

Name: Muhammad Fahad

SAP ID: 37125

Section: BSCS-6A

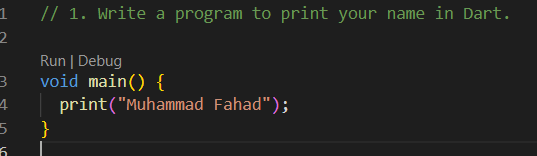
Course: Mobile Application Development

Assignment#1

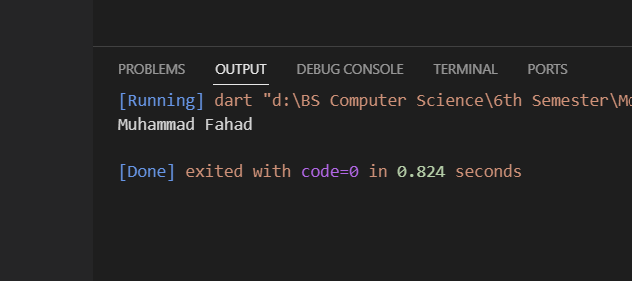
Github Repository: **https://github.com/muhammad-fahad-hussain/Flutter/tree/Flutter/Assignments/AssignmentDart**

1. **Write a program to print your name in Dart.**

**Program Screenshot**

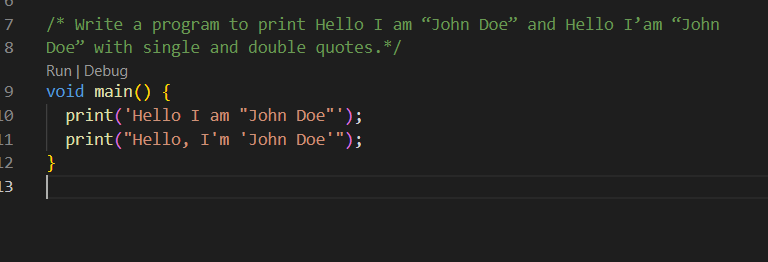
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**Output Screenshot**

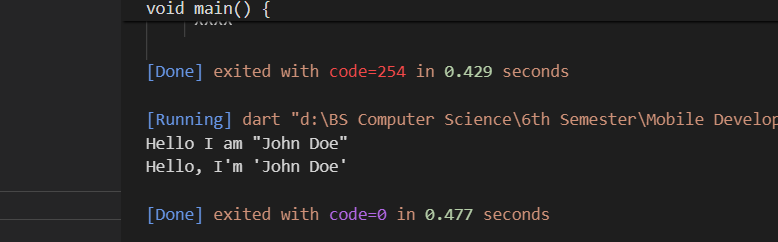
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1. **Write a program to print Hello I am “John Doe” and Hello I’am “John Doe” with single and double quotes.**

**Program Screenshot**

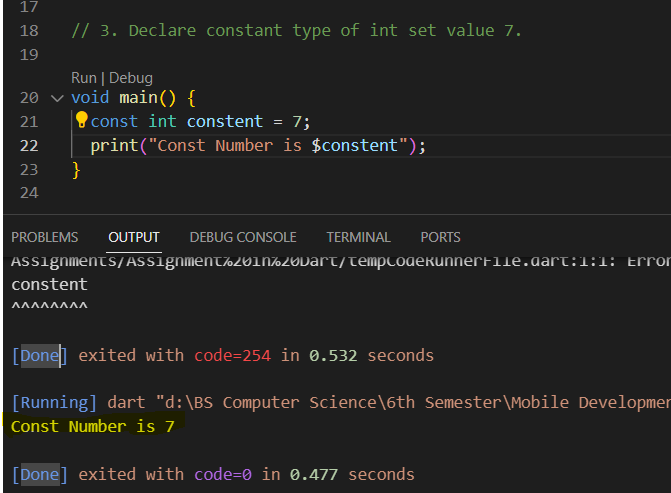
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**Output Screenshot**

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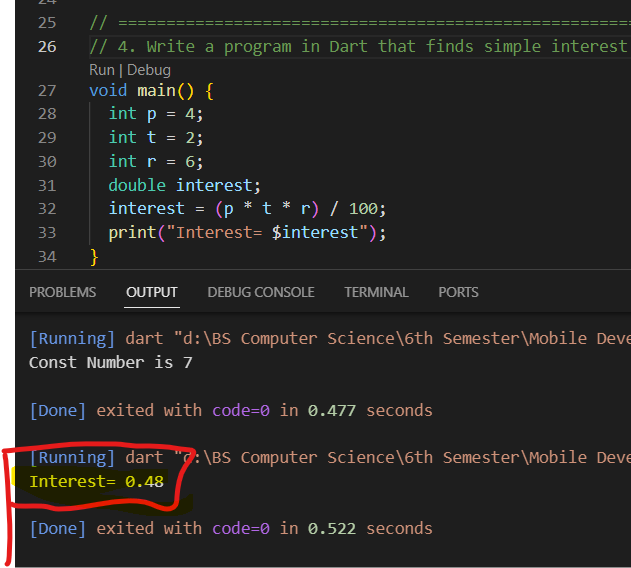
1. **Declare constant type of int set value 7.**

**Program and Output Screenshot:**

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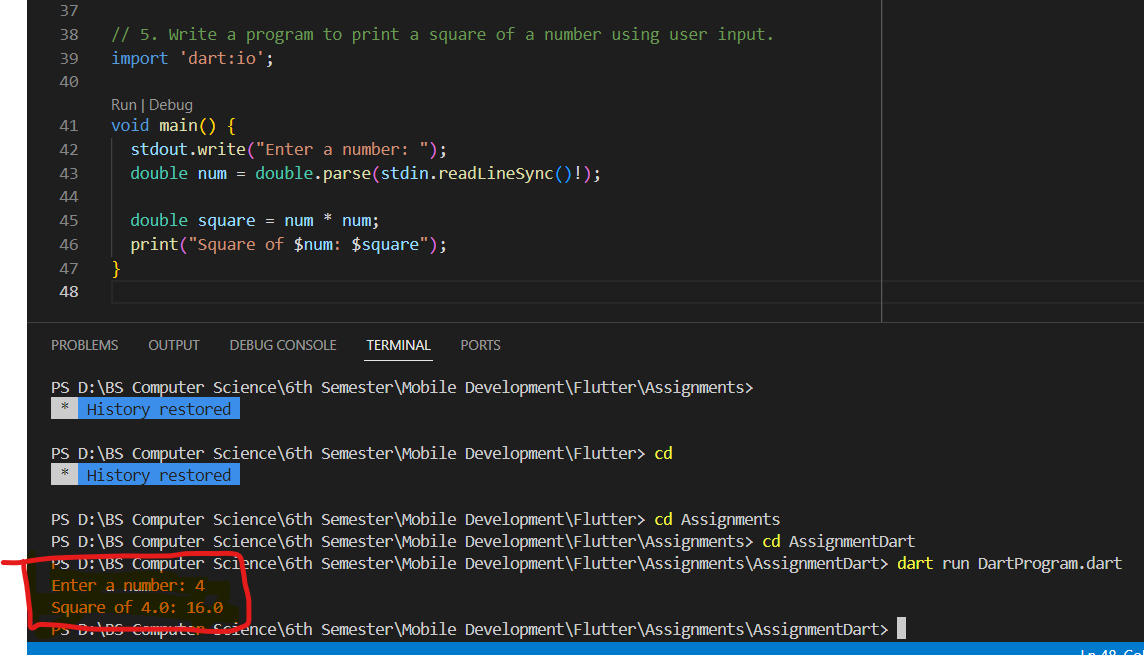
1. **Write a program in Dart that finds simple interest. Formula= (p \* t \* r) / 100**

**Program and Output Screenshot:**

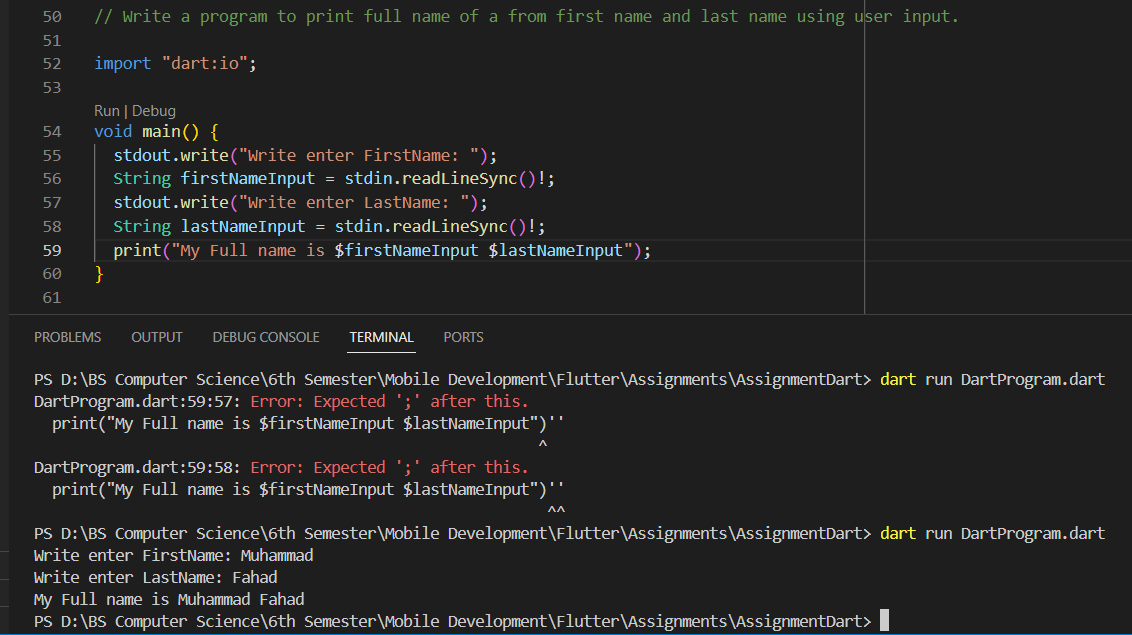
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1. **Write a program to print a square of a number using user input.**

**Program and Output Screenshot:**

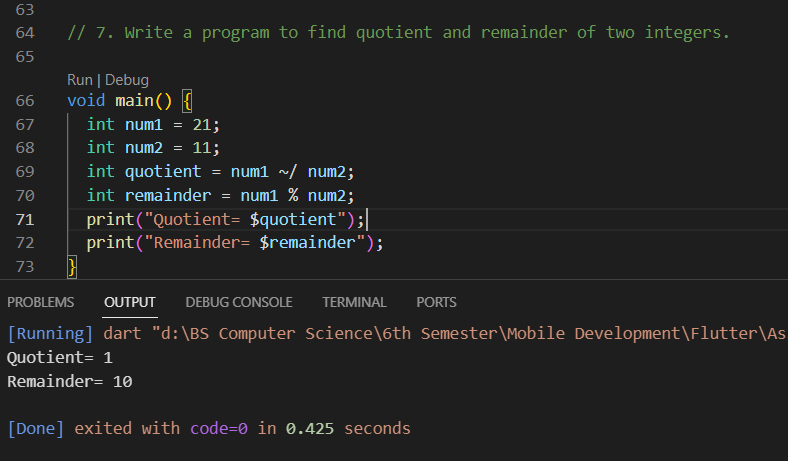
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1. **Write a program to print full name of a from first name and last name using user input. Program and Output Screenshot:**

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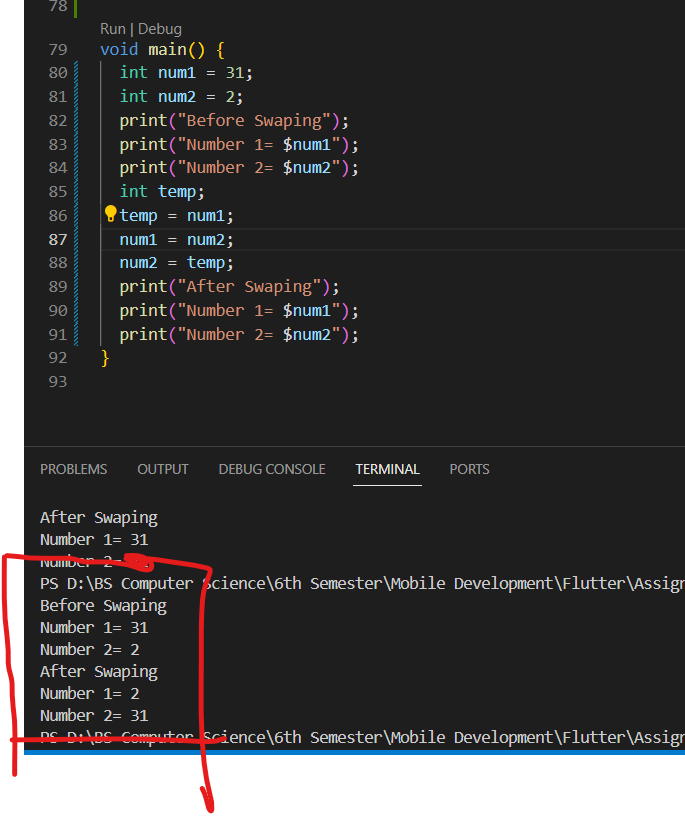
1. **Write a program to find quotient and remainder of two integers.**

**Program and Output Screenshot:**

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1. **Write a program to swap two numbers.**

**Program and Output Screenshot:**

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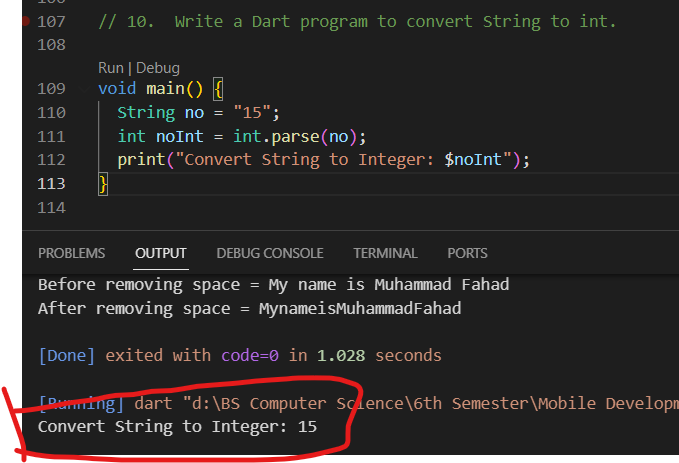
1. **Write a program in Dart to remove all whitespaces from String.**

**Program and Output Screenshot:**

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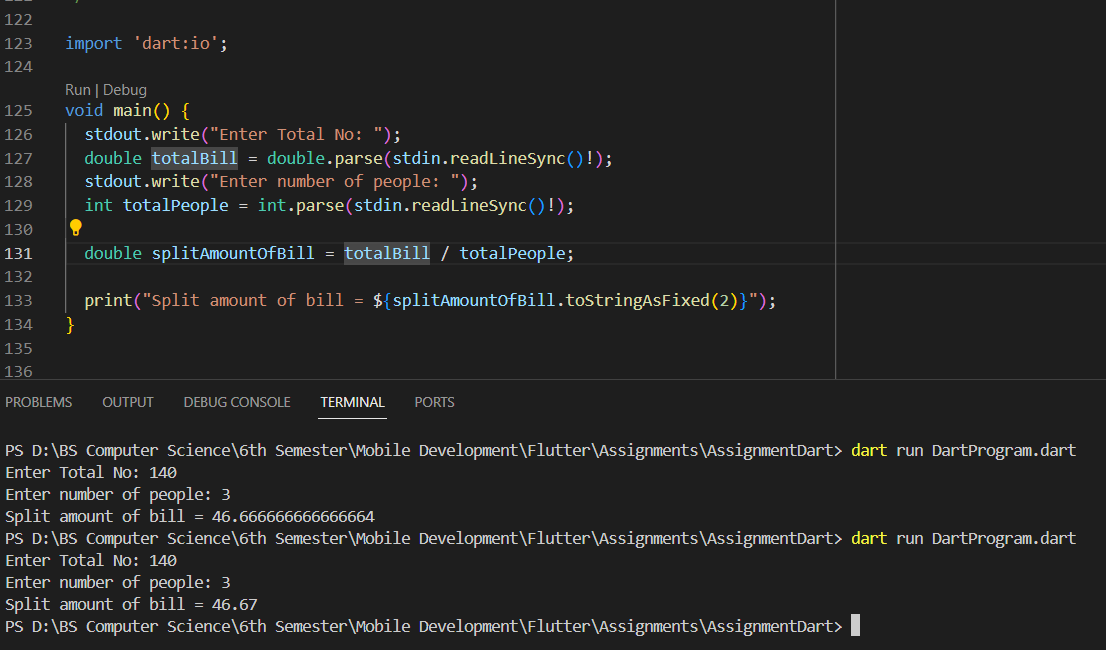
1. **Write a Dart program to convert String to int.**

**Program and Output Screenshot:**

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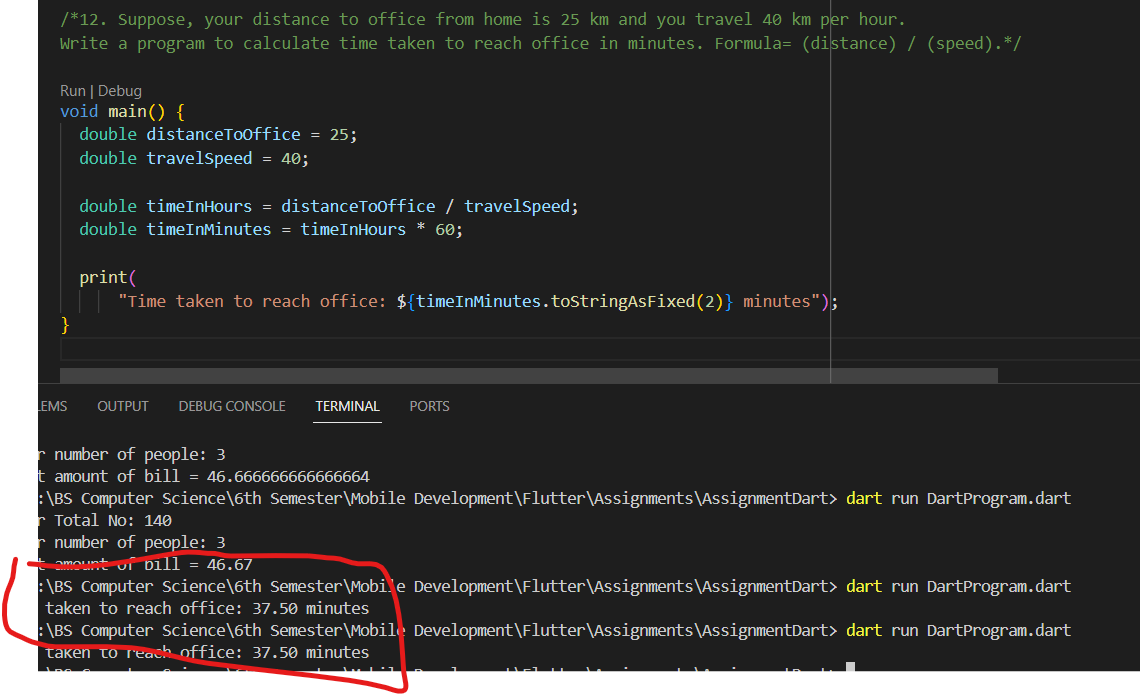
1. **Suppose, you often go to restaurant with friends and you have to split amount of bill. Write a program to calculate split amount of bill. Formula= (total billamount) / number of people.**

**Program and Output Screenshot:**

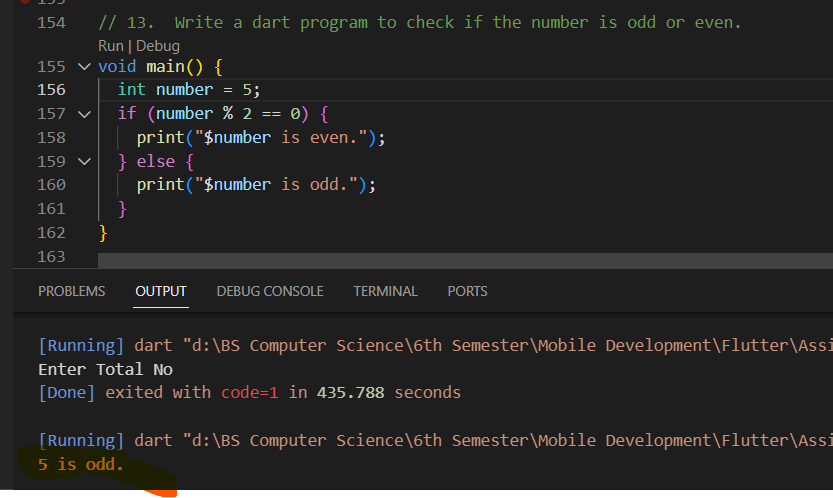
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1. **Suppose, your distance to office from home is 25 km and you travel 40 km per hour. Write a program to calculate time taken to reach office in minutes. Formula= (distance) / (speed).**

**Program and Output Screenshot:**

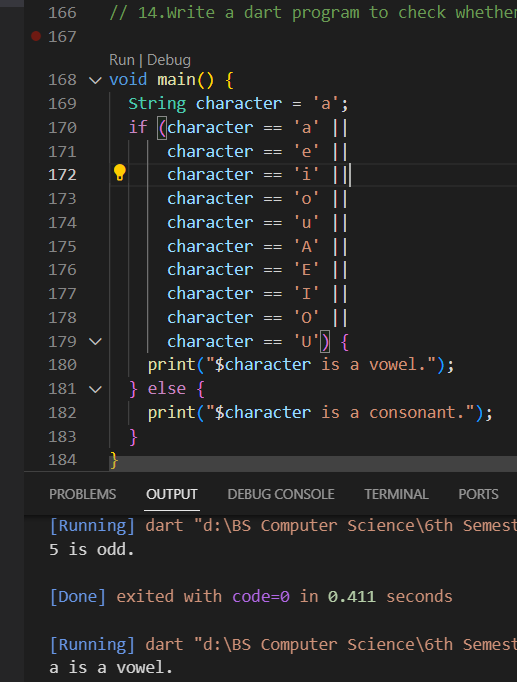
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1. **Write a dart program to check if the number is odd or even.Program and Output Screenshot:**

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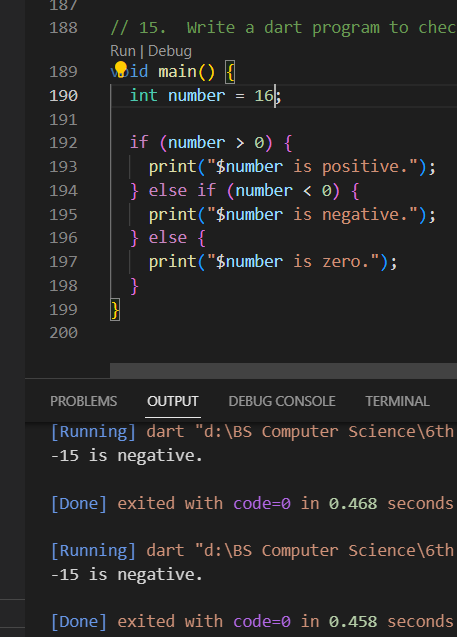
1. **Write a dart program to check whether a character is a vowel or consonant.**

**Program and Output Screenshot:**

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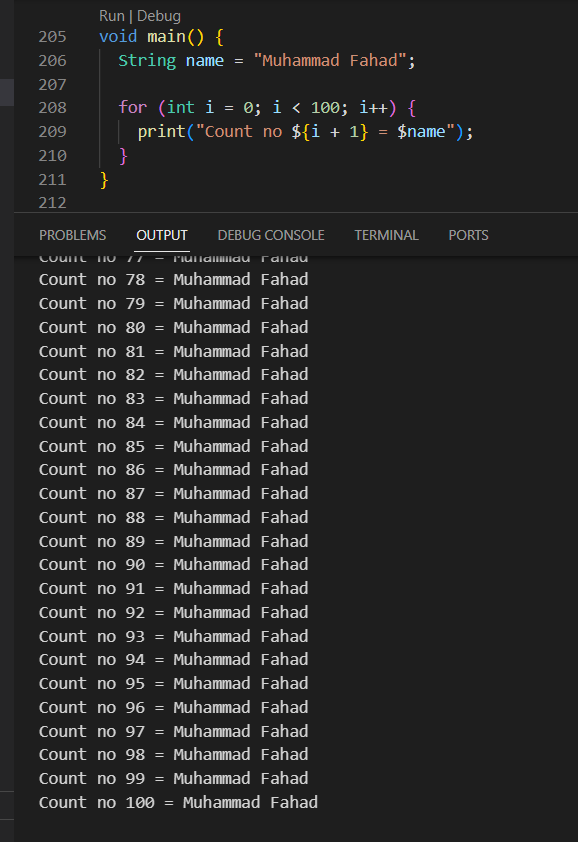
1. **Write a dart program to check whether a number is positive, negative, or zero.**

**Program and Output Screenshot:**

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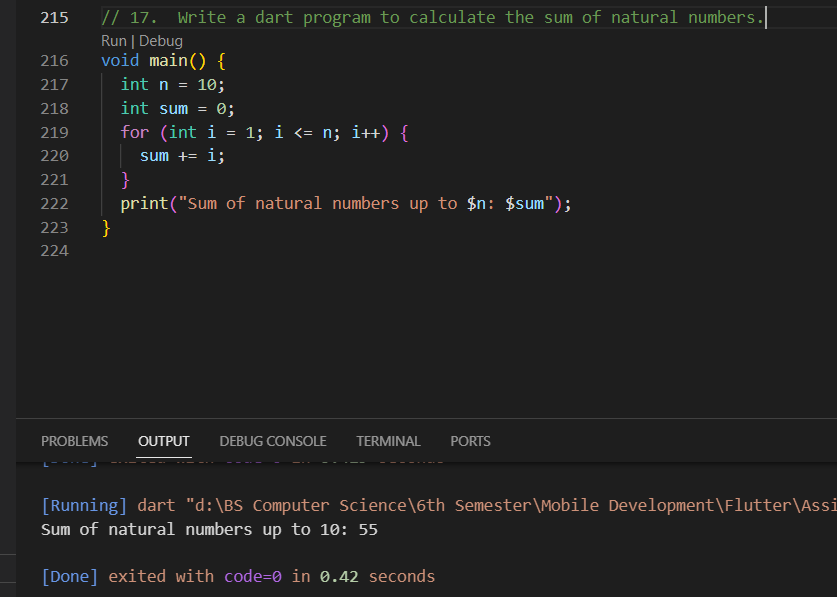
1. **Write a dart program to print your name 100 times.**

**Program and Output Screenshot:**

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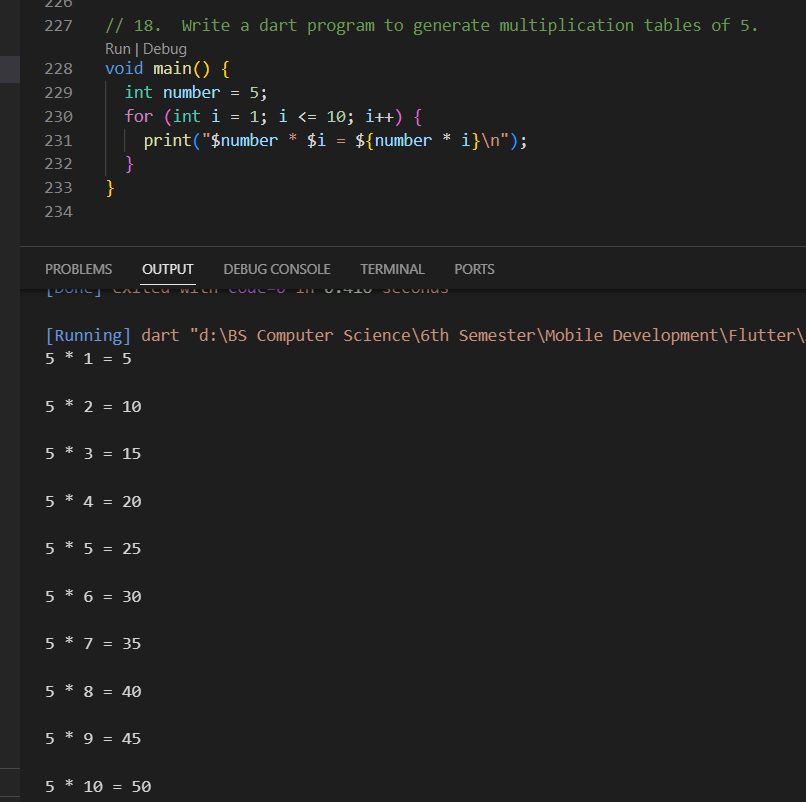
1. **Write a dart program to calculate the sum of natural numbers.**

**Program and Output Screenshot:**

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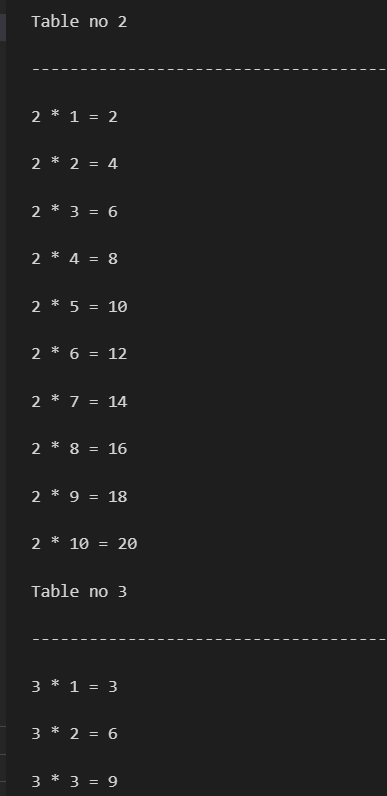
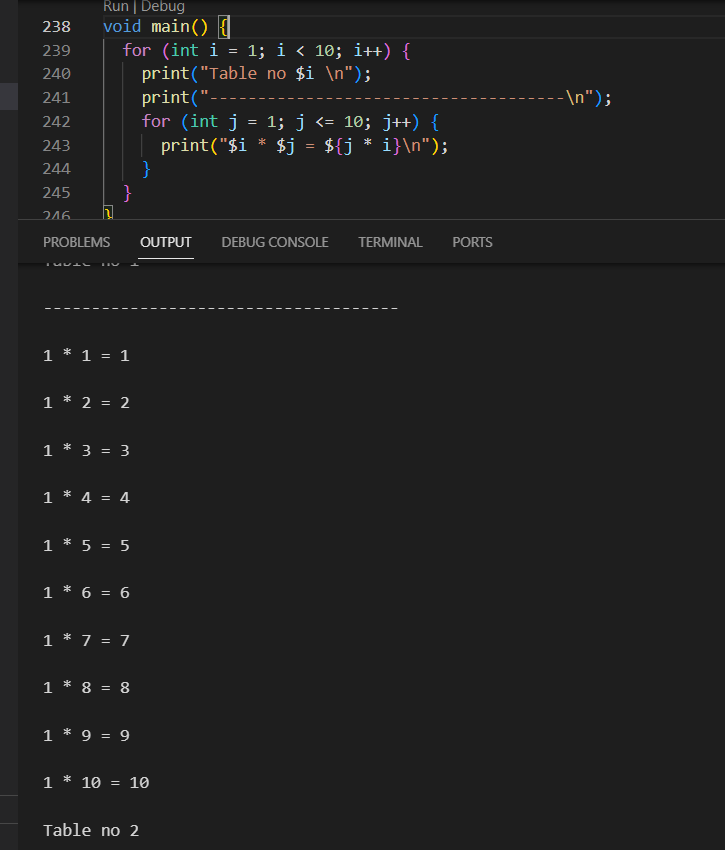
1. **Write a dart program to generate multiplication tables of 5.**

**Program and Output Screenshot:**

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1. **Write a dart program to generate multiplication tables of 1-9.**

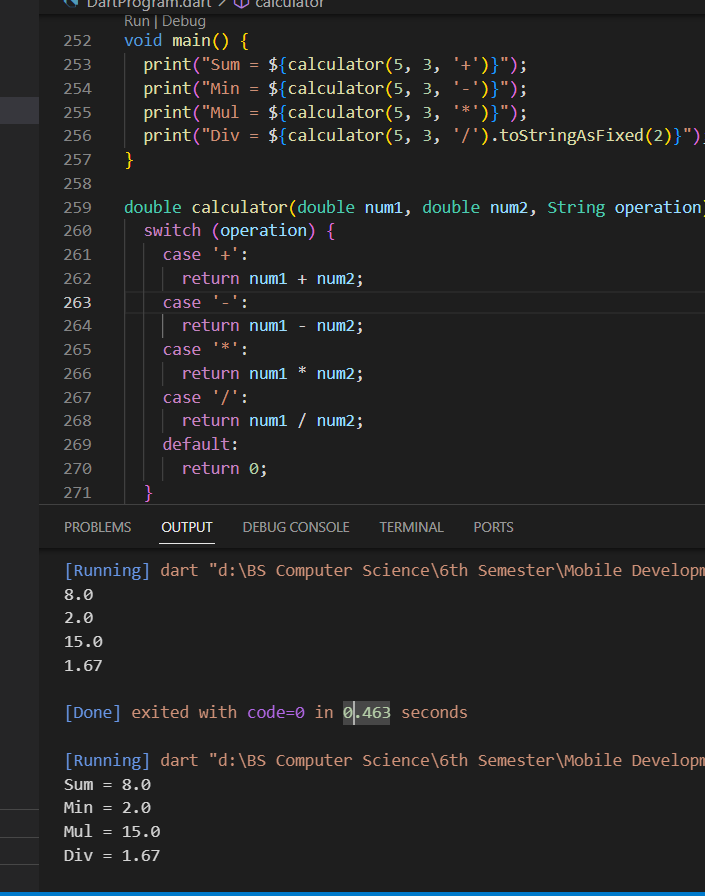
**Program and Output Screenshot:**

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Printed the Table 1 -9

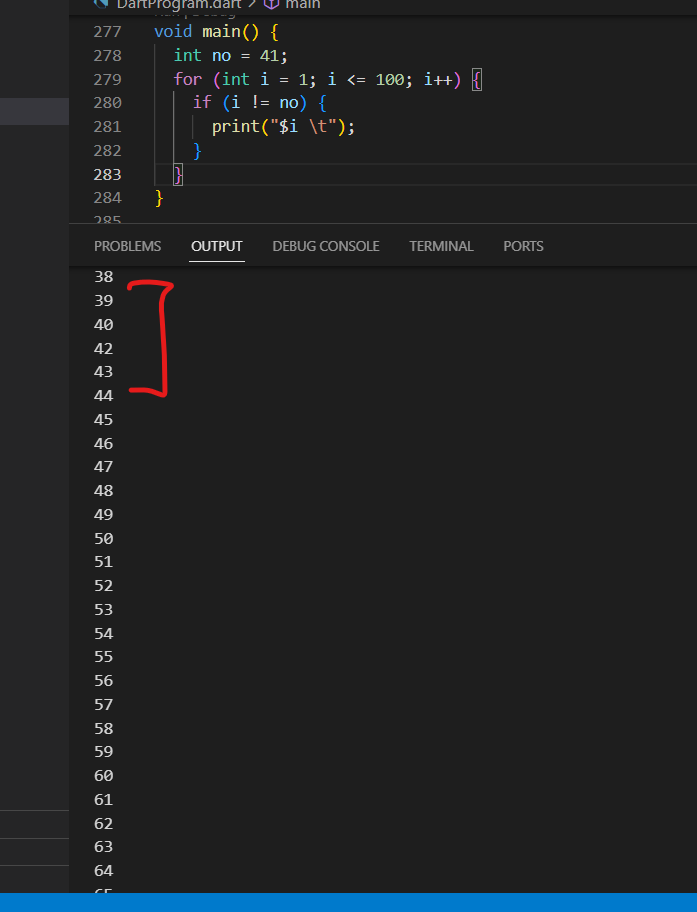
1. **Write a dart program to create a simple calculator that performs addition, subtraction, multiplication, and division.**

**Program and Output Screenshot:**

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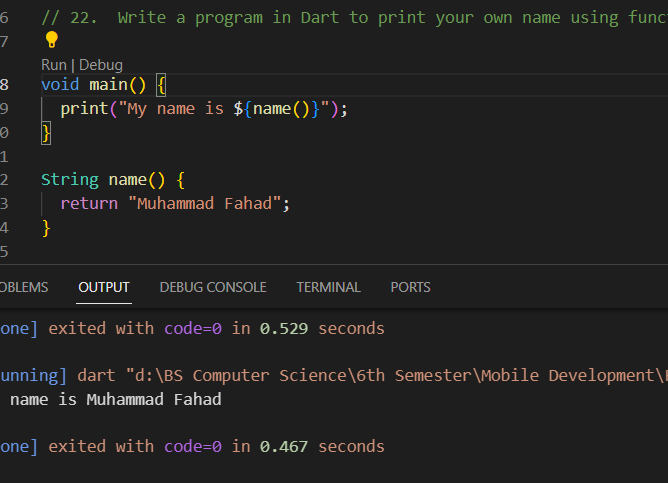
1. **Write a dart program to print 1 to 100 but not 41.**

**Program and Output Screenshot:**

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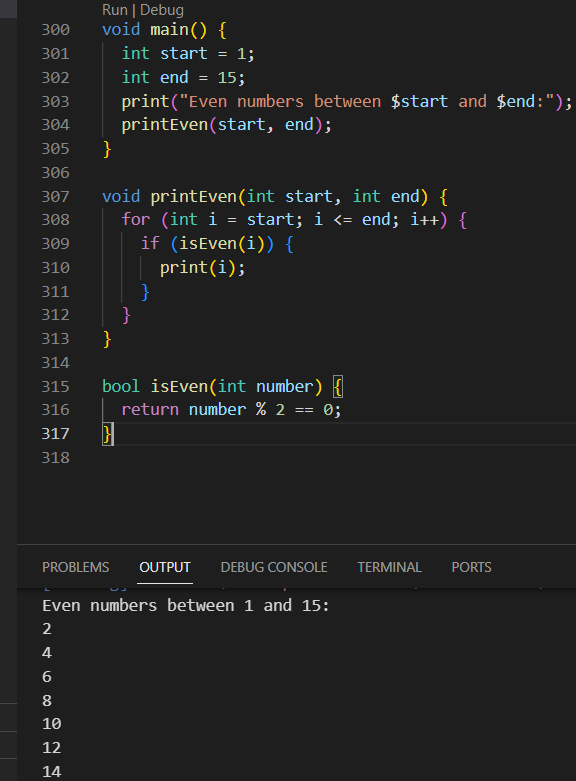
1. **Write a program in Dart to print your own name using function.**

**Program and Output Screenshot:**

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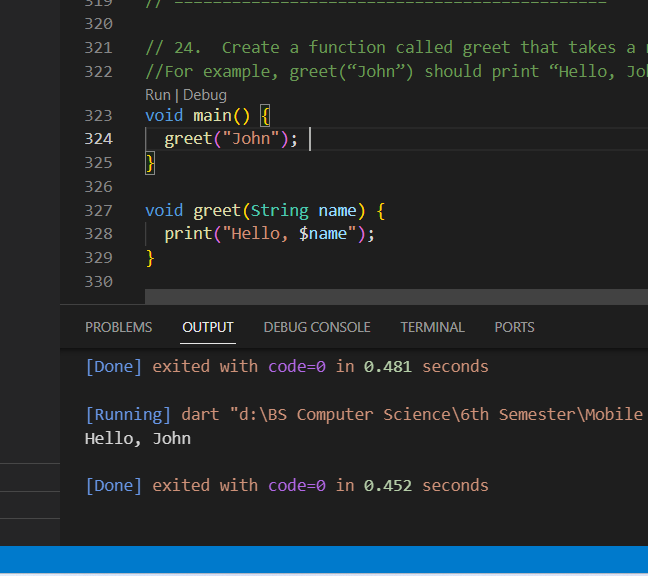
1. **Write a program in Dart to print even numbers between intervals using function.**

**Program and Output Screenshot:**

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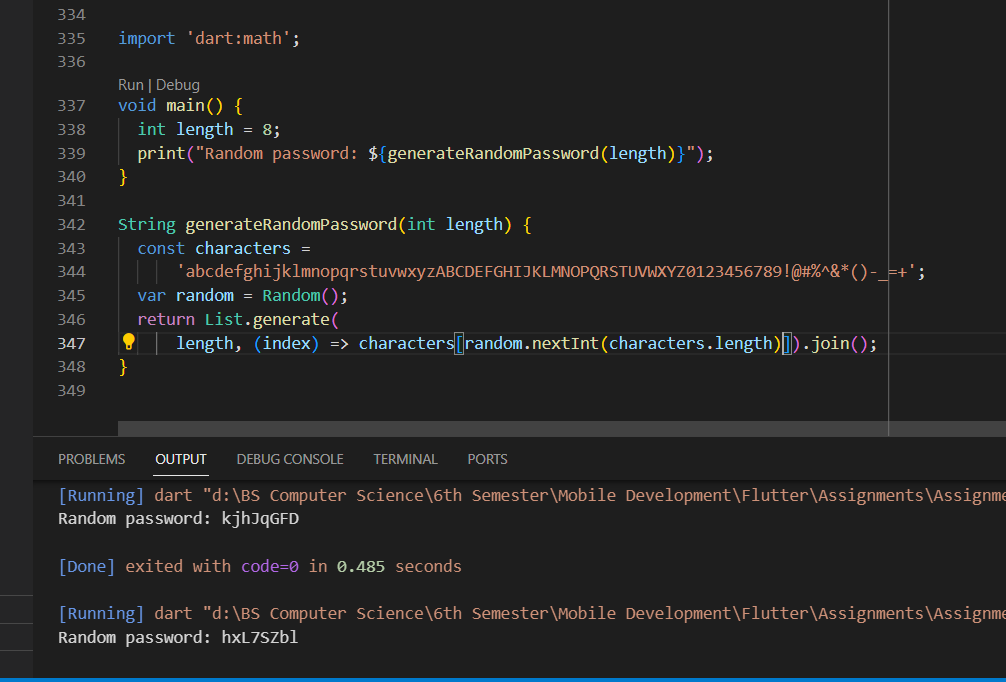
1. **Create a function called greet that takes a name as an argument and prints a greeting message. For example, greet(“John”) should print “Hello, John”.**

**Program and Output Screenshot:**

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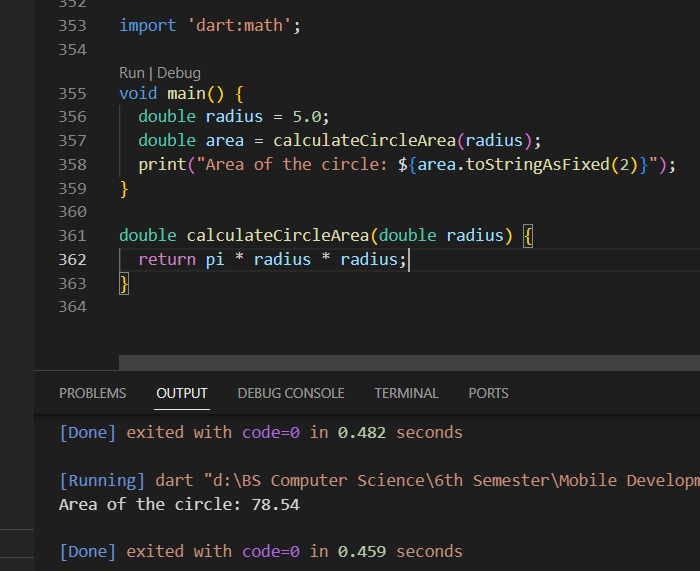
1. **Write a program in Dart that generates random password.**

**Program and Output Screenshot:**

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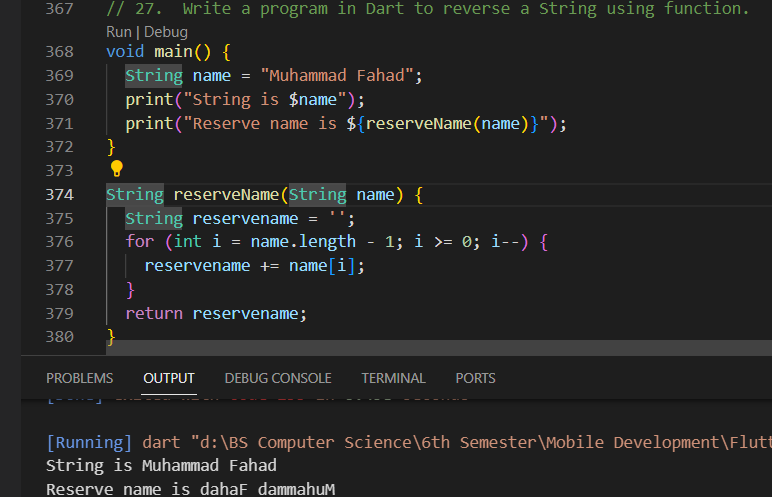
1. **Write a program in Dart that find the area of a circle using function. Formula: pi \* r \* r**

**Program and Output Screenshot:**

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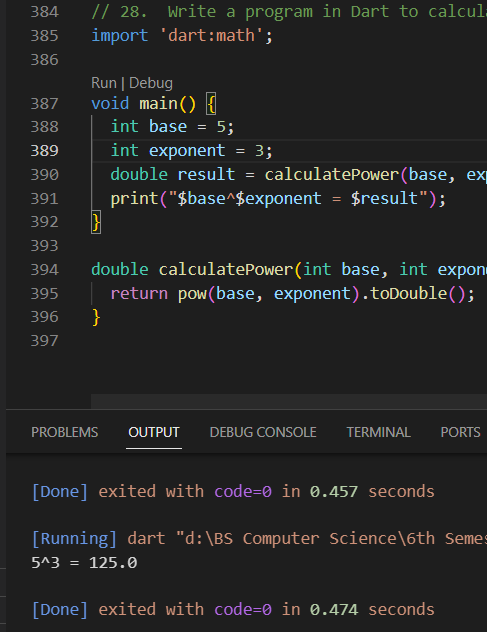
1. **Write a program in Dart to reverse a String using function.**

**Program and Output Screenshot:**

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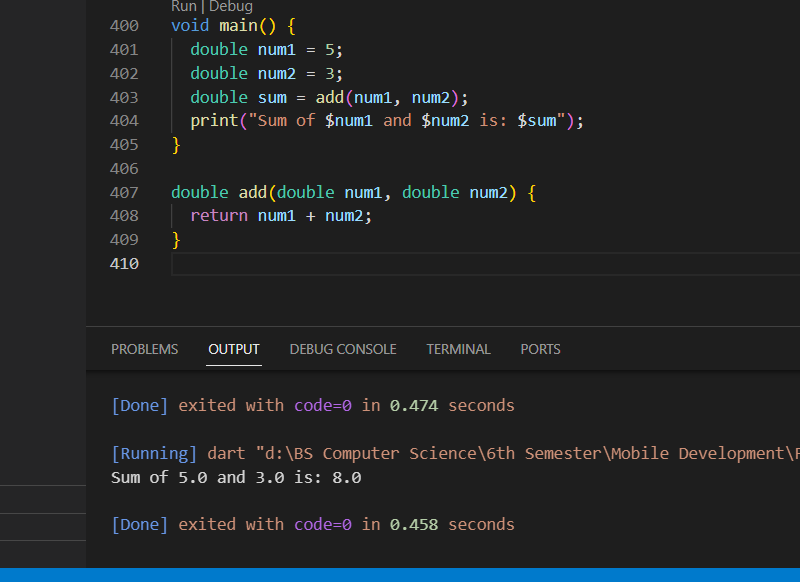
1. **Write a program in Dart to calculate power of a certain number. For e.g 5^3=125**

**Program and Output Screenshot:**

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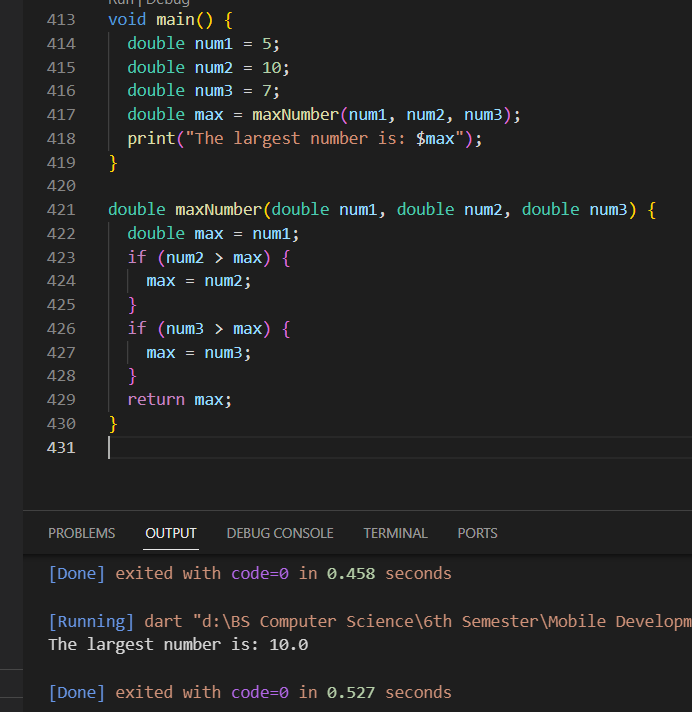
1. **Write a function in Dart named add that takes two numbers as arguments and returns their sum.**

**Program and Output Screenshot:**

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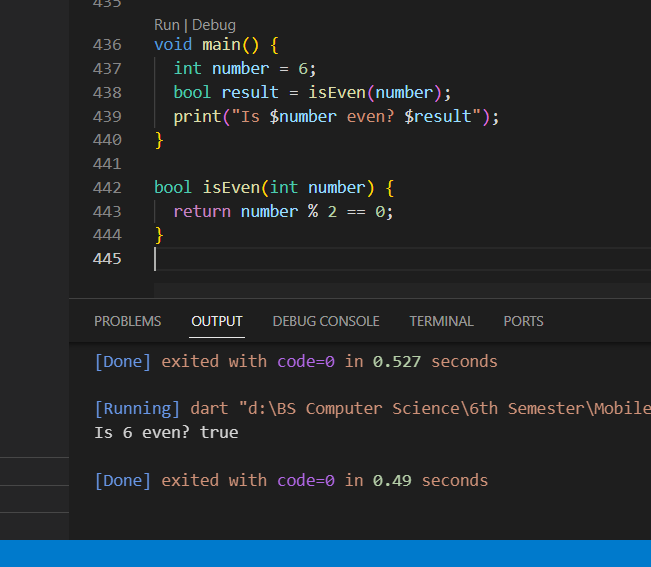
1. **Write a function in Dart called maxNumber that takes three numbers as arguments and returns the largest number.**

**Program and Output Screenshot:**

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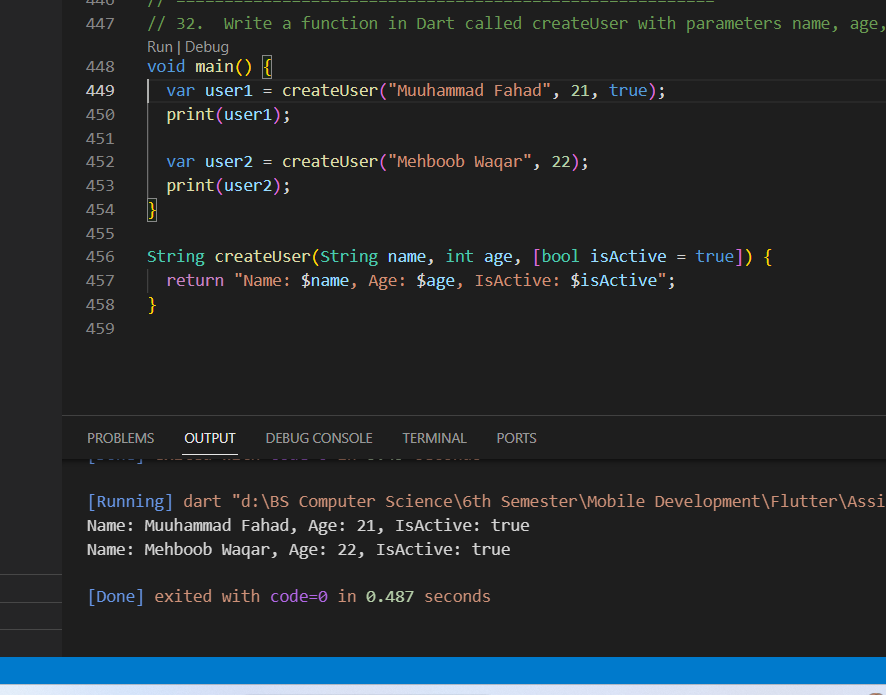
1. **Write a function in Dart called isEven that takes a number as an argument and returns True if the number is even, and False otherwise.**

**Program and Output Screenshot:**

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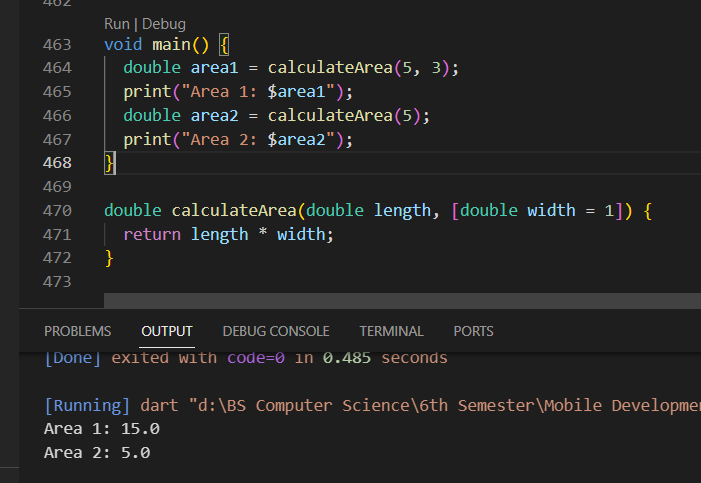
1. **Write a function in Dart called createUser with parameters name, age, and isActive, where isActive has a default value of true.**

**Program and Output Screenshot:**

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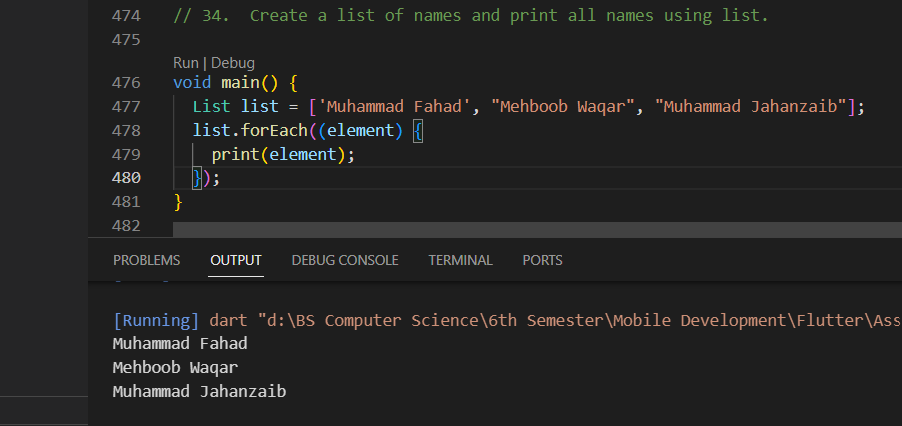
1. **Write a function in Dart called calculateArea that calculates the area of a rectangle. It should take length and width as arguments, with a default value of 1 for both. Formula: length \* width.**

**Program and Output Screenshot:**

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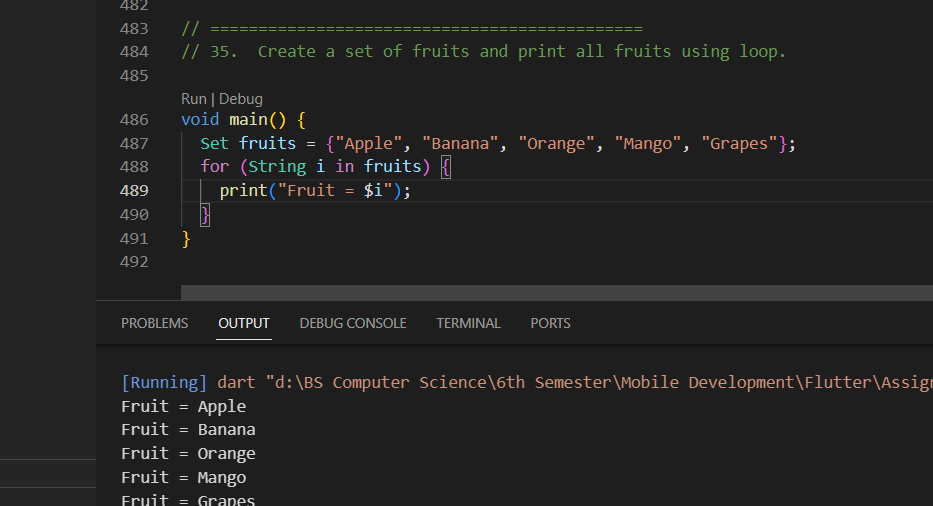
1. **Create a list of names and print all names using list.**

**Program and Output Screenshot:**

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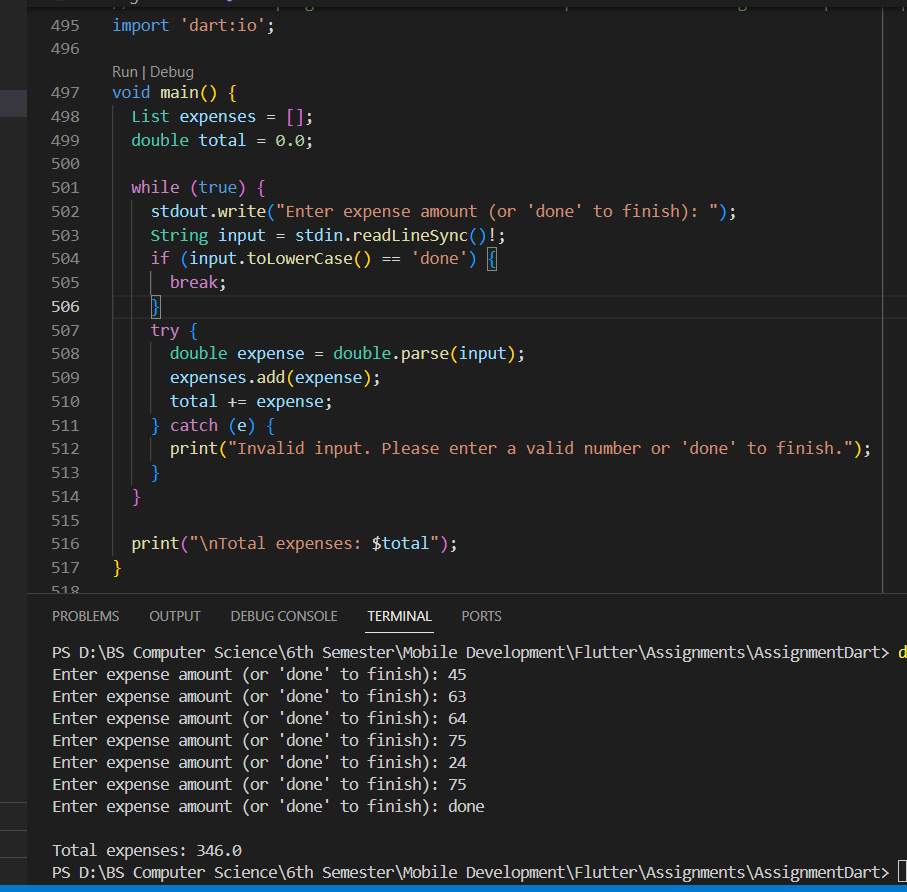
1. **Create a set of fruits and print all fruits using loop.**

**Program and Output Screenshot:**

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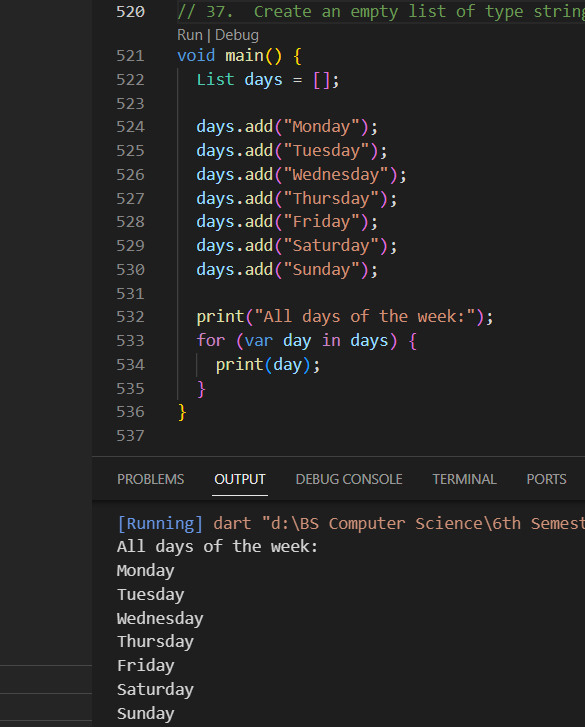
1. **Create a program thats reads list of expenses amount using user input and print total.**

**Program and Output Screenshot:**

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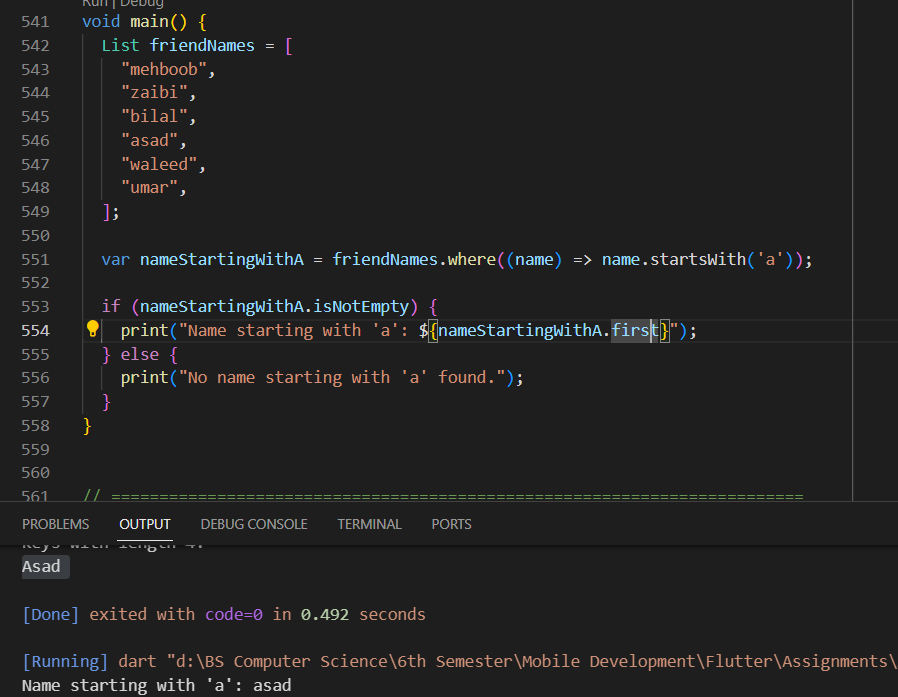
1. **Create an empty list of type string called days. Use the add method to add names of 7 days and print all days.**

**Program and Output Screenshot:**

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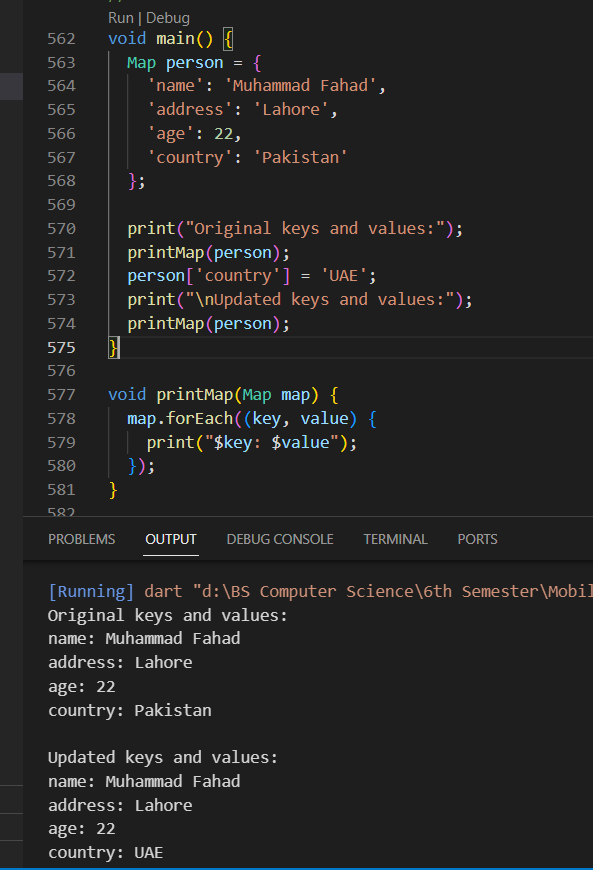
1. **Add your 7 friend names to the list. Use where to find a name that starts with alphabet a.**

**Program and Output Screenshot:**

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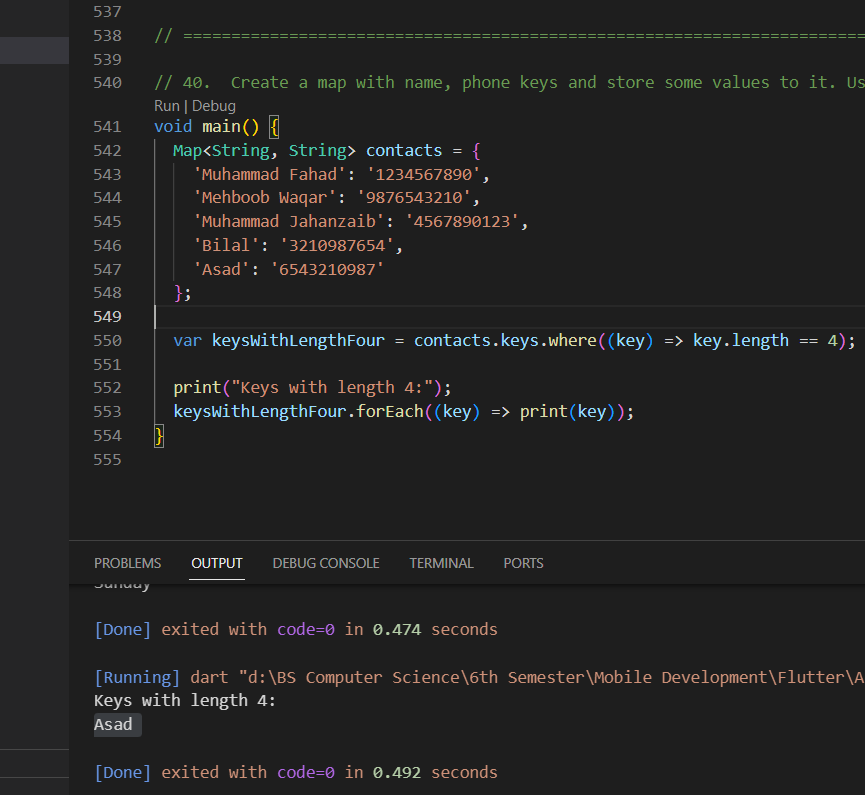
1. **Create a map with name, address, age, country keys and store values to it. Update country name to other country and print all keys and values.**

**Program and Output Screenshot:**

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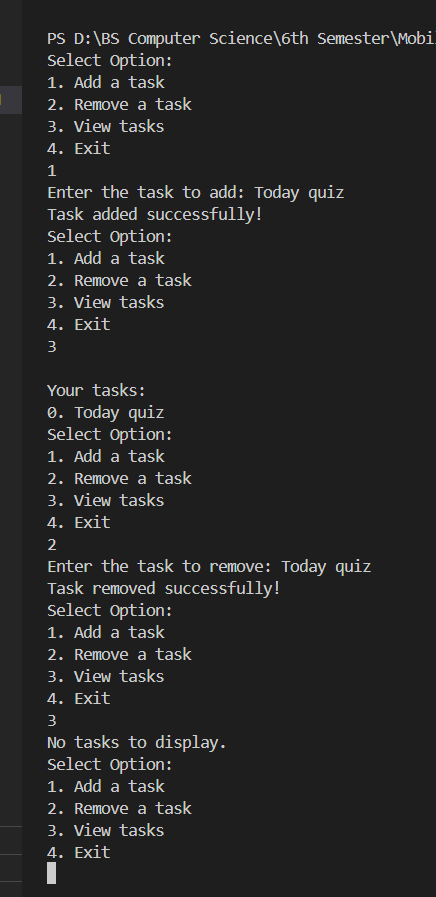
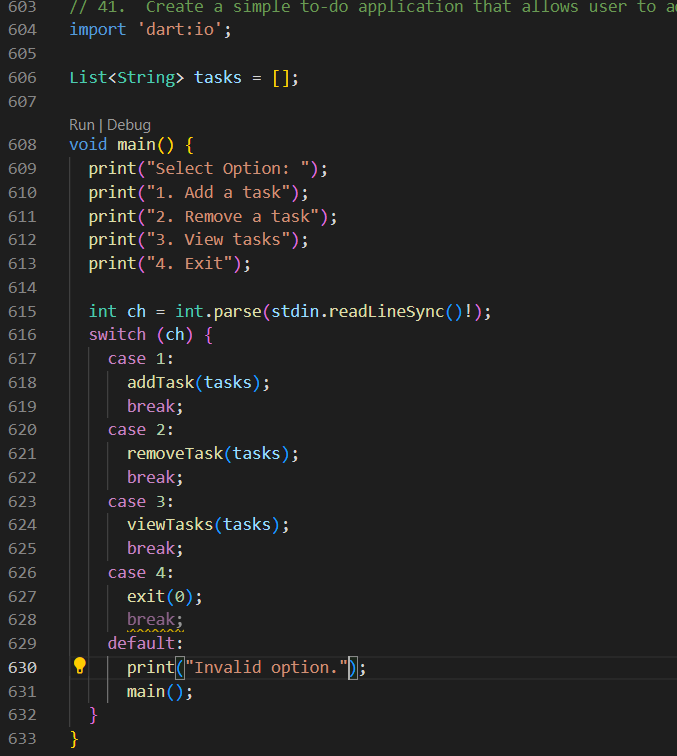
1. **Create a map with name, phone keys and store some values to it. Use where to find all keys that have length 4.**

**Program and Output Screenshot:**

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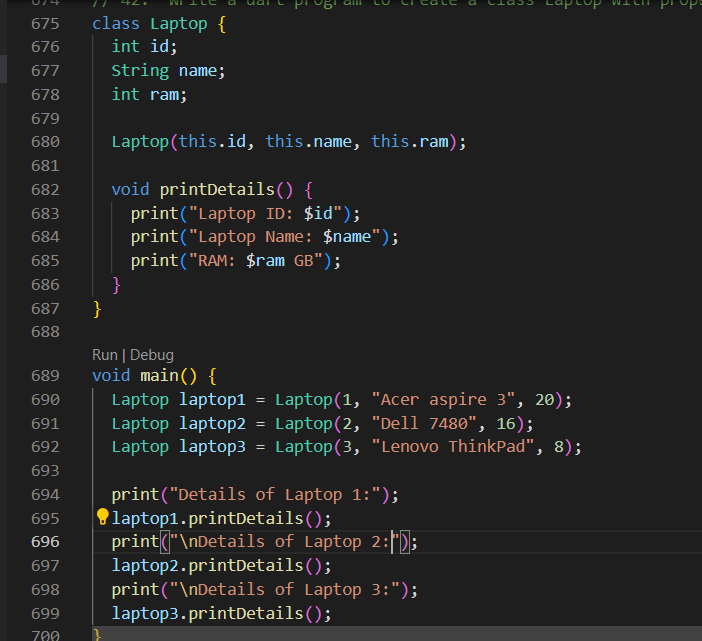
1. **Create a simple to-do application that allows user to add, remove, and view their task.**

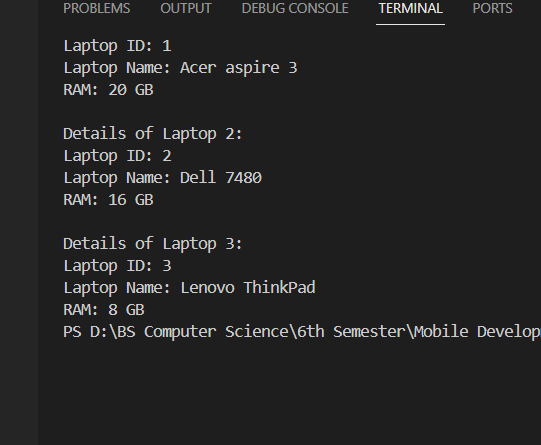
**Program and Output Screenshot:**

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1. **Write a dart program to create a class Laptop with properties [id, name, ram] and create 3 objects of it and print all details.**

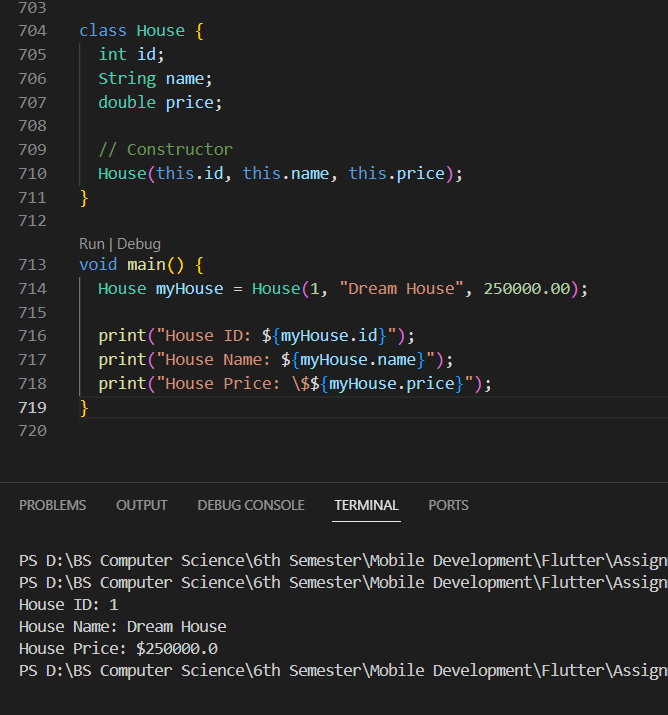
**Program and Output Screenshot:**

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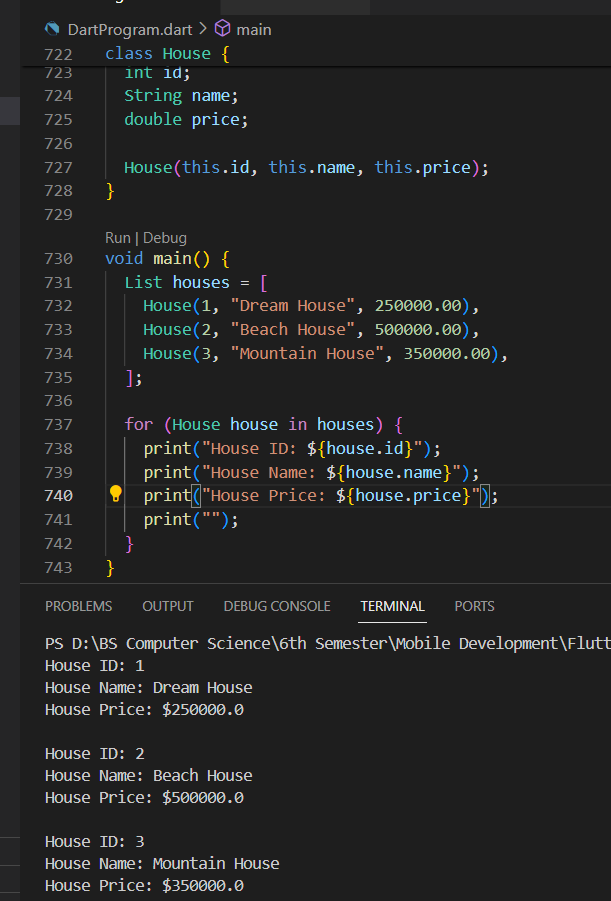
1. **Write a dart program to create a class House with properties [id, name, price].**

**Program and Output Screenshot:**

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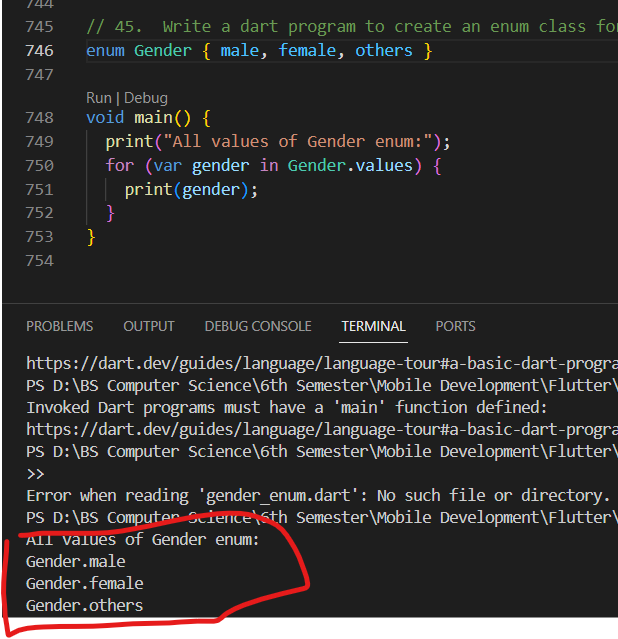
1. **Create a constructor of it and create 3 objects of it. Add them to the list and print all details.**

**Program and Output Screenshot:**

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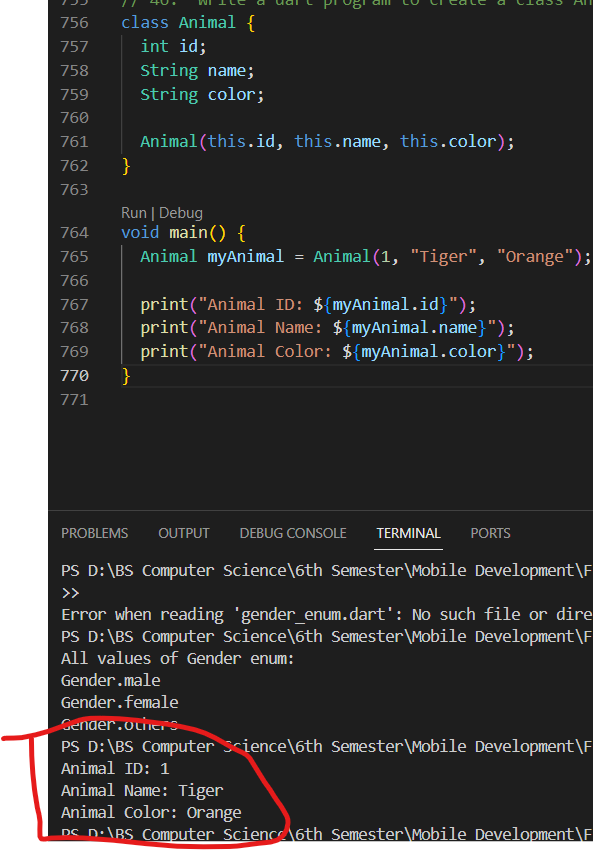
1. **Write a dart program to create an enum class for gender [male, female, others] and print all values.**

**Program and Output Screenshot:**

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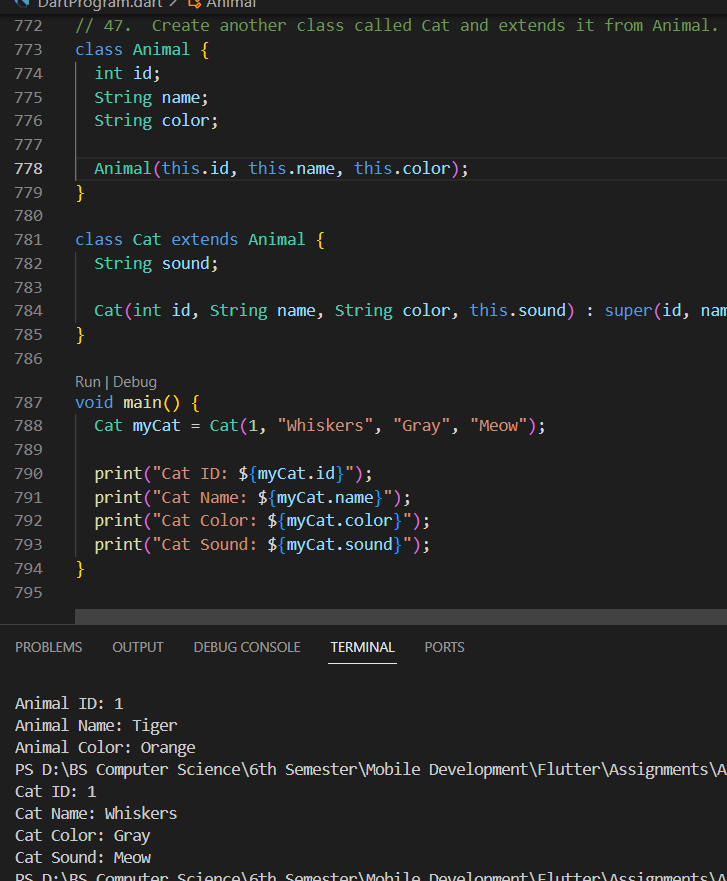
1. **Write a dart program to create a class Animal with properties [id, name, color].**

**Program and Output Screenshot:**

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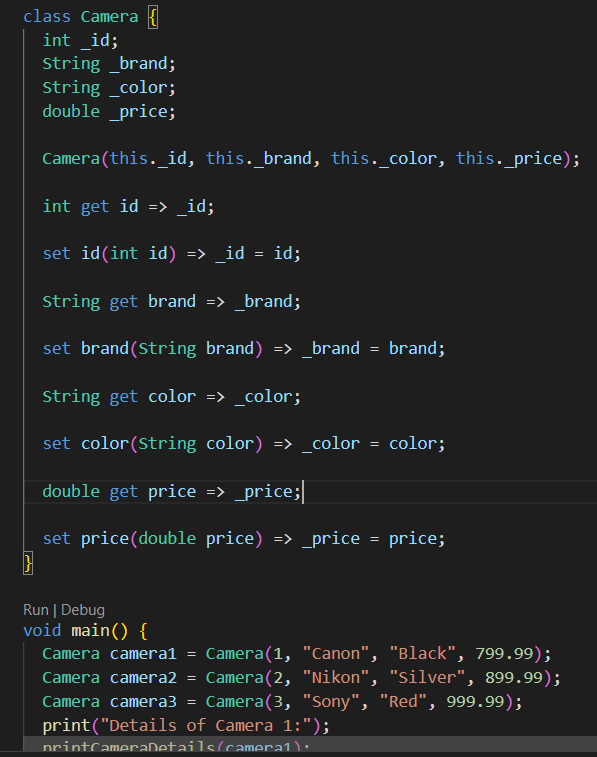
1. **Create another class called Cat and extends it from Animal. Add new properties sound in String. Create an object of a Cat and print all details.**

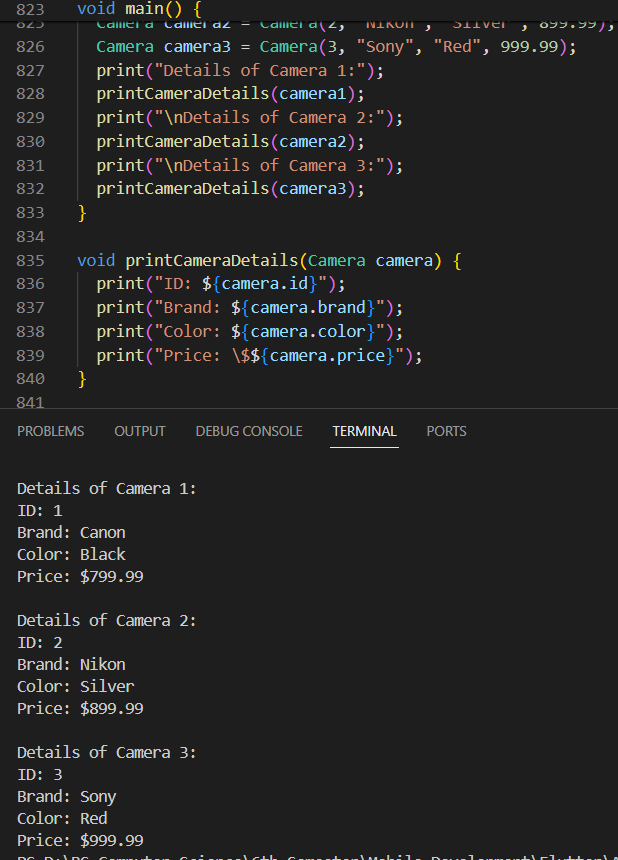
**Program and Output Screenshot:**

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1. **Write a dart program to create a class Camera with private properties [id, brand, color, price]. Create a getter and setter to get and set values. Also, create 3 objects of it and print all details.**

**Program and Output Screenshot:**

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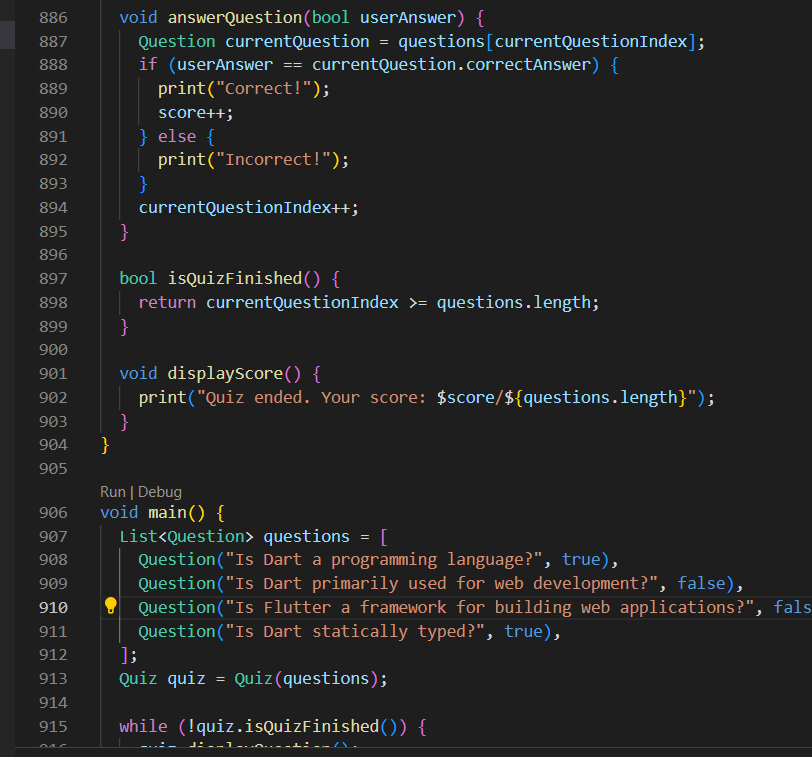
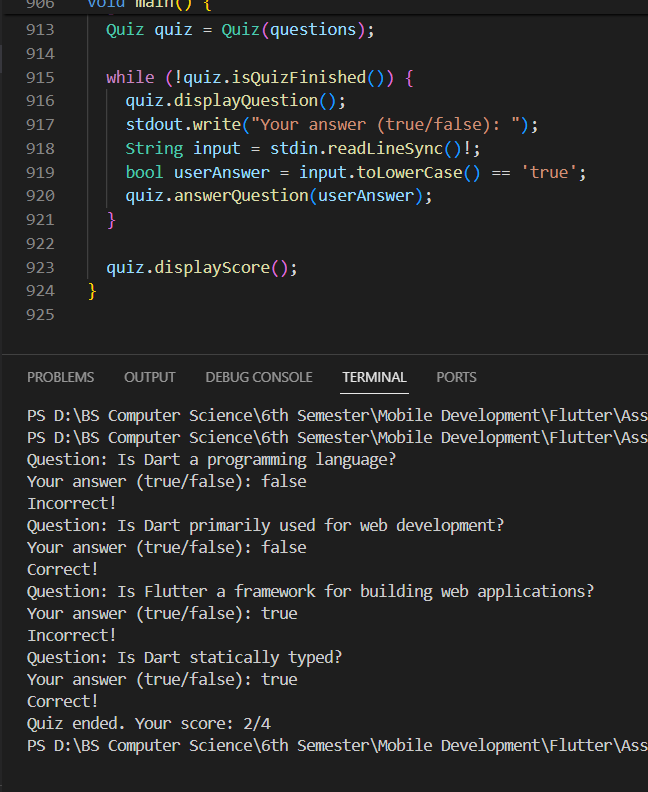
1. **Create an interface called Bottle and add a method to it called open(). Create a class called CokeBottle and implement the Bottle and print the message “Coke bottle is opened”. Add a factory constructor to Bottle and return the object of CokeBottle. Instantiate CokeBottle using the factory constructor and call the open() on the object.**

**Program and Output Screenshot:**

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1. **Create a simple quiz application using oop that allows users to play and view their score.**

**Program and Output Screenshot:**

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1. **What is the purpose of the ? operator in Dart null safety?**

**Program and Output Screenshot:**

In Dart null safety, the **?** operator is used in several contexts to work with potentially nullable types. Its purpose is to indicate that a variable or expression can be null, and it allows for safe navigation and null-aware operations.

Here are the main uses of the **?** operator in Dart null safety:

1. **Nullable Type Declaration**: When declaring a variable, you can explicitly mark it as nullable by appending **?** after its type. For example:

dartCopy code

String? nullableString;

1. **Null-aware Access**: The **?.** operator is used for null-aware access, which allows accessing properties or calling methods on an object only if the object is not null. If the object is null, the expression evaluates to null. For example:

dartCopy code

String? name; int length = name?.length ?? 0; // Safe access to length property

1. **Null-aware Assignment**: The **??=** operator is used for null-aware assignment, which assigns a value to a variable only if the variable is currently null. For example:

dartCopy code

int? value; value ??= 42; // Assigns 42 to value only if value is null

1. **Conditional Expression**: The **condition ? expr1 : expr2** operator is used for conditional expressions. In Dart null safety, both **expr1** and **expr2** can be nullable, and the result of the expression is nullable if either **expr1** or **expr2** is nullable. For example:

dartCopy code

String? name; String message = name != null ? 'Hello, $name!' : 'Hello, Guest!';

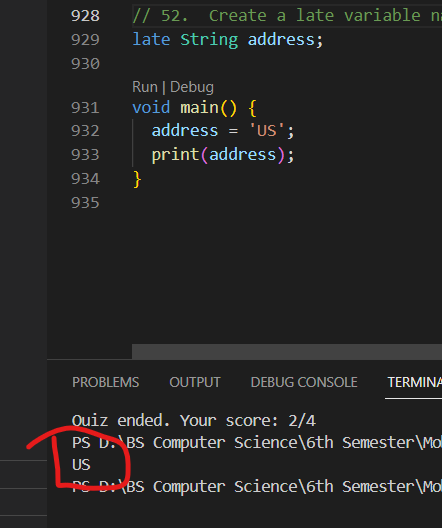
1. **Function Invocation**: The **?** operator can be used to make function invocations null-safe. If the function might be null, you can use **?.** to invoke it conditionally. For example:

dartCopy code

Function? nullableFunction; nullableFunction?.call(); // Safe invocation of nullableFunction

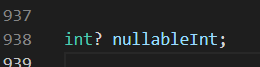
1. **Create a late variable named address, assign a US value to it and print it.**

**Program and Output Screenshot:**

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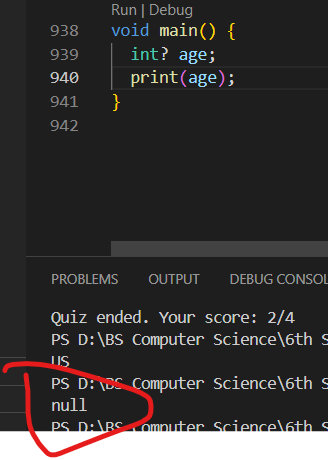
1. **How do you declare a nullable type in Dart null safety?**

**Program and Output Screenshot:**

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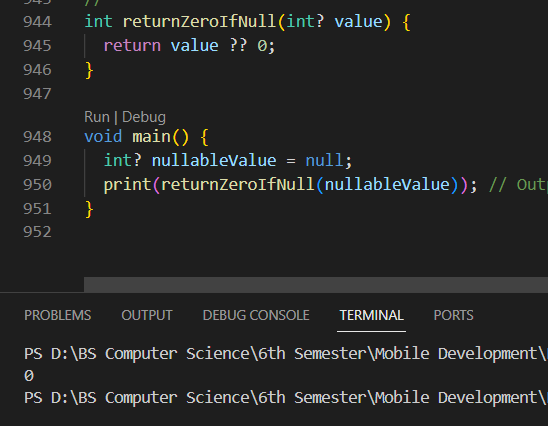
1. **Write a program in a dart to create an age variable and assign a null value to it using ?.**

**Program and Output Screenshot:**

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1. **Write a function that accepts a nullable int parameter and returns 0 if the value is null using null coalescing operator ??.**

**Program and Output Screenshot:**

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1. **Write a function named generateRandom() in dart that randomly returns 100 or null. Also, assign a return value of the function to a variable named status that can’t be null. Give status a default value of 0, if generateRandom() function returns null**

**Program and Output Screenshot:**

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