JAVERIA NOOR

ASSIGNMENT 2

GitHub Repository Code Link: https://github.com/JiaNoor/Ass-02-dart

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

OPERATORS:

1) Arithmetic Operators

Sr.No	Operators	Description	Examples
1	+	Add	var a = 6; var b = 3; print(a+b); **Output:** 9
2	-	Subtract	var a = 6; var b = 3; print(a-b); **Output:** 3
3	*	Multiply	var a = 6; var b = 3; print(a*b); **Output:** 18
4	/	Divide	var a = 6; var b = 3; print(a/b); **Output:** 2
5	~/	Divide, returning an integer result	var a = 6; var b = 4; print(a+b); **Output:** 1
6	%	Get the remainder of an integer division (modulo)	var a = 6; var b = 3; print(a%b); **Output:** 0

7	++	Increment	var a = 3; print(a++); // value of 'a' become 5
			Output: 3

8	--	Decrement	var a = 3; print(a--); // value of 'a' become 1
			Output: 3

2) **Equality and Relational Operators**

Sr.No	Operators	Description	Examples
1	>	Greater than	var a = 6; var b = 3; print(a>b); **Output:** True
2	<	Lesser than	var a = 6; var b = 3; print(a<b); **Output:** False
3	>=	Greater than or equal to	var a = 6; var b = 3; print(a>=b); **Output:** True
4	<=	Lesser than or equal to	var a = 6; var b = 3; print(a<=b); **Output:** False
5	==	Equality	var a = 6; var b = 3; print(a==b); **Output:** False
6	!=	Not Equal	var a = 6; var b = 3; print(a! =b); **Output:** True

3) Logical Operators

Sr. No	Operator	Name	Description	Examples
1	&&	AND	Operator returns True only if all the expressions specified return True.	var a = 6; var b = 3; var c=8 print(a>b && b<c); **Output:** True

2	||	OR	Operator returns True only if at least one of the expressions specified return True.	var a = 6; var b = 3; var c=8;
				print(a<b || b<c);
				Output: False

3	!	NOT	Operator returns the inverse of the expression's result.	var a = 6; var b = 3;
				print(!(a>=b));
				Output: False

(2) What will be the output in variables a, b & result after execution of the following script:

a) var a = 2, b = 1;

b) var result = --a - --b + ++b + b--;

Explain the output at each stage:

c) --a;

Code: `print(--a);`

Output: 1

d) --a - --b;

Code: `print(--a - --b);`

Output: 1

e) --a - --b + ++b;

Code: `print(--a - --b + ++b);`

Output: 2

f) --a - --b + ++b + b--;

Code: `print(--a - --b + ++b + b--);`

Output: 3

(3) 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.

Code:

```
var tick_price = 600;
print ("Cost of Buying 5 Tickets will be ${tick_price*5} PKR.");
```

Output:

```
Console
  Cost of Buying 5 Tickets will be 3000 PKR.
```

(4) 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:

```
List <int> lst_1 = [1,2,3,4,5,6,7];
List <int> lst_2 = [3,5,6,7,9,10];
lst_1.retainWhere((e) => ! lst_2.contains(e));
print(lst_1);
```

Output:

(5) What is a difference between these operators "?? And?"

Sr. No	Operator	Description	Examples
1	?	It is a simple version of if-else statement. If the condition is true than expersion1 is executed else expersion2 is executed.	`var a = 6; var b = 3; var c= (a >b)? print (c);` **Output:** True
2	??	If expersion1 is non-null returns its value else returns expression2 value.	`var a = 6; var c=a ? ? ; print (c);` **Output:** False

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

Sr. No	Data Type	Keyword	Description	Examples

1	Number	**int, double, num**	Numbers in dart are used to represent numeric literals.	`int age = 20;`
				`double percentage = 85.46;`
				`num age = 19;`
				`num percentage = 67.8;`

2	Strings	**String**	Strings represent a sequence of characters.	`String name = "Jia";` `String date = "8-May-2021";`

3	Booleans	**bool**	It represents Boolean values, true and false.	`var rzlt = 12>5;`
				`print(rzlt);`
				`bool status = true;`

4	Lists	**List**	It is an ordered group of objects.	`List <dynamic> lst_1 = ["abc",2.9, -1];` `List <int> lst_2 = [2,4,6,8];`
5	Maps	**Map**	It represents set of values as key-value pairs.	`Map<dynamic> data = {1: 'John ', 2: 'poet', 3: 'Malta'};`

(7) Solve:

a. First declare an array and assign the numbers of the table of 7.

b. Second declare another array and assign the numbers 1-10

c. Now write down the table of 7 using map.fromiterables method.

Code:

```
var table = [7,14, 21, 28, 35, 42, 49, 56, 63, 70];

var numbers = [1, 2, 3, 4, 5, 6, 7, 8, 9, 10];

var seventh = Map.fromIterables(numbers, table);

print(seventh);
```

Output:

```
Console
  {1: 7, 2: 14, 3: 21, 4: 28, 5: 35, 6: 42, 7: 49, 8: 56, 9: 63, 10: 70}
```

(8) Write a program that

a. Store correct password in a JS variable.

b. Asks user to enter his/her password

c. Validate the two passwords:

d. Check if user has entered password. If not, then give message “Please enter your password”

e. Check if both passwords are same. If they are same, show message “Correct! The password you

f. entered matches the original password”. Show “Incorrect password” otherwise.

Code:

```
 String password = "a1B4C^7";
print("Enter Your Password!");
String user = stdin.readLineSync();
if (user.isEmpty == true) {
  print("Please enter your password");
}
else{
  if(user==password){
    print("Correct! Password you entered matches the original password..");
```

```
  }
  else{
    print("Incorrect Password");
  }
}
```

Output:

```
Console

  Enter Your Password!
  Please enter your password
```

(9) Write a program to store 3 student names in an array. Take another array to store score of these three students. Assume that total marks are 500 for each student, display the scores & percentages of students.

Code:

```
  List<dynamic> names = ["Ali", "Sara", "Zaid"];
  List<dynamic> scores = [450, 400, 327];
  print("${names[0]}'s score is ${scores[0]} and the percentage is ${(scores[0]*100)/500}.");
  print("${names[1]}'s score is ${scores[1]} and the percentage is ${(scores[1]*100)/500}.");
  print("${names[2]}'s score is ${scores[2]} and the percentage is ${(scores[2]*100)/500}.");
```

Output:

```
Console

  Ali's score is 450 and the percentage is 90.
  Sara's score is 400 and the percentage is 80.
  Zaid's score is 327 and the percentage is 65.4.
```

(10) Declare 5 legal & 5 illegal variable names.

Legal:

1) abc
2) a_1
3) n2
4) ab_c
5) n$

Illegal:

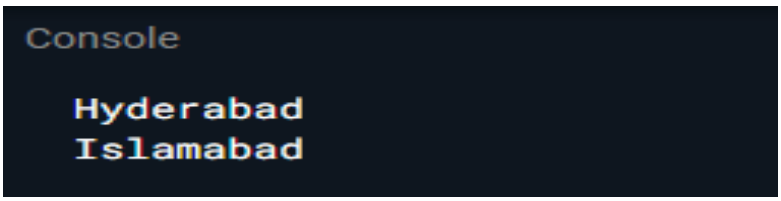
1) 5n
2) abc*
3) ab c
4) Var
5) 1_a

(11) Write a program to replace the “Hyder” to “Islam” in the word “Hyderabad” and display the result.

Code:

```
var word = "Hyderabad";
print(word);
print(word.replaceRange(0,5,"Islam"));
```

Output:



(12) Write a program to generate your K-Electric bill 7. All the amounts should be rounded off to 2 decimal places. Display the following fields:

a. Customer Name

b. Current Month

c. Number of units

d. Charges per unit

e. Net Amount Payable (within Due Date)

f. Late Payment Surcharge

g. Gross Amount Payable (after Due Date)

Where, Net Amount Payable (within Due Date) = Number of units * Charges per unit & Gross Amount Payable (after Due Date) = Net Amount + Late Payment Surcharge

Code:

```
var custName = "Mr. Ali";

var currentMonth = "May";

var units = 301;

var chargePerUnit = 25.78;

var netAmount = units * chargePerUnit;

var lateAmount = 200;

var grossAmount = netAmount + lateAmount;

print ("Customer Name: ${custName}");

print ("Current Month: ${currentMonth}");

print ("Number of units: ${units}");

print ("Charges per unit: ${chargePerUnit}");

print ("Net Amount Payable (within Due Date):
${netAmount.toStringAsFixed(2)}");

print ("Late Payment Surcharge: ${lateAmount}");

print ("Gross Amount Payable (after Due Date):
${grossAmount.toStringAsFixed(2)}");
```

Output:

```
Console

  Customer Name: Mr. Ali
  Current Month: May
  Number of units: 301
  Charges per unit: 25.78
  Net Amount Payable (within Due Date): 7759.78
  Late Payment Surcharge: 200
  Gross Amount Payable (after Due Date): 7959.78
```

(13) Write a program that shows the message “First fifteen days of the month” if the date is less than 16th of the month else shows “Last days of the month”.

Code:

```
var date = "19-feb-2020";
var n = date.substring(0,2);
var a = int.parse(n);
if (a < 15){
  print ("First fifteen days of the month");
}
else {
  print ("Last days of the month");
}
```

Output:

```
Console

  Last days of the month
```