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Drawing and Working with Animation

* Explain Types of Animation with its advantages and disadvantages.

=> Animation in Android Application used to provides dynamic visual effects.

Animation is used to enhance user experience and enhance users with interactive elements.

There are Main Three Types of Animation.

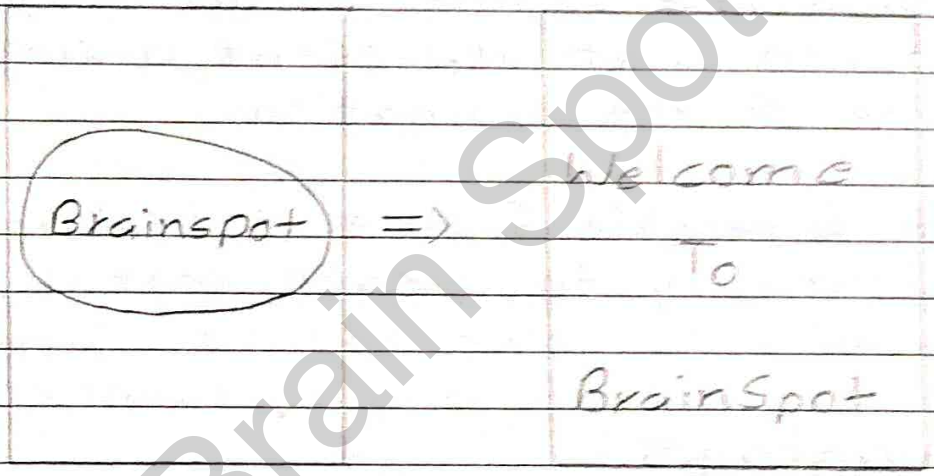
1) View Animation
2) Property Animation
3) Drawable Animation

1 View Animation:

View Animations are commonly used in Android Apptication to create simple and straightforward animations for views.

View Animation are relatively simple to implement and can enhance the User experience.

Example: Used to display welcome message when the app starts or Fade out a dialog box after user Action.



2 Property Animation:

Property Animation allowing for more complex and customizable animations compared to view animation.

Property Animation in Android provide detailed control over animating properties of views or objects.

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3 Drawable Animation :

Drawable Animation in Android are used to create animations by displaying a sequence of drawable Frames in a specified order and duration.

A Drawable Frame is an image resource that represent a single Frame of the animation.

Each drawable Frame is displayed sequentially to create motion.

=> Advantages :

1 Enhanced User Experience

2 Visual Feedback

3 Interactive Feedback.

4 Guided Attention.

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=> Disadvantages:

1 Overuse

2 Compatibility Issues

3 Development Complexity

4 Performance Impact

* Explain How to add animation in Android with example.

=> This are the steps to Add Animation in Android.

1 Add Animation Resources:

You can define animation resources in XML File in the res/anim directory.

2 Initialize Views in Java:

In MainActivity.java, initialize the views from the XML Layout.

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3 Create Animation Objects:

Create Animation Objects in java using classes.

4 Set Animation Properties:

Configure the animation properties such as Duration, repeat mode etc.

5 Apply Animation to Views:

Apply the created animations object to the desired view using the 'startAnimation' method.

6 Handle Animation Events:

You can implement Animation listeners to handle events of Animation.

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Ex.

fade_in.xml :

```
<?xml version="1.0" encoding="utf-8"?>
<alpha xmlns:android="..."
 android:interpolator="@animat
 android:interpolator="@android:
     amin/accelerate_interpolator"
 android:FromAlpha="0.0"
 android:toAlpha="1.0"
 android:duration="2000" />
```

-> activity.java :

```
public class MainActivity extends
   AppCompatActivity
{
  private TextView animatedText;

  protected void onCreate( )
  {
   animatedText = FindViewById
       (R.id.animatedText);
```

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```
Animation fadeInAnimation =

    AnimationUtils.loadAnimation
    (this, R.anim.fade_in);

    animatedText.startAnimation
        (fadeInAnimation);

    }
}
```