**ASSIGNMENT # 04**

**Q1. Consider the code:  
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(){

List namelist = ['Bilal', 'Bilal', 'Bilal', 'Owais', 'Owais', 'Owais'];

var namelist1 = namelist.toSet().toList();

  print (namelist1);

}

**OUTPUT:**

[Bilal, Owais]

**Q2. 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<int> a = [1, 4, 9, 16, 25, 36, 49, 64, 81, 100];

 List<int> l = [];

  int i = 0;

for (var   e   in   a ) {

  if (++i    %2 == 0 ) {

   l.add(e);

  }  }

print( l );

}

**OUTPUT:**

[4, 16, 36, 64, 100]

**Q 3. Write a program to print multiplication table of 7 length 15 using loop.**

void main() {

  int num=7;

  for(var i=1;i<=15;++i)   {

  print('$num \* $i = ${num\*i}');

 }    }

**OUTPUT:**

7 \* 1 = 7

7 \* 2 = 14

7 \* 3 = 21

7 \* 4 = 28

7 \* 5 = 35

7 \* 6 = 42

7 \* 7 = 49

7 \* 8 = 56

7 \* 9 = 63

7 \* 10 = 70

7 \* 11 = 77

7 \* 12 = 84

7 \* 13 = 91

7 \* 14 = 98

7 \* 15 = 105

**Q4. 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 (var i = 0; i < fruits.length;  i++) {

    print(fruits[ i ]);     }

 }

**OUTPUT:**

Apple

Banana

Mango

Orange

Strawberry

**Q5. Write a program to print multiples of 5 ranging 1 to 100.**

void main(){

  int i ;

  for ( i = 1; i <= 100; i++)

  {

  if ( i %5==0)

  {

  print('$i');

  } } }

**OUTPUT:**

5

10

15

20

25

30

35

40

45

50

55

60

65

70

75

80

85

90

95

100

**Q6. 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”.  
Note: NN = any number**

void main(){

  var celsius = 80;

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

      print ("$celsius°C is $celsiusIntoF°F");

  var fahrenheit = 176;

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

     print("$fahrenheit°F is  $fahrenheitIntoC°C");

}

**OUTPUT:**

80°C is 176.0°F

176°F is 80.0°C

**Q8. 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.**

import 'dart:io';

void main() {

  print('a. Write First Number');

  print('b. Write any Operation(+,-,\*,/,%)');

  print('c. Write Second Number');

  var first\_num = int.parse((stdin.readLineSync())!);

  var oper = stdin.readLineSync();

  var second\_num = int.parse((stdin.readLineSync())!);

  var result;

  if (oper == '+') {

    result = first\_num + second\_num;

    print('Addition of First Number and Second Number:$result');

  } else if (oper == '-') {

    result = first\_num - second\_num;

    print('Subtraction of First Number and Second Number:$result');

  } else if (oper == '\*') {

    result = first\_num \* second\_num;

    print('Multiplication of First Number and Second Number:$result');

  } else if (oper == '/') {

    result = first\_num / second\_num;

    print('Division of First Number and Second Number:$result');

  } else if (oper == '%') {

    result = (first\_num /second\_num) \*100;

    print('Percentage of First Number and Second Number:$result %');

  }}

**Q9. 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() {

    print('Enter a character');

    String? ch = stdin.readLineSync();

if(

ch=="A" || ch=="a" || ch=="E" || ch=="e" || ch=="I" ||

ch=="i" || ch=="O" || ch=="o" || ch=="U" || ch=="u"  )

    {

    print("TRUE");

   }

else

   {

    print("FALSE");

  } }

**Q10. Write a program to reverse a string. For example, if my string is  
"natsikaP nawaJ" then my result will be "Jawan Pakistan".**

void main() {

  var a = ' natsikaP nawaJ';

  print (reverse (a) );

}

String reverse (String input) {

  var chars = input.split('');

  return chars.reversed.join();

}

**OUTPUT:**

Jawan Pakistan

**Q12. List numList = [1, 2, 3, 4, 5, 6, 7, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 29, 30, 31, 32, 33, 35, 36, 37, 38, 39, 40, 41, 42, 45, 46, 48, 49, 50, 51, 53, 54, 55, 56, 57, 58, 59, 60, 61, 62, 63, 64, 66, 67, 68, 69, 71, 72, 73, 74, 75, 76, 77, 78, 79, 80, 81, 82, 83, 84, 85, 86, 87, 88, 89, 90, 92, 93, 94, 95, 96, 98, 99, 100];  
Find the missing number in array of 1 to 100 ?**

Iterable<int> findMissingInts(List<int> ints) sync\* {

  for (var i = 0; i < ints.length - 1; i++) {

    for (var j = ints[i] + 1; j < ints[i + 1]; j++) {

      yield j;

    } } }

main() {

  print(findMissingInts([1, 2, 3, 4, 5, 6, 7, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 29, 30,31, 32, 33, 35, 36, 37, 38, 39, 40, 41, 42, 45, 46, 48, 49, 50, 51, 53, 54, 55, 56, 57, 58, 59, 60, 61, 62, 63, 64, 66, 67, 68, 69, 71, 72, 73, 74, 75, 76, 77, 78, 79, 80, 81, 82, 83, 84, 85, 86, 87, 88, 89, 90, 92, 93, 94, 95, 96, 98, 99, 100]));

}

**OUTPUT:**

(8, 28, 34, 43, 44, 47, 52, 65, 70, 91, 97)

**Q13. List<int> unsortedList = [65, 34, 43, 44, 28, 70, 47, 52, 8, 11];  
Find the largest and smallest number in an unsorted integer array?**

void main(){

List unsortedList = [65, 34, 43, 44, 28, 70, 47, 52, 8, 11];

  unsortedList.sort() ;

  List sortedList = unsortedList ;

print ('Smallest number:${sortedList.first}') ;

print ('Largest number:${sortedList.last}') ;

}

**OUTPUT:**

Smallest number is:8

Largest number is:70

***OR***

void main() {

  var unsortedList = [65, 34, 43, 44, 28, 70, 47, 52, 8, 11];

  var largestValue = unsortedList[0];

  var smallestValue = unsortedList[0];

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

        if (unsortedList[i] > largestValue) {

    largestValue = unsortedList[i];

    }

    if (unsortedList[i] < smallestValue) {

    smallestValue = unsortedList[i];

    }    }

  print("Smallest value is : $smallestValue");

  print("Largest value is : $largestValue");

  }

**OUTPUT:**

Smallest value is : 8

Largest value is : 70

**Q14. Let, int number = 18;  
Find all pairs of an integer array whose sum is equal to a given number?**

void main(){

List pair = [];

  int number = 18;

  for (int i = 0; i <= 18; i++) {

    for (int j = 0; j < 18; j++) {

      if (i + j == 18) {

        pair.add([i, j]);

      }

    }

  }

  print(pair);

  }

**OUTPUT:**

[[1, 17], [2, 16], [3, 15], [4, 14], [5, 13], [6, 12], [7, 11], [8, 10], [9, 9], [10, 8], [11, 7], [12, 6], [13, 5], [14, 4], [15, 3], [16, 2], [17, 1], [18, 0]]

**Q15. Create a Marks sheet using loop with given data also add 5 Subjects in root directory.**

void main(){

  List marksheet = [

    {

      "id": 1,

      "name": "Leanne Graham",

      "username": "Bret",

      "email": "Sincere@april.biz",

      "address": {

        "street": "Kulas Light",

        "suite": "Apt. 556",

        "city": "Gwenborough",

        "zipcode": "92998-3874",

        "geo": {"lat": "-37.3159", "lng": "81.1496"}

      },

      "phone": "1-770-736-8031 x56442",

      "website": "hildegard.org",

      "company": {

        "name": "Romaguera-Crona",

        "catchPhrase": "Multi-layered client-server neural-net",

        "bs": "harness real-time e-markets"

      }

    },

    {

      "id": 2,

      "name": "Ervin Howell",

      "username": "Antonette",

      "email": "Shanna@melissa.tv",

      "address": {

        "street": "Victor Plains",

        "suite": "Suite 879",

        "city": "Wisokyburgh",

        "zipcode": "90566-7771",

        "geo": {"lat": "-43.9509", "lng": "-34.4618"}

      },

      "phone": "010-692-6593 x09125",

      "website": "anastasia.net",

      "company": {

        "name": "Deckow-Crist",

        "catchPhrase": "Proactive didactic contingency",

        "bs": "synergize scalable supply-chains"

      }

    },

    {

      "id": 3,

      "name": "Clementine Bauch",

      "username": "Samantha",

      "email": "Nathan@yesenia.net",

      "address": {

        "street": "Douglas Extension",

        "suite": "Suite 847",

        "city": "McKenziehaven",

        "zipcode": "59590-4157",

        "geo": {"lat": "-68.6102", "lng": "-47.0653"}

      },

      "phone": "1-463-123-4447",

      "website": "ramiro.info",

      "company": {

        "name": "Romaguera-Jacobson",

        "catchPhrase": "Face to face bifurcated interface",

        "bs": "e-enable strategic applications"

      }

    },

    {

      "id": 4,

      "name": "Patricia Lebsack",

      "username": "Karianne",

      "email": "Julianne.OConner@kory.org",

      "address": {

        "street": "Hoeger Mall",

        "suite": "Apt. 692",

        "city": "South Elvis",

        "zipcode": "53919-4257",

        "geo": {"lat": "29.4572", "lng": "-164.2990"}

      },

      "phone": "493-170-9623 x156",

      "website": "kale.biz",

      "company": {

        "name": "Robel-Corkery",

        "catchPhrase": "Multi-tiered zero tolerance productivity",

        "bs": "transition cutting-edge web services"

      }

    },

    {

      "id": 5,

      "name": "Chelsey Dietrich",

      "username": "Kamren",

      "email": "Lucio\_Hettinger@annie.ca",

      "address": {

        "street": "Skiles Walks",

        "suite": "Suite 351",

        "city": "Roscoeview",

        "zipcode": "33263",

        "geo": {"lat": "-31.8129", "lng": "62.5342"}

      },

      "phone": "(254)954-1289",

      "website": "demarco.info",

      "company": {

        "name": "Keebler LLC",

        "catchPhrase": "User-centric fault-tolerant solution",

        "bs": "revolutionize end-to-end systems"

      }

    },

    {

      "id": 6,

      "name": "Mrs. Dennis Schulist",

      "username": "Leopoldo\_Corkery",

      "email": "Karley\_Dach@jasper.info",

      "address": {

        "street": "Norberto Crossing",

        "suite": "Apt. 950",

        "city": "South Christy",

        "zipcode": "23505-1337",

        "geo": {"lat": "-71.4197", "lng": "71.7478"}

      },

      "phone": "1-477-935-8478 x6430",

      "website": "ola.org",

      "company": {

        "name": "Considine-Lockman",

        "catchPhrase": "Synchronised bottom-line interface",

        "bs": "e-enable innovative applications"

      }

    },

    {

      "id": 7,

      "name": "Kurtis Weissnat",

      "username": "Elwyn.Skiles",

      "email": "Telly.Hoeger@billy.biz",

      "address": {

        "street": "Rex Trail",

        "suite": "Suite 280",

        "city": "Howemouth",

        "zipcode": "58804-1099",

        "geo": {"lat": "24.8918", "lng": "21.8984"}

      },

      "phone": "210.067.6132",

      "website": "elvis.io",

      "company": {

        "name": "Johns Group",

        "catchPhrase": "Configurable multimedia task-force",

        "bs": "generate enterprise e-tailers"

      }

    },

    {

      "id": 8,

      "name": "Nicholas Runolfsdottir V",

      "username": "Maxime\_Nienow",

      "email": "Sherwood@rosamond.me",

      "address": {

        "street": "Ellsworth Summit",

        "suite": "Suite 729",

        "city": "Aliyaview",

        "zipcode": "45169",

        "geo": {"lat": "-14.3990", "lng": "-120.7677"}

      },

      "phone": "586.493.6943 x140",

      "website": "jacynthe.com",

      "company": {

        "name": "Abernathy Group",

        "catchPhrase": "Implemented secondary concept",

        "bs": "e-enable extensible e-tailers"

      }

    },

    {

      "id": 9,

      "name": "Glenna Reichert",

      "username": "Delphine",

      "email": "Chaim\_McDermott@dana.io",

      "address": {

        "street": "Dayna Park",

        "suite": "Suite 449",

        "city": "Bartholomebury",

        "zipcode": "76495-3109",

        "geo": {"lat": "24.6463", "lng": "-168.8889"}

      },

      "phone": "(775)976-6794 x41206",

      "website": "conrad.com",

      "company": {

        "name": "Yost and Sons",

        "catchPhrase": "Switchable contextually-based project",

        "bs": "aggregate real-time technologies"

      }

    },

    {

      "id": 10,

      "name": "Clementina DuBuque",

      "username": "Moriah.Stanton",

      "email": "Rey.Padberg@karina.biz",

      "address": {

        "street": "Kattie Turnpike",

        "suite": "Suite 198",

        "city": "Lebsackbury",

        "zipcode": "31428-2261",

        "geo": {"lat": "-38.2386", "lng": "57.2232"}

      },

      "phone": "024-648-3804",

      "website": "ambrose.net",

      "company": {

        "name": "Hoeger LLC",

        "catchPhrase": "Centralized empowering task-force",

        "bs": "target end-to-end models"

      }

    }

  ];

  print('---------------------------------------------------------------------');

  print('                                    MarkSheet              ');

  print('---------------------------------------------------------------------');

  List subject = [

    [77, 88, 90, 80, 88],

    [77, 88, 99, 89, 90],

    [77, 60, 70, 80, 90],

    [77, 88, 66, 77, 88],

    [77, 88, 77, 89, 90],

    [77, 88, 88, 55, 89],

    [77, 88, 88, 86, 98],

    [77, 88, 88, 78, 90],

    [77, 88, 88, 78, 90],

    [77, 88, 88, 78, 90],

  ];

  for (int i = 0; i < marksheet.length; i++) {

    marksheet[i]['Subject'] = subject[i];

  }

  var total;

  var per;

  for (int i = 0; i < marksheet.length; i++) {

    print('Student ID: ${marksheet[i]['id']}');

    print('Student Name: ${marksheet[i]['name']}');

    print('Student Username: ${marksheet[i]['username']}');

    print('Student Email: ${marksheet[i]['email']}');

    print('Student Address: ${marksheet[i]['address']['suite']}, ${marksheet[i]['address']['street']},${marksheet[i]['address']['city']}');

    print('Student ZipCode: ${marksheet[i]['address']['zipcode']}');

    print('');

    print('                              Student Company Info: ');

    print('---------------------------------------------------------------------');

    print('Student Company Name: ${marksheet[i]['company']['name']}');

    print('Student Phone Number: ${marksheet[i]['phone']}');

    print('Student Website: ${marksheet[i]['website']}');

    print('Student Conpany CatchPhrase: ${marksheet[i]['company']['catchPhrase']}');

    print('Student Conpany BS: ${marksheet[i]['company']['bs']}');

    print('');

    print('                              Student GeoLocation: ');

    print('---------------------------------------------------------------------');

    print('Latitude: ${marksheet[i]['address']['geo']['lat']}');

    print('Longitude: ${marksheet[i]['address']['geo']['lng']}');

    print('');

    print('                              Student Subject Marks ');

    print('---------------------------------------------------------------------');

    print('English: ${marksheet[i]['Subject'][0]}');

    print('Urdu: ${marksheet[i]['Subject'][1]}');

    print('Maths: ${marksheet[i]['Subject'][2]}');

    print('Physics: ${marksheet[i]['Subject'][3]}');

    print('Chemistry: ${marksheet[i]['Subject'][4]}');

    total = marksheet[i]['Subject'][0] +

        marksheet[i]['Subject'][1] +

        marksheet[i]['Subject'][2] +

        marksheet[i]['Subject'][3] +

        marksheet[i]['Subject'][4];

    per = (total / 500) \* 100;

    print('');

    print('                           Total Marks :$total');

    print('                           Percentage:$per');

    print('---------------------------------------------------------------------');

    print('\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*');

    print('\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*');

  }

}