

HABIB UL REHMAN

01

ASP.NET CORE WEB API BEST PRACTICES



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Use Attribute Routing for Clear Endpoints

Employ attribute routing for Web API controllers to define clear and concise endpoint routes.

```
1 [Route("api/[controller]")]
2 public class ProductsController : ControllerBase
3 {
4     [HttpGet("{id}")]
5     public IActionResult GetProduct(int id)
6     {
7         // Get product logic
8     }
9 }
```

DTOs for Request and Response Models

Utilize Data Transfer Objects (DTOs) to represent request and response models. This promotes clarity and separation of concerns.

```
1 public class CreateProductDto
2 {
3     public string Name { get; set; }
4     public decimal Price { get; set; }
5 }
6
7 [HttpPost]
8 public IActionResult CreateProduct([FromBody] CreateProductDto productDto)
9 {
10     // Create product logic
11 }
```

AutoMapper for mapping DTOs

A mapper automates the conversion process between DTOs and domain models, making your code cleaner.

```
public class CreateProductDto
{
    public string Name { get; set; }
    public decimal Price { get; set; }
}

public class CreateProduct
{
    public string Name { get; set; }
    public decimal Price { get; set; }
}
```

```
private readonly IMapper _mapper;
public ProductController(IMapper mapper)
{
    _mapper = mapper;
}

[HttpPost]
public IActionResult CreateProduct([FromBody]CreateProductDto productDto)
{
    CreateProduct product = _mapper.Map<CreateProduct>(productDto);
    //Create product logic
}
```

Versioning for API Longevity

Implement API versioning to ensure backward compatibility and facilitate future updates.

```
1 services.AddApiVersioning(options =>
2 {
3     options.DefaultApiVersion = new ApiVersion(1, 0);
4     options.AssumeDefaultVersionWhenUnspecified = true;
5     options.ReportApiVersions = true;
6 });
```

Use Dependency Injection for Services

Leverage Dependency Injection to inject services into controllers, promoting modularity and testability.

```
1 public class ProductsController : ControllerBase
2 {
3     private readonly IProductService _productService;
4
5     public ProductsController(IProductService productService)
6     {
7         _productService = productService;
8     }
9 }
```

Handle Errors Gracefully

Implement a consistent error handling strategy using status codes and meaningful error messages.

```
1 [HttpGet("{id}")]
2 public IActionResult GetProduct(int id)
3 {
4     var product = _productService.GetProduct(id);
5
6     if (product == null)
7     {
8         return NotFound($"Product with ID {id} not found.");
9     }
10
11     return Ok(product);
12 }
```

Implement Caching for Performance

Apply caching strategies to enhance API performance, especially for data that doesn't change frequently.

```
1 [HttpGet]
2 [ResponseCache(Duration = 60)]
3 public IActionResult GetProducts()
4 {
5     // Return products with caching
6 }
```


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