

Here's the revised weekly task paper with the changes you requested:

Bano Qabil Program
Instructor: Talha Iqbal
Week 2 - Flutter Mobile Application Development
Deadline: Friday, 17th January 2025

Section 1: Data Types and Variables in Dart

Mandatory Questions

1. What is an `int` in Dart? Write a program to declare and print an `int` variable.
2. How can you use a `String` in Dart? Provide an example where a `String` variable is used to concatenate two pieces of text.
3. Write a program to declare and print a `bool` variable in Dart.
4. Explain how `List` is used in Dart. Write a program to create a list of integers and iterate through it using a loop.
5. What is a `Map` in Dart? Write a program to create a `Map` with key-value pairs and print all the keys and values.

Optional (Advanced) Questions

1. What is the difference between `var` and `dynamic` in Dart? Write a program to illustrate their differences.
 2. Write a Dart program that demonstrates the use of `const`. How is it different from `final`?
 3. How do you access and modify elements in a `List` and a `Map`? Write a program to show this with examples.
 4. Explain null safety in Dart with an example where a variable is declared as nullable (?) and non-nullable.
 5. Write a Dart program to demonstrate the immutability of `const` variables with examples.
-

Section 2: Operators in Dart

Mandatory Questions

1. What are relational operators in Dart? Write a program to demonstrate their usage (`<`, `<=`, `>`, `>=`, `==`, `!=`).
2. Explain assignment operators in Dart. Write a program to demonstrate the use of `=`, `+=`, `-=`, `*=`, and `/=`.

3. Write a Dart program to demonstrate the use of arithmetic operators (+, -, *, /, %).
4. What are logical operators in Dart? Write a program to demonstrate &&, ||, and !.
5. Write a program to combine relational and logical operators to create a simple conditional expression.

Optional (Advanced) Questions

1. Write a Dart program to calculate the area of a rectangle using relational and arithmetic operators.
 2. How can you chain assignment operators in Dart? Write a program to demonstrate.
 3. Write a Dart program that uses logical operators to validate user input (e.g., a password must be more than 8 characters and contain a special character).
 4. Explain the precedence of arithmetic and logical operators in Dart. Write a program to show how precedence affects the result.
 5. Write a program to demonstrate compound conditions using relational and logical operators.
-

Section 3: Flutter Installation Guide

Follow the Video Guide

To get started with Flutter, please watch the video provided below and follow the steps to install Flutter on your laptops:

[Flutter Installation Guide Video](#)

Steps Covered in the Video:

1. Install the Flutter SDK for your operating system (Windows, macOS, or Linux).
2. Set up the environment variables for Flutter.
3. Install Android Studio and set up the emulator.
4. Install Visual Studio Code or another code editor of your choice and configure Flutter extensions.
5. Run the `flutter doctor` command to ensure all required tools are installed correctly.

If you encounter any issues during the installation, please feel free to ask questions during the next session or contact me directly for assistance.

Note:

- Submit your answers in a PDF file via the program's designated portal.
- Make sure to attempt all the mandatory questions, and you are encouraged to attempt optional questions for better understanding.

Good luck, and happy coding! 😊
Instructor: Talha Iqbal
