

CENTRAL BANK OF EGYPT
Egyptian Banking Institute



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Current Trends

“Tokenization”

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What is Tokenization?

Tokenization isn't a new concept by any means. It has been seen in some games around the world, replacing actual money and data with symbolic tokens. It's the same in the world of online payments.

Tokenization refers to a process of replacing actual card details with the unique set of characters referred to as "token" when the transaction is under process. Token shall be unique for a combination of card, the requester (the entity who accepts request for tokenization of a card from the customer and passes it on to the card network for issuing a corresponding token) and device (referred to as identified device).

In short, tokenization is the process of converting something with tangible or intangible value into digital tokens. It means representing something by a symbol(token).

In details, credit card tokens are created to protect customers' sensitive data (like credit card number, address, account number, etc.) by replacing it with a series of algorithmically generated numbers and letters. By that, using credit card tokens the actual data of the customer (credit card number, address, account number...e.t.c) are being hidden in his/her transactions and replaced instead by a series of algorithmically generated numbers and letters. It is worth mentioning that, no private customer information is contained in tokens. They resemble maps that show where the customer's bank is keeping this private information in their own systems.

How does it work

As mentioned, sensitive customer information is replaced by a one-time alphanumeric ID through credit card tokenization; this ID has no value and is unrelated to the account owner. Then, customers' credit card information is safely accessed, passed, transmitted, and retrieved using this token that was randomly created.

Detailed steps are as follows:

Step 1: Collecting payment details: Cardholder starts the transaction and inputs their credit card's private information. This can either happen through an online checkout process or a POS system. The process is the same whether the transaction is happening online, through an ecommerce payment gateway, or in person through a point-of-sale system.



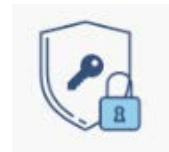
Step 2: Generating a token: Once payment data is entered, the checkout platform generates the corresponding alphanumeric ID or "token." Tokenized credit card data is then sent to the merchant acquiring bank.



Step 3: For authorization, the acquirer sends the token to the credit card networks.



Step 4: Once authorized, the token is linked with the customer's account number and the customer's data is kept in the bank's safe virtual vaults.



Step 5: The bank checks the funds and approves or rejects the transaction.



Step 6: A special token is then given back to the merchant for use in current and future transactions if the authorization is successful.



Most importantly, customers don't actually need to do anything because the tokenized credit card payment process is entirely handled behind the scenes.

Benefits of Tokenization

Payment tokenization has many advantages. The main drivers behind the adoption of payment tokenization are convenience, speed, and security.

- **Security:** Tokenization is a certain approach to safeguard the clients' payment information from both external and internal security threats. Even if they have been exposed, randomly created tokens can only be read by the payment processor and cannot be used for financial gain. As a result, as a token moves through the systems, untraceable thieves and hackers have less chances to commit a criminal.
- **Convenience:** Customers do not have to manually enter sensitive data for each transaction when setting up recurring payments. Customers simply need to enter their information once on an online platform. Furthermore, a dynamic token ID generated at random and provided by the customer's bank will be used in place of the actual card number. This token ID is nearly impossible to compromise or reverse-engineer.

Examples of Payment Tokenization

Furthermore, mobile wallets provide additional security. The tokenization process used by third-party apps like Apple Pay or Google Pay increases security for the mobile devices the clients use, using additional biometric information or a password.

- **Speed:** nowadays, efficiency is crucial. Another factor that makes tokenization so successful is that it is generated instantaneously and in real-time.

Payment tokenization may take the form of:

- **Mobile Wallets:** mobile wallets like Apple Pay, Samsung Pay, Google Pay, and Android Pay use tokenization to safeguard transactions. Once the customer's personal credit card information is uploaded, Apple sends the data to the customer's card's network. It's then in charge of replacing that card data with a token. That token is sent back to the customer's mobile wallet so it can be used to conduct transactions.
- **Recurring Payments:** Tokenization makes it possible for businesses to safely keep client payment information for recurring billing without risking security problems. As a result, businesses can maintain steady cash flow without being disrupted by payment problems.
- **One click check out:** Businesses, whether online (e-commerce) or offline, can benefit from the simplicity of one-click checkouts by securely saving the information of repeat customers and enabling them to complete a purchase with just one click. It makes the shopping process simpler, which increases revenue, improves basket size, and reduces cart abandonment for the merchant.
- **Contactless Transaction:** Without the usage of chip technology, the tokenization procedure and all the less-sensitive data added to it are used to instantaneously pay for goods. By that, tokenization ensures a safe transaction with minimal hassle and added convenience.

Examples of Payment Tokenization

Aiming to contribute to the efforts of implementing the strategy of National Payments Council's, to support the digital transformation of Egyptian economy, the Central Bank of Egypt's board of directors has approved on 8 March 2023 the governing regulations for the tokenization of payment cards services on electronic devices, allowing contactless transactions via applications installed on these devices. The regulations enabled various international companies' services, such as (Apple Pay - Samsung Pay - etc.), as well as FinTech companies services, which in return will create great opportunities to provide innovative financial solutions that meet customers' requirements.

CBE Issues Regulations on Tokenization

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Illustrative Videos on Tokenization

What is Tokenization?

https://youtu.be/jSTYanzCHDI?si=VN5M8anIFmJaD_d6

What is Tokenization? (why we need it)

https://youtu.be/Y7I4lDojhJk?si=SQw7EHxfux5RP5_-

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