 

Assignment 4

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**Question 1**

**How to duplicate repeating items inside a Dart list?**

**Problem:**

**Consider the code: final List \_nameList = [Bilal, Bilal, Bilal, Owais, Owais, Owais]**

**What can to be done in order to not repeat Bilal and Owais multiple times?**

void main() {

  final List \_nameList = ["Bilal", "Bilal", "Bilal", "Owais", "Owais", "Owais"];

  print(\_nameList.toSet().toList());

}

Output:

[Bilal, Owais]

**Question 2**

**Let’s say you are given a list saved in a variable:**

**Consider a = [1, 4, 9, 16, 25, 36, 49, 64, 81, 100].**

**Write a code that takes this list and makes a new list that has only the even elements of this list in it.**

void main() {

  List a = [1, 4, 9, 16, 25, 36, 49, 64, 81, 100];

  List.of(a);

  var evenNumbers = a.where((number) => number.isEven);

  evenNumbers = evenNumbers.toList()..sort();

  print(evenNumbers);

}

Output:

[4, 16, 36, 64, 100]

**Question 3**

**Ask the user for a number and determine whether the number is prime or not**

import 'dart:io';

import 'dart:math';

void main() {

  print('Enter number to check prime or not');

  int? num = int.parse(stdin.readLineSync()!);

  if (num <= 1) {

    print("Is not a Prime Number");

  } else {

    for (int i = 2; i <= sqrt(num); i++) {

      if (num % i == 0) {

        print("$num not a Prime Number");

      }

    }

    print('$num is a prime');

  }

}

Output:

Enter number to check prime or not

8

8 not a Prime Number

8 is a prime

------------

Enter number to check prime or not

7

7 is a prime

**Question 4**

**Write a program to print multiplication table of 7 lengths 15 using loop.**

void main() {

  print("Table of 7");

  for (int i = 1; i <= 15; ++i) {

    print("7 x $i = ${i \* 7}");

  }

}

Output:

Table of 7

7 x 1 = 7

7 x 2 = 14

7 x 3 = 21

7 x 4 = 28

7 x 5 = 35

7 x 6 = 42

7 x 7 = 49

7 x 8 = 56

7 x 9 = 63

7 x 10 = 70

7 x 11 = 77

7 x 12 = 84

7 x 13 = 91

7 x 14 = 98

7 x 15 = 105

**Question 5**

**Write a program to print items of the following array using for loop: fruits = [“apple”, “banana”, “mango”, “orange”, “strawberry”].**

void main() {

   List fruits = ["apple", "banana", "mango", "orange", "strawberry"];

    for (int i = 0; i <= 4; ++i)

    {

    print("fruit no ${i+1} = ${fruits[i]}");

    }

}

Output:

fruit no 1 = apple

fruit no 2 = banana

fruit no 3 = mango

fruit no 4 = orange

fruit no 5 = strawberry

**Question 6**

**Write a program to print multiples of 5 ranging 1 to 100.**

void main() {

   print("Table of 5");

    for (int i = 1; i <= 100; ++i){

    print("5 x $i = ${i\*5}");

    }

}

Output:

Table of 5

5 x 1 = 5

5 x 2 = 10

5 x 3 = 15

5 x 4 = 20

5 x 5 = 25

5 x 6 = 30

5 x 7 = 35

5 x 8 = 40

5 x 9 = 45

5 x 10 = 50

5 x 11 = 55

5 x 12 = 60

5 x 13 = 65

5 x 14 = 70

5 x 15 = 75

5 x 16 = 80

5 x 17 = 85

5 x 18 = 90

5 x 19 = 95

5 x 20 = 100

5 x 21 = 105

5 x 22 = 110

5 x 23 = 115

5 x 24 = 120

5 x 25 = 125

5 x 26 = 130

5 x 27 = 135

5 x 28 = 140

5 x 29 = 145

5 x 30 = 150

5 x 31 = 155

5 x 32 = 160

5 x 33 = 165

5 x 34 = 170

5 x 35 = 175

5 x 36 = 180

5 x 37 = 185

5 x 38 = 190

5 x 39 = 195

5 x 40 = 200

5 x 41 = 205

5 x 42 = 210

5 x 43 = 215

5 x 44 = 220

5 x 45 = 225

5 x 46 = 230

5 x 47 = 235

5 x 48 = 240

5 x 49 = 245

5 x 50 = 250

5 x 51 = 255

5 x 52 = 260

5 x 53 = 265

5 x 54 = 270

5 x 55 = 275

5 x 56 = 280

5 x 57 = 285

5 x 58 = 290

5 x 59 = 295

5 x 60 = 300

5 x 61 = 305

5 x 62 = 310

5 x 63 = 315

5 x 64 = 320

5 x 65 = 325

5 x 66 = 330

5 x 67 = 335

5 x 68 = 340

5 x 69 = 345

5 x 70 = 350

5 x 71 = 355

5 x 72 = 360

5 x 73 = 365

5 x 74 = 370

5 x 75 = 375

5 x 76 = 380

5 x 77 = 385

5 x 78 = 390

5 x 79 = 395

5 x 80 = 400

5 x 81 = 405

5 x 82 = 410

5 x 83 = 415

5 x 84 = 420

5 x 85 = 425

5 x 86 = 430

5 x 87 = 435

5 x 88 = 440

5 x 89 = 445

5 x 90 = 450

5 x 91 = 455

5 x 92 = 460

5 x 93 = 465

5 x 94 = 470

5 x 95 = 475

5 x 96 = 480

5 x 97 = 485

5 x 98 = 490

5 x 99 = 495

5 x 100 = 500

**Question 7**

**The Temperature Converter: It’s hot out! Let’s make a converter based on the steps here**

**a. Store a Celsius temperature into a variable.**

**b. Convert it to Fahrenheit & output “NNoC is NNoF”.**

**c. Now store a Fahrenheit temperature into a variable.**

**d. Convert it to Celsius & output “NNoF is NNoC”**

void main() {

  num celsius, fahrenheit;

  print("Celsius into Fahrenhiet");

  print("Enter temperature in Celsius: ");

  celsius = int.parse(stdin.readLineSync()!);

  fahrenheit = (celsius \* 9 / 5) + 32;

  print("$celsius Celsius = $fahrenheit Fahrenheit");

  print("Fahrenhiet into Celsius");

  print("Enter temperature in Fahrenheit: ");

  fahrenheit = int.parse(stdin.readLineSync()!);

  /\* celsius to fahrenheit conversion formula \*/

  celsius = ((fahrenheit - 32) \* 5 / 9);

  print("$fahrenheit Fahrenheit = $celsius Celsius");

}

Output:

Celsius into Fahrenhiet

Enter temperature in Celsius:

12

12 Celsius = 53.6 Fahrenheit

Fahrenhiet into Celsius

Enter temperature in Fahrenheit:

48

48 Fahrenheit = 8.88888888888889 Celsius

**Question 8**

**Write a program to create a calculator for +, -, \*, / & % using if statements. Take the following input:**

**a. First number Second number b. Operation (+, -, \*, /, %). Compute & show the calculated result to user**

void main() {

  num a, b, sum;

  var operator;

  print("Simple Calculator");

  print("Enter First Number: ");

  a = int.parse(stdin.readLineSync()!);

  print("Enter Second Number: ");

  b = int.parse(stdin.readLineSync()!);

  print("Enter an Operation (+, -, \*, /, %): ");

  operator = stdin.readLineSync();

  if (operator == '+') {

    sum = a + b;

    print("Sum: $sum");

  } else if (operator == '-') {

    sum = a - b;

    print("Subtraction: $sum");

  } else if (operator == '\*') {

    sum = a \* b;

    print("Multiplication $sum");

  } else if (operator == '/') {

    sum = a / b;

    print("Divison $sum");

  } else if (operator == '%') {

    sum = a % b;

    print("Modulus $sum");

  } else {

    print("Wrong Operator");

  }

}

Output:

Simple Calculator

Enter First Number:

3

Enter Second Number:

5

Enter an Operation (+, -, \*, /, %):

\*

Multiplication 15

**Question 9**

**Write a program that takes a character (I. e. string of length 1) and returns true if it is a vowel, false otherwise.**

import 'dart:io';

void main() {

  var x = stdin.readLineSync();

  print("Enter a letter");

  if (x == "a" ||

      x == "e" ||

      x == "i" ||

      x == "o" ||

      x == "u" ||

      x == "A" ||

      x == "E" ||

      x == "I" ||

      x == "O" ||

      x == "U") {

    print("True");

  } else {

    print("False");

  }

}

Output:

Enter a letter

j

False

Enter a letter

a

True

**Question 10**

**Write a program to reverse a string. For example, if my string is "natsikaP nawaJ" then my result will be "Jawan Pakistan".**

import 'dart:io';

void main() {

  String a = stdin.readLineSync()!;

  a = a.split("").reversed.join("");

  print(a);

}

Output:

Jawan Pakistan

natsikaP nawaJ

**Question 11**

**How are duplicates removed from a given array? [Ahmed, Bilal, Muhammad, Owais, Muhmmad, Ali, Ahmed]**

void main() {

  List \_nameList = [

    "Ahmed",

    "Bilal",

    "Muhammad",

    "Owais",

    "Muhmmad",

    "Ali",

    "Ahmed"

  ];

  print(\_nameList.toSet().toList());

}

Output:

 [Ahmed, Bilal, Muhammad, Owais, Muhmmad, Ali]

**Question 12**

**Find the missing number in array of 1 to 100?**

**Question 13**

**Find the largest and smallest number in an unsorted integer array?**

void main() {

  List a = [121, 123, 34, 343, 53, 2, 33, 14, 3];

  var largestValue = a[0];

  var smallestValue = a[0];

  for (var i = 0; i < a.length; i++) {

    if (a[i] > largestValue) {

      largestValue = a[i];

    }

    if (a[i] < smallestValue) {

      smallestValue = a[i];

    }

  }

  print("Smallest value in the list : $smallestValue");

  print("Largest value in the list : $largestValue");

}

Output:

Smallest value in the list : 2

Largest value in the list : 343

**Question 14**

**Find all pairs of an integer array whose sum is equal to a given number?**