Cloud Computing

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Cloud Computing

- Definition:
  - the delivery of computing services—including servers, storage, databases, networking, software, analytics, and intelligence—over the Internet (“the cloud”).
- Benefits:
  - Cost, Speed of development and deployment, Scalability, Reliability, Security, Updated software and services.
- Types of Cloud:
  - Public, Private, Hybrid.
- Types of Cloud Services:
  - IaaS, PaaS, Serverless and SaaS
- References:
  - What is cloud computing? A beginner’s guide | Microsoft Azure

Development Flow

- Steps:
  - Provision
  - Code
  - Test
  - Deploy
  - Manage

- References:
  - The Azure development flow | Microsoft Docs

Serverless architecture

- Key:
  - Servers managed for us
- Benefits:
  - Ease - helps speed up development
  - Cost – subscription model
  - Scaling
  - Reliability

Azure Functions

- Features:
  - Functions as a Service (FaaS).
  - Serverless solution that allows you to write less code, maintain less infrastructure, and save on costs.
  - Instead of worrying about deploying and maintaining servers, the cloud infrastructure provides all the up-to-date resources needed to keep your applications running.
- Triggers:
  - HTTP, Timer, Message, more…
- Bindings:
  - Queue, Cosmos DB, Table Storage, SendGrid, more…
- Development Environments:
  - Portal, Visual Studio, more…
- Language:
  - C#, Javascript, Java, Python, more…
- References:
  - Azure Functions Overview | Microsoft Docs

REST APIs

- Representational State Transfer (REST) APIs are service endpoints that support sets of HTTP operations (methods), which provide create, retrieve, update, or delete access to the service's resources.
- HTTP is not just for serving up HTML pages. It is also a powerful platform for building Web APIs, using a handful of verbs (GET, POST, and so forth) plus a few simple concepts such as *URIs* and *headers*.
- A set of guidelines for creating stateless reliable web APIs. Statelessness means that every HTTP request happens in complete isolation. When the client makes an HTTP request, it includes all information necessary for the server to fulfill the request. The server never relies on information from previous requests from the client. If any such information is important then the client will send that as part of the current request.
- Reference:
  - Build RESTful APIs with ASP.NET Web API - ASP.NET 4.x | Microsoft Learn
  - Azure REST API reference documentation | Microsoft Learn
  - What is REST - REST API Tutorial (restfulapi.net)

Demo and Q & A