**Flutter & Dart Assignment Number 2**

**Name:** **MUHAMMAD ABDUL RAFAY**

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

There are 4 types of operators:

1. Arithmetic operators for calculation, to add, multiply, divide, subtract, to find remainder, to increment or decrement.

\*(multiply) +(add) -(subtract) /(divide)

~/ (divide but int value) etc.

1. Conditional/Relational operators are used for checking conditions.

for ex: if 2 is <3 then execute this code etc.

1. Assignment Operator is “=” which assigns value to any attribute.
2. Logical operators are AND, OR, NOT, in coding they are &&, ||, !, respectively. They are also used in logic making

For ex: if (A>=B) && (A==C) then execute this code.

Assuming 2 numbers 5 and 6 and 3 variables A B C

* Arithmetic: 5 + 6, 5 \*6 etc.
* Conditional or Relational: if 2 is <3 then execute this code etc.
* Assignment: A = 3, B=2, C= 3.
* Logical: if (A>=B) && (A==C) then execute this code.

**Q2.** **a. var a = 2, b = 1;**  
  **b. var result = --a - --b + ++b + b--;**

**Explain the output at each stage:**

**c. --a;**

**d. --a - --b;**

**e. --a - --b + ++b;**

**f. --a - --b + ++b + b--;**

**Ans2)**

A) a = 2, b = 1;

b) result = 3;

c) 1

Explanation: --a (1); pre decrement

d) 1

Explanation: --a (1) - --b (0); pre decrement

e) 2

Explanation: --a (1) - --b (0) + ++b (1); pre increment

f) 3

Explanation: --a (1) - --b (0) + ++b (1) + b (1) --; post decrement so first it will add b then decrement b.

**Q3.**

**Ans)**

void main(){

var ticket\_price = 600;

var total\_tickets = 5;

var total\_cost = ticket\_price \* total\_tickets;

// we can also multiple directly to 5 but this is proper way

print("Cost of 1 tickets is $ticket\_price PKR");

print("Total no. of tickets are $total\_tickets ");

print("Total cost of 5 tickets is $total\_cost PKR");

}

Output:

**Cost of 1 ticket is 600 PKR**

**Total no. of tickets are 5**

**Total cost of 5 tickets is 3000 PKR**

**Q4.**

**Ans)**

void main(){

List<double> list1 = [1,2,3,4,5,6,7];

List<double> list2 = [3,5,6,7,9,10];

List<double> difference = [];

list1.forEach((element) {

if(!list2.contains(element)){

difference.add(element);

}

}

);

print(difference);

}

**Q5.**

**Ans)**

**? Operator:**

**Syntax:**

**Condition ? Expression1 : Expression2**

If condition is true, then itreturns **expression1** value otherwise, it returns the value of **expression2**.

A= 10

B= 12

Output = A>B ? “yes”:”no”

**Output will be : no**

**?? Operator:**

If **Expression1** is not null it will returns its value, else returns the value of **Expression2**

**Expression1 = null;**

**Expression2 = 12**

**Syntax:** Expression1 ?? Expression2

A = null;

B = 12

Output = A??B

**Output will be: 12**

**Q6.**  **Data types in dart.**

**Ans)** Dart supports following data types

1. int= stores only integer whole value.

Example: num A = 5;

1. double = stores floating point value.

Example: double B = 10.00

1. num = Stores integer and floating (.) value

Example: num A = 23.5, num B = 23

1. String = Stores string as a value. Value must be in “ “

Example: String A = “Me”;

1. Bool = It returns true false value only not any other value.

Example: bool ans;

ans = 12 > 5;

print(ans);

1. List = It is an array which use [] to store data, 1 list can store multiple data and it give index to each element starting to 0 till the end of the list.

Example: List<dynamic> Names = ["Rafay”,” Hamza”,123,456]

1. Map = Map is also an array which uses {} to store value, Map can store multiple and data must have a key and a value. That is to be separated by a colon ( : )

Example = var a = {key:value}

**Q7.**

**Ans7)**

**void main() {**

**List<String> list1 = [**

**" 7\n",**

**" 14\n",**

**" 21\n",**

**" 28\n",**

**" 35\n",**

**" 42\n",**

**" 49\n",**

**" 56\n",**

**" 63\n",**

**" 70\n"**

**];**

**List<dynamic> list2 = [**

**" 7 x 1",**

**" 7 x 2",**

**" 7 x 3",**

**" 7 x 4",**

**" 7 x 5",**

**" 7 x 6",**

**" 7 x 7",**

**" 7 x 8",**

**" 7 x 9",**

**" 7 x 10",**

**];**

**var table = Map.fromIterables(list2, list1);**

**table.forEach((key, value) {**

**print('$key : $value');**

**});**

**print(table);**

**}**

**Q8.**

**Ans8)**

**import 'dart:io';**

**void main() {**

**var org\_pass = "rafay51698";**

**int lenOfOrg = org\_pass.length;**

**if (lenOfOrg >= 8 && lenOfOrg <= 16) {**

**print("Enter your password");**

**var user\_pass = stdin.readLineSync();**

**int len = user\_pass!.length;**

**if (len >= 8 && lenOfOrg <= 16) {**

**if (user\_pass == "") {**

**print("Please Enter password");**

**} else if (org\_pass == user\_pass) {**

**print(**

**"Correct! The password you entered matches the original password");**

**} else {**

**print("Incorrect password");**

**}**

**} else if (len < 8) {**

**print("Password strength must be between 8-16 characters ");**

**}**

**} else {**

**print("value you stored is less than 8 characters/n");**

**}**

**}**

**Q9.**

**Ans)**

**void main() {**

**List<dynamic> names = ["\nHamza", "\nRafay", "\nNashra"];**

**List<dynamic> scores = [300, 400, 450];**

**var per1 = (scores[0] / 500) \* 100;**

**var per2 = (scores[1] / 500) \* 100;**

**var per3 = (scores[2] / 500) \* 100;**

**List<dynamic> Data = [**

**"${names[0]} score is ${scores[0]} and percentage is $per1 %",**

**"${names[1]} score is ${scores[1]} and percentage is $per2 %",**

**"${names[2]} score is ${scores[2]} and percentage is $per3 % \n"**

**];**

**print(Data);**

**}**

**Q10.**

**Ans10)**

|  |  |
| --- | --- |
| **LEGAL VARIABLE NAMES** | **ILLEGAL VARIABLE NAMES** |
| * **var ABC = 123** | * **var 123 = ABC** |
| * **var A2 = “rafay”** | * **var 2A = “rafay”** |
| * **var A\_BC = 123** | * **var A-BC = 123** |
| * **var A# = “me”** | * **Var A = “ me “** |
| * **var FOR = “ her “** | * **Var for = “ her “** |

**Q11.**

**Ans11)**

**void main() {**

**var word = "Hyderabad";**

**var updated = word.replaceRange(0, 5, "Islam");**

**print(updated);**

**}**

**Q12.**

**Ans)**

**void main() {**

**double charges\_per\_unit = 100.15;**

**double tot\_units = 200.02;**

***// double tot\_units = ((100.8821214 \* pow(10, 2))..round()) / pow(10, 2);***

**double net\_ammount =**

**(((charges\_per\_unit \* tot\_units) \* 100)..round()) / 100;**

**int surcharge = 500;**

**double gross\_ammount =**

**((((charges\_per\_unit \* tot\_units) + surcharge) \* 100)..round())/ 100;**

**print("\t\tK-ELECTRIC BILL 7\n\n");**

**print("Enter name of customer");**

**String cus\_name = stdin.readLineSync()!;**

**print("Enter month");**

**String month = stdin.readLineSync()!;**

**int len = month.length;**

**int i = 1;**

**while (i <= len) {**

**stdout.write("=");**

**++i;**

**}**

**print("\n\n");**

**print("> Name: $cus\_name");**

**print("> Current month: $month");**

**print("> Charges per unit = $charges\_per\_unit");**

**print("> Net ammount payable within due date: $net\_ammount");**

**print("> Late payment surcharge: $surcharge");**

**print("> Gross ammount payable after due date: $gross\_ammount");**

**}**

**Q13.**

**Ans)**

**void main() {**

**print("Enter date of the month");**

**int date = int.parse(stdin.readLineSync()!);**

**if (date > 0 && date <= 15) {**

**print("First 15 days of the month");**

**} else if (date >= 16 && date <= 31) {**

**print("Last days of the month");**

**} else if (date == "") {**

**print("Enter date");**

**} else {**

**print("Enter proper date");**

**}**

**}**