Goal Report

Payment Engine

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1. Domain:

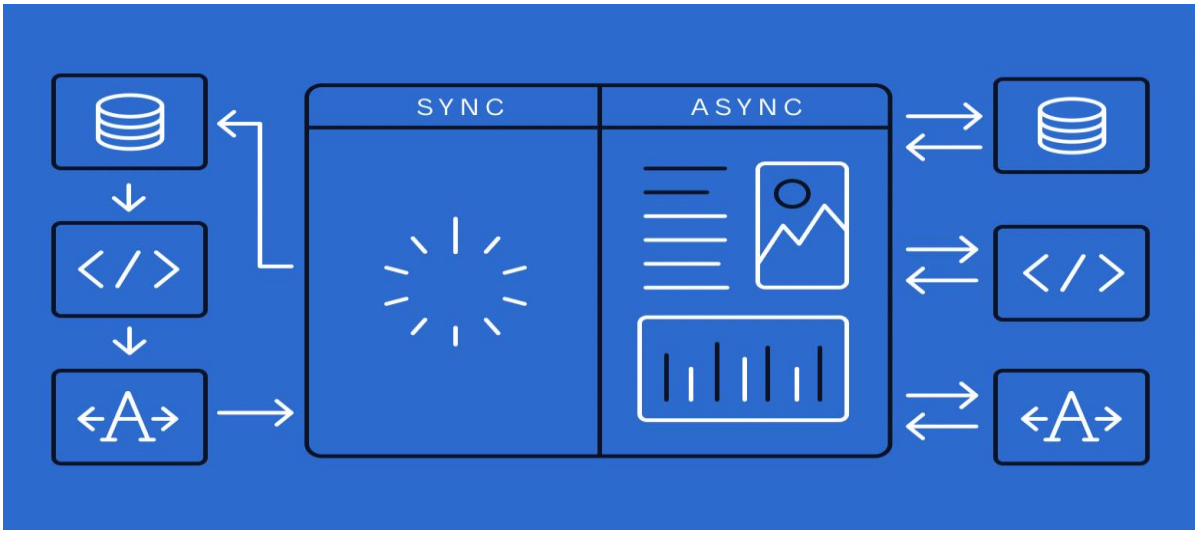
Tata 1 Mg's Payment service is operating within the Vyked Backend framework and is connected to a PostgreSQL database. This framework was specifically developed by Tata 1 Mg to manage payment services and can integrate with databases while performing high-speed caching with Redis cache. The operations in this framework are based on Synchronous programming, which is ideal for programming reactive systems due to its blocking architecture. As a single-thread model, operations are performed one at a time in a specific order. However, the introduction of Asynchronous programming is a technique that enables programs to start potentially long-running tasks and still be responsive to other events while the task runs, reducing lag time between when a function is called and when its value is returned. This translates to a faster and more seamless flow in the real world.

2. Tentative Problem

The primary issue with the Vyked Backend framework, which is based on synchronous programming, is that it is blocking. This means that when a function is called, the program must wait for it to finish executing before moving on to the next line of code. This can lead to performance issues, especially when dealing with long-running or I/O-bound tasks that may take a significant amount of time to complete. Additionally, as a single-thread model, the framework follows a strict set of sequences, which means that operations are performed one at a time and in a specific order.

3. My Role (Tentative Tasks):

- My role is to convert the synchronous code in the Vyked backend framework to asynchronous code using the Sanic framework.
- This involves identifying the parts of the code in Vyked that can benefit from asynchronous programming and modifying them using the asynchronous programming techniques available in the Sanic framework.
- Async is multi-thread, which means operations or programs can run in parallel. Async is non-blocking, which means it will send multiple requests to a server.



Synchronous Vyked vs Asynchronous Sanic

- Convert all the routes of various services, such as the authentication service, authorization service, Paytm service, Juspay service, and Razorpay service etc.
- Convert PostgreSQL database to the new Tortoise ORM (Object-Relational Mapping) models. This involves identifying the differences between the PostgreSQL database and new models and making the necessary modifications to the database schema and queries to ensure they are compatible with the new models.
- To integrate the Tortoise ORM models with the Sanic backend framework.
- Perform API testing and validation to ensure that an API meets the desired specifications and functions correctly.
- The aim is to improve the performance of the payment service by allowing long-running or I/O-bound tasks to run in the background while the program continues executing other code.