

# Payment system



ALEX XU

NOV 29, 2021

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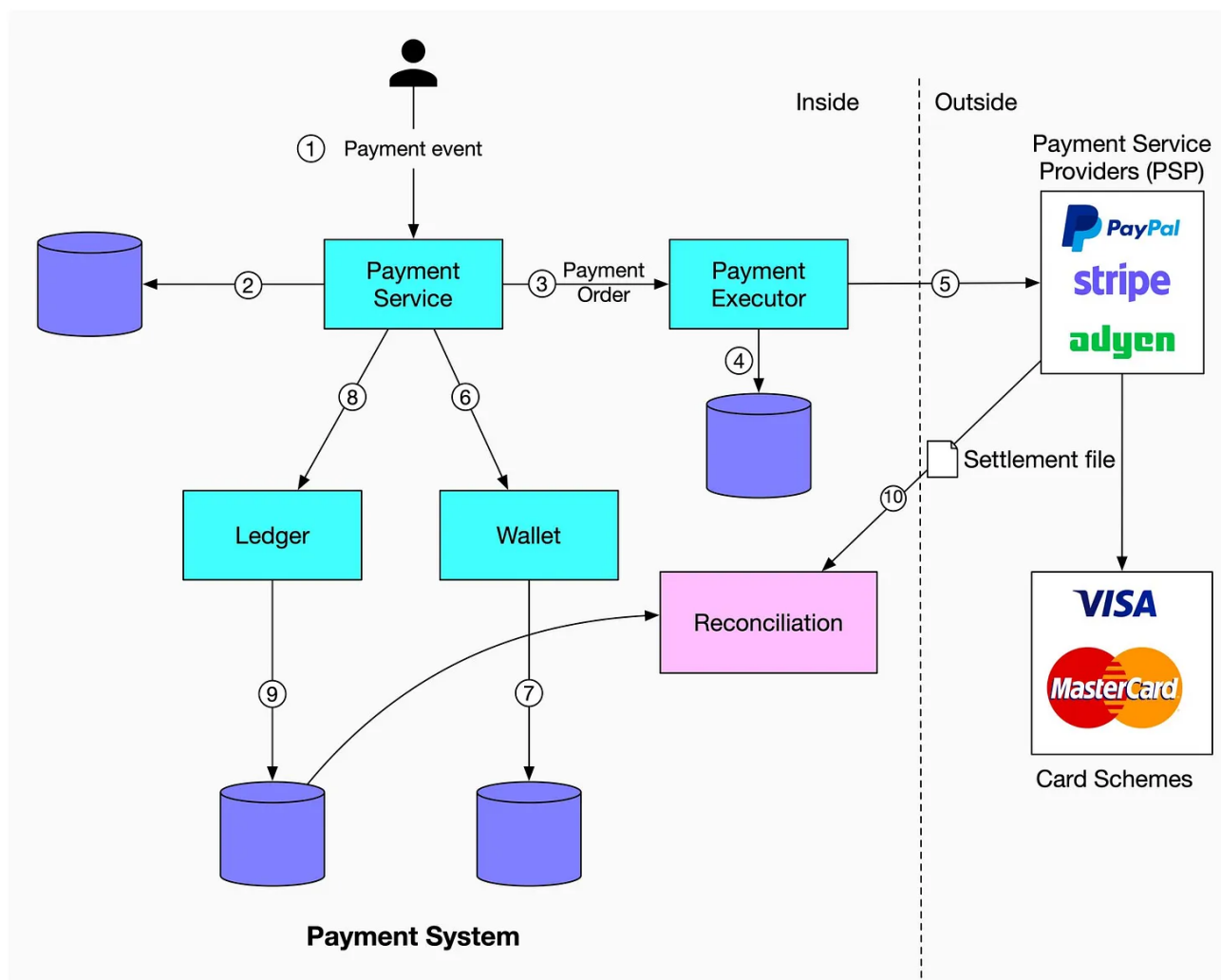
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Today is Cyber Monday. Here is how money moves when you click the Buy button on Amazon or any of your favorite shopping websites.



1. When a user clicks the “Buy” button, a payment event is generated and sent to the payment service.

2. The payment service stores the payment event in the database.

3. Sometimes a single payment event may contain several payment orders. For example, you may select products from multiple sellers in a single checkout process. The payment service will call the payment executor for each payment order.
4. The payment executor stores the payment order in the database.
5. The payment executor calls an external PSP to finish the credit card payment.
6. After the payment executor has successfully executed the payment, the payment service will update the wallet to record how much money a given seller has.
7. The wallet server stores the updated balance information in the database.
8. After the wallet service has successfully updated the seller's balance information, the payment service will call the ledger to update it.
9. The ledger service appends the new ledger information to the database.
10. Every night the PSP or banks send settlement files to their clients. The settlement file contains the balance of the bank account, together with all the transactions that took place on this bank account during the day.



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## 10 Comments



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Stone Aug 5, 2022

I have trouble wrapping my head around why we need ledger and wallet. In my mind these are all derived information that shouldn't be part of the payment flow. At best these just need to be updated asynchronously to be used for e.g. reconciliation as mentioned. Can you explain why you design them to be part of the payment flow?

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1 reply



Asif Apr 30, 2022

How will the system remain in consistent state if there's a failure in wallet service or ledger service?

Should there be a synchronous transaction among all the services involved? If yes, how would it be implemented.

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