10 Ways to Build Web Services in .NET

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What is a Web Service?

- **A Service**
  - Receives input, processes, returns output

- **… that is accessed using web-standard methods**
  - HTTP

- **Consumers of a web service don't need to know anything about the platform, object model, or programming language used to implement the service, they just need to know how to send and receive HTTP**

Types of Web Services

- **Remote Procedure Call**

- **Calling the methods of an object located on a server instead of in memory**

- **Uses Simple Object Access Protocol (SOAP)**
  - Standard used to represent method calls and return values
  - Uses Web Service Definition Language (WSDL) documents to communicate what is expected for input and output

Types of Web Services

- **Web API**
  - A service that relies more on HTTP standards to send and receive data
  - Data usually sent and received in XML and JSON
  - Structured so that multiple web services can be combined into single applications "aka mashups"
  - Resource focused as opposed to action focused (nouns over verbs)

Types of Web Services

- **Representational State Transfer (REST)**
  - Uses HTTP Verbs to perform actions with resources
  - Create = POST, Read = GET, Update = PUT (or PATCH), Delete = DELETE
  - Focus on stateless resources and clean URLs
    - Old way: server.com/GetCustomerByID?id=5&show=invoices
    - REST way: server.com/customers/5/invoices

Our Project

- **A simple Create, Read, Update, and Delete (CRUD) web service**
    - Data layer and transport objects already supplied
    - Each module will use a different web service framework

- **A console application to connect to the web service**
    - Client data layer exists to abstract web service connection from application logic
    - Each module will use a different web service client framework

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