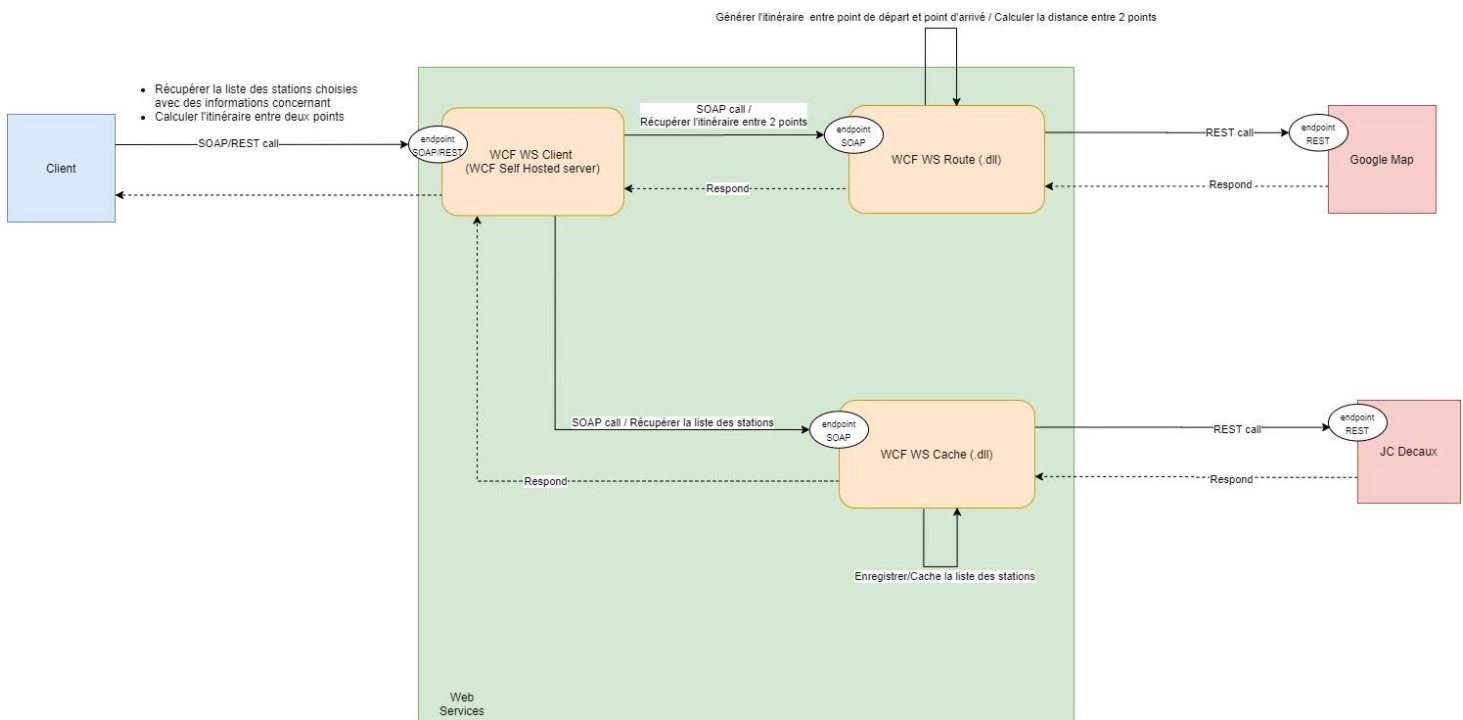


# First Lab Project – Let's go Biking Web Service

## Project Architecture

In this lab, you will find a final product who have the architecture as diagram below.



## The release of lab project consist

### 1. goBikingWS repo contains

- A **WCF web service Cache** in library form (.dll) which provide the functionalities in order to store the JCDecaux stations informations. These information achieved by call the REST requests to JCDecaux Web API
- A **WCF web service Route** in library form (.dll) which provide the functionalities in order to calculate the route between two locations. These information achieved by call the REST requests to Directions API of Google Map Platform.
- A **WCF self-hosted server** in application console form which provide an web service for client who want to interact with server by using SOAP/REST call. This web service will call the SOAP requests to WCF WS Cache and WCF WS Route added as service references (in form .dll) in order to get information related to client request on this server.

By noting that JCDecaux's information is dynamic. A bicycle is not always available in the stations nearest to the departure and destination. In the first release, I have solved this problem by implemented a function refresh data allows the server to fetch to send the requests to JCDecaux API and refresh data in WS cache every 5 minutes.

### 2. goBikingClient repo contains

- A **GUI Client** in form windows form application provided for the final users. This application can interact with the self-hosted server by sending SOAP/REST requests.

## How to run the project

The projects was build successfully on Visual Studio 2019 and saving as .exe file

In the zip file, you can run the self-hosted server by executing :

*goBikingWS\SelfHostedServer\bin\Debug\SelfHostedServer.exe*

Also, you can run the GUI Client application by executing :

*goBikingClient\goBikingClient\bin\Debug\goBikingClient.exe*

**NB** : Please execute these files as administrator.

## Developed by using

- Visual Studio 2019
- .NET Framework 4
- [Json.NET Framework](#) - Json format handling
- [GMap.NET.Windows](#) - Routing, geocoding, directions and maps from Google used on Windows form.
- [JCDecaux API](#) - A service of JCDecaux allows to get open data about JCDecaux bicycle stations.
- [Directions API](#) - A service of google map platform that calculates directions between locations.