

# Caching in the .NET Stack: Inside-Out

Elton Stoneman  
elton@sixeyed.com



# Benefits of Caching

## ■ Performance

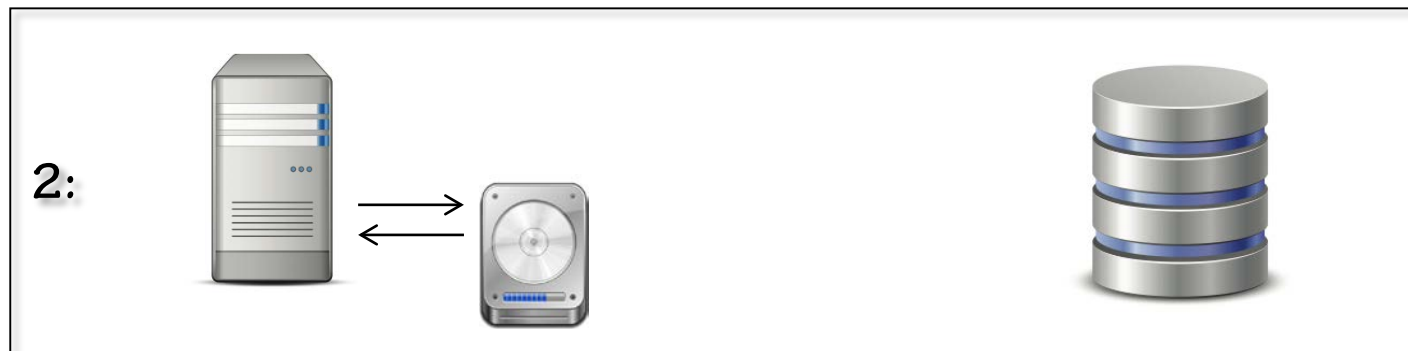
- Reduced response time
- Reduced infrastructure usage
  - CPU time, database utilisation, network bandwidth,



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# Aims of the Course

- **Caching Techniques**

- Internal caching with AOP
  - Local, remote, distributed cache stores
- External caching on the client
- Invalidation and expiration

- **Technologies**

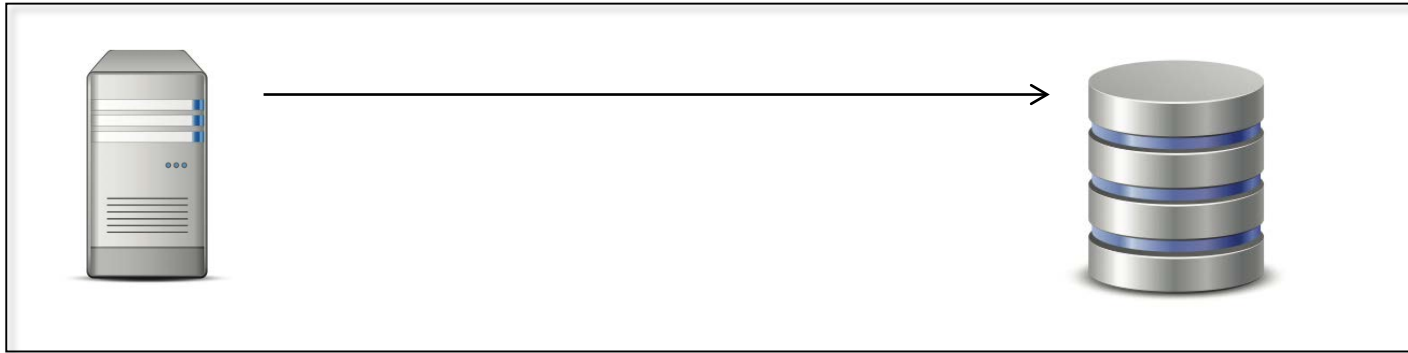
- MemoryCache, NCache Express, AppFabric Caching
- memcached, Azure Table Storage, disk
- HTTP

- **Decision criteria**

- Longevity, breadth, cost and size

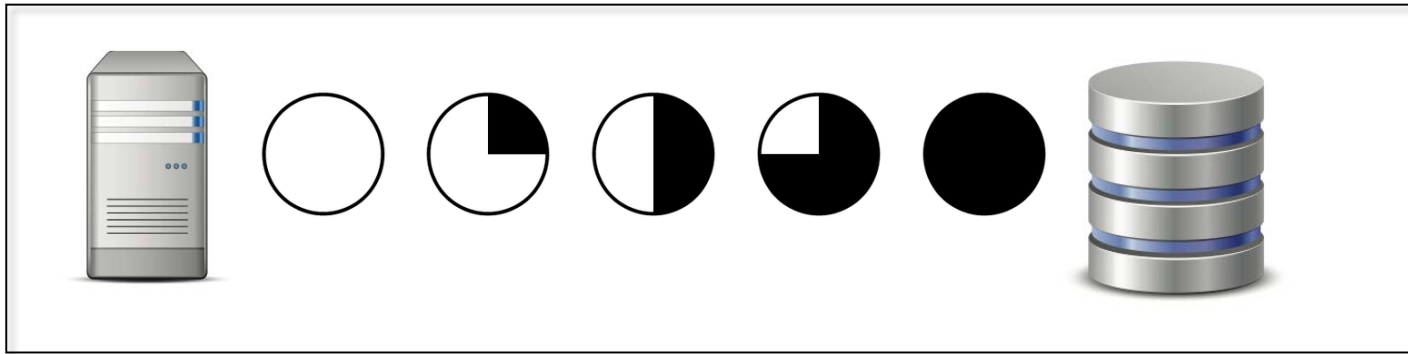
# About Caching

- Access a resource from the owner; keep a local copy



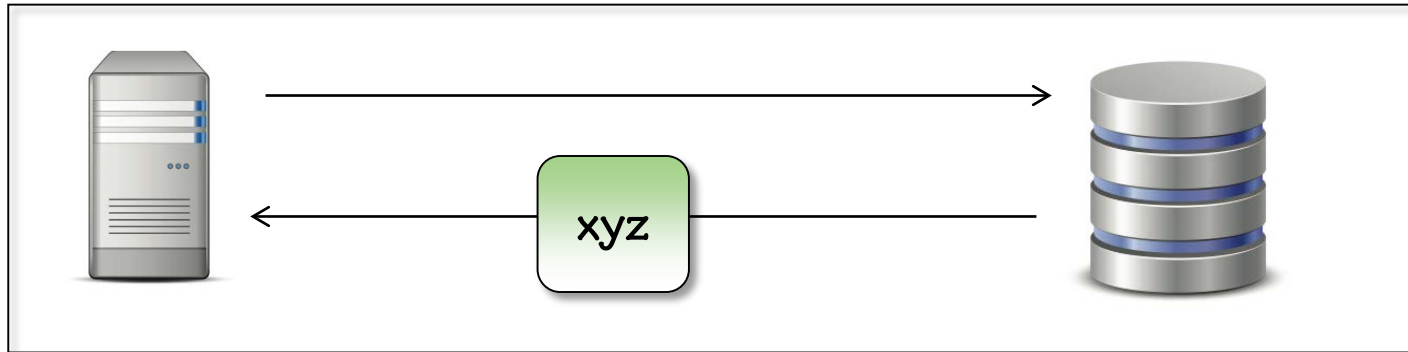
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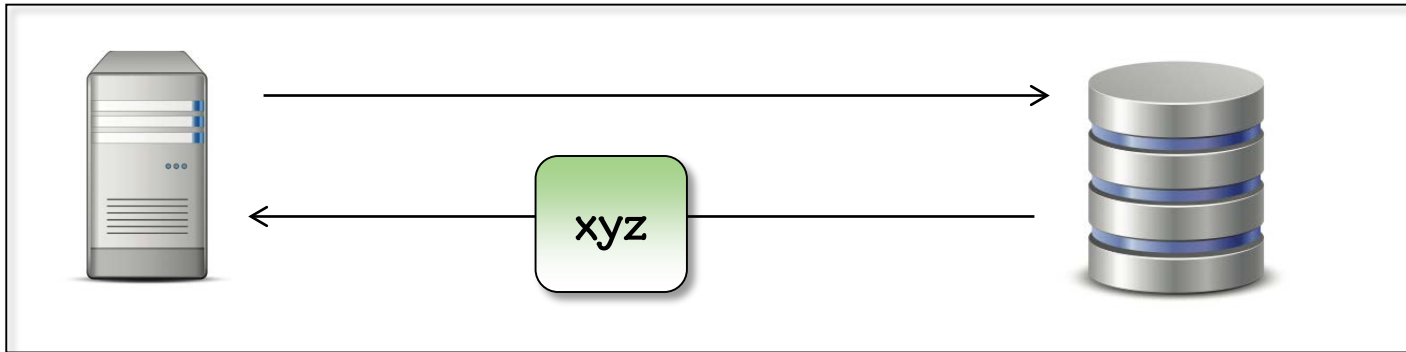
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# The Cost of Caching

- Staleness

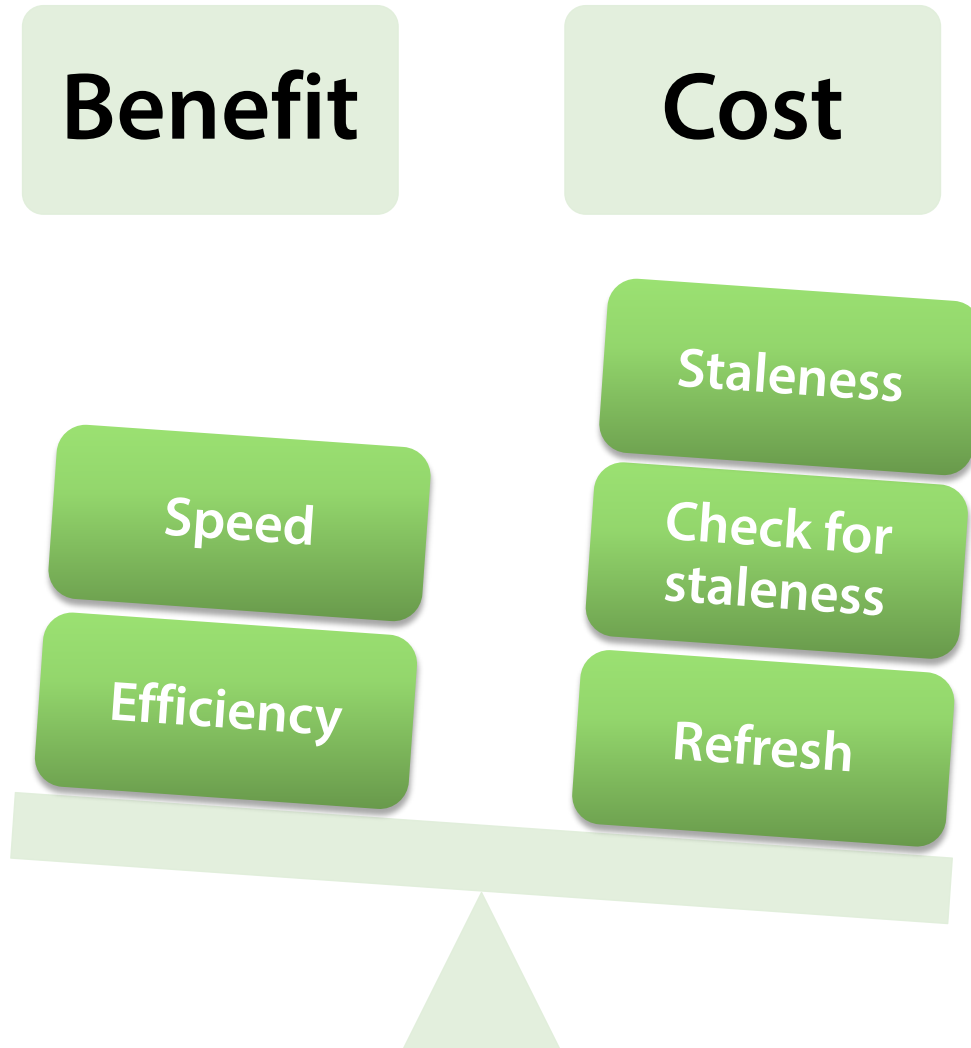


# The Cost of Caching

- Staleness

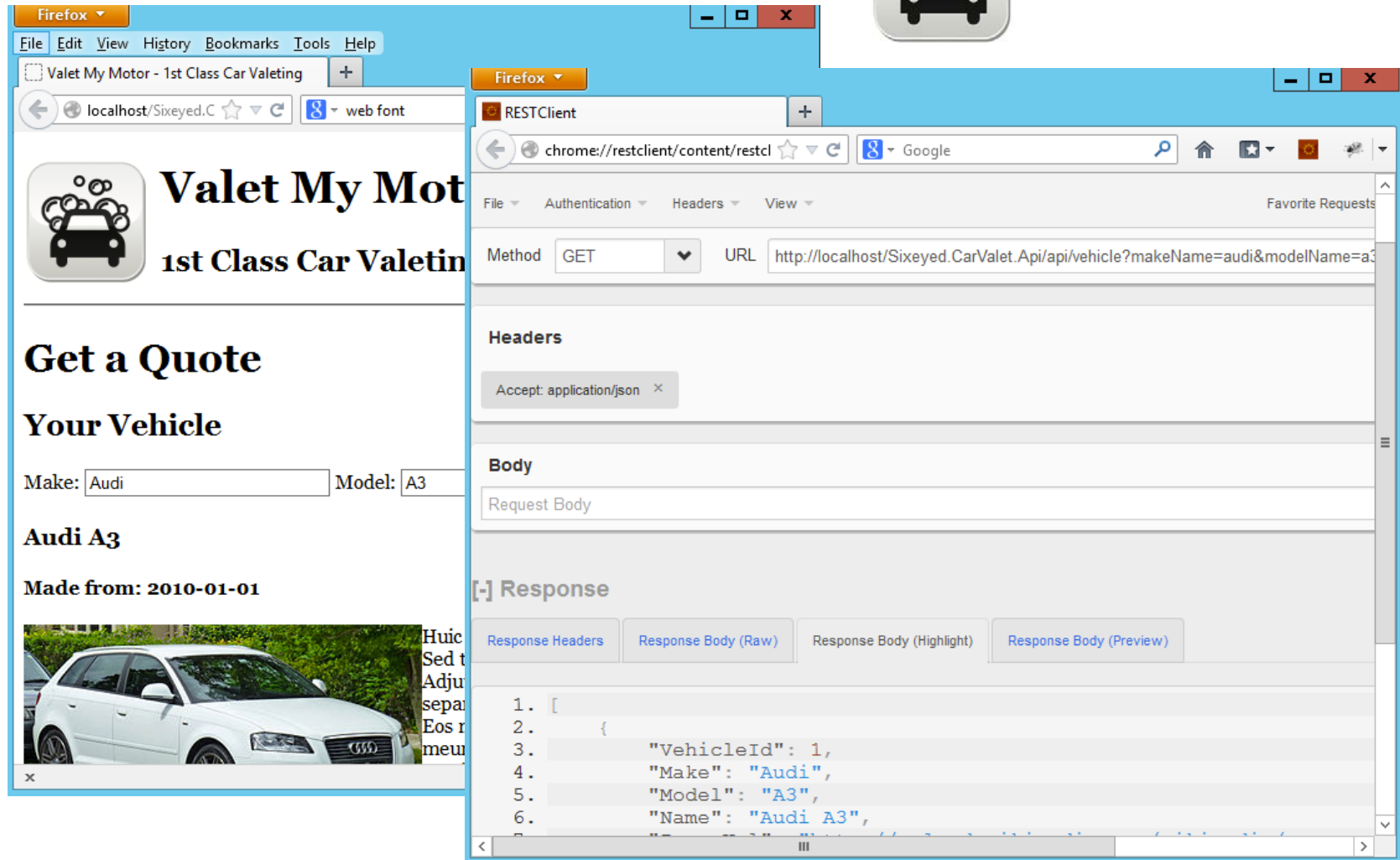


# The Complexity



# Course Structure

- The Car Valeting Solution



The screenshot displays two overlapping browser windows. The background window is a Firefox browser showing the 'Valet My Motor' website. The website has a header with a car icon and the text 'Valet My Motor 1st Class Car Valeting'. Below the header, there is a section titled 'Get a Quote Your Vehicle' with input fields for 'Make' (Audi) and 'Model' (A3). Below these fields, it says 'Audi A3' and 'Made from: 2010-01-01'. At the bottom, there is a small image of a white Audi A3. The foreground window is a RESTClient browser showing a GET request to the URL 'http://localhost/Sixeyed.CarValet.Api/api/vehicle?makeName=audi&modelName=a3'. The response is displayed in the 'Response' section, showing a JSON array with one object containing vehicle details.

**RESTClient Request:**

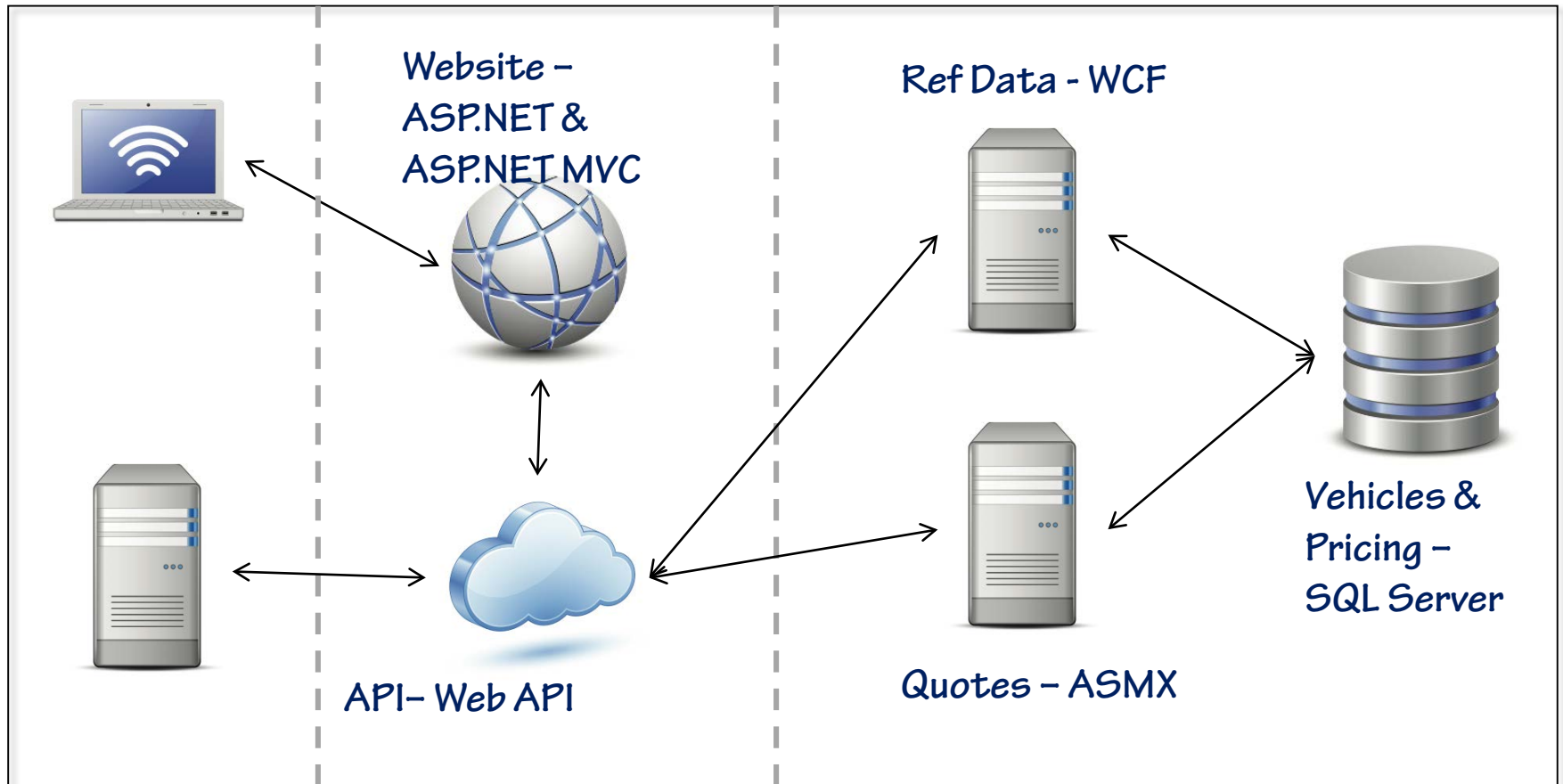
- Method: GET
- URL: `http://localhost/Sixeyed.CarValet.Api/api/vehicle?makeName=audi&modelName=a3`

**Response:**

```
1. [  
2.   {  
3.     "vehicleId": 1,  
4.     "Make": "Audi",  
5.     "Model": "A3",  
6.     "Name": "Audi A3",
```

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