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KHOA CÔNG NGHỆ THÔNG TIN

Slider Images

Nội dung

- Slide Images with ViewFlipper
- Slide Images with ViewPager and Indicator
- Slide Images with ViewPager2 and Indicator3
- Slide Imgaes with SliderView

1. Slide Images with ViewFlipper

- Bước 1: Cấp quyền Internet

```
<uses-permission android:name="android.permission.ACCESS_WIFI_STATE" />
<uses-permission android:name="android.permission.ACCESS_NETWORK_STATE" />
<uses-permission android:name="android.permission.INTERNET" />
```

```
android:usesCleartextTraffic="true"
```

Bước 2: Thiết kế giao diện

```
<?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"
    tools:context=".ViewFlipperActivity">
    <ViewFlipper
        android:id="@+id/viewFlipperMain"
        android:layout_width="match_parent"
        android:layout_height="160dp"
        android:layout_marginStart="16dp"
        android:layout_marginTop="8dp"
        android:layout_marginEnd="16dp">
    </ViewFlipper>
</LinearLayout>
```

Slide Images with ViewFlipper

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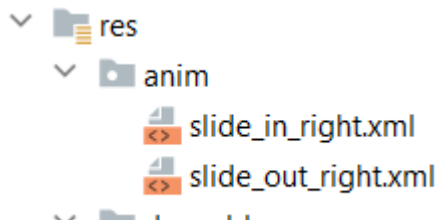
Bước 3: Tạo Animation




```xml
<?xml version="1.0" encoding="utf-8"?>
<set xmlns:android="http://schemas.android.com/apk/res/android"
    android:shareInterpolator="false"
    android:duration="2000">
    <translate android:fromXDelta="-100%"
        android:toXDelta="0%"/>
    <alpha android:fromAlpha="0.0" android:toAlpha="1.0"/>

</set>
```

Slide_out_right.xml

```xml
<?xml version="1.0" encoding="utf-8"?>
<set xmlns:android="http://schemas.android.com/apk/res/android"
    android:shareInterpolator="false"
    android:duration="2000">
    <translate android:fromXDelta="0%"
        android:toXDelta="-100%"/>
    <alpha android:fromAlpha="1.0" android:toAlpha="0.0"/>
</set>
```

Slide Images with ViewFlipper

Bước 4: Viết hàm ViewFlipper

```
public class ViewFlipperActivity extends AppCompatActivity {
    ViewFlipper viewFlipperMain;
    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_view_flipper);
        viewFlipperMain = findViewById(R.id.viewFlipperMain);
        ActionViewFlipperMain();
    }
    //hàm Flipper
    private void ActionViewFlipperMain() {
        List<String> arrayListFlipper = new ArrayList<>();
        arrayListFlipper.add("http://app.iotstar.vn/appfoods/flipper/quangcao.png");
        arrayListFlipper.add("http://app.iotstar.vn/appfoods/flipper/coffee.jpg");
        arrayListFlipper.add("http://app.iotstar.vn/appfoods/flipper/companypizza.jpeg");
        arrayListFlipper.add("http://app.iotstar.vn/appfoods/flipper/themoingon.jpeg");
        for(int i = 0; i<arrayListFlipper.size();i++){
            ImageView imageView = new ImageView(getApplicationContext());
            Glide.with(getApplicationContext()).load(arrayListFlipper.get(i)).into(imageView);
            imageView.setScaleType(ImageView.ScaleType.FIT_XY);
            viewFlipperMain.addView(imageView);
        }
        viewFlipperMain.setFlipInterval(3000);
        viewFlipperMain.setAutoStart(true);
        //thiết lập animation cho flipper
        Animation slide_in = AnimationUtils.loadAnimation(getApplicationContext(),R.anim.slide_in_right);
        Animation slide_out = AnimationUtils.loadAnimation(getApplicationContext(),R.anim.slide_out_right);
        viewFlipperMain.setInAnimation(slide_in);
        viewFlipperMain.setOutAnimation(slide_out);
    }
}
```

2. Slide Images with CircleIndicator và ViewPager

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- Bước 1: Thêm thư viện CircleIndicator

  https://github.com/ongakuer/CircleIndicator

  implementation 'me.relex:circleindicator:2.1.6'

- Bước 2: Chuẩn bị hình bỏ vào thư mục drawable hoặc link ảnh

- Bước 3: Tạo model Images

```
public class Images {
    private int imagesId;

    public Images(int imagesId) { this.imagesId = imagesId; }

    public int getImagesId() { return imagesId; }

    public void setImagesId(int imagesId) { this.imagesId = imagesId; }
}
```

Bước 4: Thiết kế giao diện 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"
    tools:context=".MainActivity">
        <androidx.viewpager.widget.ViewPager
            android:id="@+id/viewpage"
            android:layout_width="match_parent"
            android:layout_height="220dp"/>
        <me.relex.circleindicator.CircleIndicator
            android:id="@+id/circle_indicator"
            android:layout_width="wrap_content"
            android:layout_height="40dp"
            android:layout_margin="5dp"
            android:layout_gravity="center_horizontal"
            app:ci_drawable="@drawable/bg"
            />
</LinearLayout>
```

Bước 4: item_images.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="match_parent">
    <ImageView
       android:id="@+id/imgView"
        android:scaleType="centerCrop"
        android:layout_width="wrap_content"
        android:layout_height="match_parent"/>

</LinearLayout>
```

Bước 5: Tạo Adapter

```
public class ImagesViewPageAdapter extends PagerAdapter {
    private List<Images> imagesList;
    public ImagesViewPageAdapter(List<Images> imagesList) {
        this.imagesList = imagesList;
    }
    @NonNull
    @Override
    public Object instantiateItem(@NonNull ViewGroup container, int position) {
        View view = LayoutInflater.from(container.getContext()).inflate(R.layout.item_images,container, attachToRoot: false);
        ImageView imageView = view.findViewById(R.id.imgView);
        Images images = imagesList.get(position);
        imageView.setImageResource(images.getImagesId());
        //add view
        container.addView(view);
        return view;
    }
    @Override
    public int getCount() {
        if(imagesList != null){
            return imagesList.size();
        }
        return 0;
    }
    @Override
    public boolean isViewFromObject(@NonNull View view, @NonNull Object object) {
        return view == object;
    }
    @Override
    public void destroyItem(@NonNull ViewGroup container, int position, @NonNull Object object) {
        container.removeView((View) object);
    }
}
```

Bước 6: Viết hàm trong MainActivity.java

```
public class MainActivity extends AppCompatActivity {
    private ViewPager viewPager;
    private CircleIndicator circleIndicator;
    private List<Images> imagesList;
    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_main);
        viewPager = findViewById(R.id.viewpage);
        circleIndicator = findViewById(R.id.circle_indicator);

        imagesList = getListImages();
         ImagesViewPageAdapter adapter = new ImagesViewPageAdapter(imagesList);
        viewPager.setAdapter(adapter);

        //liên kết viewpager và indicator
        circleIndicator.setViewPager(viewPager);
    }
    private List<Images> getListImages(){
        List<Images> list = new ArrayList<>();
        list.add(new Images(R.drawable.quangcao));
        list.add(new Images(R.drawable.coffee));
        list.add(new Images(R.drawable.companypizza));
        list.add(new Images(R.drawable.themoingon));
        return list;
    }
}
```

- Bước 7: Tự động chuyển ảnh Autorun CircleIndicator
  - Khai báo Handler trên hàm onCreate() của MainActivity.java

```
//autorun
private Handler handler = new Handler();
private Runnable runnable = new Runnable() {
    @Override
    public void run() {
        if(viewPager.getCurrentItem() == imagesList.size() - 1){
            viewPager.setCurrentItem(0);
        }else {
            viewPager.setCurrentItem(viewPager.getCurrentItem() + 1);
        }
    }
};
```

Bước 7: Autorun CircleIndicator

- Gọi Handler và lắng nghe viewpage trong hàm onCreate() của MainActivity.java

```
//goi runable
handler.postDelayed(runnable, delayMillis: 3000);
//lắng nghe viewpager chuyển trang
viewPager.addOnPageChangeListener(new ViewPager.OnPageChangeListener() {
    @Override
    public void onPageScrolled(int position, float positionOffset, int positionOffsetPixels) {
    }
    @Override
    public void onPageSelected(int position) {
        handler.removeCallbacks(runnable);
        handler.postDelayed(runnable, delayMillis: 3000);
    }
    @Override
    public void onPageScrollStateChanged(int state) {
    }
});
```

Bước 7: Autorun CircleIndicator

- Thêm hàm onPause() và onResume() trong class MainActivity.java

```
@Override
protected void onPause() {
    super.onPause();
    handler.removeCallbacks(runnable);
}

@Override
protected void onResume() {
    super.onResume();
    handler.postDelayed(runnable, delayMillis: 3000);
}
```

Bài tập

- Cho 02 Model sau:

```
public class ImagesSlider implements Serializable {

    private int id;
    private int position;
    private String avatar;
```

```
public class MessageModel implements Serializable {
    private boolean success;
    private String message;
    private List<ImagesSlider> result;
```

- Hãy sử dụng ViewPager, CricleIndicator và Retrofit để lấy ảnh từ API server sau hiển thị như hình http://app.iotstar.vn/appfoods/

```
@FormUrlEncoded
@POST("newimagesmanager.php")
Call<MessageModel> LoadImageSlider(@Field("position") int position);
```

3. Slide Images with CircleIndicator3 và ViewPager2

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Bước 1: Thêm thư viện và Thiết kế giao diện

https://github.com/ongakuer/CircleIndicator

implementation 'me.relex:circleindicator:2.1.6'

item_images.xml

```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="match_parent">
    <ImageView
       android:id="@+id/imgView"
        android:scaleType="centerCrop"
        android:layout_width="wrap_content"
        android:layout_height="match_parent"/>

</LinearLayout>
```

```xml
    <androidx.viewpager2.widget.ViewPager2
        android:id="@+id/viewpage2"
        android:layout_width="match_parent"
        android:layout_height="220dp"/>
    <me.relex.circleindicator.CircleIndicator3
android:id="@+id/circle_indicator3"
app:ci_drawable="@drawable/bg"
android:layout_width="match_parent"
android:layout_height="40dp"
android:layout_margin="5dp"
app:ci_gravity="right|center"
android:layout_alignParentRight="true"/>
```

- Bước 2: Chuẩn bị hình bỏ vào thư mục drawable hoặc link ảnh
- Bước 3: Tạo model Images

```
public class Images implements Serializable {
    private int imagesId;


    public Images(int imagesId) { this.imagesId = imagesId; }

    public int getImagesId() { return imagesId; }

    public void setImagesId(int imagesId) { this.imagesId = imagesId; }
}
```

Slide Images with CircleIndicator3 và ViewPager2

Bước 4: Tao Adapter

```
public class ImagesViewPager2Adapter extends RecyclerView.Adapter<ImagesViewPager2Adapter.ImagesViewHolder> {
    private List<Images> imagesList;

    public ImagesViewPager2Adapter(List<Images> imagesList) { this.imagesList = imagesList; }

    @NonNull
    @Override
    public ImagesViewHolder onCreateViewHolder(@NonNull ViewGroup parent, int viewType) {
        View view = LayoutInflater.from(parent.getContext()).inflate(R.layout.item_images,parent, attachToRoot: false);
        return new ImagesViewHolder(view);
    }

    @Override
    public void onBindViewHolder(@NonNull ImagesViewHolder holder, int position) {
        //set dữ liệu lên ảnh
        Images images = imagesList.get(position);
        if(images == null){
            return;
        }
        holder.imageView.setImageResource(images.getImagesId());
    }

    @Override
    public int getItemCount() {
        if(imagesList != null){
            return imagesList.size();
        }
        return 0;
    }
```

- Bước 4: Tạo Adapter

```
public class ImagesViewHolder extends RecyclerView.ViewHolder{
    private ImageView imageView;

    public ImagesViewHolder(@NonNull View itemView) {
        super(itemView);
        imageView = itemView.findViewById(R.id.imgView);
    }
}
}
```

Bước 5: Xử lý trong MainActivity.java

```
private ViewPager2 viewPager2;
private CircleIndicator3 circleIndicator3;
private List<Images> imagesList1;
```

```
// anh xạ viewpager2
    viewPager2 = findViewById(R.id.viewpage2);
    circleIndicator3 = findViewById(R.id.circle_indicator3);
    imagesList1 = getListImages() ;
    ImagesViewPager2Adapter adapter1 = new ImagesViewPager2Adapter(imagesList1);
    viewPager2.setAdapter(adapter1);
//liên kết viewpager2 và indicator3
    circleIndicator3.setViewPager(viewPager2);
```

```
private List<Images> getListImages(){
    List<Images> list = new ArrayList<>();
    list.add(new Images(R.drawable.quangcao));
    list.add(new Images(R.drawable.coffee));
    list.add(new Images(R.drawable.companypizza));
    list.add(new Images(R.drawable.themoingon));
    return list;
}
```

- Bước 6: AutoRun

```
//autorun
private Handler handler = new Handler();
private Runnable runnable = new Runnable() {
    @Override
    public void run() {
        if(viewPager.getCurrentItem() == imagesList.size() - 1){
            viewPager.setCurrentItem(0);
        }else {
            viewPager.setCurrentItem(viewPager.getCurrentItem() + 1);
        }
        if(viewPager2.getCurrentItem() == imagesList1.size() - 1){
            viewPager2.setCurrentItem(0);
        }else {
            viewPager2.setCurrentItem(viewPager2.getCurrentItem() + 1);
        }
    }
};
```

- Bước 6: AutoRun

```
//lắng nghe viewpager chuyển trang
viewPager2.registerOnPageChangeCallback(onPageSelected(position) → {
        super.onPageSelected(position);
        handler.removeCallbacks(runnable);
        handler.postDelayed(runnable, delayMillis: 3000);
});
//viewpager2 transformers
//viewPager2.setPageTransformer(new ZoomOutPageTransformer());
viewPager2.setPageTransformer(new DepthPageTransformer());
```

Slide Images with CircleIndicator3 và ViewPager2

Bước 6: AutoRun

```
public class DepthPageTransformer implements ViewPager2.PageTransformer {
    private static final float MIN_SCALE = 0.75f;
    public void transformPage(View view, float position) {
        int pageWidth = view.getWidth();
        if (position < -1) { // [-Infinity,-1)
            // This page is way off-screen to the left.
            view.setAlpha(0f);
        } else if (position <= 0) { // [-1,0]
            // Use the default slide transition when moving to the left pa
            view.setAlpha(1f);
            view.setTranslationX(0f);
            view.setTranslationZ(0f);
            view.setScaleX(1f);
            view.setScaleY(1f);
        } else if (position <= 1) { // (0,1]
            // Fade the page out.
            view.setAlpha(1 - position);
            // Counteract the default slide transition.
            view.setTranslationX(pageWidth * -position);
            // Move it behind the left page
            view.setTranslationZ(-1f);
            // Scale the page down (between MIN_SCALE and 1).
            float scaleFactor = MIN_SCALE
                    + (1 - MIN_SCALE) * (1 - Math.abs(position));
            view.setScaleX(scaleFactor);
            view.setScaleY(scaleFactor);
        } else { // (1,+Infinity]
            // This page is way off-screen to the right.
            view.setAlpha(0f);
        }
    }
```

```
public class ZoomOutPageTransformer implements ViewPager2.PageTransformer {
    private static final float MIN_SCALE = 0.85f;
    private static final float MIN_ALPHA = 0.5f;
    public void transformPage(View view, float position) {
        int pageWidth = view.getWidth();
        int pageHeight = view.getHeight();
        if (position < -1) { // [-Infinity,-1)
            // This page is way off-screen to the left.
            view.setAlpha(0f);
        } else if (position <= 1) { // [-1,1]
            // Modify the default slide transition to shrink the page as well.
            float scaleFactor = Math.max(MIN_SCALE, 1 - Math.abs(position));
            float vertMargin = pageHeight * (1 - scaleFactor) / 2;
            float horzMargin = pageWidth * (1 - scaleFactor) / 2;
            if (position < 0) {
                view.setTranslationX(horzMargin - vertMargin / 2);
            } else {
                view.setTranslationX(-horzMargin + vertMargin / 2);
            }
            // Scale the page down (between MIN_SCALE and 1).
            view.setScaleX(scaleFactor);
            view.setScaleY(scaleFactor);
            // Fade the page relative to its size.
            view.setAlpha(MIN_ALPHA +
                    (scaleFactor - MIN_SCALE) /
                            (1 - MIN_SCALE) * (1 - MIN_ALPHA));
        } else { // (1,+Infinity]
            // This page is way off-screen to the right.
            view.setAlpha(0f);
        }
    }
```

4. Slide Images with SliderView

- Bước 1: Thêm thư viện và thiết kế giao diện
- Bước 2: Tạo Adapter
- Bước 3: Viết code

4. Slide Images with SliderView

- Bước 1: Thêm thư viện và thiết kế giao diện
- Bước 2: Tạo Adapter
- Bước 3: Viết code

4. Slide Images with SliderView

- Bước 1: Thêm thư viện và thiết kế giao diện

```
//slider
implementation 'com.github.smarteist:autoimageslider:1.4.0'
```

settings.gradle (ViewFlipper Anh CircleIndicator)

Gradle files have changed since last project sync. A project sync may be necessary for the IDE to work properly.

```
1  pluginManagement { PluginManagementSpec it ->
2      repositories { RepositoryHandler it ->
3          gradlePluginPortal()
4          google()
5          jcenter()
6          mavenCentral()
7      }
8  }
9  dependencyResolutionManagement { DependencyResolutionManagement it ->
10     repositoriesMode.set(RepositoriesMode.FAIL_ON_PROJECT_REPOS)
11     repositories { RepositoryHandler it ->
12         google()
13         jcenter()
14         mavenCentral()
15     }
16 }
17 rootProject.name = "ViewFlipper Anh CircleIndicator"
18 include ':app'
```

Bổ sung hàm jcenter() vào

- Bước 1: Thêm thư viện và thiết kế giao diện

```
<com.smarteist.autoimageslider.SliderView
    android:id="@+id/imageSlider"
    android:layout_width="match_parent"
    android:layout_height="180dp"
    app:sliderAnimationDuration="600"
    app:sliderAutoCycleDirection="back_and_forth"
    app:sliderAutoCycleEnabled="true"
    app:sliderIndicatorAnimationDuration="600"
    app:sliderIndicatorGravity="center_horizontal|bottom"
    app:sliderIndicatorMargin="20dp"
    app:sliderIndicatorOrientation="horizontal"
    app:sliderIndicatorPadding="2dp"
    app:sliderIndicatorRadius="1dp"
    app:sliderScrollTimeInSec="3"
    app:sliderStartAutoCycle="true"/>
```

4. Slide Images with SliderView

Bước 2: Tạo Adapter

```
public class SliderAdapter  extends SliderViewAdapter<SliderAdapter.SliderHolder> {
    private Context context;
    private ArrayList<Integer> arrayList;

    public SliderAdapter(Context context, ArrayList<Integer> arrayList) {
        this.context = context;
        this.arrayList = arrayList;
    }
    @Override
    public SliderHolder onCreateViewHolder(ViewGroup parent) {
        View view = LayoutInflater.from(parent.getContext()).inflate(R.layout.images_slider_shoppe,parent, attachToRoot: false);
        return new SliderHolder(view);
    }
    @Override
    public void onBindViewHolder(SliderHolder viewHolder, int position) {
        Glide.with(context).load(arrayList.get(position)).into(viewHolder.imageView);
    }
    @Override
    public int getCount() { return arrayList.size(); }

    public class SliderHolder extends SliderViewAdapter.ViewHolder{
        private ImageView imageView;
        public SliderHolder(View itemView) {
            super(itemView);
            imageView = itemView.findViewById(R.id.iv_auto_image_slider);
        }
    }
}
```

4. Slide Images with SliderView

- Bước 3: Xử lý trong hàm onCreate() của MainActivity

```
private SliderView sliderView;
private ArrayList<Integer> arrayList;
private SliderAdapter sliderAdapter;
```

Khai báo biến toàn cục

```
sliderView = findViewById(R.id.imageSlider);
arrayList = new ArrayList<>();
arrayList.add(R.drawable.shoppe1);
arrayList.add(R.drawable.shoppe2);
arrayList.add(R.drawable.shoppe1);
arrayList.add(R.drawable.shoppe4);

sliderAdapter = new SliderAdapter(getApplicationContext(),arrayList);
sliderView.setSliderAdapter(sliderAdapter);
sliderView.setIndicatorAnimation(IndicatorAnimationType.WORM);
sliderView.setAutoCycleDirection(SliderView.AUTO_CYCLE_DIRECTION_RIGHT);
sliderView.setIndicatorSelectedColor(getResources().getColor(R.color.red));
sliderView.setIndicatorUnselectedColor(Color.GRAY);
sliderView.startAutoCycle();
sliderView.setScrollTimeInSec(5);
```

Gọi Adapter, truyền dữ liệu và xác lập thuộc tính của sliderView

Thông tin liên lạc

- Nguyễn Hữu Trung
- 0908617108
- trungnh@hcmute.edu.vn
- utex.hcmute.edu.vn