

## Dart Basics

5

Which of the following is the correct way to declare a variable in Dart?

\* (1 Point)

- ☐ A) `int x = 10;`
- ☐ B) `var x = 10;`
- ☐ C) `int x;`
- ☒ D) All of the above

6

What does the 'void' keyword in Dart signify? \* (1 Point)

- ☒ A) The function will not return a value
- ☐ B) The function will return an integer
- ☐ C) The function will return a boolean
- ☐ D) The function will return a string

7

Which of the following Dart collections allows you to store unique elements only? \* (1 Point)

- ☐ A) List
- ☒ B) Set
- ☐ C) Map
- ☐ D) Array

8

Which of the following is a valid numeric data type in Dart? \* (1 Point)

- ☐ A) int
- ☐ B) float
- ☐ C) double
- ☒ D) Both A and C

9

Which data type would you use in Dart to store key-value pairs? \* (1 Point)

- ☐ A) List
- ☐ B) Set
- ☒ C) Map
- ☐ D) Array

10

What does the `this` keyword refer to in Dart? \* (1 Point)

- ☒ A) The current object
- ☐ B) The parent class
- ☐ C) The method being invoked
- ☐ D) The variable inside the method

11

What is the purpose of the `super` keyword in Dart? \* (1 Point)

- ☒ A) It refers to a parent class method or constructor
- ☐ B) It refers to the current class
- ☐ C) It refers to the superclass
- ☐ D) It initializes a class object

12

What is the difference between `final` and `const` in Dart? \* (1 Point)

- ☒ A) `final` variables are assigned once and `const` variables are compile-time constants
- ☐ B) `final` variables can be modified later, while `const` variables cannot
- ☐ C) `final` is for objects, and `const` is for primitives
- ☐ D) There is no difference

13

In Dart, how do you make a class member private? \* (1 Point)

- ☒ A) By prefixing the member name with an underscore "\_"
- ☐ B) By using the private keyword
- ☐ C) By making the member final
- ☐ D) By adding the private access modifier

14

What is an abstract method in Dart? \* (1 Point)

- ☒ A) A method that has no implementation and must be implemented by subclasses
- ☐ B) A method that cannot be overridden
- ☐ C) A method that is used to store abstract data
- ☐ D) A method that has a fixed return type

15

What is the purpose of an enum in Dart? \* (1 Point)

- ☐ A) To represent a collection of variables
- ☒ B) To define a set of named constants
- ☐ C) To define a class with static methods
- ☐ D) To store values of different types

16

How do you iterate over all the values of an enum in Dart? \* (1 Point)

- ☒ A) for (var day in Days.values) {}
- ☐ B) for (var day in Days()) {}
- ☐ C) for (var day : Days) {}
- ☐ D) for (var day in Days.allValues()) {}

17

Can you extend an enum in Dart? \* (1 Point)

- ☐ A) Yes, enums can inherit from other enums
- ☒ B) No, enums cannot be extended
- ☐ C) Yes, but only if they are of type 'String'
- ☐ D) Yes, enums can inherit from classes, not other enums

18

Which of the following statements about polymorphism in Dart is true? \* (1 Point)

- ☐ Polymorphism can only be achieved by method overriding
- ☒ Polymorphism allows objects of different classes to be treated as objects of a common superclass
- ☐ Polymorphism only works with static methods
- ☐ Polymorphism in Dart can only occur at compile-time

What is the output of the following Dart code? \* (1 Point)

```
void main() {  
  Map<String, String> capitals = {'USA': 'Washington', 'France': 'Paris'};  
  print(capitals['USA']);  
}
```

- ☒ A) Washington
- ☐ B) Paris
- ☐ C) USA
- ☐ D) null

23

What will be the output of this Dart code? \* (1 Point)

```
void main() {  
  var a = [1, 2, 3];  
  var b = a;  
  b[0] = 100;  
  print(a);  
}
```

- ☒ A) [1, 2, 3]
- ☐ B) [100, 2, 3]
- ☐ C) [100, 2, 3, 0]

24

What will the following Dart code print? \* (1 Point)

```
void main() {  
  int? x;  
  print(x ?? 5);  
}
```

- ☒ A) 5
- ☐ B) null
- ☐ C) Error
- ☐ D) 0

Back

Next

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Page 2 of 3

Required

## Flutter Basics

25

In Flutter, which widget is used to arrange children widgets horizontally? \* (1 Point)

- ☐ A) Column
- ☐ B) Container
- ☒ C) Row
- ☐ D) Stack

26

Which of the following widgets allows for a scrollable list of items in Flutter? \* (1 Point)

- ☒ A) ListView
- ☐ B) GridView
- ☐ C) Scrollable
- ☐ D) Stack



27

What does the 'Scaffold' widget provide in a Flutter app? \* (1 Point)

- ☒ A) A base layout structure including an app bar, body, and bottom navigation bar
- ☐ B) A layout for positioning widgets on top of each other
- ☐ C) A layout for organizing widgets in a grid
- ☐ D) A container for wrapping content with padding and margins

28

Which widget would you use to display a simple, unstyled text in Flutter? \* (1 Point)

- ☐ A) TextField
- ☒ B) Text
- ☐ C) Label
- ☐ D) RichText

31

In Flutter, which widget is used to navigate to a new screen? \* (1 Point)

- ☒ A) Navigator
- ☐ B) Route
- ☐ C) Scaffold
- ☐ D) PageView

32

What is the purpose of the TextFormField widget in Flutter? \* (1 Point)

- ☐ A) To display static text that cannot be edited
- ☒ B) To create a form field for text input with validation and formatting capabilities
- ☐ C) To create a button that submits user input
- ☐ D) To display a list of selectable options for the user

33

Which of the following methods can be used to load an image from the internet in Flutter? \* (1 Point)

- ☒ A) [Image.network\(\)](#)
- ☐ B) Image.asset()
- ☐ C) Image.file()
- ☐ D) Image.memory()

34

What the main difference between 'MaterialApp()' and 'Scaffold()' widget ? \* (5 Points)

غير تأسيسك عربي او انجليزي براحتك.....

دي عبارة عن الهيكل الاساسي للتطبيق material app  
لانها بتعتمد علي

الموجوده ف فلاتر material design

دي عبارة عن الهيكل الاساسي لكل شاشه scaffold |  
جيهاالك من الاخر يعني

اقدر اشبها بالسفره لكن material app

اقدر اشبها بالمفرش الي علي السفره scaffold

35

What the main difference between "Stateless widget" and "Statefull widget" ? \* (5 Points)

عبر بآستونك عربى او انجليزى برحلك.....

stateless ==> دون حالة لا تتغير اثناء بناء ال ui وهكذا من الاخر ثابتة ui  
stateful ==> معينه state يتغير كل ما تعمل ui ديناميكيه بتتغير بمرور الوقت بمعنى ان ال

عبرنا الى صفحة

277

```
void main() {  
    // Create a new instance of  
    // the class  
    Application app = new Application();  
    // Set the title of the window  
    app.setTitle("My Application");  
    // Set the content of the window  
    app.setContent(new JPanel());  
    // Set the window's look and feel  
    app.setLookAndFeel(SwingUtilities.getCurrentLookAndFeel());  
    // Set the window's size and position  
    app.setSize(400, 300);  
    app.setLocationRelativeTo(null);  
    // Make the window visible  
    app.setVisible(true);  
}
```

```
void main() {  
  runApp(MaterialApp(  
    home: Scaffold(  
      appBar: AppBar(  
        title: Text('GDG Al-Azhar'),  
      ),  
      body: Column(  
        children: <Widget>[  
          Text('Header Text'),  
          Expanded(  
            child: ListView(  
              children: <Widget>[  
                ListTile(title: Text('Item 1')),  
                ListTile(title: Text('Item 2')),  
                ListTile(title: Text('Item 3')),  
              ],  
            ),  
          ),  
        ],  
      ),  
    ),  
  ));  
}
```



column جو listView ألمشكلة اني حاطط  
ياخد مساحه محدده من الشاشة column وحالا ال  
ملهاش مساحه محدده list view و ال

error ف هيعمل

column مش عارف ياخد مساحته جو listView لان

377

What the problems in this code are and what the solutions to solve errors and warnings. ^ [5 Points]

```

void main() {
  stringstream ss;
  int i = 0;
  while (i < 10) {
    ss << "Iteration " << i << "\n";
    i++;
  }
  cout << ss.str();
}

```

```
void main() {  
  runApp(MaterialApp(  
    home: Scaffold(  
      appBar: AppBar(  
        title: Text('TextFormField Validation Example'),  
      ),  
      body: Column(  
        children: <Widget>[  
          TextFormField(  
            decoration: InputDecoration(  
              labelText: 'Enter your email',  
            ),  
            validator: (value) {  
              if (value.isEmpty) {  
                return 'Email cannot be empty';  
              }  
            },  
          ),  
        ],  
      ),  
    ),  
  ));  
}
```

TextFormField لما بتستخدم  
validator ومعه  
validator جه مش هيشغل ال

form ف لازم تحطه جوا  
validation عشان تحقق من key و تستخدم ال

38

what the problem in this code and what the solution? (5 Points)

عبو بأستويك عربي او إنجليزې بزاحتك .....

```
class CounterPage extends StatelessWidget {
  int counter = 0;

  void _increment() {
    counter++;
  }

  @override
  Widget build(BuildContext context) {
    return Column(
      children: [
        Text(counter.toString()),
        Text('Counter: Increment'),
        ElevatedButton(
          onPressed: _increment,
          child: Text('Increment'),
        ),
      ],
    );
  }
}
```

```
class CounterPage extends StatelessWidget {  
  int counter = 0;  
  
  void _increment() {  
    counter++;  
  }  
  
  @override  
  Widget build(BuildContext context) {  
    return Column(  
      children: <Widget>[  
        Text('Counter: $counter'),  
        ElevatedButton(  
          onPressed: _increment,  
          child: Text('Increment'),  
        ),  
      ],  
    );  
  }  
}
```

StatelessWidget المکشله اني استخدمت

ف ده مش هيلفع

ف هتغير الكلام ده ل

StatefulWidget

وخط

```
set state(){
```

```
  counter++;
```

```
}
```