|  |
| --- |
| BAHRIA UNIVERSITY (KARACHI CAMPUS)    RIMYA FAREED  02-131192-010  Open Ended Lab II – SPRING SEMESTER – 2022  Software Application for Mobile Devices    Class: BSE-6A Morning    Lab Instructor: Engr. Muhammad Rehan Baig |

Scenario

OMarket is a Things Sharing/Rental Market place MVP soon to be launched for pitch.

needs a Mobile application. You as an Application Developer responsible for the requirements given below.

*Product Types that can be listed on this market are (Books, Clothes, Music, Valuables... etc.)*

Requirements of App

* Authentication Area
  + User can Authenticate from this page and this authentication information will be used over the application and on executing processes.

* Dashboard.
  + Add Product Option – on click the prompt will be shown that captures the details of the product on the same page.
  + List of the products that are listed in the application for sharing and Rental purposes. - On Click on any product from the list the Activity will open that contains the details of the product and a Checkout button when this button clicked the Checkout Activity will be shown with the order details.
  + For Category music user can play music in the app background before buying without hanging the rest of the application.

* Order Management.
  + It show both Orders (Orders Done by you) and (Order Received By you for your products) in the separate lists.
  + In this Activity Real time order status will be shown after 10 seconds the order status must be updated based on Approval from the Seller. This process must be running in the background so no any process dead.

* Checkout.
  + When Buyer checkout the Seller in the market place will be notified with the OFFER Message sent from Buyer and App Notification for Approval.
  + Until the Offer not approved the Order Status will be displayed as PENDING

Every point is important. Read the given scenario carefully to perform this OpenEnded Lab Late Submissions not allowed.

XML FILES:

PRODUCT CARD .XML:

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

<androidx.cardview.widget.CardView xmlns:android="http://schemas.android.com/apk/res/android"

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

    android:id="@+id/hotelCard"

    android:layout\_width="match\_parent"

    android:layout\_height="wrap\_content"

    android:animateLayoutChanges="true"

    android:clickable="true"

    android:clipToPadding="false"

    android:foreground="?android:attr/selectableItemBackground"

    app:cardCornerRadius="6dp"

    android:layout\_margin="6dp"

    app:cardElevation="4dp">

    <LinearLayout

        android:layout\_width="match\_parent"

        android:layout\_height="wrap\_content"

        android:orientation="vertical">

        <RelativeLayout

            android:layout\_width="match\_parent"

            android:layout\_height="wrap\_content">

            <ImageView

                android:id="@+id/productImage"

                android:layout\_width="match\_parent"

                android:scaleType="centerCrop"

                android:layout\_height="130dp" />

            <LinearLayout

                android:layout\_width="match\_parent"

                android:layout\_height="3dp"

                android:layout\_below="@id/productImage"

                android:background="@drawable/horizontal\_line" />

            <TextView

                android:layout\_width="wrap\_content"

                android:layout\_height="wrap\_content"

                android:layout\_margin="8dp"

                android:id="@+id/ratings"

                android:background="@drawable/rounded\_linear\_layout"

                android:drawableRight="@drawable/ic\_24px\_star"

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

                android:gravity="center"

                android:padding="5dp"

                android:text="4.5"

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

                android:textSize="14sp"/>

        </RelativeLayout>

        <RelativeLayout

            android:layout\_width="match\_parent"

            android:layout\_height="match\_parent"

            android:orientation="horizontal"

            android:padding="12dp">

            <TextView

                android:layout\_width="39dp"

                android:layout\_height="wrap\_content"

                android:id="@+id/hotelCardViews"

                android:layout\_centerVertical="true"

                android:layout\_marginRight="5dp"

                android:layout\_toLeftOf="@idproductBookButton"

                android:gravity="center"

                android:text="0\nviews" />

            <TextView

                android:id="@+id/hotelName"

                android:layout\_width="100dp"

                android:layout\_height="wrap\_content"

                android:layout\_centerVertical="true"

                android:orientation="horizontal" />

            <TextView

                android:layout\_width="70dp"

                android:layout\_height="wrap\_content"

                android:layout\_marginLeft="2dp"

                android:id="@+id/tagsList"

                android:layout\_centerVertical="true"

                android:layout\_toRightOf="@id/productName"/>

            <com.google.android.material.button.MaterialButton

                android:id="@+id/productBookButton"

                android:layout\_width="wrap\_content"

                android:layout\_height="wrap\_content"

                android:layout\_alignParentRight="true"

                android:text="Book" />

        </RelativeLayout>

    </LinearLayout>

</androidx.cardview.widget.CardView>

LoginActivity.xml:

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

<LinearLayout 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"

    android:gravity="center"

    android:orientation="vertical"

    android:padding="14dp"

    tools:context=".Activities.LoginActivity">

    <com.google.android.material.textfield.TextInputLayout

        android:id="@+id/username"

        style="@style/Widget.MaterialComponents.TextInputLayout.OutlinedBox"

        android:layout\_width="match\_parent"

        android:layout\_height="wrap\_content">

        <com.google.android.material.textfield.TextInputEditText

            android:layout\_width="match\_parent"

            android:digits="ABCDEFGHIJKLMNOPQRSTUVWXYZabcdefghijklmnopqrstuvwxyz1234567890"

            android:inputType="textFilter"

            android:text="user"

            android:layout\_height="wrap\_content"

            android:hint="Username" />

    </com.google.android.material.textfield.TextInputLayout>

    <GridLayout

        android:layout\_width="match\_parent"

        android:layout\_height="wrap\_content"

        android:layout\_gravity="center"

        android:clipToPadding="false"

        android:padding="16dp">

        <com.google.android.material.button.MaterialButton

            android:id="@+id/loginBtn"

            android:layout\_width="wrap\_content"

            android:layout\_height="wrap\_content"

            android:layout\_gravity="center"

            android:text="Login" />

    </GridLayout>

</LinearLayout>

MAIN ACTIVITY.XML:

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

<androidx.coordinatorlayout.widget.CoordinatorLayout 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=".Activities.MainActivity">

    <androidx.viewpager.widget.ViewPager

        android:id="@+id/viewpager"

        android:layout\_width="match\_parent"

        android:layout\_height="match\_parent"

        app:layout\_behavior="@string/appbar\_scrolling\_view\_behavior" />

    <com.google.android.material.appbar.AppBarLayout

        android:layout\_width="match\_parent"

        android:layout\_height="wrap\_content"

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

        <androidx.appcompat.widget.Toolbar

            android:id="@+id/toolBar"

            android:layout\_width="match\_parent"

            android:layout\_height="?attr/actionBarSize"

            app:layout\_scrollFlags="scroll|enterAlways">

            <RelativeLayout

                android:layout\_width="wrap\_content"

                android:layout\_height="match\_parent"

                android:orientation="horizontal"

                android:padding="15dp">

                <TextView

                    style="@style/TextAppearance.AppCompat.Widget.ActionBar.Title"

                    android:layout\_width="wrap\_content"

                    android:layout\_height="wrap\_content"

                    android:layout\_gravity="center\_vertical"

                    android:gravity="center\_vertical"

                    android:text="OMarket"

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

                <TextView

                    android:layout\_width="wrap\_content"

                    android:layout\_height="match\_parent"

                    android:layout\_gravity="center\_vertical"

                    android:layout\_toLeftOf="@id/cartCount"

                    android:layout\_marginRight="5dp"

                    android:clickable="true"

                    android:drawableLeft="@drawable/ic\_cart\_24px"

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

                    android:gravity="center\_vertical"

                    android:text="Cart"

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

                <TextView

                    android:id="@+id/cartCount"

                    android:layout\_width="wrap\_content"

                    android:layout\_height="match\_parent"

                    android:layout\_gravity="end"

                    android:layout\_alignParentRight="true"

                    android:clickable="true"

                    android:gravity="center\_vertical"

                    android:text="0"

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

            </RelativeLayout>

        </androidx.appcompat.widget.Toolbar>

        <com.google.android.material.tabs.TabLayout

            android:id="@+id/tabs"

            android:layout\_width="match\_parent"

            android:layout\_height="wrap\_content"

            app:tabGravity="fill"

            android:layout\_gravity="end"

            app:tabMode="fixed" />

    </com.google.android.material.appbar.AppBarLayout>

</androidx.coordinatorlayout.widget.CoordinatorLayout>

HOME\_FRAGMENT.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:padding="12dp"

    android:layout\_height="match\_parent"

    tools:context=".Fragments.HomeFrag">

    <androidx.recyclerview.widget.RecyclerView

        android:layout\_width="match\_parent"

        android:layout\_height="wrap\_content"

        android:id="@+id/productList"

        />

</RelativeLayout>

PRODUCT\_FRAGMENT\_INFO:

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

<RelativeLayout 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:id="@+id/fragment\_product"

    android:layout\_width="match\_parent"

    android:layout\_height="match\_parent"

    tools:context=".Activities.ProductInfo">

    <com.google.android.material.appbar.AppBarLayout

        android:layout\_width="match\_parent"

        android:layout\_height="wrap\_content"

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

        <com.google.android.material.appbar.CollapsingToolbarLayout

            android:id="@+id/productTitle"

            android:layout\_width="match\_parent"

            android:layout\_height="200dp"

            app:layout\_scrollFlags="enterAlways|scroll"

            app:title="ProductName">

            <ImageView

                android:id="@+id/productImage"

                android:layout\_width="match\_parent"

                android:layout\_height="match\_parent"

                android:scaleType="centerCrop" />

            <androidx.appcompat.widget.Toolbar

                android:layout\_width="match\_parent"

                android:layout\_height="?actionBarSize"

                app:layout\_collapseMode="parallax" />

        </com.google.android.material.appbar.CollapsingToolbarLayout>

    </com.google.android.material.appbar.AppBarLayout>

    <com.google.android.material.button.MaterialButton

        android:id="@+id/confirmBooking"

        style="?android:attr/buttonBarButtonStyle"

        android:layout\_width="match\_parent"

        android:layout\_height="60dp"

        android:layout\_alignParentBottom="true"

        android:layout\_marginTop="-6dp"

        android:layout\_marginBottom="-6dp"

        android:gravity="center"

        android:text="Book"

        android:textAllCaps="false"

        android:textSize="20sp"

        app:cornerRadius="0dp" />

</RelativeLayout>

Recommendation Fragment.xml:

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

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

    android:layout\_width="match\_parent"

    android:padding="12dp"

    android:id="@+id/recoFrag"

    android:layout\_height="match\_parent">

    <androidx.recyclerview.widget.RecyclerView

        android:tag="reco"

        android:layout\_width="match\_parent"

        android:layout\_height="wrap\_content"

        android:id="@+id/productList" />

    <TextView

        android:id="@+id/emptyRecommendationPlaceHolder"

        android:layout\_width="match\_parent"

        android:layout\_height="wrap\_content"

        android:layout\_centerInParent="true"

        android:fontFamily="monospace"

        android:gravity="center"

        android:text="No requests in pending."

        android:textSize="23sp"

        android:visibility="invisible" />

</RelativeLayout>

MainActivity.java:

package com.OMarket.productsbookrecomendation.Utils;

import android.content.Context;

import android.graphics.Rect;

import android.view.View;

import androidx.annotation.DimenRes;

import androidx.annotation.NonNull;

import androidx.recyclerview.widget.RecyclerView;

public class RecyclerDecoration extends RecyclerView.ItemDecoration {

    private final int mItemOffset;

    private RecyclerDecoration(int itemOffset) {

        mItemOffset = itemOffset;

    }

    public RecyclerDecoration(@NonNull Context context, @DimenRes int itemOffsetId) {

        this(context.getResources().getDimensionPixelSize(itemOffsetId));

    }

    @Override

    public void getItemOffsets(@NonNull Rect outRect, @NonNull View view, @NonNull RecyclerView parent,

                               @NonNull RecyclerView.State state) {

        super.getItemOffsets(outRect, view, parent, state);

        outRect.set(mItemOffset, mItemOffset, mItemOffset, mItemOffset);

    }

}

Product Info Activity .java:

package com.OMarket.Activities;

import android.content.Context;

import android.content.SharedPreferences;

import android.net.Uri;

import android.os.Bundle;

import android.util.Log;

import android.view.View;

import android.widget.Button;

import android.widget.ImageView;

import android.widget.TextView;

import androidx.appcompat.app.AppCompatActivity;

import androidx.appcompat.widget.Toolbar;

import com.google.gson.Gson;

import com.squareup.picasso.Picasso;

import com. OMarket.Adapters.RecommendationAdapter;

import com. OMarket.Fragments.Recommendation;

import com. OMarket.R;

import com. OMarket.model.Booking;

import com. OMarket.model.Hotel;

import com. OMarket.model.HotelResult;

import com. OMarket.model.UserHotel;

import java.util.HashSet;

import java.util.List;

import java.util.Set;

public class ProductInfo extends AppCompatActivity {

    private Toolbar toolbar;

    private ImageView ProductImage;

    private TextView hotelDesc, views, drafts, completed;

    private Button book, draftBook;

    private RecommendationAdapter.ProductHolder ProductViewHolder;

    Product product;

    int pos;

    ProductResult ProductResult;

    @Override

    protected void onCreate(Bundle savedInstanceState) {

        super.onCreate(savedInstanceState);

        setContentView(R.layout.activity\_product\_info);

        toolbar = findViewById(R.id.toolbarInfo);

        ProductImage = findViewById(R.id.ProductImage);

        ProductDesc = findViewById(R.id.ProductDesc);

        book = findViewById(R.id.confirmBooking);

        draftBook = findViewById(R.id.draftBooking);

        views = findViewById(R.id.views);

        drafts = findViewById(R.id.draftText);

        completed = findViewById(R.id.completedText);

    }

    @Override

    protected void onResume() {

        super.onResume();

        Product = (Product) getIntent().getExtras().getSerializable("data");

        ProductResult = new Gson().fromJson(getProducts(), ProductResult.class);

        pos = getIntent().getExtras().getInt("pos");

        toolbar.setTitle(hotel.getName());

        setSupportActionBar(toolbar);

        Picasso

                .with(HotelInfo.this)

                .load(Uri.parse(hotel.getImageUrl()))

                .into(hotelImage);

        ProductDesc.setText(hotel.getDescription());

        views.setText(ProductResult.getProduct ().get(pos).getProduct () + " views");

        drafts.setText(hotelResult.getHotels().get(pos).getDraftBookings() + " pendings");

        completed.setText(hotelResult.getHotels().get(pos).getCompletedBookings() + " booked");

        book.setOnClickListener(new View.OnClickListener() {

            @Override

            public void onClick(View v) {

                setBooking(true);

                finish();

            }

        });

        draftBook.setOnClickListener(new View.OnClickListener() {

            @Override

            public void onClick(View v) {

                setBooking(false);

                MainActivity.updatec(1);

                Log.d("ononon", "onClick: ");

                finish();

            }

        });

    }

    public String getHotels() {

        SharedPreferences sp = getSharedPreferences("Product", Context.MODE\_PRIVATE);

        Gson gson = new Gson();

        if (sp.contains("data")) {

            return sp.getString("data", null);

        } else {

            return null;

        }

    }

    private void setBooking(Boolean complete) {

        UserProduct product1 = new UserProduct();

        product1.setName(product.getName());

        product 1.setCompleted(complete);

        product 1.setTags(product.getTags());

        Booking booking = new Booking();

      List<UserProduct > userProducts = MainActivity.bookings.getUserProducts();

        userProducts.add(product1);

        MainActivity.bookings.setUserProducts(userProducts);

        Set<String> s = new HashSet<>();

        for (UserProduct userProduct : MainActivity.bookings.getUserProducts()) {

            if (userProducts.getCompleted()) {

                for (String ss : userProducts.getTags().split("\n")) {

                    ss = ss.replace("null", "");

                    s.add(ss);

                }

            }

        }

        String sa = "";

        for (String sss : s) {

            sa += sss;

            Recommendation.tagSet.add(sss);

        }

        if (complete) {

            int c = Integer.valueOf(ProductsResult.getHotels().get(pos).getCompletedBookings());

            ProductsResult.getHotels().get(pos).setCompletedBookings(String.valueOf(c + 1));

            storeUpdates(hotelResult);

        } else {

            int c = Integer.valueOf(ProductsResult.getProducts ().get(pos).getDraftBookings());

            productResult.getProducts ().get(pos).setDraftBookings(String.valueOf(c + 1));

            storeUpdates(productsResult);

        }

    }

    public void storeUpdates(ProductsResult productsResult) {

        SharedPreferences.Editor spe = getSharedPreferences("Product", Context.MODE\_PRIVATE).edit();

        String save = new Gson().toJson(productsResult);

        spe.putString("data", save);

        spe.apply();

    }

}

Login Activity.java:

package com.OMarket.Activities;

import android.content.SharedPreferences;

import android.os.Bundle;

import android.view.View;

import android.widget.Button;

import androidx.annotation.NonNull;

import androidx.appcompat.app.AppCompatActivity;

import com.google.android.material.textfield.TextInputLayout;

import com.productbookrecomendation.R;

import static com.product.bookrecomendation.Utils.Utilities.newActivity;

public class LoginActivity extends AppCompatActivity implements View.OnClickListener {

    private Button login;

    private TextInputLayout username;

    @Override

    protected void onCreate(Bundle savedInstanceState) {

        super.onCreate(savedInstanceState);

        setContentView(R.layout.activity\_login);

        username = findViewById(R.id.username);

        login = findViewById(R.id.loginBtn);

        login.setOnClickListener(this);

    }

    @Override

    public void onClick(View v) {

        if (v.getId() == R.id.loginBtn) {

            if (getUsername().equals("")) {

                setError(username, "Enter valid username with length greater than 5 char");

            } else {

                SharedPreferences sharedPreferences = getSharedPreferences(getUsername(), MODE\_PRIVATE);

                SharedPreferences.Editor editor = getSharedPreferences(getUsername(), MODE\_PRIVATE).edit();

                if (sharedPreferences.getString("active", "in").equals("in")) {

                    SharedPreferences.Editor edit = getSharedPreferences("cur", MODE\_PRIVATE).edit();

                    edit.putString("user", getUsername());

                }

                newActivity(LoginActivity.this, MainActivity.class);

            }

        }

    }

    private void setError(@NonNull TextInputLayout username, String s) {

        username.setError(s);

    }

    private String getUsername() {

        return username.getEditText().getText().toString();

    }

}

Product Adapter.Java:

package com.OMarket.productbookrecomendation.Adapters;

import android.content.Context;

import android.content.Intent;

import android.content.SharedPreferences;

import android.net.Uri;

import android.view.LayoutInflater;

import android.view.View;

import android.view.ViewGroup;

import android.widget.Button;

import android.widget.ImageView;

import android.widget.TextView;

import androidx.annotation.NonNull;

import androidx.recyclerview.widget.RecyclerView;

import com.google.gson.Gson;

import com.squareup.picasso.Picasso;

import com.OMarket.productbookrecomendation.Activities.ProductInfo;

import com.OMarket.productbookrecomendation.R;

import com.OMarket.productbookrecomendation.model.Product;

import com. OMarket.productbookrecomendation.model.ProductResult;

import java.util.List;

public class ProductAdapter extends RecyclerView.Adapter<ProductAdapter.ProductViewHolder> {

    private final Context context;

    private final LayoutInflater inflater;

    private View view;

    private ProductViewHolder productViewHolder;

    private List<Product> products;

    private Product productResult = new productResult();

    public ProductAdapter(Context context) {

        this.context = context;

        inflater = LayoutInflater.from(context);

    }

    public void setProducts(List<Hotel> lists) {

        this.products = lists;

        ProductsResult.setproducts (products);

        ProductsResult productsResult = new productsResult();

        productResult.setproducts (products);

        storeUpdates(productResult);

        notifyDataSetChanged();

    }

    public void storeUpdates(ProductsResult productResult) {

        SharedPreferences.Editor spe = context.getSharedPreferences("hotel", Context.MODE\_PRIVATE).edit();

        Gson gson = new Gson();

        spe.putString("data", gson.toJson(productResult));

        spe.apply();

    }

    @NonNull

    @Override

    public ProductViewHolder onCreateViewHolder(@NonNull ViewGroup parent, int viewType) {

        view = inflater.inflate(R.layout.hotelcard, parent, false);

       productViewHolder = new productViewHolder(view);

        return productViewHolder;

    }

    @Override

    public void onBindViewHolder(@NonNull ProductViewHolder holder, final int position) {

        Picasso

                .with(context)

                .load(Uri.parse(producst.get(position).getImageUrl()))

                .into(holde.productImage);

        holder.productRatings.setText(product.get(position).getRatings());

        holder.tags.setText(products.get(position).getTags());

        holder. productsName.setText(products.get(position).getName());

        holder. productsViews.setText(products.get(position).getVisits() + "\nViews");

        holder.bookButton.setOnClickListener(new View.OnClickListener() {

            @Override

            public void onClick(View v) {

                int vis = Integer.valueOf(hotels.get(position).getVisits());

                products.get(position).setVisits(String.valueOf(++vis));

                setHotels(hotels);

                Intent i = new Intent(context, ProductInfo.class);

                i.putExtra("hotels", productResult);

                i.putExtra("pos", position);

                i.putExtra("data", products.get(position));

                context.startActivity(i);

            }

        });

    }

    @Override

    public int getItemCount() {

        return products.size();

    }

    class ProductViewHolder extends RecyclerView.ViewHolder {

        ImageView productImage;

        TextView productRatings, productName, productViews;

        TextView tags;

        Button bookButton;

        public ProductsViewHolder(@NonNull View itemView) {

            super(itemView);

           productImage = itemView.findViewById(R.id.productImage);

            productRatings = itemView.findViewById(R.id.ratings);

            bookButton = itemView.findViewById(R.id.productBookButton);

            tags = itemView.findViewById(R.id.tagsList);

            productName = itemView.findViewById(R.id.productName);

            productsViews = itemView.findViewById(R.id.productCardViews);

        }

    }

}

RecommendationAdapter.java:

package com.OMarket.productbookrecomendation.Adapters;

import android.annotation.SuppressLint;

import android.content.Context;

import android.content.Intent;

import android.net.Uri;

import android.view.LayoutInflater;

import android.view.View;

import android.view.ViewGroup;

import android.widget.Button;

import android.widget.ImageView;

import android.widget.TextView;

import androidx.annotation.NonNull;

import androidx.recyclerview.widget.RecyclerView;

import com.squareup.picasso.Picasso;

import com.OMarket.product.Activities.ProductInfo;

import com.OMarket.productbookrecomendation.R;

import com.OMarket.productbookrecomendation.model.Product;

import java.io.Serializable;

import java.util.ArrayList;

import java.util.HashSet;

import java.util.List;

import java.util.Set;

public class RecommendationAdapter extends RecyclerView.Adapter<RecommendationAdapter.ProductViewHolder> implements Serializable {

    private final Context context;

    private final LayoutInflater inflater;

    private View view;

    private ProductViewHolder ProductViewHolder;

    private List<Product>products;

    public RecommendationAdapter(Context context) {

        this.context = context;

        inflater = LayoutInflater.from(context);

    }

    public void setProducts(Set<Product> lists) {

        this.products = new ArrayList<>(lists);

        notifyDataSetChanged();

    }

    @NonNull

    @Override

    public ProductViewHolder onCreateViewHolder(@NonNull ViewGroup parent, int viewType) {

        view = inflater.inflate(R.layout.hotelcard, parent, false);

        productViewHolder = new ProductViewHolder(view);

        return productViewHolder;

    }

    @Override

    public void onBindViewHolder(@NonNull final ProductViewHolder holder, @SuppressLint("RecyclerView") final int position) {

        Picasso

                .with(context)

                .load(Uri.parse(products.get(position).getImageUrl()))

                .into(holder.productsImage);

        Holder.productsRatings.setText(products.get(position).getRatings());

        holder.tags.setText(hotels.get(position).getTags());

        holder.productsName.setText(products.get(position).getName());

        holder.productsViews.setText(products get(position).getVisits() + "\nViews");

        holder.bookButton.setOnClickListener(new View.OnClickListener() {

            @Override

            public void onClick(View v) {

                int vis = Integer.valueOf(hotels.get(position).getVisits());

               products.get(position).setVisits(String.valueOf(++vis));

                setProducts(new HashSet<>(hotels));

                Intent i = new Intent(context,ProductInfo.class);

                i.putExtra("data", products.get(position));

                context.startActivity(i);

            }

        });

    }

    @Override

    public int getItemCount() {

        return products.size();

    }

    public class ProductsViewHolder extends RecyclerView.ViewHolder implements UpdateListener, Serializable {

        TextView productViews;

        ImageView productImage;

        TextView productRatings, productName;

        TextView tags;

        Button bookButton;

        public ProductViewHolder(@NonNull final View itemView) {

            super(itemView);

            productImage = itemView.findViewById(R.id.productImage);

            productRatings = itemView.findViewById(R.id.ratings);

            bookButton = itemView.findViewById(R.id. productBookButton);

            tags = itemView.findViewById(R.id.tagsList);

            productName = itemView.findViewById(R.id.productName);

            productViews = itemView.findViewById(R.id.productCardViews);

        }

        @Override

        public void update() {

            notifyItemChanged(getAdapterPosition());

        }

    }

    public interface UpdateListener extends Serializable {

        void update();

    }

}

HomeFrag.java:

package com.OMarket.productbookrecomendation.Adapters;

import android.content.Context;

import android.content.SharedPreferences;

import android.os.Bundle;

import android.view.LayoutInflater;

import android.view.View;

import android.view.ViewGroup;

import androidx.annotation.NonNull;

import androidx.fragment.app.Fragment;

import androidx.recyclerview.widget.LinearLayoutManager;

import androidx.recyclerview.widget.RecyclerView;

import com.google.gson.Gson;

import com.turquoise.hotelbookrecomendation.Adapters.HotelAdapter;

import com.turquoise.hotelbookrecomendation.R;

import com.turquoise.hotelbookrecomendation.model.HotelResult;

import java.io.BufferedReader;

import java.io.IOException;

import java.io.InputStreamReader;

public class HomeFrag extends Fragment {

    private static final String ARG\_PARAM1 = "param1";

    private static final String ARG\_PARAM2 = "param2";

    private String mParam1;

    private String mParam2;

    private HotelAdapter hotelAdapter;

    HotelResult hotelResult;

    RecyclerView recyclerView;

    int lastPos=0;

    public HomeFrag() {

    }

    public static HomeFrag newInstance(String param1, String param2) {

        HomeFrag fragment = new HomeFrag();

        Bundle args = new Bundle();

        args.putString(ARG\_PARAM1, param1);

        args.putString(ARG\_PARAM2, param2);

        fragment.setArguments(args);

        return fragment;

    }

    @Override

    public void onCreate(Bundle savedInstanceState) {

        super.onCreate(savedInstanceState);

        if (getArguments() != null) {

            mParam1 = getArguments().getString(ARG\_PARAM1);

            mParam2 = getArguments().getString(ARG\_PARAM2);

        }

    }

    @Override

    public View onCreateView(LayoutInflater inflater, ViewGroup container,

                             Bundle savedInstanceState) {

        View view=inflater.inflate(R.layout.fragment\_home, container, false);

        recyclerView=view.findViewById(R.id.hotelList);

        return view;

    }

    @Override

    public void onSaveInstanceState(@NonNull Bundle outState) {

        super.onSaveInstanceState(outState);

    }

    @Override

    public void onPause() {

        super.onPause();

        lastPos = ((LinearLayoutManager)recyclerView.getLayoutManager()).findFirstCompletelyVisibleItemPosition();

    }

    public String getHotels(){

        SharedPreferences sp=getActivity().getSharedPreferences("Product",Context.MODE\_PRIVATE);

        Gson gson=new Gson();

        if(sp.contains("data")){

            return sp.getString("data",null);

        }

        else{

            return null;

        }

    }

    @Override

    public void onResume() {

        super.onResume();

        HotelAdapter hotelAdapter=new HotelAdapter(getContext());

        Gson gson=new Gson();

        if(getHotels()==null) {

            BufferedReader br = null;

            try {

                br = new BufferedReader(new InputStreamReader(getContext().getAssets().open("hotels.json")));

            } catch (IOException e) {

                e.printStackTrace();

            }

            hotelResult =gson.fromJson(br, HotelResult.class);

        }

        else {

            hotelResult=gson.fromJson(getHotels(),HotelResult.class);

        }

        hotelAdapter.setHotels(hotelResult.getHotels());

        recyclerView.setLayoutManager(new LinearLayoutManager(getContext()));

        recyclerView.setAdapter(hotelAdapter);

        recyclerView.getLayoutManager().scrollToPosition(lastPos);

    }

    // TODO: Rename method, update argument and hook method into UI event

    public void onButtonPressed(String uri) {

    }

    @Override

    public void onAttach(Context context) {

        super.onAttach(context);

    }

    public void updateList() {

        if(hotelAdapter!=null){

            hotelAdapter.setHotels(hotelResult.getHotels());

        }

    }

    @Override

    public void onDetach() {

        super.onDetach();

    }

}

Booking.java:

package com.OMarket.hotelbookrecomendation.model;

import com.google.gson.annotations.Expose;

import com.google.gson.annotations.SerializedName;

import java.util.ArrayList;

import java.util.List;

public class Booking {

    @SerializedName("user\_product")

    @Expose

    private List<UserProduct> UserProducts = new ArrayList<>();

    public List<UserProduct> getUserProducts() {

        return userProducts;

    }

    public void setUserProducts(List<UserProducts> userProducts) {

        this.userProducts = userProducts;

    }

}

OUTPUT:



 