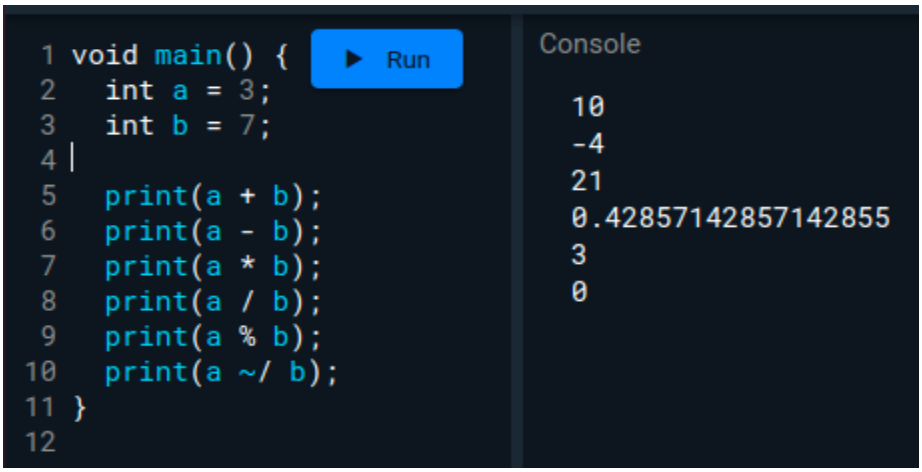
ASSIGNMENT 3

Answer: 01

There are three types of operators:

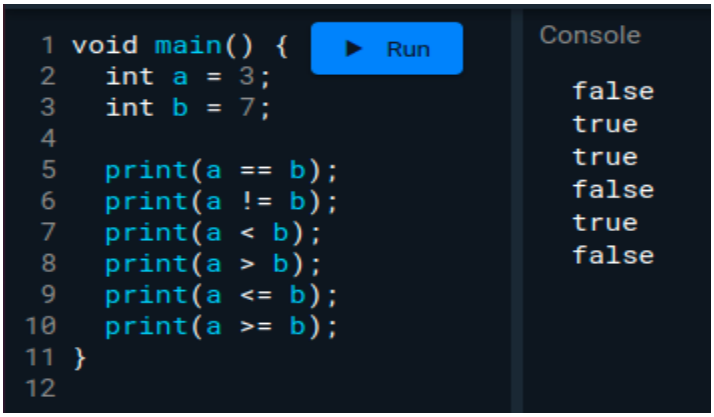
1. Arithmetic Operator
    - +, -, *, /, %, ~/




```
void main() {
  int a = 3;
  int b = 7;

  print(a + b);
  print(a - b);
  print(a * b);
  print(a / b);
  print(a % b);
  print(a ~/ b);
}
```

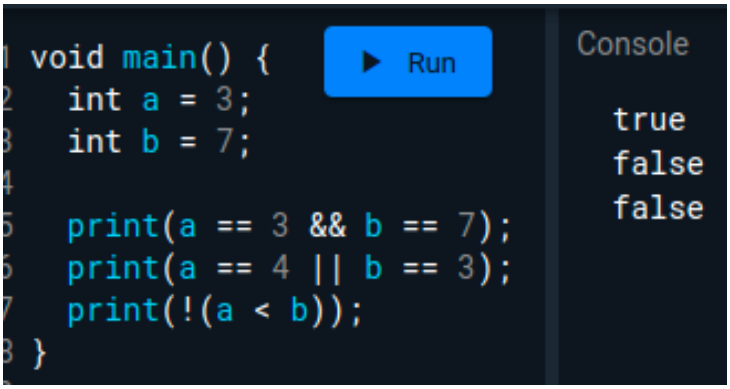
2. Equality Operator
    - ==, !=, <, >, <=, >=




```
void main() {
  int a = 3;
  int b = 7;

  print(a == b);
  print(a != b);
  print(a < b);
  print(a > b);
  print(a <= b);
  print(a >= b);
}
```

3. Logical Operator
    - &&, ||, !




```
void main() {
  int a = 3;
  int b = 7;

  print(a == 3 && b == 7);
  print(a == 4 || b == 3);
  print(!(a < b));
}
```

Answer: 02

```dart
void main() {
  int ticket = 600;
  int fiveTickets = ticket * 5;
  print('Price of five tickets is: ${fiveTickets} rupees');
}
```

```
PROBLEMS  OUTPUT  DEBUG CONSOLE  TERMINAL

tahseen@tahseen-PC:~/Documents/Dart learning$ dart week3.dart
Price of five tickets is: 3000 rupees
tahseen@tahseen-PC:~/Documents/Dart learning$
```

Answer: 03

```dart
void main() {
  List lst1 = [1, 2, 3, 4, 5, 6, 7];
  List lst2 = [3, 5, 6, 7, 9, 10];

  print('First method');
  print(lst1.toSet().difference(lst2.toSet()).toList());

  List difference = lst1.where((element) => !lst2.contains(element)).toList();
  print('\nSecond method');
  print(difference);
}
```

```
PROBLEMS  OUTPUT  DEBUG CONSOLE  TERMINAL

tahseen@tahseen-PC:~/Documents/Dart learning$ dart week3.dart
First method
[1, 2, 4]

Second method
[1, 2, 4]
tahseen@tahseen-PC:~/Documents/Dart learning$
```

Answer: 04

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

??: It is a conditional operator for null value, if first expression is null value print second statement otherwise first first

```dart
// Question 4
  int a = 5;
  int b = 7;
  // ?
  var c = (a < b) ? 'Correct' : 'Wrong';
  print(c);
  // ??
  var n = null;
  var d = n ?? 'n has null value';
  print(d);
  // ??
  n = 10;
  d = n ?? 'n has Null value';
  print(d);
}
```

```
PROBLEMS  OUTPUT  DEBUG CONSOLE  TERMINAL

tahseen@tahseen-PC:~/Documents/Dart learning$ dart week3.dart
Correct
n has null value
10
tahseen@tahseen-PC:~/Documents/Dart learning$
```

Answer: 05

Different data types are supported by dart:

- Var (universal data type of dart)
- String (“14 August is the independence day of Pakistan”)
- Number
    - Num (24, 5.4896)
    - Int (2)
    - Double (3.142)
- Boolean (True, False)
- List (**[1, 2, 3, ‘a’, ‘b’, ‘c’,]**)
- Map

Answer: 06

week3.dart > main

```
28    // Question 5
29    var times = [1, 2, 3, 4, 5, 6, 7, 8, 9, 10];
30    final table = Map.fromIterable(times, key: (item) => item, value: (item) => item * 7);
31    table.forEach((key, value) {print('7 x $key = $value');});
32  }
```

PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL bash

```
tahseen@tahseen-PC:~/Documents/Dart learning$ dart week3.dart
7 x 1 = 7
7 x 2 = 14
7 x 3 = 21
7 x 4 = 28
7 x 5 = 35
7 x 6 = 42
7 x 7 = 49
7 x 8 = 56
7 x 9 = 63
7 x 10 = 70
tahseen@tahseen-PC:~/Documents/Dart learning$
```

Answer: 07

question7.dart > main

```
1   import 'dart:io';
    Run | Debug
2   void main() {
3     String pass = 'Flutter';
4     print('Enter password: ');
5     String? userPass = stdin.readLineSync();
6
7     if (userPass == pass) {
8       print('Correct password!');
9     }
10    else if (userPass == '') {
11      print('Please enter your password.');
12    }
13    else {
14      print('Wrong password!');
15    }
16  }
```

PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL

```
tahseen@tahseen-PC:~/Documents/Dart learning$ dart question7.dart
Enter password:
hello
Wrong password!
tahseen@tahseen-PC:~/Documents/Dart learning$ dart question7.dart
Enter password:
Flutter
Correct password!
tahseen@tahseen-PC:~/Documents/Dart learning$ dart question7.dart
Enter password:

Please enter your password.
tahseen@tahseen-PC:~/Documents/Dart learning$
```

Answer: 08

```dart
void main() {
  List students = ['Ali', 'Nawaz', 'Raheel'];
  var marks = [443, 409, 380];
  int total = 500;
  print('Name      | Score  | Percentage');
  for (int i = 0; i < students.length; i++) {
    num per = (marks[i] * 100) / total;
    print('${students[i]}      | ${marks[i]}    | $per%');
  }
}
```

```
tahseen@tahseen-PC:~/Documents/Dart learning$ dart question8.dart
Name      | Score  | Percentage
Ali       | 443    | 88.6%
Nawaz     | 409    | 81.8%
Raheel    | 380    | 76.0%
tahseen@tahseen-PC:~/Documents/Dart learning$
```

Answer: 09

Legal variable: hello, firstName, floor8, user_email, myFavouriteColor

Illegal variable: Hello, $currency, 8floor, user email, 43

Answer: 10

```dart
void main() {
  String city = 'Islamabad';
  String newCity = city.replaceAll('Islam', 'Hyder');
  print('Old city: $city');
  print('new city: $newCity');
}
```

```
tahseen@tahseen-PC:~/Documents/Dart learning$ dart question10.dart
Old city: Islamabad
new city: Hyderabad
tahseen@tahseen-PC:~/Documents/Dart learning$
```

Answer: 11

question11.dart > main

```dart
void main() {
  int units = 158;
  num unitPrice = 10.57;
  num netAmmount = units * unitPrice;
  int latePay = 250;
  num grossPay = netAmmount + latePay;
  print('Customer name: Tehseen Mukhtiar');
  print('Current month: March');
  print('Number of units: $units');
  print('Charges per unit: $unitPrice');
  print(
      'Net Amount Payable (within Due Date): ${netAmmount.toStringAsFixed(2)}');
  print('Late Payment Surcharge: $latePay');
  print('Gross Amount Payable (after Due Date): ${grossPay.toStringAsFixed(2)}');
}
```

PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL

```
tahseen@tahseen-PC:~/Documents/Dart learning$ dart question11.dart
Customer name: Tehseen Mukhtiar
Current month: March
Number of units: 158
Charges per unit: 10.57
Net Amount Payable (within Due Date): 1670.06
Late Payment Surcharge: 250
Gross Amount Payable (after Due Date): 1920.06
tahseen@tahseen-PC:~/Documents/Dart learning$
```

Answer: 12

question12.dart > main

Run | Debug

```dart
void main() {
  var now = DateTime.now();
  if (now.day <= 15) {
    print('First fifteen days of the month');
  }
  else {
    print('Last fifteen days of the month');
  }
}
```

PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL

```
tahseen@tahseen-PC:~/Documents/Dart learning$ dart question12.dart
First fifteen days of the month
tahseen@tahseen-PC:~/Documents/Dart learning$
```

Answer: 13

Methods of list:

1. sublist()
2. shuffle()
3. where((i) => i < 4)
4. whereType<Type>()
5. asMap()

```dart
void main() {
  var lst = [1, 2, 3, 4, 5, 6, 7, 8, 9];
  print('Original list: $lst');

  print('Sub list: ${lst.sublist(3, 6)}'); // 1st method

  lst.shuffle(); // 2nd method
  print('Shuffled list: $lst');

  var mixList = [1, "a", 2, "b", 3, "c", 4, "d"];
  var num = mixList.whereType<int>(); // 3rd method
  print(num);

  List<String> sports = ['cricket', 'football', 'tennis', 'baseball'];
  Map map = sports.asMap(); // 4th method
  print(map);

  var newList = [1,2,3,4,5,6];
  print(newList.where((i) => i < 4)); //5th method
}
```

```
PROBLEMS  OUTPUT  DEBUG CONSOLE  TERMINAL

tahseen@tahseen-PC:~/Documents/Dart learning$ dart question13.dart
Original list: [1, 2, 3, 4, 5, 6, 7, 8, 9]
Sub list: [4, 5, 6]
Shuffled list: [2, 7, 5, 8, 4, 1, 3, 6, 9]
(1, 2, 3, 4)
{0: cricket, 1: football, 2: tennis, 3: baseball}
(1, 2, 3)
tahseen@tahseen-PC:~/Documents/Dart learning$
```

Methods of string:

1. toUpperCase()
2. toLowerCase()
3. trim()
4. replaceAll()
5. substring()

```dart
void main() {
  // Methods of String
  String sentence = ' this is some sentence ';

  print(sentence.toUpperCase()); // 1st method

  print(sentence.toLowerCase()); // 2nd method

  print(sentence.trim()); //3rd method

  print(sentence.replaceAll('some', 'a')); // 4th method

  print(sentence.substring(9)); // 5th method
}
```

```
PROBLEMS  OUTPUT  DEBUG CONSOLE  TERMINAL

tahseen@tahseen-PC:~/Documents/Dart learning$ dart question13.dart
 THIS IS SOME SENTENCE
 this is some sentence
this is some sentence
 this is a sentence
some sentence
tahseen@tahseen-PC:~/Documents/Dart learning$
```