ASSIGNMENT # 3

Q1) What are the various types of operators in dart? Explain with Examples.

<u>Ans</u>) The operators are special symbols that are used to carry out certain operations on the operands. The Dart has numerous built-in operators which can be used to carry out different functions, for example, '+' is used to add two operands.

There are different types of operators like Arithmetic, Logical, Conditional etc.

OPERATOR SYMBOL	OPERATOR NAME	DESCRIPTION
+	ADDITION	USE TO ADD TWO OR MORE OPERANDS
-	SUBTRACTION	USE TO SUBTRACTS B/W OPERANDS.
/	DIVISION	USE TO DIVIDE OPERANDS
*	MULTIPLICATION	USE TO MULTIPLY
>	GREATER THEN	USE TO SHOW LARGER OPERAND
<	LESS THEN	USE TO SHOW SMALLER OPERAND
==	EQUAL TO	USE TO EQUATE THE OPERANDS
!=	NOT EQUAL	USE TO CHECK BOTH OPERANDS NOT EQUAL
Is	IS	GIVE BOOLEAN VALUE AS TRUE
Is!	IS NOT	GIVE BOOLEAN VALUE AS FALSE
&&	AND OPERATOR	USE TO ADD TRUE CONDITIONS
||	OR OPERATOR	USE TO GIVE TRUE CONDITION

Q2) Cost of one movie ticket is 600 PKR. Write a script to store ticket price in a variable & calculate the cost of buying 5 tickets to a movie.

```
1    // Question 2: Ticket storing program
2    void main(){
3    int cost = 600;
4    print ("cost of ticket = $cost");
5    int tickets = 5;
6    print ("tickets given = $tickets");
7    int total_cost = (cost*tickets);
8    print ("TOTAL COST IS = $total_cost");
9    }
```

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```
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PS C:\Users\baqar\Documents\courses\jawan pakistan> dart "c:\Users\b
cost of ticket = 600
tickets given = 5
TOTAL COST IS = 3000
PS C:\Users\baqar\Documents\courses\jawan pakistan>
```

Q3) How to get difference of lists in Dart?

```
listdiff.dart
1    import 'dart:io';
2    void main(){
3        List<int> L1 = [1,2,3,4,5,6,7];
4        List<int> L2 = [3,5,6,7,9,10];
5        List<int> L3 = L1.toSet().difference(L2.toSet()).toList();
6        print(L3.toString());
7
8    }
```

Q4) What is a difference between these operators "?? And?"

Ans) Conditional Statements:

Dart has two operators that let you evaluate expressions that might otherwise require if-else statements.

condition? expression1 : expression 2

If condition is true, then the expression evaluates **expr1** (and returns its value); otherwise, it evaluates and returns the value of **expr2**.

expresion1 ?? expression2

If **expresion1** is non-null, returns its value; otherwise, evaluates and returns the value of **expresion2**

Q5) What are the data types supported in Dart? Explain with Examples.

Data Type	Keyword	Description
Number	int, double, num	Numbers in Dart are used to represent numeric literals
Strings	String	Strings represent a sequence of characters
Booleans	bool	It represents Boolean values true and false
Lists	List	It is an ordered group of objects
Maps	Map	It represents a set of values as key-value pairs

Q6) Solve:

```dart
table_of_7.dart
1    import 'dart:core';
2    void main(List<String> args) {
3
4    List <dynamic> table_7 =   [7,14,21,28,35,42,49,56,63,70];
5    List <dynamic> range10 = [1,2,3,4,5,6,7,8,9,10];
6    Map < dynamic,dynamic > table = Map.fromIterables(range10,table_7);
7
8    print (table);
9    }
```

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```
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PS C:\Users\baqar\Documents\courses\J3> dart "c:\Users\baqar\Documents\courses\J3\table_of_7.dart"
{1: 7, 2: 14, 3: 21, 4: 28, 5: 35, 6: 42, 7: 49, 8: 56, 9: 63, 10: 70}
PS C:\Users\baqar\Documents\courses\J3> 
```

Q7) password storing

```dart
password.dart
1     import 'dart:io';
2     void main() {
3       var password = "123456789";
4       print("Enter your password: ");
5       var pass = stdin.readLineSync();
6       print("Confirm your password please : ");
7       var conf_pass = stdin.readLineSync();
8
9       if (pass == "" && conf_pass == "") {
10        print("Please enter your password.");
11      } else if (pass == pass && conf_pass == password) {
12        print("Correct! The password you entered matches the original password.");
13      } else if (pass != conf_pass) {
14        print("Password does not match!");
15      } else {
16        print("Incorrect password.");
17      }
18    }
```

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```
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PS C:\Users\baqar\Documents\courses\J3> dart "c:\Users\baqar\Documents\courses\J3\password.dart"
Enter your password:
123456789
Confirm your password please :
123456789
Correct! The password you entered matches the original password.
PS C:\Users\baqar\Documents\courses\J3> 
```

Q8) Write a program to store 3 student names in an array.

```dart
void main() {
  var names = ['Baqar', 'Usman', 'Shayan'];
  var scores = [499, 399, 475];
  int total_marks = 500;

  num perc_1 =
      num.parse(((scores[0] / total_marks) * 100).toStringAsFixed(2));
  num perc_2 =
      num.parse(((scores[1] / total_marks) * 100).toStringAsFixed(2));
  num perc_3 =
      num.parse(((scores[2] / total_marks) * 100).toStringAsFixed(2));

  print(names[0] + " scored ${scores[0]} marks with a percentage of $perc_1%");
  print(names[1] + " scored ${scores[1]} marks with a percentage of $perc_2%");
  print(names[2] + " scored ${scores[2]} marks with a percentage of $perc_3%");
}
```

```
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PS C:\Users\baqar\Documents\courses\J3> dart "c:\Users\baqar\Documents\courses\J3\student_data.dart"
Baqar scored 499 marks with a percentage of 99.8%
Usman scored 399 marks with a percentage of 79.8%
Shayan scored 475 marks with a percentage of 95.0%
PS C:\Users\baqar\Documents\courses\J3>
```

Q9) Declare 5 legal & 5 illegal variable names.

5 legal variable names:
 baqar121, b2q2r, baqar-raza, number, BA_qar

5 illegal variable names:
 _baqar , "number, 50baq , 1_baqar, .baqar

Q10) Write a program to replace the "Hyder" to "Islam" in the word "Hyderabad" and display the result.

```dart
city_replace.dart
1    import 'dart:io';
2
3    void main (){
4        var city_name = "Hyderabad";
5        print (city_name);
6        print (city_name.replaceAll("Hyder","Islam"));
7        |
8    }
```

Q11) Write a program to generate your K-Electric bill 7. All the amounts should be rounded off to 2 decimal places.

```dart
K-ElectricBILL.dart
1    import 'dart:io';
2
3    void main() {
4      print("<--- K-ELECTRIC BILL --->");
5      print("Enter customer name: ");
6      String? name = stdin.readLineSync();
7      print("Enter current month: ");
8      String? month = stdin.readLineSync();
9      print("Enter number of units: ");
10     num number_of_units = num.parse(stdin.readLineSync()!);
11     num charges_per_unit = 5.6; //5 rupees and 6 paisas
12     num net_amount_payable =    //within due date
13         num.parse((number_of_units * charges_per_unit).toStringAsFixed(2));
14     num late_payment_surcharge = num.parse(
15         ((net_amount_payable * 5) / 100).toStringAsFixed(2)); //5 percent
16     num gross_amount_payable = net_amount_payable + late_payment_surcharge;
17
18     print("\nGenerating the bill, please wait.");
19     print("\nCustomer Name: $name");
20     print("Current Month: $month");
21     print("Number of units: $number_of_units");
22     print("Charges per unit: $charges_per_unit");
23     print("Net Amount Payable (within due date): $net_amount_payable");
24     print("Late Payment Surcharge: $late_payment_surcharge");
25     print("Gross Amount Payable (after due date): $gross_amount_payable");
26   }
```

```
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Generating the bill, please wait.

Customer Name: Baqar Raza
Current Month: March
Number of units: 400
Charges per unit: 5.6
Net Amount Payable (within due date): 2240.0
Late Payment Surcharge: 112.0
Gross Amount Payable (after due date): 2352.0
PS C:\Users\baqar\Documents\courses\J3> |
```