Having finished both tutorials, neither the ASP.NET Web API nor the WCF service seem any better than the other. However, the WCF service seemed to have a lot more behind the scenes work necessary in order to get it running. A WCF service uses SOAP to send and receive data, which means that it requires an extra step for a data request to make it to the server, and another additional step to send the result back to the requester. This means that a WCF service is a slower method of accessing data on a server. To access data using a WCF service, the request is sent via a SOAP ‘envelope’ using HTTP protocol to the web server, and from there it is sent on to a SOAP server, which handles the request, then sends another ‘envelope’ back to the web server, which in turn sends the response on to the requester. The web API in the tutorial is a RESTful service, which cuts out the extra server used with SOAP, handling all the requests and responses on one server. A RESTful server uses a URI (packaged within a URL) to access the data hosted by the server. When a request for data is sent to the server, it communicates with the server using the given URI, then the server processes the request and sends a response back to the requester using HTTP protocol, often in the form of an XML or JSON file. Using a web API requires fewer intermediate steps to access the data hosted on the server, which makes an API a faster resource than a WCF service.

According to SAKSOFT.com, WCF is “best fit for scenarios like message queues, duplex communication, end-to-end message security…” whereas a web API is “best fit to create a resource oriented services using HTTP/Restful…” Microsoft’s .NET online documentation also shows the advantages of each kind of web service. For example, WCF uses HTTP most often, but can also make use of TCP and UDP, whereas Web APIs only use HTTP. However, Web APIs allow for using “HTTP, WebSockets, SSL, JSON, and XML”, but don’t allow for the “higher level protocols such as Reliable Messaging or Transactions” that WCF supports.

From everything I can gather, WCF seems best suited for message transfer, whereas a Web API seems best for accessing data, particularly from a RESTful service. In the big picture, neither one seems better than the other. I find myself drawn more towards the Web APIs and the RESTful servers, but that may have more to do with my using one for CS262 than with its being a preferable service overall.

Bibliography

Bailey, Patrick. "REST and SOAP." Calvin College DATA202, 28 Nov. 2018, Grand Rapids. Lecture.

Easuwaran, Sathish. Advantages of WEB API over WCF, SAKSOFT, 6 Nov. 2015, www.saksoft.com/advantages-of-web-api-over-wcf/. Accessed 5 Dec. 2018.

WCF and ASP.NET Web API, Microsoft, 29 Mar. 2017, docs.microsoft.com/en-us/dotnet/framework/wcf/wcf-and-aspnet-web-api. Accessed 5 Dec. 2018.