**NAME: M. ABDULLAH IQBAL**

**COURSE: FLUTTER BATCH A**

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

There are 3 types of operators in dart,

1. **Arithmetic operators:**

Arithmetic operators are simple mathematical operators.

**Example:**

|  |  |
| --- | --- |
| 1 | Add + |
| 2 | Subtract - |
| 3 | Multiply \* |
| 4 | Divide / |
| 5 | ~/ divide, returning an integer result |
| 6 | % modulo |
| 7 | ++ increment |
| 8 | -- decrement |

1. **Relational operators**:

Relational Operators tests or defines the kind of relationship between two entities. Relational operators return a Boolean value i.e. true/ false.

**Example:**

|  |  |
| --- | --- |
| 1. | > greater than |
| 2. | < lesser than |
| 3 | >= greater than or equal to |
| 4. | <= less than or equal to |
| 5. | == equality |
| 6. | != not equal |

1. **Logical operators:**

Logical operators are used to combine two or more conditions. Logical operators return a Boolean value.

**Example:**

|  |  |
| --- | --- |
| 1 | && And |
| 2 | || OR |
| 3 | ! NOT |

1. 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:**

void main()

  {

int ticket\_price = 600;

int total\_price = ticket\_price \* 5;

print("5 tickets price: $total\_price");

 }

**Output:**

tickets price: 3000

1. 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:**

void main(){

List<int> first = [1,2,3,4,5,6,7];

List<int> second = [3,5,6,7,9,10];

List<int> difference = first.toSet().difference(second.toSet()).toList();

print(difference.toString());

}

**Output:**

[1, 2, 4]

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

**? :**

It is a simple if-else conditional operator, if condition is true print first statement else second statement

**??:**

It is conditional operator for null value, if first expression is null value print second statement otherwise first.

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

**Data types in dart:**

1. Numbers
2. Strings
3. Booleans
4. Lists
5. Maps

**Numbers:**

* **Integer** − Integer values represent non-fractional values, i.e., numeric values without a decimal point. **For example:** int a = 2;
* **Num** – Num data types can store both double values and integer values.

**For example:** num b = 2;

* **Double** − Dart also supports fractional numeric values i.e. values with decimal points. The Double data type in Dart represents a 64-bit (double-precision) floating-point number.

**For example**: double a = 2.2;

**Strings:** Strings represent a sequence of characters.

**For example** String message = “hello”;

**Boolean:** The Boolean data type represents Boolean values true and false. Dart uses the **bool** keyword to represent a Boolean value.

**For example:** bool check = true;

**List:** The data types list and map are used to represent a collection of objects. A **List** is an ordered group of objects. The List data type in Dart is synonymous to the concept of an array in other programming languages.

**For example:** List<int> array1 = [1,2,3,4,5,6];

**Maps**: The Map data type represents a set of values as key-value pairs. The **dart: core** library enables creation and manipulation of these collections through the predefined List and Map classes respectively.

**For example**: var details = {'Usrname':'tom','Password':'pass@123'};

1. Solve:
   1. First declare an array and assign the numbers of the table of 7.
   2. Second declare another array and assign the numbers 1-10
   3. Now write down the table of 7 using map.fromiterables method.

**Code:**

List<int> array1 = [7, 14, 21, 28, 40, 42, 49, 56, 63, 70];

List<int> array2 = [1, 2, 3, 4, 5, 6, 7, 8, 9, 10];

  var table = Map.fromIterables(array2, array1);

  print("7th table");

  print(table);

**Output:**

****

1. Write a program that
   1. Store correct password in a JS variable.
   2. Asks user to enter his/her password
   3. Validate the two passwords:
   4. Check if user has entered password. If not, then give message “Please enter your password”
   5. Check if both passwords are same. If they are same, show message “Correct! The password you
   6. entered matches the original password”. Show “Incorrect password” otherwise.

**Code:**

void main() {

  var password = "Abdullah";

  print("Please Enter the password");

  var input = stdin.readLineSync();

  if (input == password) {

    print("Correct! The password you entered is same");

  } else if (input == '') {

    print("Please enter the password");

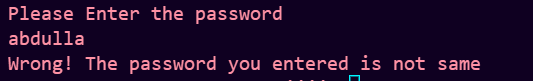
  } else {

    print("Wrong! The password you entered is not same");

  }

}

**Output:**

****

1. 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:**

void main() {

  List<String> student = ["Abdullah", "Adil", "Ali"];

  List<int> score = [400, 305, 465];

  int total\_marks = 500;

  num percentage1 = score[0] / total\_marks \* 100;

  num percentage2 = score[1] / total\_marks \* 100;

  num percentage3 = score[2] / total\_marks \* 100;

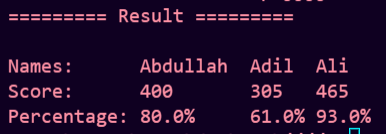
  print("========= Result =========\n");

  print("Names:      " + student[0]+"  "+ student[1] +"  "+ student[2]);

  print("Score:      " + score[0].toString()+"       "+ score[1].toString() +"   "+ score[2].toString());

  print("Percentage: " + percentage1.toString()+ "%     " + percentage2.toString()+ "% " + percentage3.toString() + "%");

**Output:**

****

1. Declare 5 legal & 5 illegal variable names.

**5 legal names:**

void main() {

*//legal variable names*

  int a;

  String abc1;

  double variable\_name;

  num abdullah;

  bool check;

}

**5 illegal names:**

void main() {

*//illegal variable names*

  int if;

  String 1abc;

  double variable name;

  num abdullah#;

  bool check-value;

}

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

**Code:**

void main() {

  String city = "Hyderabad";

  String result = city.replaceAll("Hyder", "Islam");

  print(result);

}

**Output:**

Islamabad

1. 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:
   1. Customer Name
   2. Current Month
   3. Number of units
   4. Charges per unit
   5. Net Amount Payable (within Due Date)
   6. Late Payment Surcharge
   7. 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:**

void main() {

  String name = "Abdullah Iqbal";

  String month = "March";

  double noOfUnits = 200;

  double perUnitCharges = 30;

  double late\_payment = 500;

  num net\_amount = noOfUnits \* perUnitCharges;

  num gross\_amount = net\_amount + 500;

  print("=====K-ELECTRIC BILL=====\n");

  print("Name: " + name);

  print("Month: " + month);

  print("No. of units: " + noOfUnits.toString() + " Watt");

  print("Charges per unit: " + perUnitCharges.toString());

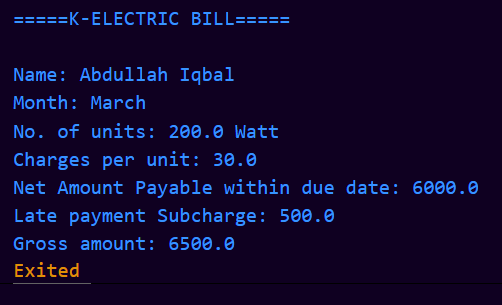
  print("Net Amount Payable within due date: " + net\_amount.toString());

  print("Late payment Subcharge: " + late\_payment.toString());

  print("Gross amount: " + gross\_amount.toString());

}

**Output:**



OR

*Best of Luck!*