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* What is ANIMATIONCONTROLLER with example ?

AnimationController is a class used to control and manage animations It is a crucial component when working with animations in Flutter because it allows you to define the duration curve and other properties of an animation as well as control its playback pause restart and stop it when needed

dart

import 'package:flutter/material.dart';

void main() => runApp(MyApp());

class MyApp extends StatelessWidget {

@override

Widget build(BuildContext context) {

return MaterialApp(

home: MyAnimationDemo(),

);

}

}

class MyAnimationDemo extends StatefulWidget {

@override

\_MyAnimationDemoState createState() => \_MyAnimationDemoState();

}

class \_MyAnimationDemoState extends State<MyAnimationDemo>

with SingleTickerProviderStateMixin {

AnimationController \_controller;

@override

void initState() {

super.initState();

// Create an AnimationController

\_controller = AnimationController(

duration: Duration(seconds: 2), // Duration of the animation

vsync: this, // Provides the ticker provider (SingleTickerProviderStateMixin)

);

// Start the animation

\_controller.forward();

}

@override

void dispose() {

// Dispose of the controller to free up resources

\_controller.dispose();

super.dispose();

}

@override

Widget build(BuildContext context) {

return Scaffold(

appBar: AppBar(

title: Text('Animation Controller Example'),

),

body: Center(

child: AnimatedBuilder(

animation: \_controller,

builder: (BuildContext context, Widget child) {

// Use the current value of the animation to create animated widgets

return Transform.scale(

scale: \_controller.value, // Use the animation value for scaling

child: Container(

width: 100.0,

height: 100.0,

color: Colors.blue,

),

);

},

),

),

);

}

}

* What is Staggered Animations with example ?

are animations that are applied sequentially or staggered to individual widgets They create an appealing visual effect by animating each widget with a delay creating a cascading or cascading effect

```dart

class StaggeredAnimationExample extends StatefulWidget {

@override

\_StaggeredAnimationExampleState createState() =>

\_StaggeredAnimationExampleState();

}

class \_StaggeredAnimationExampleState extends State<StaggeredAnimationExample>

with SingleTickerProviderStateMixin {

late AnimationController \_controller;

late Animation<double> \_animation;

@override

void initState() {

super.initState();

\_controller = AnimationController(

duration: const Duration(milliseconds: 500),

vsync: this,

);

\_animation = CurvedAnimation(

parent: \_controller,

curve: Curves.easeInOut,

);

\_controller.forward();

}

@override

void dispose() {

\_controller.dispose();

super.dispose();

}

@override

Widget build(BuildContext context) {

return ListView.builder(

itemCount: 5,

itemBuilder: (context, index) {

// Apply the staggered animation to each card

return FadeTransition(

opacity: \_animation,

child: Card(),

);

},

);

}

}

```