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Assignment 3

1. How to duplicate repeating items inside a Dart list?

Problem.

Consider the code:

final List<Ball> _ballList = [Ball (), Ball (), Ball (), Ball (), Ball (),]

What can to be done in order to not repeat Ball () multiple times?

CODE:

```
void main() {

 final _ballList = ["Ball" , "Ball" , "Ball" , "Ball" , "Ball" ,];

 for (var i=0 ; i<_ballList.length-1;i++)
 {
  for (var j =i+1;j<_ballList.length;j++ )
  {
  if(_ballList[i]==_ballList[j])
  {

    print("The duplicate elements is :${_ballList[j]}");
```

```
  }

    }
 }

}
```

```
Console

  The duplicate elements is :Ball
```

(2) How to get difference of lists in Dart? Problem: Consider you have two lists [1,2,3,4,5,6,7] and [3,5,6,7,9,10]. How would you get the difference as output? E.g. [1, 2, 4].

CODE:

```
var list1= [1,2,3,4,5,6,7] ;
var list2= [3,5,6,7,9,10];
var list3= list1.toSet().difference(list2.toSet()).toList();


print(list3);
```

OUTPUT:

```
Console

  [1, 2, 4]
```

3. Let's say you are given a list saved in a variable:

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

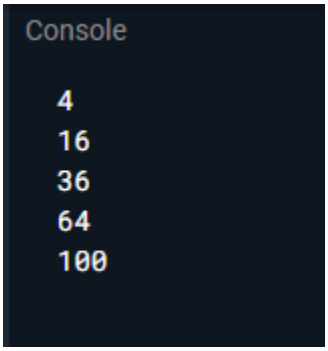
Write a code that takes this list and makes a new list that has only the

even elements of this list in it.

CODE:

```
//Q3


 void main()
{
 var a = [1, 4, 9, 16, 25, 36, 49, 64, 81, 100];
 for (var b in a){
 if(b%2==0){
  print(b);
 }
  }
}
```

OUTPUT:



4. Ask the user for a number and determine whether the number is prime or not.s

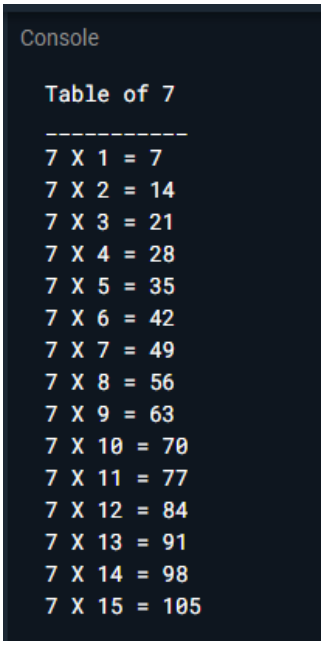
CODE:

```
//Q4
void main(){
  print(" Enter Any numbers ");
  int? n = int.parse(stdin.readLineSync()!);
  if (n==1 || n==0 )
    print("not prime numbers");

    else
    {
      for (var i = 0; i<=n/2;i++)

          if (n%i){
          print("not prime numbers");
        }
    }
}
```

5. Write a program to print multiplication table of 7 length 15.

CODE:

```
//Q5
void main(){

  print ("Table of 7");
  print("_____________");

  for (var i =1; i <=15 ;i++)
  {
    var j=i*7 ;

    print ("7 X ${i} = ${j}");

  }

}
```



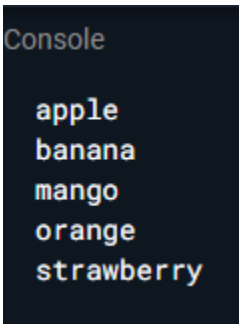
6. Write a program to print items of the following array using for loop:

fruits = [“apple”, “banana”, “mango”, “orange” , “strawberry”].

CODE:

//Q6

```
void main (){

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

  for (var i in fruits){

    print (i);
  }

}
```



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

CODE:

```
//Q7
void main (){

  print ("Multiples of five are as follows");

  for (var i =1; i<=100;i++)
  {

    if (i%5==0)
    print(i);

  }

}
```

```
Multiples of five are as follows
5
10
15
20
25
30
35
40
45
50
55
60
65
70
75
80
85
90
95
100
```

8. 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.

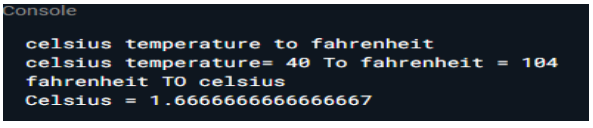
b. Convert it to Fahrenheit & output "NNoC is NNoF".

c. Now store a Fahrenheit temperature into a variable.

d. Convert it to Celsius & output "NNoF is NNoC".

CODE:

```
//Q8
void main(){

  var celsius_temperature=40;

 double  f = 40 * 1.8000 +32.00;
 print ("celsius temperature to fahrenheit\ncelsius temperature= ${celsius_temperature} To fahrenheit = ${f}");

  var fahrenheit = 35;

  var c = 5/9 * (fahrenheit - 32) ;

  print ("fahrenheit TO celsius");

  print ("Celsius = ${c}");
}
```



9. 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.

CODE:

```
 //Q9
void main (){
     var op;
     double   num1, num2;

    print( "Enter operator: +, -, *, /: ");
    double ? op = double.parse(stdin.readLineSync()!);

print("two numbers: ");
    num1=46;
    num2=50;


 switch(op) {

    case '+':

      print ("${num1}+${num2} = ${num1+num2}" );
```

```
  break;

  case '-':
    print ("${num1}-${num2} = ${num1-num2}" );


  break;

    case '*':
     print ("${num1}*${num2} = ${num1*num2}" );

  break;
      case '/':
     print ("${num1}/${num2} = ${num1/num2}" );

  break;


      default:

      print( "Error! operator is not correct");
          break;

         }

}
```

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

CODE:

```
// Q10

void main()
{
  bool lowercaseV,uppercaseV;

  String c = "A";

   lowercaseV = (c == 'a' || c == 'e' || c == 'i' || c == 'o' || c == 'u');

   uppercaseV = (c == 'A' || c == 'E' || c == 'I' || c == 'O' || c == 'U');

    if (lowercaseV || uppercaseV)
        print ( " is a vowel.");
    else
        print( " is a consonant.");
}
```