Flutter tutorial

# Vscode: Extentions

Ref: <https://codewithandrea.com/articles/vscode-shortcuts-extensions-settings-flutter-development/>

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Add

"editor.formatOnSave": true,

"editor.codeActionsOnSave": {

     "source.fixAll": true

},

"dart.previewFlutterUiGuides": true,

"dart.flutterSdkPath": "C:\\Users\\Admin\\Downloads\\flutter",

"dart.openDevTools": "flutter",

# Basic

## Install packages

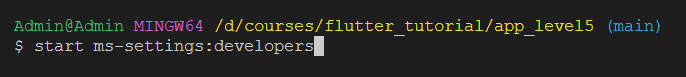
Chạy câu lệnh

flutter pub add <**package-name>**

Trong quá trình cài có thể báo lỗi chưa mở chế độ developers mode.

Khắc phục bằng cách

start ms-settings:developers



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## Class

class Book {

  // Static: thuộc về class, không phải object

  static String author = 'Unknown';

  // Private \_variableName: không thể truy cập từ ngoài class

  // Để truy cập cần thông qua setter và getter

  String \_isbn = '1234-5678-9012-3456';

  // Public

  String title;

  int year;

  // Contructor

  Book({

    required this.title,

    this.year = 2021,

  });

  // Setter

  set setIsbn(String isbn) {

    \_isbn = isbn;

  }

  // Getter

  String get getIsbn {

    return \_isbn;

  }

  // Method

  void printBook() {

    print('Title: $title, Year: $year, author: $author, ISBN: $\_isbn');

  }

}

class BookExtend extends Book {

  String? publisher;

  BookExtend({

    required super.title,

    super.year,

    this.publisher = 'Unknown',

  });

  @override

  void printBook() {

    print('Title: $title, Year: $year, ISBN: $\_isbn, Publisher: $publisher');

  }

}

## Row

import 'package:flutter/material.dart';

class Body extends StatelessWidget {

  const Body({super.key});

  @override

  Widget build(BuildContext context) {

    return Row(

      mainAxisAlignment: MainAxisAlignment.spaceEvenly,

      children: <Widget>[

        Container(

          width: 100,

          height: 100,

          color: Colors.blue,

          padding: const EdgeInsets.all(8),

          margin: const EdgeInsets.all(8),

          child: const Text('Inside container'),

        ),

        TextButton(

            onPressed: () {

              print('Button clicked!');

            },

            style: ButtonStyle(

              backgroundColor: WidgetStateProperty.all(Colors.red),

            ),

            child: const Text(

              'Click me!',

              style: TextStyle(

                color: Colors.white,

              ),

            )),

      ],

    );

  }

}

Sử dụng crossAxisAlignment: CrossAxisAlignment.baseline phải đi kèm với textBaseline: TextBaseline.alphabetic

Row(

     mainAxisAlignment: MainAxisAlignment.center,

     crossAxisAlignment: CrossAxisAlignment.baseline,

     textBaseline: TextBaseline.alphabetic,

)

## Column

import 'package:flutter/material.dart';

class Body extends StatelessWidget {

  const Body({super.key});

  @override

  Widget build(BuildContext context) {

    return Column(

      mainAxisAlignment: MainAxisAlignment.end,

      crossAxisAlignment: CrossAxisAlignment.end,

      children: <Widget>[

        Container(

          color: Colors.blue,

          height: 100,

          width: 100,

          alignment: Alignment.center,

          child: const Text('Box 1', style: TextStyle(color: Colors.white)),

        ),

        Container(

          color: Colors.redAccent,

          height: 100,

          width: 100,

          alignment: Alignment.center,

          child: const Text('Box 2'),

        ),

        Container(

          color: Colors.amberAccent,

          height: 100,

          width: 100,

          alignment: Alignment.center,

          child: const Text('Box 3'),

        ),

      ],

    );

  }

}

## Expanded

Sử dụng cho lấp đầy khoảng trống theo hàng hoặc cột.

import 'package:flutter/material.dart';

class Body extends StatelessWidget {

  const Body({super.key});

  @override

  Widget build(BuildContext context) {

    return Row(

      children: <Widget>[

        newExpanded(text: 'Box 1', flex: 3, color: Colors.blue),

        newExpanded(text: 'Box 2', flex: 2, color: Colors.red),

        newExpanded(text: 'Box 3', color: Colors.amber),

      ],

    );

  }

  Expanded newExpanded(

      {int flex = 1, String text = 'Box 1', Color color = Colors.blue}) {

    return Expanded(

      flex: flex,

      child: Container(

        color: color,

        height: 100,

        width: 100,

        alignment: Alignment.center,

        child: Text(text, style: const TextStyle(color: Colors.white)),

      ),

    );

  }

}

A screen shot of a phone

Description automatically generated

# Basic app

## StatelessWidget

*import* 'package:flutter/material.dart';  
  
*class* Body *extends* StatelessWidget {  
 *const* Body({*super*.key});  
  
 @override  
 Widget build(BuildContext context) {  
 *return const* Padding(  
 padding: EdgeInsets.fromLTRB(30, 40, 30, 0),  
 child: Column(  
 crossAxisAlignment: CrossAxisAlignment.start,  
 children: <Widget>[  
 Center(  
 child: CircleAvatar(  
 backgroundImage: AssetImage('assets/images/dog.jpg'),  
 radius: 40.0,  
 ),  
 ),  
 Divider(  
 height: 60,  
 color: Colors.*indigoAccent*,  
 ),  
 Text('NAME'),  
 SizedBox(height: 10),  
 Text('Chun-Li',  
 style: TextStyle(  
 color: Colors.*teal*,  
 letterSpacing: 2.0,  
 fontSize: 28.0,  
 fontWeight: FontWeight.*bold*,  
 )),  
 SizedBox(height: 30),  
 Text('CURERNT NINJA LEVEL'),  
 SizedBox(height: 10),  
 Text('8',  
 style: TextStyle(  
 color: Colors.*teal*,  
 letterSpacing: 2.0,  
 fontSize: 28.0,  
 fontWeight: FontWeight.*bold*,  
 )),  
 SizedBox(height: 30),  
 Row(children: <Widget>[  
 Icon(Icons.*email*, color: Colors.*blueGrey*),  
 SizedBox(width: 10),  
 Text(  
 'phungdinhtrung@gmail.com',  
 style: TextStyle(color: Colors.*blueGrey*),  
 )  
 ])  
 ]));  
 }  
}

## StatefullWidget

*import* 'package:flutter/material.dart';  
  
*class* Body *extends* StatefulWidget {  
 *const* Body({*super*.key});  
  
 @override  
 State<Body> createState() => \_BodyState();  
}  
  
*class* \_BodyState *extends* State<Body> {  
 *// variable* int ninjaLevel = 0;  
  
 @override  
 Widget build(BuildContext context) {  
  
 *return* Padding(  
 padding: *const* EdgeInsets.fromLTRB(30, 40, 30, 0),  
 child: Column(  
 crossAxisAlignment: CrossAxisAlignment.start,  
 children: <Widget>[  
 *const* Center(  
 child: CircleAvatar(  
 backgroundImage: AssetImage('assets/images/dog.jpg'),  
 radius: 40.0,  
 ),  
 ),  
 *const* Divider(  
 height: 60,  
 color: Colors.*indigoAccent*,  
 ),  
 *const* Text('NAME'),  
 *const* SizedBox(height: 10),  
 *const* Text('Chun-Li',  
 style: TextStyle(  
 color: Colors.*teal*,  
 letterSpacing: 2.0,  
 fontSize: 28.0,  
 fontWeight: FontWeight.*bold*,  
 )),  
 *const* SizedBox(height: 30),  
 Row(  
 mainAxisAlignment: MainAxisAlignment.spaceBetween,  
 children: [  
 *const* Text('NINJA LEVEL'),  
 TextButton(onPressed: (){  
 setState(() {  
 ninjaLevel = ninjaLevel + 1;  
 });  
 }, child: *const* Icon(Icons.*add*))  
 ],  
 ),  
 *const* SizedBox(height: 10),  
 Text('$ninjaLevel',  
 style: *const* TextStyle(  
 color: Colors.*teal*,  
 letterSpacing: 2.0,  
 fontSize: 28.0,  
 fontWeight: FontWeight.*bold*,  
 )  
 ),  
 ]));  
 }  
}

## Show list data

*import* 'package:flutter/material.dart';  
  
*class* Body *extends* StatefulWidget {  
 *const* Body({*super*.key});  
  
 @override  
 State<Body> createState() => \_BodyState();  
}  
  
*class* \_BodyState *extends* State<Body> {  
 List<String> quotes = [  
 'Be yourself; everyone else is already taken',  
 'I have nothing to declare except my genius',  
 'The truth is rarely pure and never simple'  
 ];  
  
 @override  
 Widget build(BuildContext context) {  
 *return* Column(  
 children: quotes.map((quote) => Text(quote)).toList(),  
 );  
 }  
}

## Show list by Class (Refactor extract Widget)

*import* 'package:flutter/material.dart';  
*import* 'quote.dart';  
  
*class* Body *extends* StatefulWidget {  
 *const* Body({*super*.key});  
  
 @override  
 State<Body> createState() => \_BodyState();  
}  
  
*class* \_BodyState *extends* State<Body> {  
 List<Quote> quotes = [  
 Quote(author: 'Phung Trung', text: 'Be yourself; everyone else is already taken'),  
 Quote(text: 'I have nothing to declare except my genius', author: 'Hoang Anh'),  
 Quote(text: 'The truth is rarely pure and never simple', author: 'Bao Chau')  
 ];  
  
 @override  
 Widget build(BuildContext context) {  
 *return* Column(  
 children: quotes.map((quote) => QuoteCard(quote: quote)).toList(),  
 );  
 }  
}  
  
*class* QuoteCard *extends* StatelessWidget {  
 *final* Quote quote;  
  
 *const* QuoteCard({*super*.key, *required this*.quote});  
  
 @override  
 Widget build(BuildContext context) {  
 *return* Card(  
 margin: *const* EdgeInsets.fromLTRB(15, 15, 15, 0),  
 child: Padding(  
 padding: *const* EdgeInsets.all(10),  
 child: Column(  
 crossAxisAlignment: CrossAxisAlignment.stretch,  
 children: <Widget> [  
 Text(  
 '${quote.text}',  
 style: *const* TextStyle(  
 color: Colors.*indigo*,  
 fontSize: 20  
 ),  
 ),  
 Text(  
 '${quote.author}',  
 style: *const* TextStyle(  
 color: Colors.*deepOrange*,  
 fontSize: 18,  
 fontWeight: FontWeight.*bold* ),  
 )  
 ],  
 ),  
 ),  
 );  
 }  
}

# Thay logo

## Create logo

* Chuẩn bị logo.png file kích thước 512px x 512 px
* Upload logo lên trang <https://www.appicon.co/>

A screenshot of a computer

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Chọn Generate để tải về. Kết quả:

A close-up of a folder

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## Thay logo

**Android**

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Xóa 4 folder mipmap-… và thay bằng các thư mục trong android.

Lưu ý: Tên file logo phải trùng với tên file logo trong AndroidManifest.xml;

**iOS**

**Copy thư mục Assets.xcassets** vào thay thế thư mục **Runner/Assets.xcassets**

# Class for onPressed

Danh sách các class có thể dùng như onPressed

* GestureDetector
* TextButton

# Pass data to page

## By params

**Page get params**

A screen shot of a computer program

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**Page pass params**

A computer screen shot of a program code

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