# OpenAPI

- **OpenAPI** - short for OpenAPI Specification

  - Often abbreviated as OA3 - for OpenAPI 3.x

- OpenAPI is a widely adopted **standard** for describing APIs

- Strong Industry Support for OpenAPI

  - Backers include - Microsoft, Google, and IBM

- OpenAPI is considered technology agnostic

  - Thus, developers using Java, .NET, PHP, Ruby, etc - can all benefit from OpenAPI

# OpenAPI

- OpenAPI Specifications are defined in YAML or JSON

- The OpenAPI Specification is backed by a formal schema

  - This defines the document's properties and data types

- Because the OpenAPI is a structured document it can be read programmatically

- OpenAPI Tools - Converters, Validators, GUI Editors, Mock Services, SDK Generators, Documentation

- OpenAPI CodeGen - Generate Server code for 20+ different languages; Client code for 40+ languages

# Single Source of Truth

- The OpenAPI Specification becomes the single source of truth for what the API is supposed to do.

- Without OpenAPI - what defines the API?

  - Source code?

  - Design documentation on wiki?

  - Unit tests?

  - Email messages between developers?

# OpenAPI at Velo Payments

- Microservices define API via OpenAPI Specification

- Unit Tests use OpenAPI to validate all requests and responses

  - Test are run locally and during CI/CD

- Consumer Driven Contracts defined in OpenAPI extensions

- Client Side SDKs published in ~8 languages using OpenAPI generated code

- Public documentation generated from OpenAPI specification

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