

FLUTTER PRACTICE PROBLEMS

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DART (CLO-1)

Question A1:

Write a program that takes as input the command line arguments of types string, integer and decimal value. In case of a string, its length should be displayed, for an integer value, it should be multiplied by 100, and for a decimal value, we need to take its power of 3.

Question:

Create a list of records, consisting of name and age values. Sort list with respect to name and age.

Question:

Create a list of integers, 10, 20, 30, 40.
Create another list using the first list, such that at its initialization, the new list is initialized like this:
Item 1: 10, Item 2: 20, Item 3: 30, Item 4: 40.

Question:

Suppose we have a list of 4 integers. You need to sum the elements of the list without using any loops or calling list elements through their indexes.

Question:

Suppose we have two numbers $a=10$ and $b=20$. You need to swap the numbers without using any third temporary variable, or any arithmetic or logical operators.

Question:

Suppose you have a range of numbers, and their respective grades:

10 – 30, grade E

31 – 50, grade D

51 – 70, grade C

71 – 90, grade B

91 – 100, grade A

Write a switch – case statement, that takes the marks and show the grade.

Question:

Create a Map with positions and names. Sort the set with respect to the positions.

For example:

4, Shahid

2, Noman

1, Faisal

3, Javed

Use sort function.

Question:

Write an example of function definition and function call with named parameters.

Question:

Write arrow functions for the following equations:

$$A = x^2 + 2xy + P.z$$

$$A = n^2 + qn + 1$$

$$Z = x^2 + 4y^2 - 8y + 2x$$

Question:

Suppose the equation is:

$$Z = x^2 + 4y^2 - 8N + 2x$$

Where N is represented by a separate equation:

$$N = p^2z + rq^2 + s$$

Solve 'Z' with arrow function. Note, here you are calling an arrow function within an arrow function.

Question:

Write the following expressions using Dart arrow functions. DO NOT change the variable names and function names as provided below, otherwise it will be considered an incorrection solution.

$$N = x^3 + a^3$$

$$Z = s^2 + 5t + N/2$$

$$A = 2x + yZ^2$$

Question:

Write an example of arrow function taking two string arguments, and returning concatenated string.

Question:

Given the following list: ['apples', 'bananas', 'oranges'];

Append a string with each element of the list and capitalize each element of list. Use a combination of map and forEach function.

Question:

Create a small calculator application using typedef functions performing these operations, add, subtract, multiply, and divide.

Question:

Suppose you have the following array,

```
List<Map<String, String>> myArray = [  
  {'name': 'ali', 'age': '45'},  
  {'name': 'noman', 'age': '34'},  
];
```

Display the key and value of array elements using for and forEach.

Question:

Suppose we have the following arrays:

```
var myArray1 = [3, 4, 5]  
var myArray2 = [6, 7, 8]
```

Write code to append the myArray2 into myArray1.

Question:

Suppose we have an Dart object { name: 'Devin', hairColor: 'brown' }
Write code to change value of hairColor using spread syntax (...) three dots.

Question:

Write an example of defining an arrow function within another arrow function.

Question:

Create a class Person with attributes: id, name, age.

Derive two classes from person, named Student and Teacher.

The extra attributes of Student are cgpa, currently enrolled semester (e.g., FA22 or SP22, etc), admission date.

The extra attributes of Teacher are salary, designation (Lecturer, Assistant Professor, Professor, etc), department, and joining date.

Populate at least 3 records in each class use class objects.

A user should be able to search a student or teacher with the provided ID. You should store objects of Teacher and Student in a list.

Print list of students whose cgpa is greater than 3.7.

Question:

Given the following list of objects, you need to write `myObjects.where().forEach()` function, so that the name, age, and marks of those students are printed on screen whose age is greater than 25 and marks are greater than equal to 50, and name is Alice or Bob

```
myObjects.add(Student('Alice', 25, 55));  
myObjects.add(Student('Bob', 30, 50));  
myObjects.add(Student('Alice', 27, 40));  
myObjects.add(Student('Charlie', 22, 45));
```