

FAKE PRODUCT DETECTION

Prothentify



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PROBLEM STATEMENT

Nowadays we are depending more and more on e - commercial websites and trusting whether they would deliver us authentic products, but there is no way to determine whether the delivered product is fake or not.

We're proposing a system to determine the authenticity of a delivered product.



IMPACT OF FAKE PRODUCTS

- The price of the genuine products are quite expensive in price. Whereas, the fake products are sold in the Market in much cheaper range in price.
- Fake products in the market adversely affects the process of innovation, profit, sales of the products and damage the brand reputation.
- Authentic Companies themselves are caught between trying to avoid wasting resources on the imitations of their products which are available in the market.



METHODOLOGY

- We propose the Block - Supply chain. Block - Supply is a decentralized supply chain that exploits blockchain technology. In this chain, each node maintains a blockchain for each product. This blockchain is comprised of chained blocks where each is an entity participating in the transaction.
- Block - Supply chain eliminates the need for a centralized authentication server utilized in most existing supply chains. Instead, it involves the nodes in the supply chain to do the authentication. Moreover, it detects the three counterfeiting attacks (modification, cloning, and QR code reapplication).



USED TECHNOLOGIES

What is IPFS ?

- IPFS is a protocol designed to create a content - addressable, P2P method of storing and sharing hypermedia in a distributed file system.
- It combines a self-certifying namespace, an incentivized block exchange, a distributed hash table (DHT) and has no single point of failure.

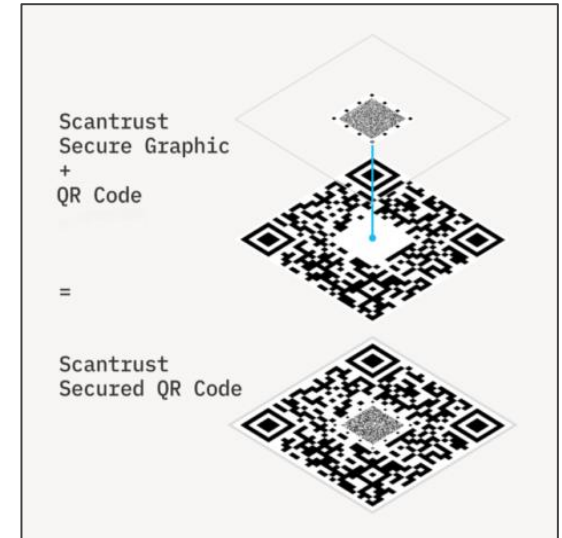




USED TECHNOLOGIES

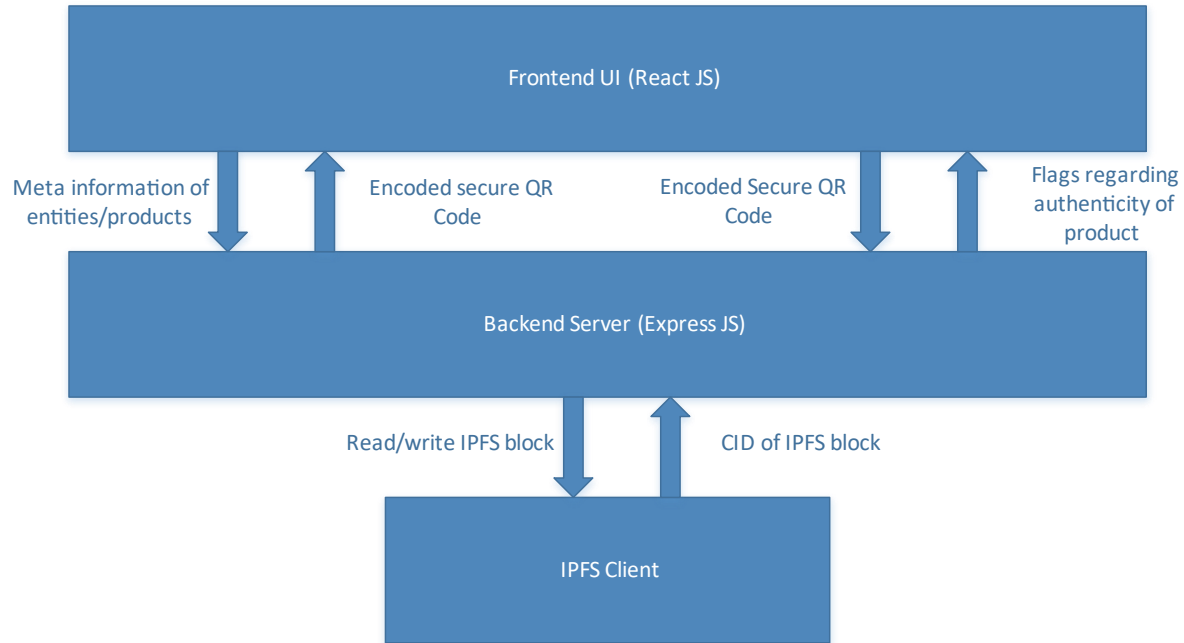
How Secure QR Code works ?

- Secure QR Code unlike other QR Codes work by the principle of CDP.
- A Copy Detection Pattern is a digital image designed to lose key information when copied and re - printed, thus signaling that it is a copy.
- This implies that it's possible to insert a randomly - generated security image into a portion of the QR code, making it a "secure" QR code that can be authenticated as the original.





SYSTEM ARCHITECTURE





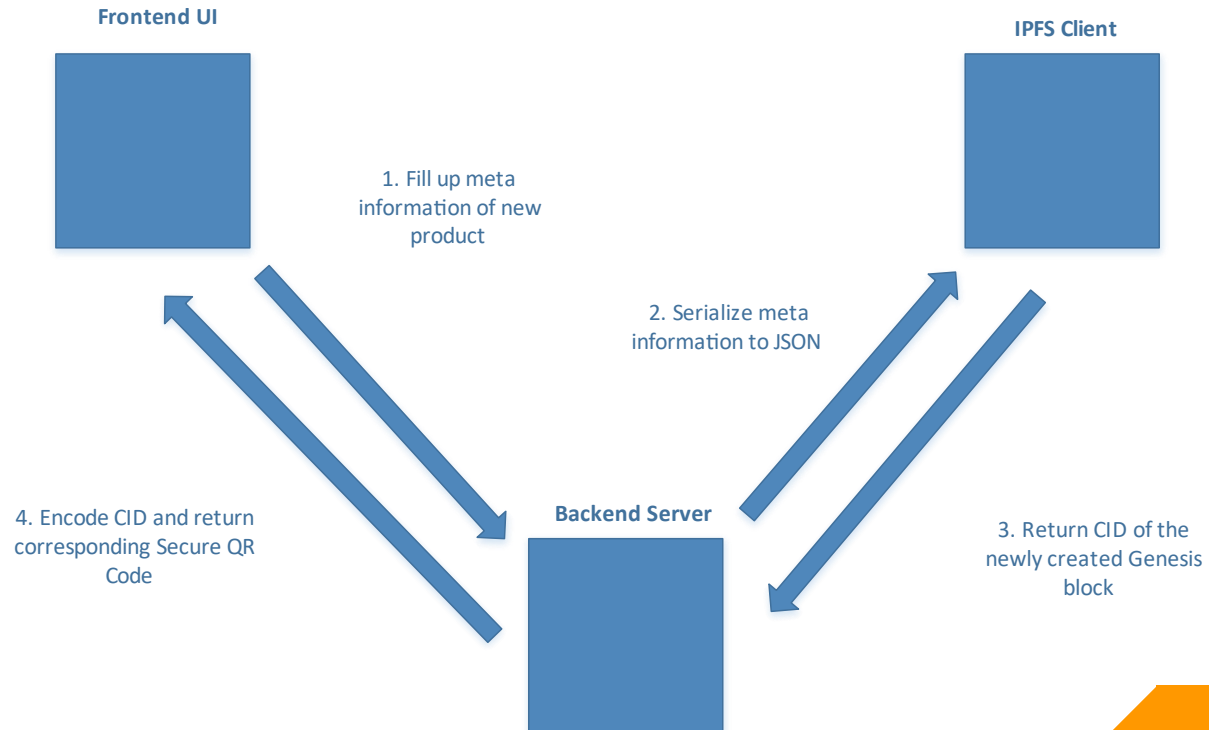
APPLICATION DESIGN

- The whole system consists of three main components

Components	Entities
Producer	Manufacturer
Seller	Manufacturer, Retailer
Verification	Customer

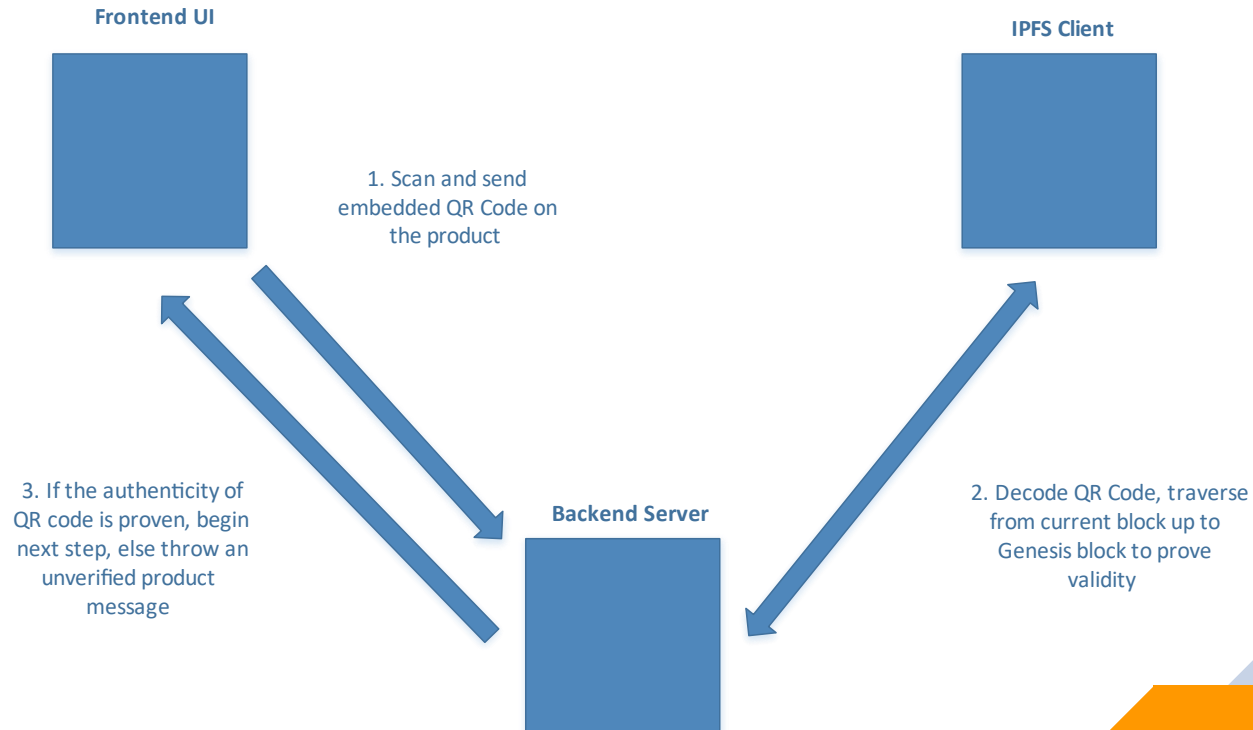


APPLICATION DESIGN (PRODUCER COMPONENT)



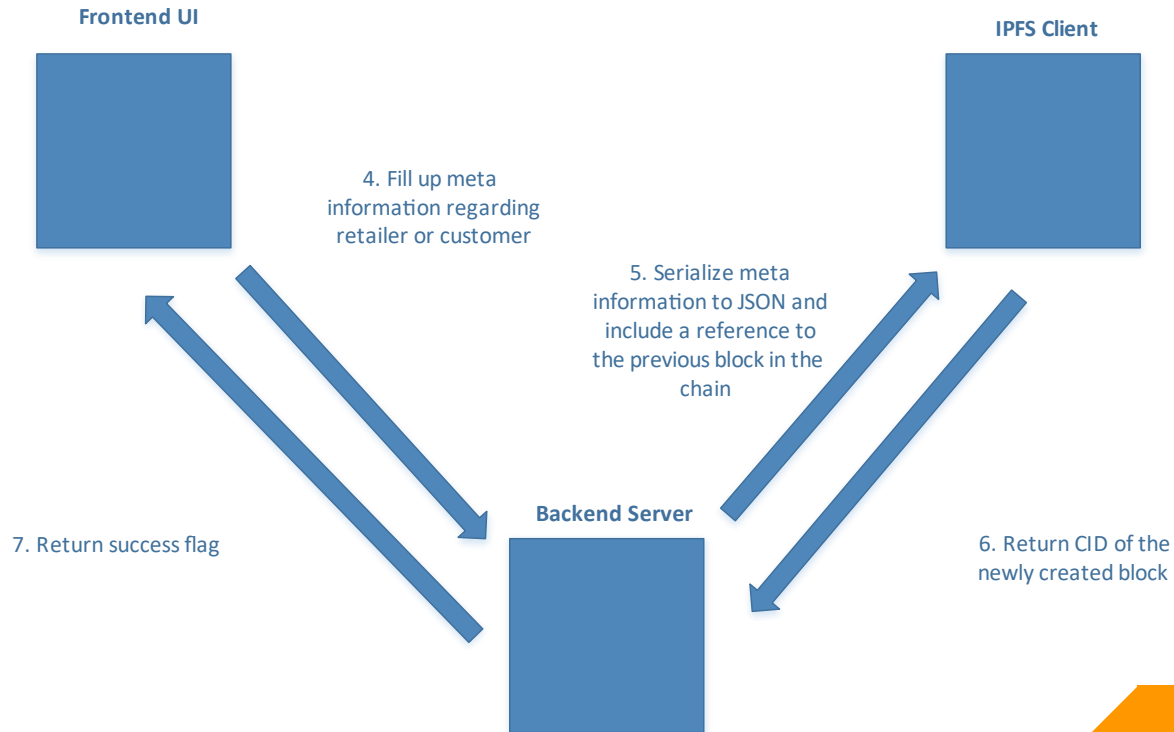


APPLICATION DESIGN (SELLER COMPONENT)



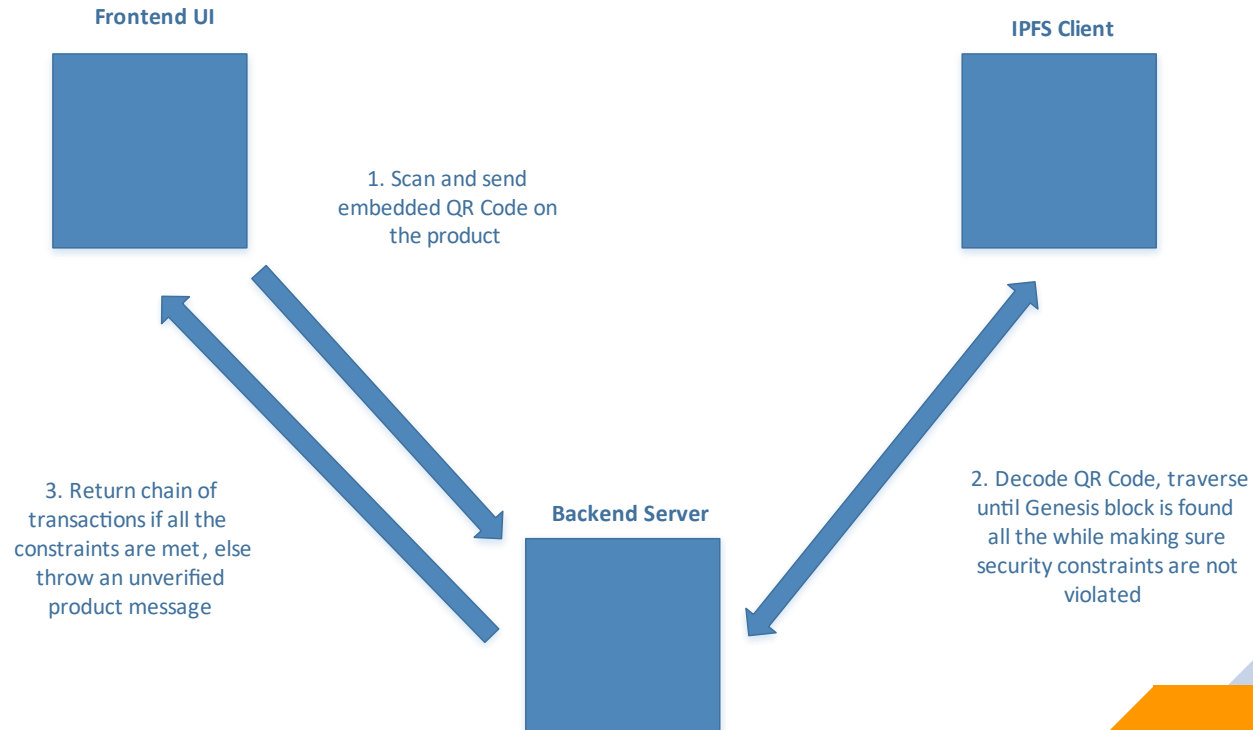


APPLICATION DESIGN (SELLER COMPONENT)



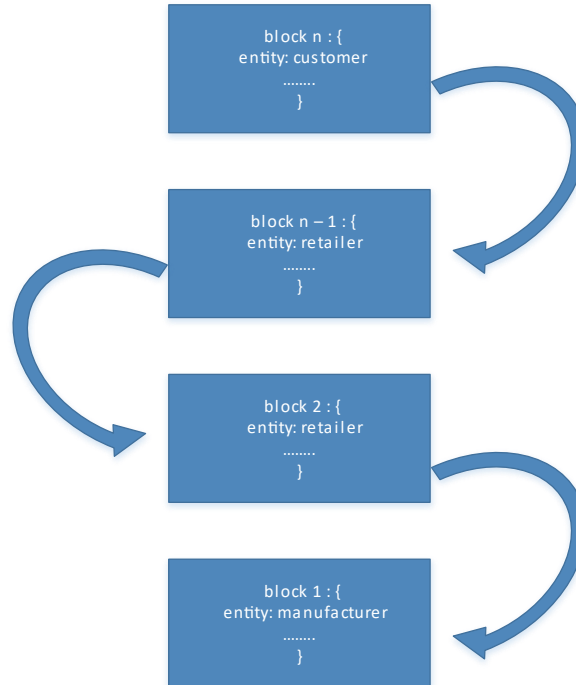


APPLICATION DESIGN (VERIFICATION COMPONENT)





CHAIN OF TRANSACTIONS





CONCLUSION

- Even though it is not possible to achieve 100% accuracy in eliminating the circulation of fake products, it is possible to bring that number to around 90%.
- This project can be further improved by employing a tracking system to know about the journey of the product to the customer.



THANKS!

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