

Assignment #03

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Q1:

Ans: Types of Operator:

1. Arithmetic Operators

Exp: (+, -, *, /, %, ++, --)

2. Rational Operators:

Shows the Relation between two operands and containing only true or false.

Exp: (>, <, >=, <=)

3. Logical Operators:

used to combine two or more conditions and return Boolean values (true or false).

Exp: (&& (And), || (or), !(Not), != (Not equal))

4. Assignment Operators:

(=, ??=(assign the value only variable is null))

for exp: a=b (b assign to a)

5. Type Test Operators:

(is, true if object has specified type)

(is!, true if object has not specified type)

6. Equality Operator:

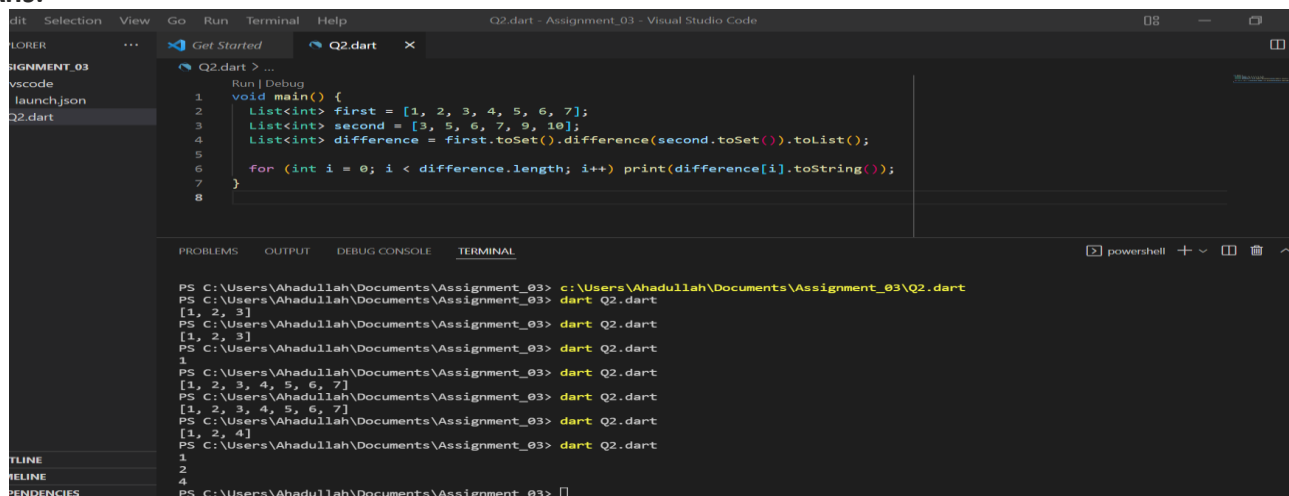
(==, Equals to) (if x==y)

(!=, Not Equals to)

7. Bit Wise Operators.(a And b,a or b)

Q2:

Ans:

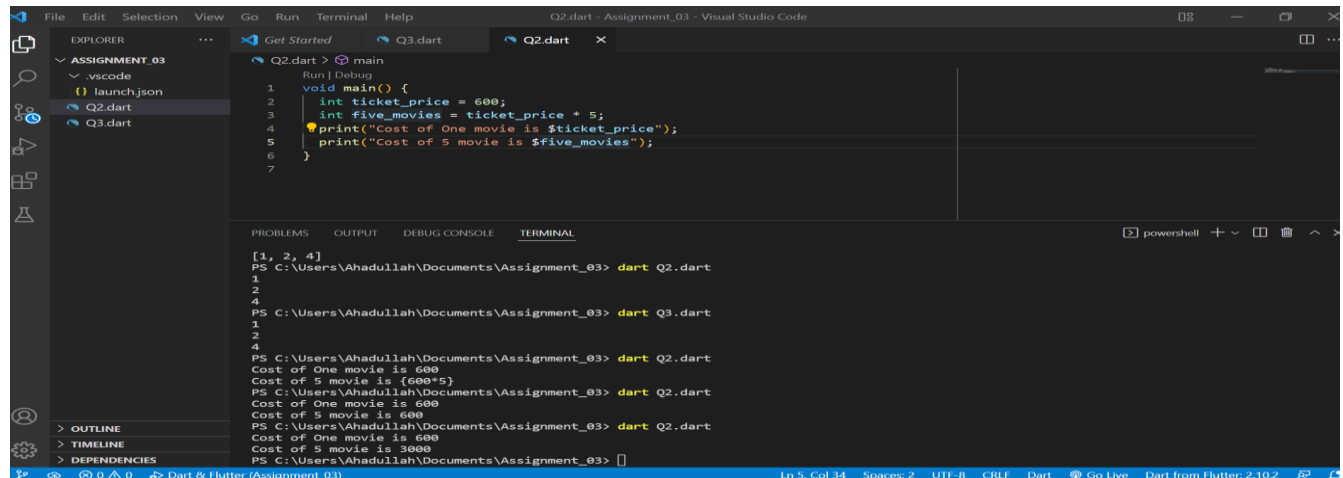


```
Q2.dart - Assignment_03 - Visual Studio Code
Q2.dart
1 void main() {
2   List<int> first = [1, 2, 3, 4, 5, 6, 7];
3   List<int> second = [3, 5, 6, 7, 9, 10];
4   List<int> difference = first.toSet().difference(second.toSet()).toList();
5
6   for (int i = 0; i < difference.length; i++) print(difference[i].toString());
7 }
8

PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL
PS C:\Users\Ahadullah\Documents\Assignment_03> c:\Users\Ahadullah\Documents\Assignment_03\Q2.dart
PS C:\Users\Ahadullah\Documents\Assignment_03> dart Q2.dart
[1, 2, 3]
PS C:\Users\Ahadullah\Documents\Assignment_03> dart Q2.dart
[1, 2, 3]
PS C:\Users\Ahadullah\Documents\Assignment_03> dart Q2.dart
1
PS C:\Users\Ahadullah\Documents\Assignment_03> dart Q2.dart
[1, 2, 3, 4, 5, 6, 7]
PS C:\Users\Ahadullah\Documents\Assignment_03> dart Q2.dart
[1, 2, 3, 4, 5, 6, 7]
PS C:\Users\Ahadullah\Documents\Assignment_03> dart Q2.dart
[1, 2, 4]
PS C:\Users\Ahadullah\Documents\Assignment_03> dart Q2.dart
1
2
4
PS C:\Users\Ahadullah\Documents\Assignment_03> [
```

Q3:

Ans:



The screenshot shows the Visual Studio Code interface with a Dart file named `Q2.dart` open. The code defines a `main` function that calculates the cost of movies. The terminal output shows the execution of the code, displaying the cost of one movie (600) and the cost of five movies (3000).

```
1 void main() {  
2   int ticket_price = 600;  
3   int five_movies = ticket_price * 5;  
4   print("Cost of One movie is $ticket_price");  
5   print("Cost of 5 movie is $five_movies");  
6 }  
7
```

```
[1, 2, 4]  
PS C:\Users\Ahadullah\Documents\Assignment_03> dart Q2.dart  
1  
2  
4  
PS C:\Users\Ahadullah\Documents\Assignment_03> dart Q3.dart  
1  
2  
4  
PS C:\Users\Ahadullah\Documents\Assignment_03> dart Q2.dart  
Cost of One movie is 600  
Cost of 5 movie is 3000  
PS C:\Users\Ahadullah\Documents\Assignment_03> dart Q2.dart  
Cost of One movie is 600  
Cost of 5 movie is 3000  
PS C:\Users\Ahadullah\Documents\Assignment_03>
```

Q4:

Ans:

condition? var1: var2 If the condition is true then var1 is executed else var2

var1?? var2 If var2 is non-null return its value else return var2 value

Q5:

Ans: Data Types

Number **int, double, num** Numbers in Dart are used to represent numeric literals

Strings **String** Strings represent a sequence of characters

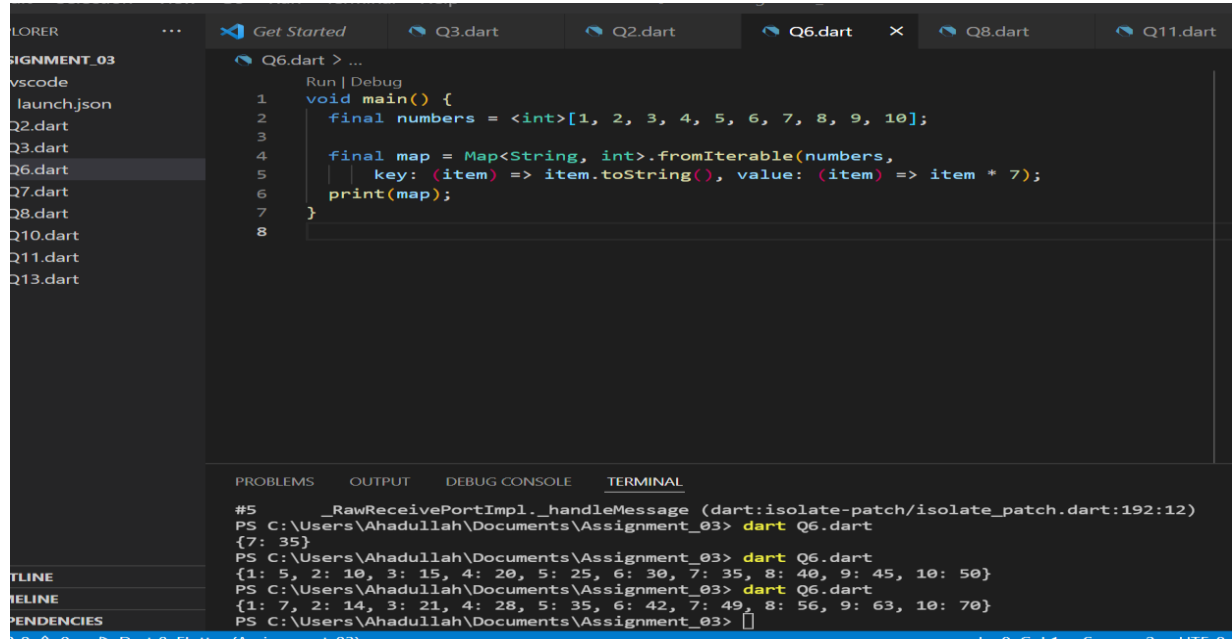
Booleans **bool** It represents Boolean values true and false

Lists **List** It is an ordered group of objects

Maps **Map** It represents a set of values as key-value pairs

Q6:

Ans:



The screenshot shows the VS Code editor with a file explorer on the left containing files like 'vscodex', 'launch.json', and 'Q2.dart' through 'Q13.dart'. The main editor displays 'Q6.dart' with the following Dart code:

```
1 void main() {  
2   final numbers = <int>[1, 2, 3, 4, 5, 6, 7, 8, 9, 10];  
3  
4   final map = Map<String, int>.fromIterable(numbers,  
5     key: (item) => item.toString(), value: (item) => item * 7);  
6   print(map);  
7 }  
8
```

The bottom panel shows the 'TERMINAL' tab with the following output:

```
#5 _RawReceivePortImpl._handleMessage (dart:isolate-patch/isolate_patch.dart:192:12)  
PS C:\Users\Ahadullah\Documents\Assignment_03> dart Q6.dart  
{7: 35}  
PS C:\Users\Ahadullah\Documents\Assignment_03> dart Q6.dart  
{1: 5, 2: 10, 3: 15, 4: 20, 5: 25, 6: 30, 7: 35, 8: 40, 9: 45, 10: 50}  
PS C:\Users\Ahadullah\Documents\Assignment_03> dart Q6.dart  
{1: 7, 2: 14, 3: 21, 4: 28, 5: 35, 6: 42, 7: 49, 8: 56, 9: 63, 10: 70}  
PS C:\Users\Ahadullah\Documents\Assignment_03>
```

Q7:

Ans:

```

1  import 'dart:io';
2
3  void main(List<String> args) {
4      var passw = "Ahadullah";
5      var inputtxt, inputtxt2;
6      print("Enter the Password: ");
7      inputtxt = stdin.readLineSync();
8
9      if (inputtxt == passw) {
10         print('Enter another...');
11         inputtxt2 = stdin.readLineSync();
12         if (inputtxt2 == inputtxt) {
13             print("Entered matches the original password");
14         }
15         else {
16             print('Incorrect Password...!');
17         }
18     }
19 }

```

Enter another...
Ahadullah
Entered matches the original password
PS C:\Users\Ahadullah\Documents\Assignment_03> dart Q7.dart
Enter the Password:
Bhutto
Incorrect Password...!
PS C:\Users\Ahadullah\Documents\Assignment_03>

Q8:

Ans:

```

1  void main() {
2      var student = ["Ahadullah", "Ismail", "Hassan"];
3      var maths = [54, 79, 98];
4      var physics = [59, 77, 84];
5      var calculus = [50, 79, 90];
6      var PST = [89, 79, 70];
7      var Islamiat = [90, 78, 67];
8      var obtained_marks = new List.generate(3, (index) => 0);
9      var percentage = new List.generate(3, (index) => 0);
10
11     for (int i = 0; i < 3; i++) {
12         obtained_marks[i] =
13             (maths[i] + physics[i] + calculus[i] + PST[i] + Islamiat[i]);
14         percentage[i] = (obtained_marks[i] * 100);
15     }
16     print("Student Name      Marks      Percentage");
17     for (int i = 0; i < 3; i++) {
18         print(
19             "${student[i]}      ${obtained_marks[i]}      ${((percentage[i] / 500))}%");
20     }
21 }

```

Student Name	Marks	Percentage
Ahadullah	342	68.4%
Ismail	392	78.4%
Hassan	409	81.8%

PS C:\Users\Ahadullah\Documents\Assignment_03> dart Q8.dart

Q9:

Ans: Legal Variable:

1. `int? a=null;`
2. `double?x;`
3. `dynamic x = "tom";`
4. `final val1 = 12;`

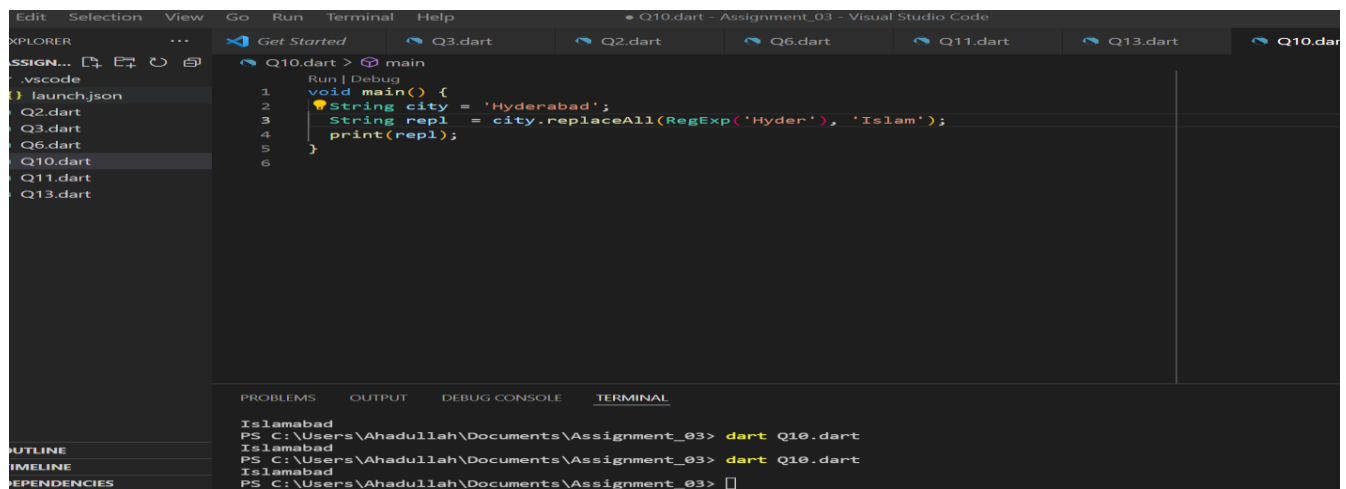
5. `const pi = 3.14;`

Illegal Variables:

1. `$more=1000000;`
2. `76trombones = "big parade"`
3. `class = "Computer Science 101"`
4. `int a = null;`
5. `final aListOfInts = <int>[];`

Q10:

Ans:



```
Q10.dart > main
1 void main() {
2   String city = 'Hyderabad';
3   String repl = city.replaceAll(RegExp('Hyder'), 'Islam');
4   print(repl);
5 }
6
```

PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL

```
Islamabad
PS C:\Users\Ahadullah\Documents\Assignment_03> dart Q10.dart
Islamabad
PS C:\Users\Ahadullah\Documents\Assignment_03> dart Q10.dart
Islamabad
PS C:\Users\Ahadullah\Documents\Assignment_03>
```

Q11:

Ans:

PLORER

...ed

Q3.dart

Q2.dart

Q6.dart

Q8.dart

Q11.dart

Q13.dart

SIGNMENT_03

.vscode

launch.json

Q2.dart

Q3.dart

Q6.dart

Q7.dart

Q8.dart

Q10.dart

Q11.dart

Q13.dart

Q11.dart > ...

17 no_units = double.parse(stdin.readLineSync());

18

19 print("Enter the Charges per Units: ");

20 ch_units = double.parse(stdin.readLineSync());

21

22 Net_amount = no_units * ch_units;

23 late_Psur = Net_amount * 0.1;

24 gross_amount = Net_amount + late_Psur;

25

26 print("*****K-Electric Bill*****");

27 print("\nCustomerName: \$CustomerName");

28 print("\nCurrentMonth: \$Current_Month");

29 print("\nNumber of Units used: \$no_units");

30 print("\nCharges per Unit: \$ch_units");

31 print(

PROBLEMS

OUTPUT

DEBUG CONSOLE

TERMINAL

Enter the No of Units:

110

Enter the Charges per Units:

13.5

*****K-Electric Bill*****

CustomerName: Ahadullah

CurrentMonth: March

Charges per Unit: 13.5

Net amount pay (With in due date): 1.5e+3

UTLINE

MELINE

DEPENDENCIES

Q13:

Ans:

List Methods

```
Q13.dart > main
1 void main(List<String> args) {
2   //Sublist()
3   var myList = [1, 2, 3, 4, 5];
4   print(myList.sublist(1, 3));
5   //Shuffle()
6   myList.shuffle();
7   print('$myList');
8
9   //reverse
10  print(myList.reversed.toList());
11
12  //asMap
13  print(myList.asMap());
14
15  //getRange()
16  print(myList.getRange(1, 4));
17 }
```

PROBLEMS OUTPUT DEBUG CONSOLE **TERMINAL**

```
[2, 3]
[5, 4, 1, 3, 2]
[2, 3, 1, 4, 5]
{0: 5, 1: 4, 2: 1, 3: 3, 4: 2}
(4, 1, 3)
PS C:\Users\Ahadullah\Documents\Assignment_03>
```

String Methods.

```
Q13.dart > main
18 //StartWith()
19 String string = "10I am Ahadullah";
20 print(string[0].startsWith(RegExp(r'[0-9]')));
21
22 //Split()
23 print(string.split(' '));
24
25 //replaceAll()
26 print(string.replaceAll(RegExp(r'(?<=.{1}).(?=.*@)'), '+'));
27
28 //replaceFirst()
29 final repReg = RegExp(r'\d{3}');
30 print(string.replaceFirst(repReg, '10I'));
31
32 //CompareTo()
33 String first = "This is first string";
34 String second = "This is another string";
35
36 print(first.length.compareTo(second.length));
37 }
```

PROBLEMS OUTPUT DEBUG CONSOLE **TERMINAL**

```
{0: 2, 1: 4, 2: 5, 3: 3, 4: 1}
(4, 5, 3)
true
[10I, am, Ahadullah]
10I am Ahadullah
10I am Ahadullah
-1
PS C:\Users\Ahadullah\Documents\Assignment_03>
```