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I. Answer the following questions. As briefly as possible. Submit a PDF of your answers with the file name SurnameInitials_exam1_part2.PDF (e.g. TANKLM_exam1_part2.PDF)

Problem 01 (5 pts)

a. For sections that are odd number, refer to the mobile screen below Figure 01. How would you layout the mobile app? (Hint: must return a scaffold with proper widgets)



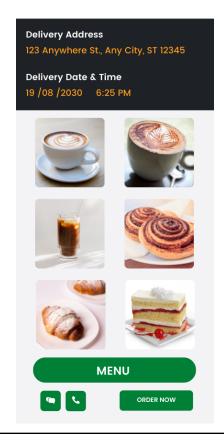


Figure 01 Figure 02

return Scaffold(appBar: AppBar(

title: Text("WacDough"),

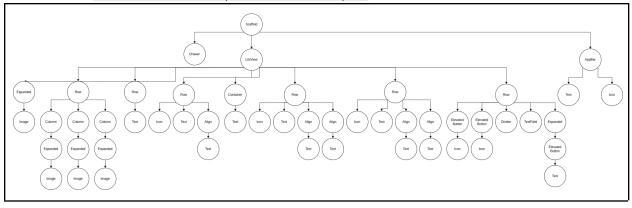
```
actions: [lcon(lcons.settings),],
),
body: ListView(
 children: [
  Expanded(child: Image),
  Row(
    children: [
     Column(
      Expanded(child: Image),
     ),
     Column(
      Expanded(child: Image,),
     ),
     Column(
      Expanded(child: Image,),
     ),
   ],
  ),
   Row(children: [Text()],),
  Row(children: [
    Icon(),
    Text(),
    Align(child: Text(), alignment: Alignment.centerRight,)
  ],),
  Container(child: Text(),),
  Row(
    children: [
     Icon(),
     Text(),
     Align(alignment: Alignment.centerRight, child: Text(),),
     Align(alignment: Alignment.centerRight, child: Icon(),)
   ],
  ),
  Row(
    children: [
     Icon(),
     Text(),
     Align(alignment: Alignment.centerRight, child: Text(),),
     Align(alignment: Alignment.centerRight, child: Icon(),)
   ],
  ),
  Row(
    children: [
     ElevatedButton(child: Icon()),
```

```
ElevatedButton(child: Icon()),
Divider(),
TextField(),
Expanded(child: ElevatedButton(child: Text())),
],
),
drawer:,
);
```

Problem 02 (5pts)

Draw the widget tree of your answer from Problem 01 (must start with the calling function)

GDrive Link: ESTILOJCS_exampart2_widgettree.png



Problem 03

a. Essay 01 (5 pts)

Discuss the difference between Hybrid Mobile Apps vs Cross-Platform Mobile Apps (minimum of 5 sentences, do not give me definitions)

In Hybrid Mobile Apps, we use languages for the web (such as HTML, CSS, JavaScript), and put it to a native container, in which it will become a WebView. The main code is a web code and the shell is native. Since we use a native container, we get access to native features in an application. On the other hand, Cross-Platform Mobile Apps use a native engine to develop them. Due to this, it can be as fast as a native application, but it gives access to different platforms such as Android or iOS. Though Hybrid Mobile Apps and Cross-Platform Mobile Apps are inherently different, they both offer access to different platforms.

b. Essay 02 (5 pts)

What would be the appropriate way/s to fixed the problem of renderflex overflowed layout error? Explain your answer and why this is the best approach. (minimum 5 sentences, do not give me definitions)

First, let us state why the renderflex overflowed layout error is happening in the first place. Renderflex overflowed layout happens when a layout widget has a child that has a size "overflowing" or exceeds the maximum available size. We can fix this by wrapping that child widget in an Expanded widget or a Flexible widget. Expanded widget expands its child to fill the available space in the parent widget. As for the Flexible widget, it also fills the available space for its child but it doesn't change their width and height. By using either of these 2 widgets, we can solve the renderflex overflowed layout error, since it takes the available spaces into consideration, and sizes accordingly with it.

c. Essay 03 (5 pts)

Discuss the difference between onGenerateRoute vs ModalRoute navigation when passing parameters in Flutter. (minimum of 5 sentences, do not give me definitions)

The onGenerateRoute navigation is built before the route is pushed to the navigation history. It can be used to first check if the arguments being passed are valid or not. On the other hand, ModalRoute is built after the route is pushed to the navigation history. ModalRoute is more used than onGenerateRoute when it comes to passing parameters in Flutter. ModalRoute also covers the entire navigator.