Lab 5 Report

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Topic Overview

Explanation & Definition

My last name is Viado; therefore, my topic will be covering Flutter layouts. Flutter layouts are the methods a developer users to organize and arrange user interface elements in a Flutter application. Layouts consist of individual components consisting of Flutter widgets. You can align and customize these widgets into rows, columns, and other ways to form the user interface of an application.

Importance

Flutter layouts are important for creating clean applications and catering to end user accessibility. Flutter layouts help you visually organize and enhance the user experience. You can keep your widgets structured in an intuitive way that helps your users enjoy and use the application easily. You also have higher customizability and responsiveness through a variety of layouts and adapting screen sizes and orientations. This further enhances the user-friendly experience.

Comparison

Flutter layouts and box constraints are similar in a way that you create the user interface for Flutter applications. Although, they have differences in their main purpose in constructing applications as a whole. A box constraint relates to a single widget and specifies the dimensions that the widget occupies. They influence how a widget is influenced by screen sizes and orientation, and influence how other widgets are influenced by it. Layouts, however, relate to all widgets on the screen and determine the user interface as a whole. Therefore, these two features work together to determine the final layout of the application that results in flexible and responsive user interfaces.

Advantages and Disadvantages

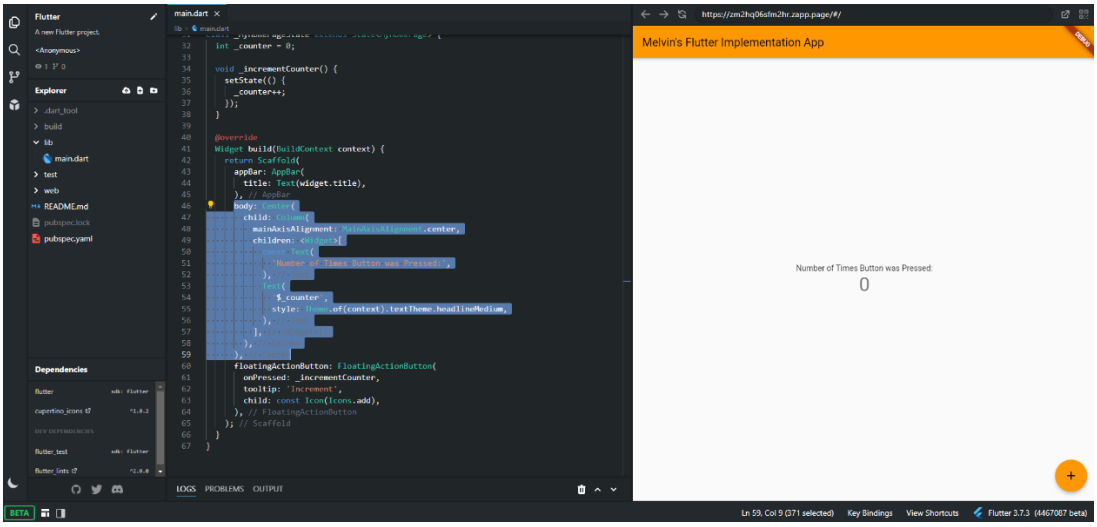
Flutter has a great widget library for common user interface elements such as buttons, text fields, and more. This is convenient for developers as it enforces the rule of not reinventing the wheel and saving time and effort on your product. These widgets are also highly customizable and flexible to make it easier to design your layout system.

Flutter can also involve complex layouts which can decrease the performance and speed of your application. With complexity comes a difficult learning curve for a new framework from inexperienced developers such as I. Flutter is also not the most popular developer environment which comes with a smaller community to effectively help other developers working with Flutter.

Implementation

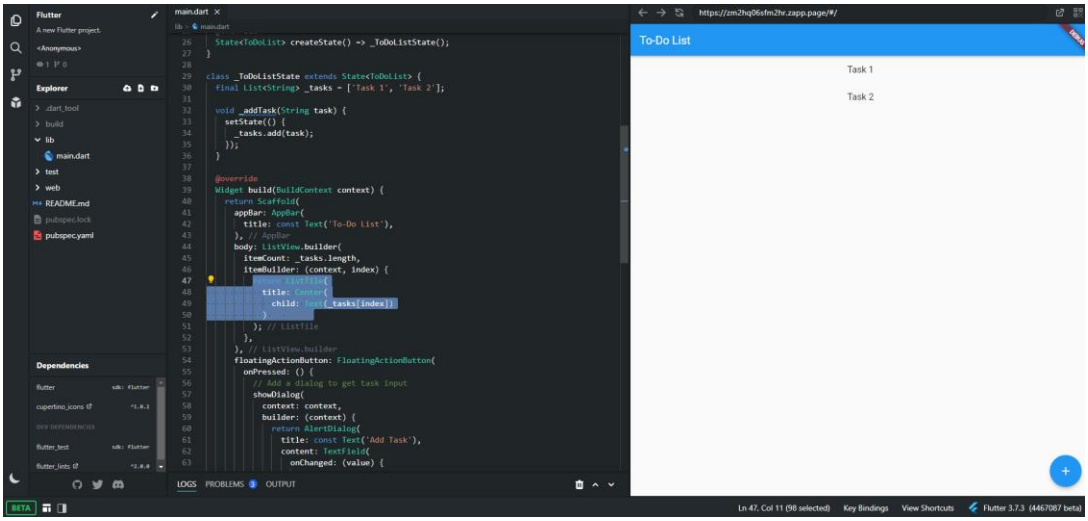
Example One

Here we have an online integrated development interface for Flutter to show my example of the Flutter layout usage. As you can see the highlighted selected section of the code shows the use of Flutter layouts. First, we have a center element that describes the body that has a column child element. This show that a column element is being centered in the body with a widget containing text and a number. Having the information given displayed in the center of the app is intuitive for the user as the center of the screen is the most accessible and viewer friendly to the user.



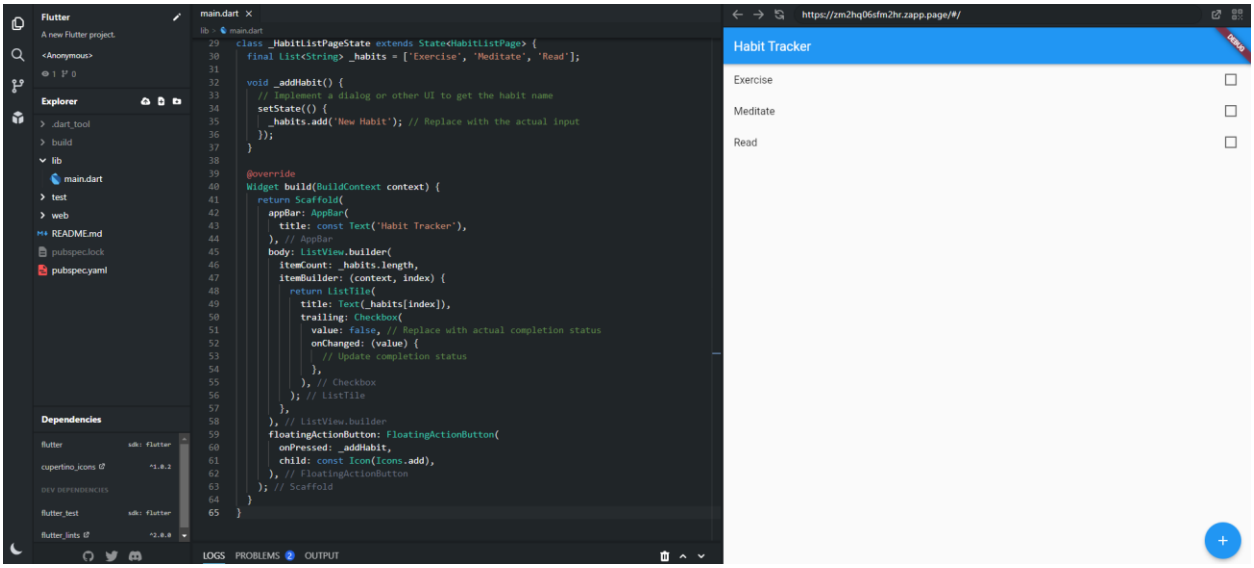
Example Two

Here we have a simple To-Do List application in Flutter which utilizes the center element to show the added tasks in a middle column. It is intuitive to show the tasks in a column stacked one on top of the other to show the latest and earlier tasks added.



Real-World Scenario

Here is a modified task list to reflect important things we should do on a daily basis. We have exercise, meditation, and reading listed as tasks from top to bottom, with checkboxes to show if we have completed these tasks for the day. It is intuitive to have the name of the tasks on the left and checkboxes on the right, with each row organized in a column. In a larger mobile application with more information, it is critical to have user interface elements in intuitive locations on the screen to avoid confusion for the user. Also, with more information on the screen, there will be less space to display information which increases the importance of organization, layout, and structure of the elements.



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