

# K8C

Resources and microservices

# Product description

The product is a platform for deploying, managing, and scaling machine learning models in production. It offers a secure, flexible environment for automating ML tasks like model versioning, routing, and monitoring. With Kubernetes integration and containerization support, it's designed for developers, ML engineers, and enterprises needing scalable, reliable ML infrastructure.

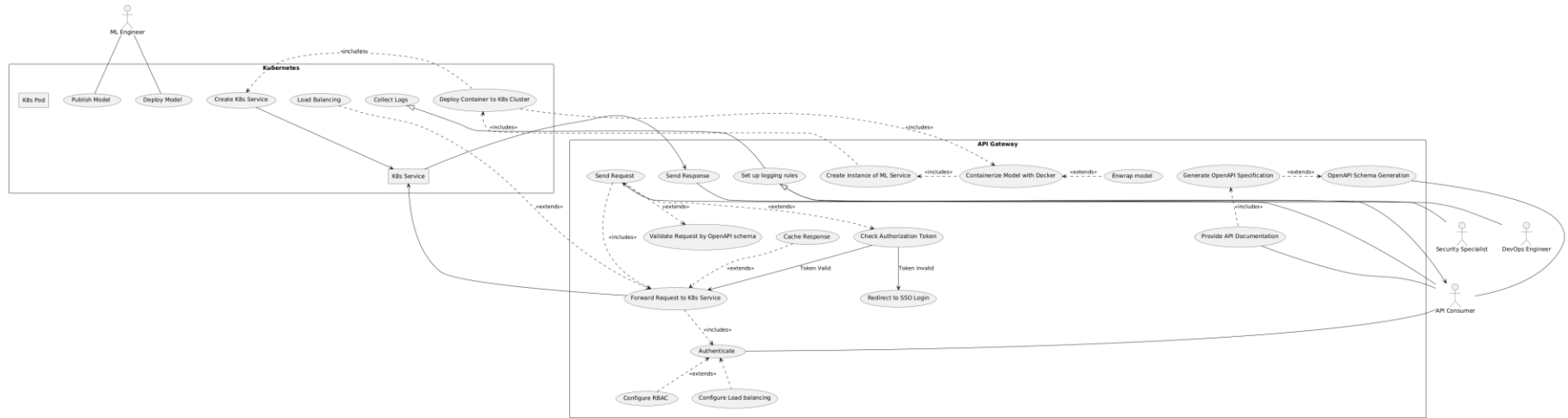
**Team K8C:** Tsurkan Daniel; Dandamaev Gadji; Tsaturyan Konstantin; Smolkin Mikhail

**Project repo:** <https://github.com/fanglores/Advanced-Software-Design>

**This report:** [https://github.com/fanglores/Advanced-Software-Design  
/blob/master/Practice%20Tasks/Module2/Task9/task9.1.pptx](https://github.com/fanglores/Advanced-Software-Design/blob/master/Practice%20Tasks/Module2/Task9/task9.1.pptx)

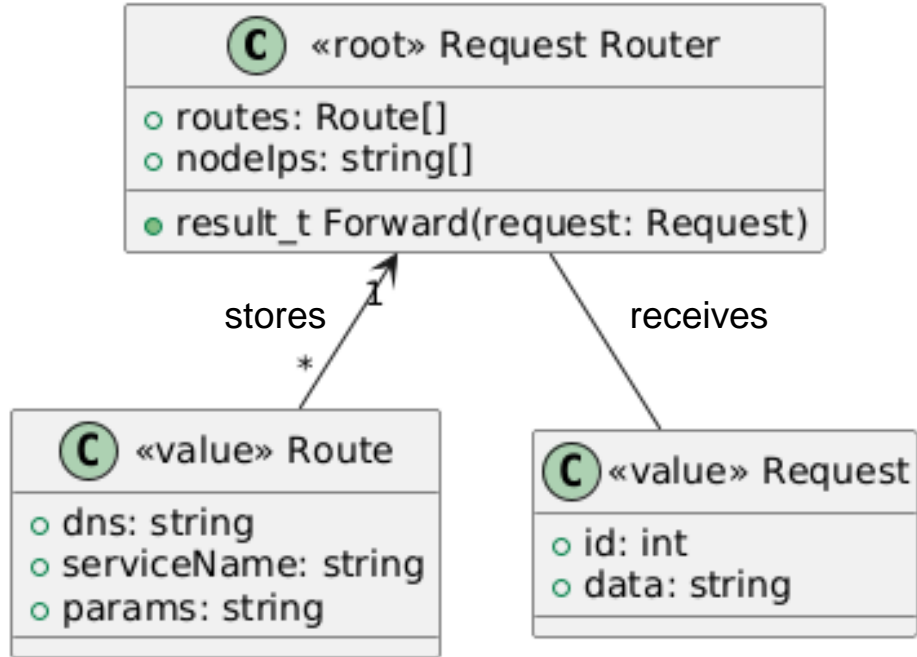
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# Use case diagram

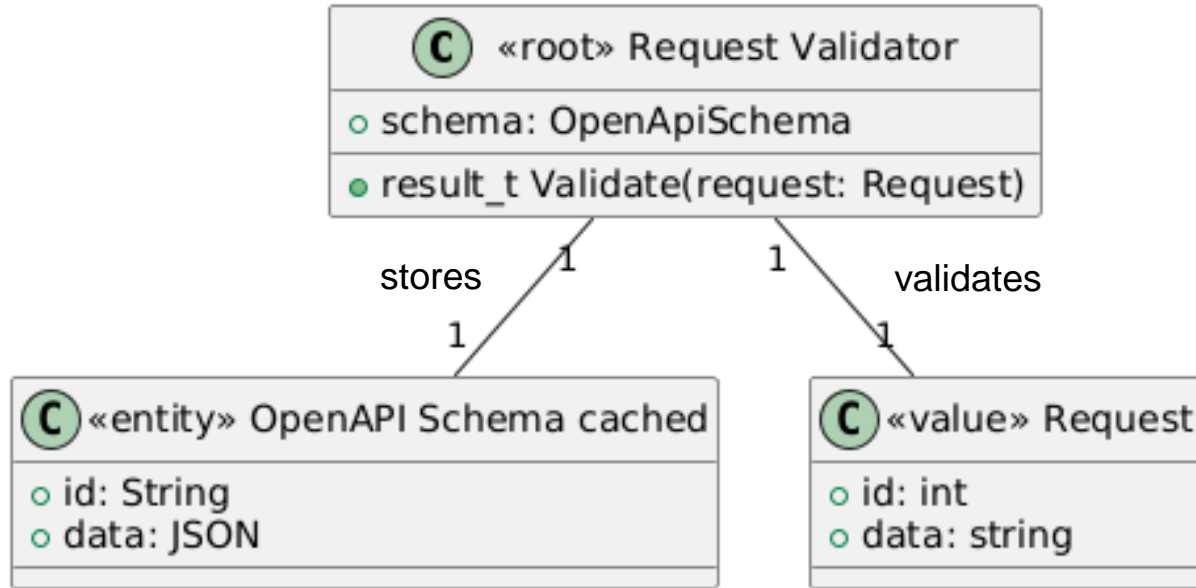


<https://github.com/fanglores/Advanced-Software-Design/tree/master/General/UseCases>

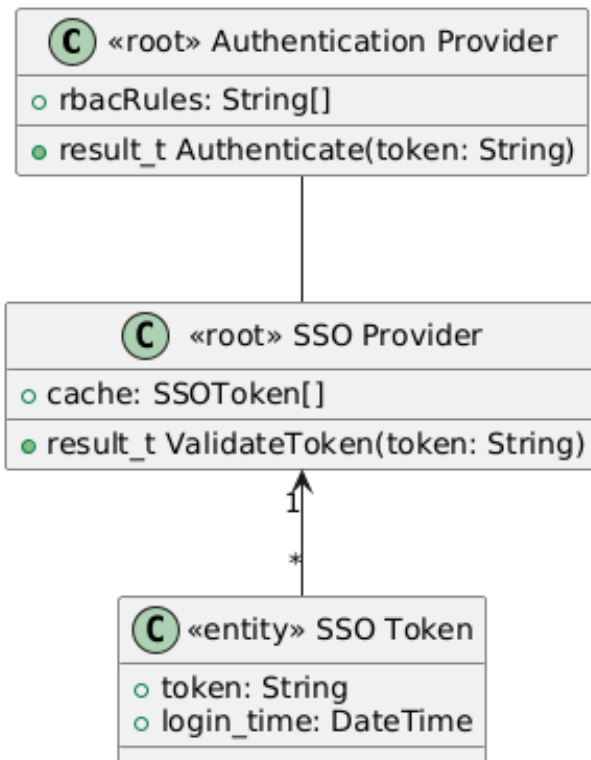
# Request Router Aggregation



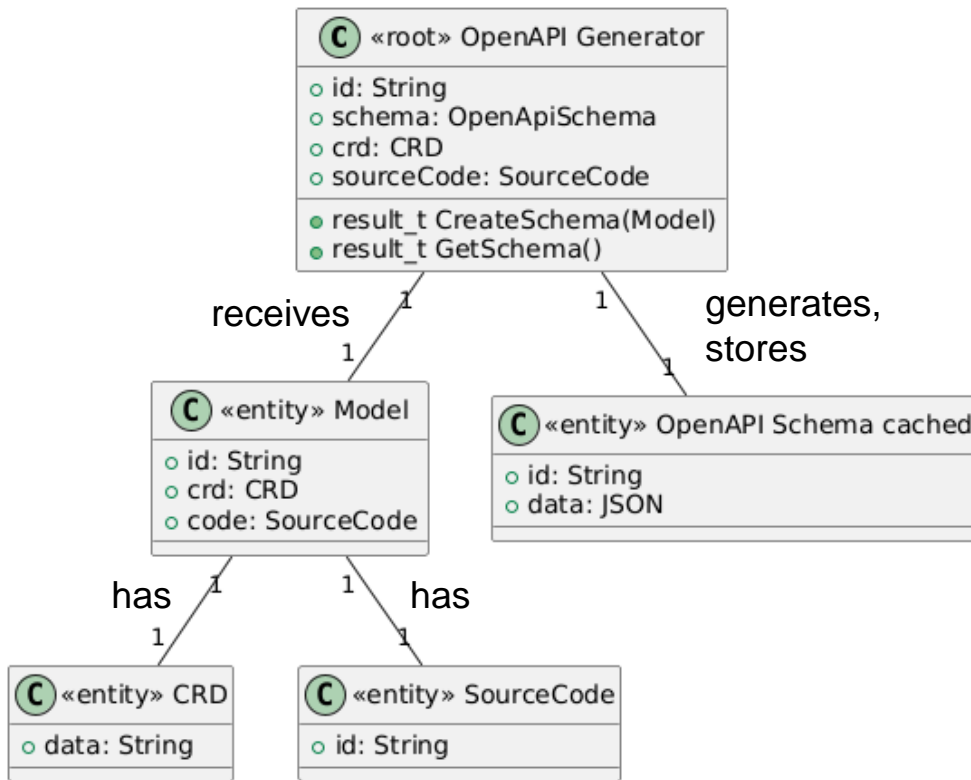
# Request Validator Aggregation



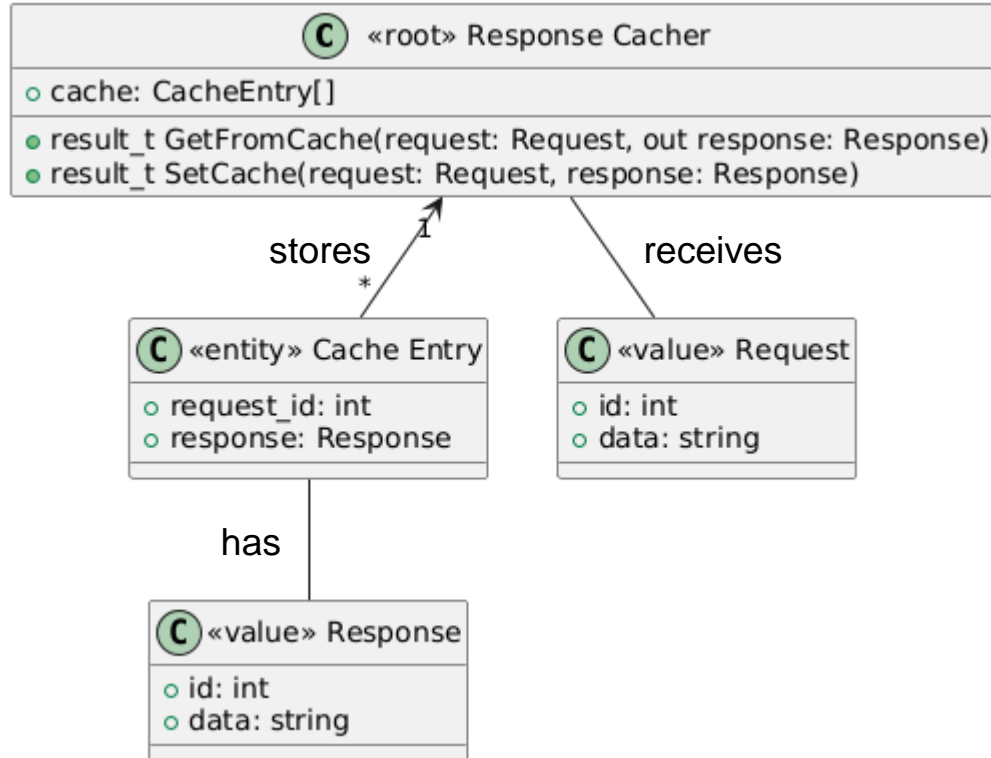
# Authentication Provider Aggregation



# OpenAPI Generator Aggregation

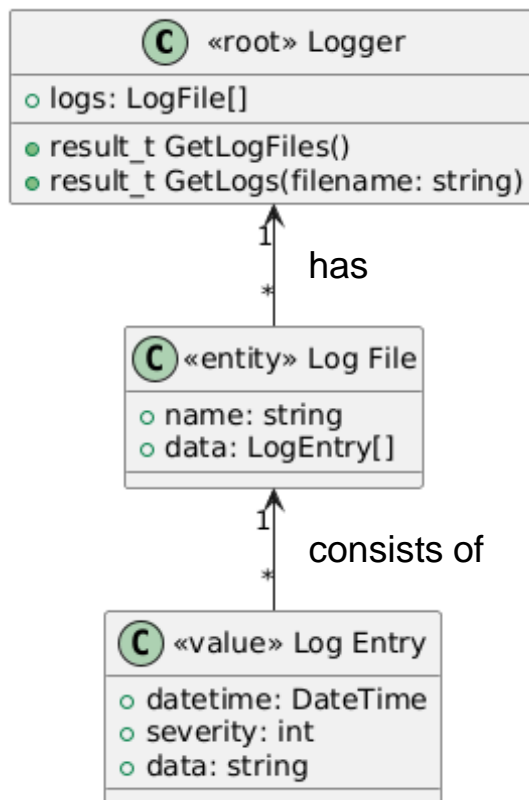


# Response Cacher Aggregation





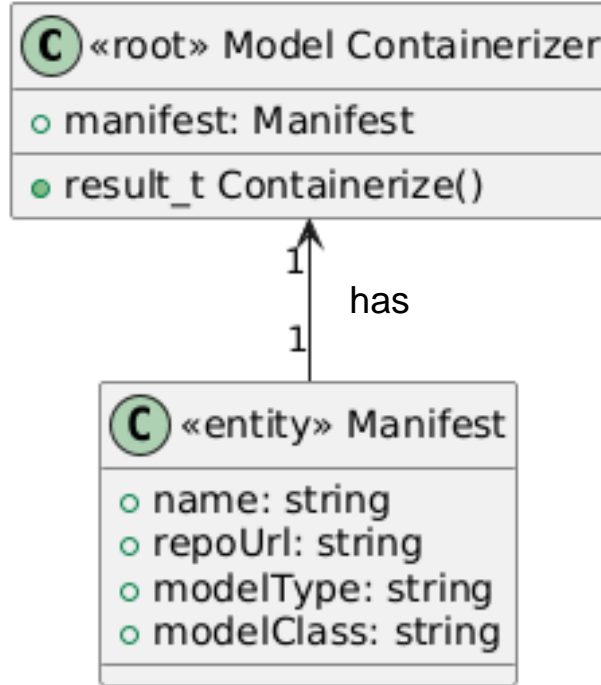
# Logger Aggregation



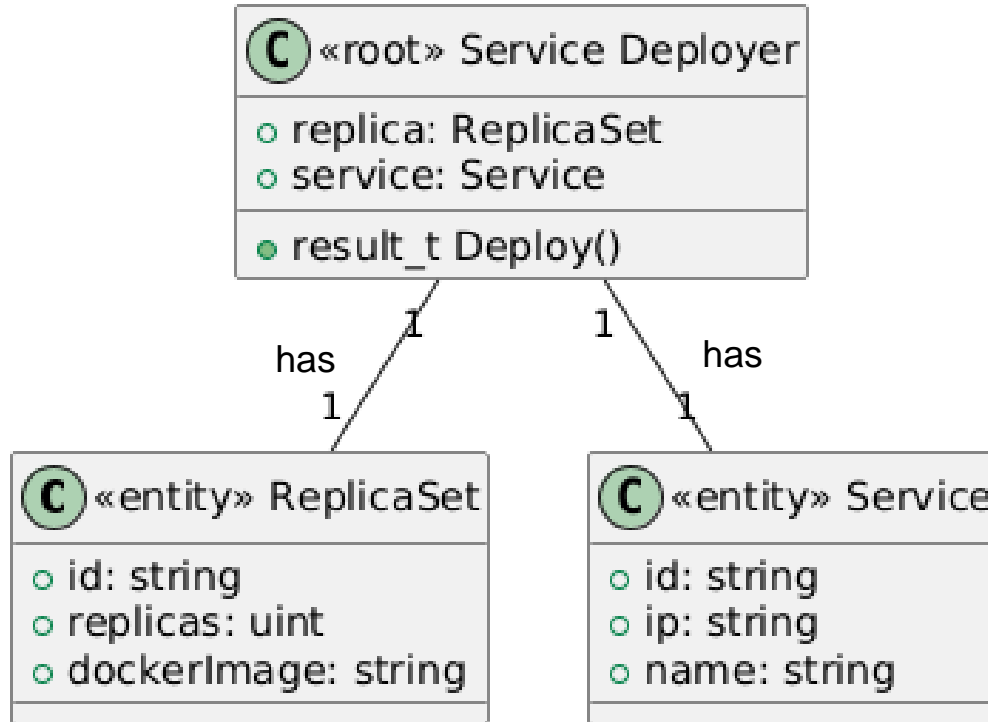
# Load Balancer Aggregation

<b>C</b> «root» Load Balancer
○ weights: map<id: int, weight: int>
● result_t Get(id: int, out value: int)
● result_t Set(id: int, value: int)

# Model Containerizer Aggregation



# Service Deployer Aggregation



# Service diagram

Draw a UML2 component diagram or physical DFD with microservices and their interfaces/data exchanges

Also include dependencies on external services

<At least one service/component per team member>

# Traceability

Microservice (component)	Resources (provided interfaces)	Domain classes in the microservice	Use case that use the microservice
Request Router	IHttpRequest	Request Router, Request Validator, Load Balancer, Response Cacher	Request Routing, Request Validation, Load balancing
Authenticator	IAuthRequest	Authentication Provider	Authentication
Deployer	-	Model Containerizer, Service Deployer	Model containerization, Service deployment
Schema Generator	IApiSchema	OpenAPI Schema Generator	OpenAPI schema generation
Logger	ILogFile	Logger	Logging Rules