </**Button**>  
  
 <**androidx.constraintlayout.widget.Guideline  
 android:id="@+id/guideline3"  
 android:layout\_width="wrap\_content"  
 android:layout\_height="wrap\_content"  
 android:orientation="horizontal"  
 app:layout\_constraintGuide\_begin="0dp"** />  
  
 <**androidx.constraintlayout.widget.Guideline  
 android:id="@+id/guideline4"  
 android:layout\_width="wrap\_content"  
 android:layout\_height="wrap\_content"  
 android:orientation="horizontal"  
 app:layout\_constraintGuide\_begin="194dp"** />  
  
  
</**androidx.constraintlayout.widget.ConstraintLayout**>

**car\_listitem\_layout.xml**

*<?***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="80dp"  
 android:orientation="horizontal"** >  
 <**ImageView  
 android:id="@+id/imageview\_id"  
 android:layout\_width="70dp"  
 android:layout\_height="match\_parent"** />  
  
 <**LinearLayout  
 android:layout\_width="match\_parent"  
 android:layout\_height="match\_parent"  
 android:orientation="vertical"**>  
  
 <**TextView  
 android:id="@+id/studentname\_id"  
 android:layout\_width="match\_parent"  
 android:text="Dave"  
 android:layout\_marginTop="10dp"  
 android:layout\_height="wrap\_content"**>  
  
 </**TextView**>  
  
 <**LinearLayout  
 android:layout\_width="match\_parent"  
 android:layout\_height="wrap\_content"  
 android:orientation="horizontal"  
 android:layout\_marginTop="20dp"** >  
  
 <**TextView  
 android:id="@+id/model\_id"  
 android:layout\_width="wrap\_content"  
 android:text=" Model: Ford"  
 android:layout\_height="wrap\_content"** />  
 <**TextView  
 android:id="@+id/year\_id"  
 android:layout\_width="wrap\_content"  
 android:text="Year: 2013"  
 android:layout\_marginLeft="10dp"  
 android:layout\_height="wrap\_content"** />  
 </**LinearLayout**>  
 </**LinearLayout**>  
  
  
</**LinearLayout**>

**colors.xml**

*<?***xml version="1.0" encoding="utf-8"***?>*<**resources**>  
 <**color name="colorPrimary"**>#6200EE</**color**>  
 <**color name="colorPrimaryDark"**>#3700B3</**color**>  
 <**color name="colorAccent"**>#03DAC5</**color**>  
</**resources**>

**Strings.xml**

<**resources**>  
 <**string name="app\_name"**>Midterm\_SanghyukLee</**string**>  
 <**string name="car\_image"**>Your Car Image</**string**>  
 <**string name="car\_info"**>Add model and year</**string**>  
 <**string name="save"**>Save</**string**>  
 <**string name="save\_car\_info"**>Save car</**string**>  
 <**string name="carmodeltxt"**>Enter the car model </**string**>  
 <**string name="caryeartxt"**>Enter the car year </**string**>  
  
  
  
 <**string-array name="carlist"**>  
 <**item**>Hyundae</**item**>  
 <**item**>Samsung</**item**>  
 <**item**>Benz</**item**>  
 </**string-array**>  
  
  
</**resources**>

**Styles.xml**

<**resources**>  
  
 *<!-- Base application theme. -->* <**style name="AppTheme" parent="Theme.AppCompat.Light.DarkActionBar"**>  
 *<!-- Customize your theme here. -->* <**item name="colorPrimary"**>@color/colorPrimary</**item**>  
 <**item name="colorPrimaryDark"**>@color/colorPrimaryDark</**item**>  
 <**item name="colorAccent"**>@color/colorAccent</**item**>  
 </**style**>  
  
</**resources**>

**AndroidManifest.xml**

*<?***xml version="1.0" encoding="utf-8"***?>*<**manifest xmlns:android="http://schemas.android.com/apk/res/android"  
 package="com.example.midterm\_map524nsa\_sanghyuklee"**>  
  
 <**application  
 android:allowBackup="true"  
 android:icon="@mipmap/ic\_launcher"  
 android:label="@string/app\_name"  
 android:roundIcon="@mipmap/ic\_launcher\_round"  
 android:supportsRtl="true"  
 android:theme="@style/AppTheme"**>  
 <**activity android:name=".ReportActivity"** />  
 <**activity android:name=".MainActivity"**>  
 <**intent-filter**>  
 <**action android:name="android.intent.action.MAIN"** />  
  
 <**category android:name="android.intent.category.LAUNCHER"** />  
 </**intent-filter**>  
 </**activity**>  
 </**application**>  
  
 </**manifest**>

