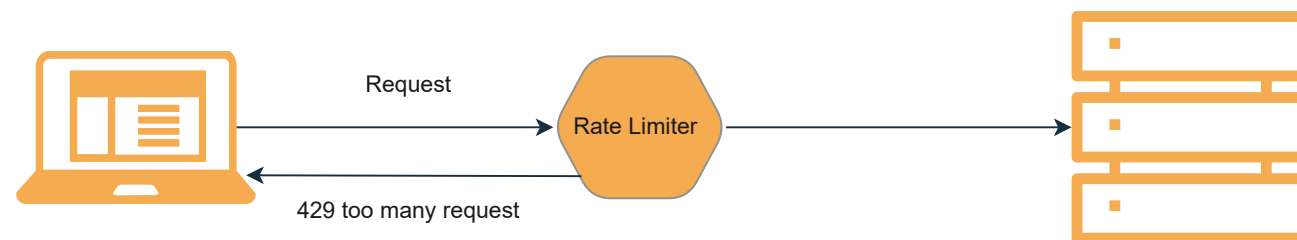# Design A Rate Limiter

Rate Limiter

A rate limiter limits the number of request sent by the client over a specified period of time .

Use Case : brute force password attempts , DOS and malicious attacks.
Eg: 10 login per ip address per hour in linkedin. (or) 900 request in 15 minutes for twitter.
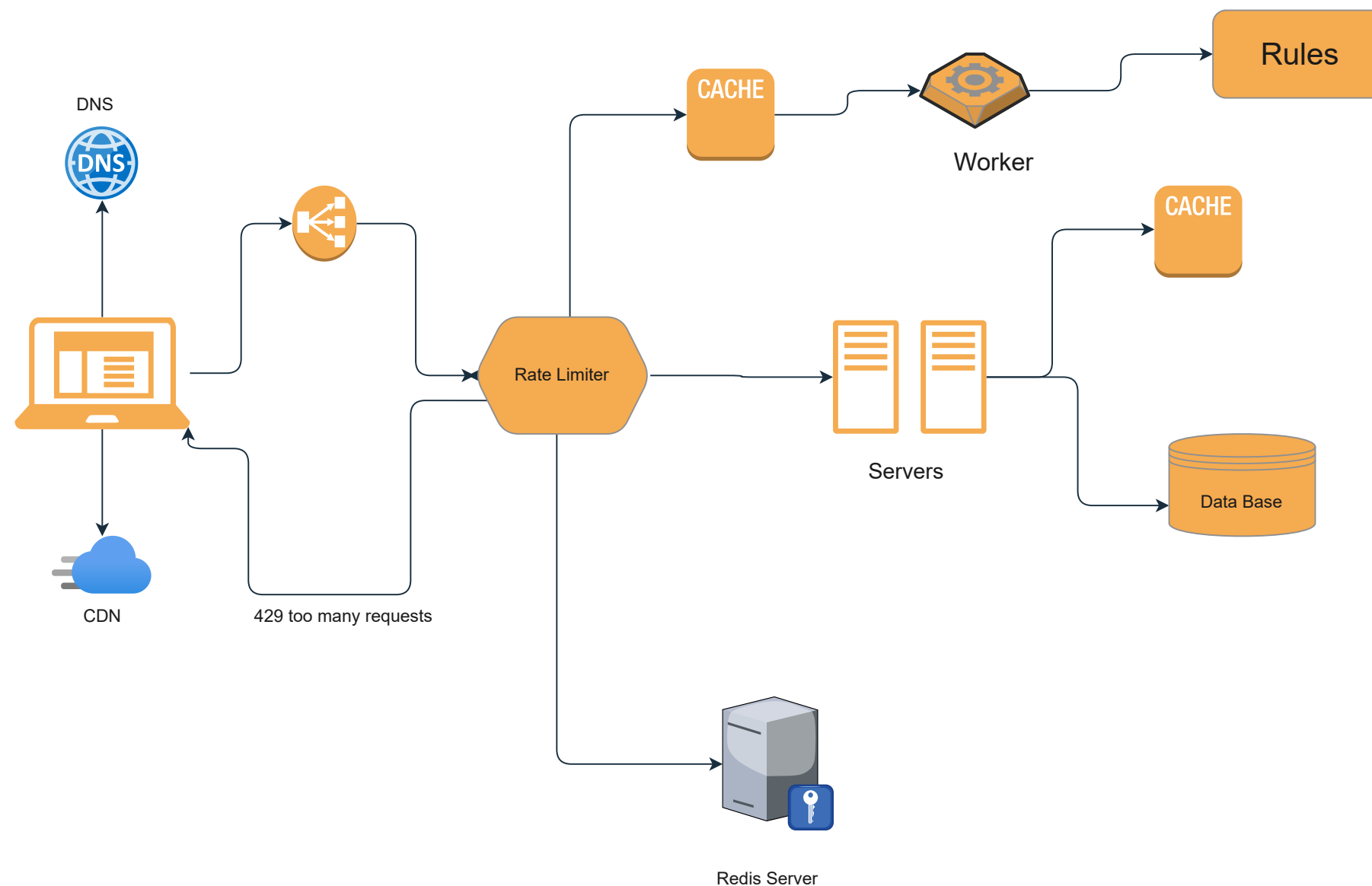
Initial Design

Request

Rate Limiter

429 too many request

Where To Place the Rate Limiter ?
1.Client Side
2.Server Side
3. In the Middleware between the client and Server

High Level Design

DNS

CACHE

Rules

Worker

CACHE

Rate Limiter

Servers

Data Base

CDN

429 too many requests

Redis Server

Various Algorithms used for rate Limiting

1. Token Bucket Algorithm
2. Leaking Bucket Algorithm
3. Fixed Window Algorithm
4. Sliding Window Algorithm
5. Sliding Window Log Algorithm