Lab – Service-Oriented Programming

**Problem Description:**

In this lab, you will develop a gas station application by using web services. The application returns a gas station for a given city, the driving directions from the current address to the gas station, and the weather of the station area. **Note**: you can hardcode the city, city of gas stations, and the current address.

For example, given the city: Buffalo, and the current address: 4200 Genesee St, Buffalo, NY 14225, your application should return the result similar to:

We found the following gas station: Irish Propane

At this address: 70 Katherine St,Buffalo,NY

The routing directions:

Head <b>west</b>

Continue onto <b>NY-33 W</b>

Take the <b>Interstate 90 W</b> exit toward <b>Erie</b>

Merge onto <b>I-90 W</b>

Take the exit onto <b>I-190 N</b> toward <b>Downtown Buffalo/Canada</b>

Take exit <b>5</b> for <b>Hamburg St</b>

Turn <b>right</b> onto <b>Hamburg St</b>

Turn <b>left</b> onto <b>South Park Ave</b>

Take the 2nd <b>right</b> onto <b>Katherine St</b><div style="font-size:0.9em">Destination will be on the right</div>

The current temperature of the gas station area is 70

**Problem Solving Session:**

You will work in groups for this portion of the lab.

1. Review the document for consuming SOAP based services.
2. Review the example codes to understand how to process XML response.
3. Read the documents of the three services:
	1. GasStation: <http://vhost3.cs.rit.edu/AltGasService/Service.svc?singleWsdl>
	2. Directions: <https://developers.google.com/maps/documentation/directions/>
	3. Weather: <http://wsf.cdyne.com/WeatherWS/Weather.asmx>
4. Answer the following questions:
	1. For each service, what is its service type (RESTful or SOAP-based) and output format (XML, JSon, or Both)?
	2. What are the operations for each service? If the service has more than 5 operations, only list 5 operations.
	3. Choose one operation of the Google Map service. List all of its required input parameters, at least one optional parameter, and briefly describe its output.
	4. Given the question description, list the operations you plan to invoke and how (and in what order) you will invoke them. For XML-formatted output, explain how you plan to parse it.

**Implementation**

You will complete this portion of the lab on your own.