# 1. Creating Your First Web API

## Task 1: Creating Your First Web API

### Objectives:  
- Explain RESTful web services, Web API, and Microservice  
- Demonstrate creation of a simple WebAPI with Read/Write actions  
- Understand HttpRequest/HttpResponse, Action Verbs, Status Codes  
- Overview of configuration files

### 1. What is a RESTful Web Service?  
RESTful web services are APIs that follow REST architecture principles: stateless, resource-based access using HTTP verbs (GET, POST, PUT, DELETE).

### 2. What is Web API?  
Web API allows communication between client and server over HTTP. It's ideal for creating REST services in .NET.

### 3. HTTP Verbs and Status Codes  
- `GET` - Retrieve data  
- `POST` - Create data  
- `PUT` - Update data  
- `DELETE` - Remove data

\*\*Status Codes:\*\*  
- `200 OK`: Success  
- `400 Bad Request`: Invalid request  
- `401 Unauthorized`: Authentication needed  
- `500 Internal Server Error`: Server issue

### 4. Creating Web API Project (Steps)  
1. Open Visual Studio → Create ASP.NET Core Web API project  
2. Use API Template → Create ValuesController  
3. Run the project → Open Swagger or browser → Check GET output

### 5. Configuration Files  
- `Startup.cs` (in .NET 5 or earlier): Configures services & middleware  
- `Program.cs` (in .NET 6+): Combines startup and host logic  
- `appsettings.json`: Holds config values like DB string  
- `launchSettings.json`: Used to set launch URL and profile

