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**COURSE: MOBILE APPLICATION**

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# Assignment 2

1. Write a program to check if a given string is a palindrome.

```
void main(){
```


```
    checkpalindrome("civic")? print("its is palindrome word") :  
    print("its is not palindrome word");
```

```
    checkpalindrome("hello")? print("its is palindrome word") :  
    print("its is not palindrome word");
```


```
    checkpalindrome("abba")? print("its is palindrome word") :  
    print("its is not palindrome word");
```


```
    checkpalindrome("")? print("its is palindrome word") : print("its is not  
    palindrome word");    checkpalindrome("amma")? print("its is palindrome word") :  
    print("its is not palindrome word");  
}
```


```
bool checkpalindrome(String user){  
    return user == user.split("").reversed.join();  
}
```

 DartPad

<> New Pad

 Reset


 Format


 Install SDK

cylindrical-aqueduct-1460

local edits

Samples





1 void main(){

2

3   checkpalindrome("civic"? print("its is palindrome word") :

4   print("its is not palindrome word");

5

6   checkpalindrome("hello"? print("its is palindrome word") :

7   print("its is not palindrome word");

8

9   checkpalindrome("abba"? print("its is palindrome word") :

10   print("its is not palindrome word");

11

12   checkpalindrome(")? print("its is palindrome word") : print

13   print("its is not palindrome word");

14 }

15

16 bool checkpalindrome(String user){

17   return user == user.split("").reversed.join();

18 }

Run

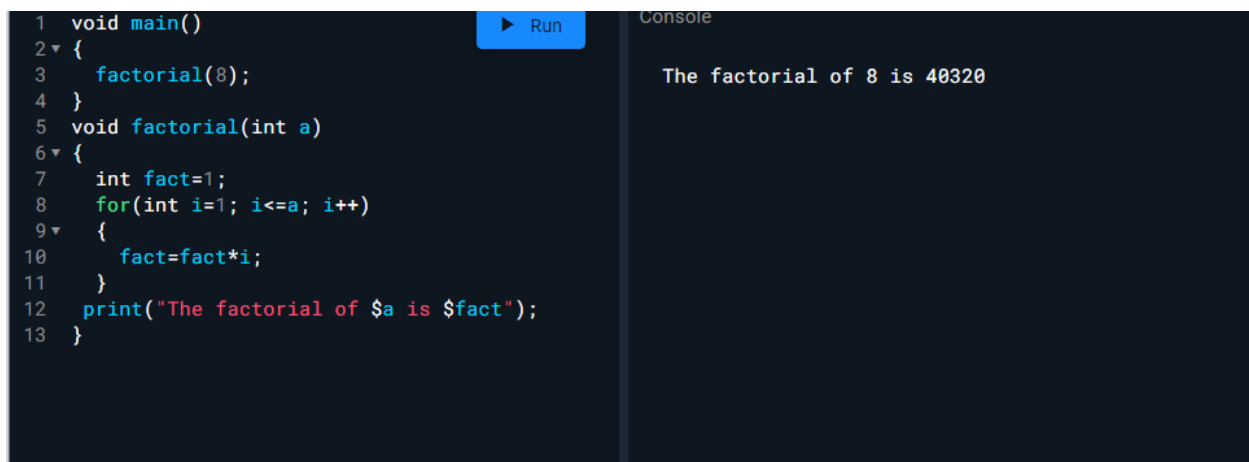
its is palindrome word  
its is not palindrome word  
its is palindrome word  
its is palindrome word  
its is palindrome word

Documentation

2. Write a program to calculate the factorial of a given number using a function.

```
void main()
{
    factorial(8);
}

void factorial(int a)
{
    int fact=1;
    for(int i=1; i<=a; i++){
        fact=fact*i;
    }
    print("The factorial of $a is $fact");
}
```



The screenshot shows a code editor with a dark theme. On the left, the code is written in C, with line numbers 1 through 13. A blue 'Run' button is visible above the code. On the right, a 'Console' window displays the output of the program. The code calculates the factorial of 8, which is 40320, and prints it with a descriptive message.

```
1 void main()
2 {
3     factorial(8);
4 }
5 void factorial(int a)
6 {
7     int fact=1;
8     for(int i=1; i<=a; i++)
9     {
10         fact=fact*i;
11     }
12     print("The factorial of $a is $fact");
13 }
```

Console

The factorial of 8 is 40320

3. Write a program to print out the Fibonacci sequence up to a given number.

```
void main() {
```

```
    fibonacci(55);
```

```
}
```

```
void fibonacci(int a){
```

```
    int b = 0;
```

```
    int c = 1;
```

```
    int d;
```

```
    print('Fibonacci sequence up to $a:');
```

```
    print(b);
```

```
    print(c);
```

```
    for (int i = 2; i <=a; i++) {
```

```
        d = b + c;
```

```
        if (c > a) {
```

```
            break;
```

```
        }
```

```
        print(c);
```

```
        b = c;
```

```
        c = d;
```

```
    }
```

```
}
```

```
1 void main() {  
2  
3     fibonacci(55);  
4 }  
5  
6 void fibonacci(int a){  
7     int b = 0;  
8     int c = 1;  
9     int d;  
10  
11     print('Fibonacci sequence up to $a:');  
12     print(b);  
13     print(c);  
14  
15     for (int i = 2; i <=a; i++) {  
16         d = b + c;  
17         if (c > a) {  
18             break;  
19         }  
20         print(c);  
21         b = c;  
22         c = d;  
23     }  
24 }
```

▶ Run

Console

Fibonacci sequence up to 55:

0  
1  
1  
1  
2  
3  
5  
8  
13  
21  
34  
55

Documentation

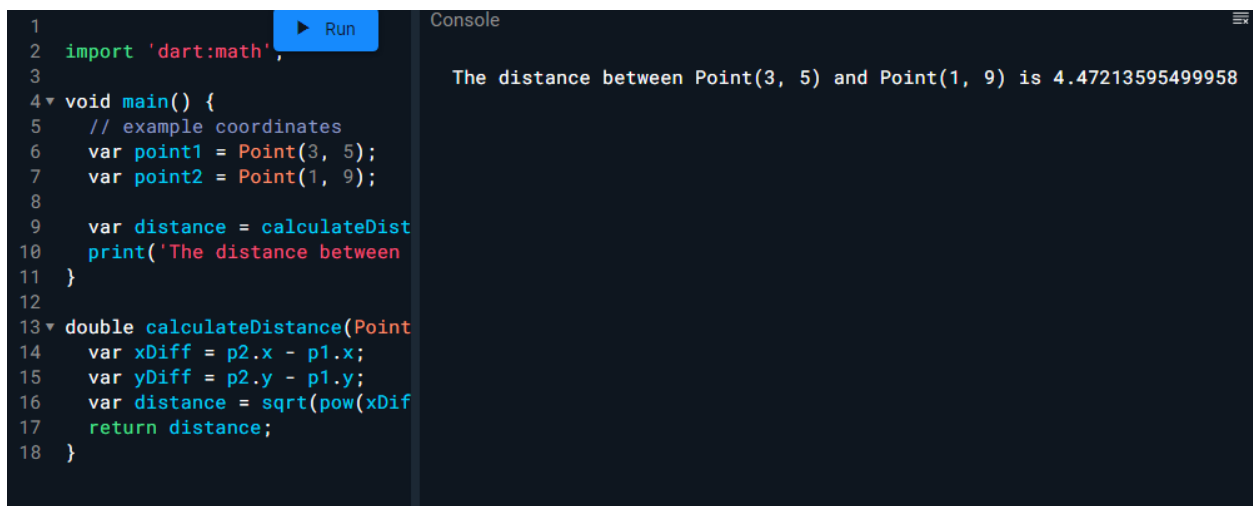
#### 4. Write a program to calculate the distance between two points on a 2D plane using a function.

```
import 'dart:math';

void main() {
  // example coordinates
  var point1 = Point(3, 5);
  var point2 = Point(1, 9);

  var distance = calculateDistance(point1, point2);
  print('The distance between $point1 and $point2 is $distance');
}

double calculateDistance(Point p1, Point p2) {
  var xDiff = p2.x - p1.x;
  var yDiff = p2.y - p1.y;
  var distance = sqrt(pow(xDiff, 2) + pow(yDiff, 2));
  return distance;
}
```



The screenshot shows a code editor with the Dart code from the previous block. A blue 'Run' button is visible above the code. To the right, a 'Console' window displays the output of the program: 'The distance between Point(3, 5) and Point(1, 9) is 4.47213595499958'.

## 5. Write a program to convert a temperature from Fahrenheit to Celsius using a function

```
void main() {  
    // example Fahrenheit temperature  
    dynamic fahrenheit=90;  
  
    var celsius = convertFahrenheitToCelsius(fahrenheit);  
    print('$fahrenheit°F is equal to $celsius°C');  
}  
  
double convertFahrenheitToCelsius(double fahrenheit) {  
    var celsius = (fahrenheit - 32) * 5 / 9;  
    return celsius;  
}
```

```
1 void main() {  
2     // example Fahrenheit temperature  
3     dynamic fahrenheit=90;  
4  
5     var celsius = convertFahrenheitToCelsius(fahrenheit);  
6     print('$fahrenheit°F is equal to $celsius°C');  
7 }  
8  
9 double convertFahrenheitToCelsius(double fahrenheit) {  
0     var celsius = (fahrenheit - 32) * 5 / 9;  
1     return celsius;  
2 }
```

Run

Console

90°F is equal to 32.222222222222°C



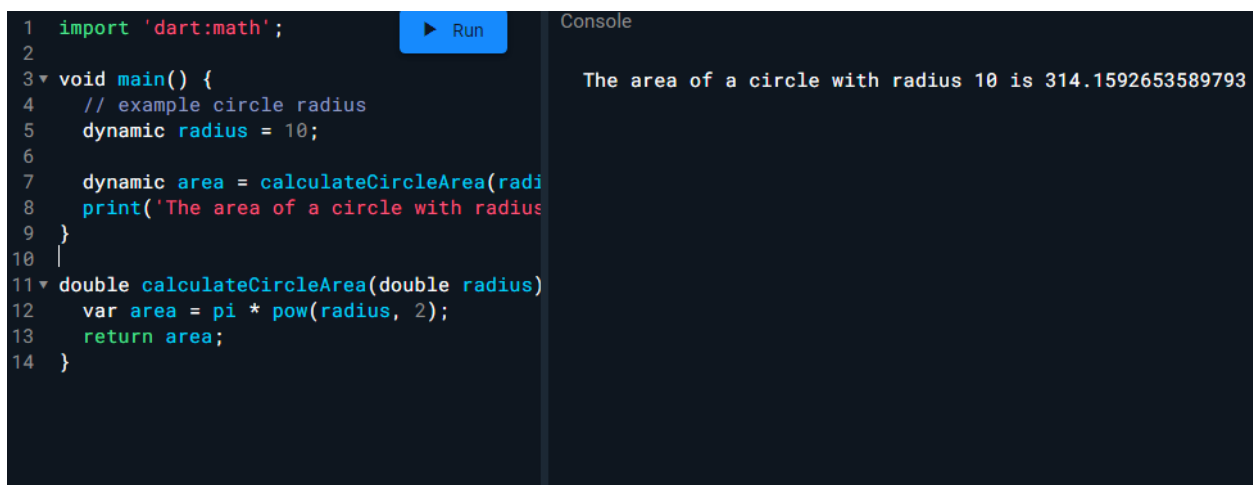
## 6. Write a program to calculate the area of a circle using a function.

```
import 'dart:math';

void main() {
  // example circle radius
  dynamic radius = 10;

  var area = calculateCircleArea(radius);
  print('The area of a circle with radius $radius is $area');
}

double calculateCircleArea(double radius) {
  var area = pi * pow(radius, 2);
  return area;
}
```



The screenshot shows a code editor with the Dart code from the previous block. A blue 'Run' button is visible next to the code. To the right, a 'Console' window displays the output of the program: 'The area of a circle with radius 10 is 314.1592653589793'.

```
1 import 'dart:math';
2
3 void main() {
4   // example circle radius
5   dynamic radius = 10;
6
7   dynamic area = calculateCircleArea(radius);
8   print('The area of a circle with radius $radius is $area');
9 }
10
11 double calculateCircleArea(double radius) {
12   var area = pi * pow(radius, 2);
13   return area;
14 }
```

Console

The area of a circle with radius 10 is 314.1592653589793

**7. Write a program to print out the prime numbers between 1 and a given number.**

```
import 'dart:math';

void main() {
  // example upper limit
  var limit = 30;

  print('The prime numbers between 1 and $limit are:');
  for (var i = 2; i <= limit; i++) {
    if (isPrime(i)) {
      print(i);
    }
  }
}

bool isPrime(int number) {
  if (number <= 1) {
    return false;
  }

  for (var i = 2; i <= sqrt(number); i++) {
    if (number % i == 0) {
      return false;
    }
  }
}
```

```
}  
  
return true;  
  
}
```

```
2 void main() {  
3     // example upper limit  
4     var limit = 30;  
5  
6     print('The prime numbers between 1 and $limit are:');  
7     for (var i = 2; i <= limit; i++) {  
8         if (isPrime(i)) {  
9             print(i);  
10        }  
11    }  
12 }  
13  
14 bool isPrime(int number) {  
15     if (number <= 1) {  
16         return false;  
17     }  
18  
19     for (var i = 2; i <= sqrt(number); i++) {  
20         if (number % i == 0) {  
21             return false;  
22         }  
23     }  
24  
25     return true;  
26 }
```

Run

Console

```
The prime numbers between 1 and 30 are:  
2  
3  
5  
7  
11  
13  
17  
19  
23  
29
```

Documentation