# Dart COM Automation Client

## Steps

1. Download and install **Dart SDK v3.0** and upwards. The implemented code uses **Flutter SDK** which includes the full Dart SDK - Dart or Flutter

2. Create project using the following command

   ```
   dart create dart_automation_client
   ```

   This creates a sample command-line application with an entrypoint in `bin/`, library code in `lib/`, and example unit test in `test/`.

   ```
   dart_automation_client (root directory)
   ┗ bin (directory)
       ┗ dart_automation_client.dart (file)
   ┗ lib (directory)
       ┗ dart_automation_client.dart (file)
   ┗ ... Other Files
   ```

3. Install the required packages using the following command

   ```
   dart pub add ffi win32
   ```

4. Type the code and replace **CLSID** with your **MyMath's CLSID** in `lib/dart_automation_client.dart`. Also write the code for `bin/dart_automation_client.dart`

5. Run the project using the following command

   ```
   dart run
   ```

   Documentation for win32 package : win32 Dart Package
   Documentation for ffi package : ffi Dart Package

# Code

## lib/dart_automation_client.dart

```
import 'dart:ffi';
import 'package:ffi/ffi.dart';
import 'package:win32/win32.dart';

const clsIdMyMath = '{69DEFCBC-00E1-4817-A8D1-C608EE5C20F3}';

(int, int) calculateResult(int num1, int num2)
{
  // Code
  int sum = 0, subtraction = 0;

  // Initialize COM
  CoInitializeEx(nullptr, COINIT_APARTMENTTHREADED);

  Dispatcher dispatcher = Dispatcher.fromCLSID(clsIdMyMath);

  final dispParams = calloc<DISPPARAMS>();
  final vArg = calloc<VARIANT>(2);

  VariantInit(vArg);
  {
    vArg[0].vt = VT_INT;
    vArg[0].intVal = num2;

    vArg[1].vt = VT_INT;
    vArg[1].intVal = num1;

    dispParams.ref.cArgs = 2;
    dispParams.ref.rgvarg = vArg;
```

```
    final vRetVal = calloc<VARIANT>();
    VariantInit(vRetVal);
    {
      dispatcher.invoke("SumOfTwoIntegers", dispParams, vRetVal);
      sum = vRetVal.ref.intVal;

      dispatcher.invoke("SubtractionOfTwoIntegers", dispParams, vRetVal);
      subtraction = vRetVal.ref.intVal;
    }
    VariantClear(vRetVal);
    free(vRetVal);
  }
  VariantClear(vArg);

  free(vArg);
  free(dispParams);

  dispatcher.dispose();

  // Uninitialize COM
  CoUninitialize();

  return (sum, subtraction);
}
```

# bin/dart_automation_client.dart

```
import 'dart:io';
import 'package:dart_automation_client/dart_automation_client.dart';

void main()
{
  // Code
  stdout.write("\nEnter Number 1 = ");
  int? num1 = int.parse(stdin.readLineSync()!);

  stdout.write("\nEnter Number 2 = ");
  int? num2 = int.parse(stdin.readLineSync()!);

  var (sum, subtraction) = calculateResult(num1, num2);

  print("\nAddition of $num1 and $num2 = $sum");
  print("\nSubtraction of $num1 and $num2 = $subtraction");
}
```