Group members: - IDYISHAKA RUTH 223014217
- TUYISENGE Ange Aurele 223015798

Group 5

Date 5/12/2026

Dart Programming LAB 1 Report

Questions Part I. functions.

Q1. A function is a reusable block of code that Performs a specific task

Why we created function named 'welcome Message':

To Provide a standard greeting for the school system, which keeps the code organized by centralizing the welcome logic.

Q2. Named Parameters: these are Parameters that allow us to Pass arguments by their names to a function. they are helpful because they make the code more readable and Parameters are Passed in by any order.

Q3. Optional Parameters: these are arguments that do not have to be Provided

How they work: if the subject Parameter is missing, the code Prints a default message.

Part II. Constructors and Classes.

Q4. Constructors is a special method used to initialize an object's variables when it is first created.

they are important: because they ensure that every new object has the data it needs immediately.

Q5. Object creation: is the Process of Using a class (a blue Print) to create a specific instance that holds real data.

How we used it: We used the student class to create a specific student object and then Printed its details.

Part III. INHERITANCE

Q6. A class is a blueprint for creating objects that defines their data and behaviors.

Q7. Inheritance: it allows one class to take on the features of another class.

How 'Student' reuses 'Person':
Student reuses the name and introduce() function from Person.

Part 4. Interfaces.

Q8. interface: is a set of rules (methods) that a class must follow.

Q9. Implementing interfaces; ensures that a class Provides specific functionality, enforcing rules across your code.

Part 5. Mixins

Q10. A mixin: is a way to reuse a chunk of code in multiple classes without using traditional inheritance.

Q11. How mixins add behaviour to a class, such as giving a student the a student the ability to track attendance.

Part 6. Collections

Q12. A List; is an ordered collection of items Used to store multiple objects in one variable.

Q13. A map: stores data in key-value Pairs And are used for Looking up data Using a Unique ID.

Q14. Anonymous functions: these are functions without names Used for Quick, One time tasks.

Q15. Arrow functions (=>); are shorthand way to write simple functions on one line.

It makes codes cleaner and simpler.

Q16. PART 8: Asynchronous Programming

Async functions: this are functions that allow Program to wait for a task to finish (like loading data) without stopping the entire Application.

Q17. Async/await is essential for fetching data from external Sources without making the User interface freeze.

Part 9: Integration Challenge

Q18. Difference btn inheritance and mixins.

Inheritance: is for "is-a" relationships e.g (a student is a Person)

Mixins: are for sharing specific behaviors accross different classes without a Parent-child relationship.
e.g (a student has attendance tracking)

Q19. How we used the new mixin.

We used the NotificationMixin to automatically send a message whenever a registration event occurs.

Q20. Dart and flutter

Learning Dart is the foundation for using Flutter, Understanding Dart's Objects, classes and async Programming is necessary to build the Logic and structure of mobile Apps effectively.