**ASSIGNMENT 3**

**Theory Questions:**

1. **What are the various types of operators in dart? Explain with Examples.**

**Operators in Dart:**

1. **Arithmetic Operators**
   1. **Addition (+)**

void main() {

var num1 = 34;

var num2 = 53;

var num3 = 65;

var num = num1 + num2 + num3;

print(num);

}

* 1. **Subtraction (-)**

void main() {

var num1 = 34;

var num2 = 53;

var num3 = 65;

var num = num1 - num2 - num3;

print(num);

}

* 1. **Multiplication (\*)**

void main() {

var num1 = 34;

var num2 = 53;

var num3 = 65;

var num = num1 \* num2 \* num3;

print(num);

}

* 1. **Division (/)**

void main() {

var num1 = 34;

var num2 = 17;

var num = num1 / num2;

print(num);

}

* 1. **Division (Return Integer Value) (~/)**

void main() {

var num1 = 45;

var num2 = 8;

var num = num1 ~/ num2;

print(num);

}

* 1. **Modulus (%)**

void main() {

var num1 = 67;

var num2 = 9;

var num = num1 % num2;

print(num);

}

1. **Relational Operators**
   1. **Greater than (>)**

void main() {

var num1 = 67;

var num2 = 9;

var num = num1 > num2;

print(num);

}

* 1. **Lesser than (<)**

void main() {

var num1 = 67;

var num2 = 9;

var num = num1 < num2;

print(num);

}

* 1. **Greater than or equal to (>=)**

void main() {

var num1 = 67;

var num2 = 9;

var num = num1 >= num2;

print(num);

}

* 1. **Lesser than or equal to (<=)**

void main() {

var num1 = 67;

var num2 = 9;

var num = num1 <= num2;

print(num);

}

* 1. **Equality (==)**

void main() {

var num1 = 67;

var num2 = 9;

var num = num1 == num2;

print(num);

}

* 1. **Not equal (! =)**

void main() {

var num1 = 67;

var num2 = 9;

var num = num1 != num2;

print(num);

}

1. **Logical Operators**
   1. **AND (&&)**

void main() {

var num1 = 67;

var num2 = 9;

var num = (num2 == num1 && num1 != num2);

print(num);

}

* 1. **OR (||)**

void main() {

var num1 = 67;

var num2 = 9;

var num = (num2 == num1 || num1 != num2);

print(num);

}

* 1. **NOT (!)**

void main() {

var num1 = 67;

var num2 = 9;

var num = !(num2 == num1 || !(num1 != num2));

print(num);

}

1. **What is a difference between these operators “?? and ?”.**

**??**

Called also null operator. This operator returns expression on its left, except if it is null, and if so, it returns right expression.

**?**

This is NOT a null-aware operator, but a ternary one. Ternary operator is used across many languages, so you should be familiar with it. This is how it looks:

expression? option1: option2

If expression is true it goes with the option1 and if not, with the option2.

1. **What are the data types supported in Dart? Explain with Examples.**
   1. **Numbers**
      1. **Num: (Includes both integer values and values with decimals)**

void main() {

num num1 = 43;

num num2 = 99.5;

}

* + 1. **Int (Only includes the whole numbers)**

Void main () {

Int num1 = 34;

}

* + 1. **Double (Only include the values with decimals)**

Void main () {

Double num1 = 34.5;

}

* 1. **String**
     1. **String (Only a sequence of characters)**

void main() {

String name = "Flutter Apllication Development";

print(name);

}

* 1. **Booleans**
     1. **Bool (It returns the values of true or false)**

void main() {

bool result;

result = 13 < 56;

print(result);

}

* 1. **List**
     1. **List (The ordered collection of the objects.)**

void main() {

List<String> studentnames = ["Ali", "Sarah", "Sana", "Bilal", "Ayesha"];

print(studentnames);

}

1. **Declare 5 legal and 5 illegal variable names:**

import 'dart:svg';

void main() {

**// Legal Variable Names**

var name = "ayesha";

var name2 = "bilal";

var name\_3 = "mariam";

var student\_name = "Ali";

var age = 34;

**// Illegal Variable Name**

var Rollno = 19;

var student class = "3rd";

var 12FatherName = "Ali Akbar";

var student.department = "computer science";

var STUDENTMARKS = 500;

}

1. **Find 5 new methods of List and String.**

**Methods of String:**

void main() {

String strg1 = "Application Development";

**//For Determining the length of the string**

print(strg1.length);

**//Converts the string to uppercase letters**

print(strg1.toUpperCase());

**//Converts the string to lowercase letters**

print(strg1.toLowerCase());

**//checks whether the string is empty or not**

print(strg1.isEmpty);

**//returns the type of the string**

print(strg1.runtimeType);

}

**Methods of List:**

void main() {

List<dynamic> numbers = [54, 43, 85, 53, 35, 22, 33, 45];

**//Add numbers in a list**

(numbers.add(5));

print(numbers);

**//Determines the length in a list**

print(numbers.length);

**//Sorts the list in Ascending order**

numbers.sort();

print(numbers);

**//Add more than one values**

numbers.addAll([42, 14, 42]);

print(numbers);

**//Insert a value at a specific position**

numbers.insert(3, 54);

print(numbers);

**//Insert values more than one at a specific position**

numbers.insertAll(5, [12, 45, 78, 53]);

print(numbers);

**//Replace a specific value in a list**

numbers.replaceRange(3, 4, [100]);

print(numbers);

**//Prints the first value of a list**

print(numbers.first);

**// //Prints the last value of a list**

print(numbers.last);

**//Prints the of a list**

print(numbers.length);

**//Sort the list in a reversed direction**

print(numbers.reversed);

}