E-Wallet

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The form of payment is changing rapidly in this tech-savvy world. For consumers, the advancement of technologies like NFC payments allows them to pay in just a few clicks. Sending money to friends, making point-of-sale payments and transferring money has never been easy. For business owners, the smartphones and mobile payment technologies enable them to collect the payments out in the field and not just at the counter.

Along with evolution, there comes a lot of new terminologies, including mobile payments and digital wallets. These two forms of payment may seem identical, but they are very different. So in my application E-Wallet , I try to merge the features of digital wallets and mobile payment.

Let's first Knowing the difference between digital wallet and mobile payment.

What's a digital wallet?

A digital wallet is an electronic method of storing payment information. It offers many features and not every wallet provides the same functionalities. Nowadays, it is popular as the Peer-to-Peer payment app. The major features of digital wallets are:

1. Pay at a store

Most of the digital wallets enable the uses to conduct transactions at a brick-and-mortar location. Google Pay, Amazon Pay allow this type of payment at NFC-capable point-of-sale.

2. Store credit & Debit card information

The primary feature of digital wallets is to provide functions for storing debit card and credit card information. Samsung Pay is an excellent example of this feature. It will allow the payment directly from the card. Although PayPal draws funds from a stored credit or debit card but payout through the service itself.

3. Peer-to-Peer payments

Digital wallets enable users to transfer funds to one another. These payments are small and used to split a lunch bill, shared rent and others. The digital wallet solutions like Apple Pay enables a user to cut their payments and transfer fund this way.

4. Online payments

The best feature of the mobile wallet is that they can be used to make an online payment for shopping. The merchants provide their preferred digital wallet button to their customers for making payments.

5. Security

The mobile wallet app is encrypted with many security features like passwords, pins, fingerprint scan, iris scan and many others. The users also can get a glimpse of the last four digits of their credit card instead of displaying the credit card number.

6. Holds cash

The digital wallet app lets the users to maintain their cash balance within the app. It also promotes coupons, rewards and other beneficiaries to its users.

What are mobile payments?

In the past, you might hand limited options for making payments including cash, credit card and check. In this age of smartphones, there is a new way to pay by using mobile devices. Mobile payments are considered as transactions conducted by using mobile devices.

You can use mobile phones to settle up your payment with your friends, can check out at any brick-and-mortar shop, or make an online money transfer. Collecting mobile payments need specific technology. Merchants will not be able to accept mobile payments if they are still practising cash registers.

They need to upgrade the POS system, which will receive the payments from services like Google Pay, Amazon Pay.

The number of mobile payments is increasing every year. In 2018, there are 55 million mobile payments have been conducted across the US, as per the reports. Besides, banks have also adopted to integrate mobile payment technologies for their customers to pay directly from their bank accounts.

Mobile Payments Vs Digital Wallets-What's the difference?

An easy way to differentiate digital wallets from mobile payments is that digital wallets enable the users to store their payment information and allow them to pay at any point-of-sale terminal. The use of digital wallet declines the use of physical credit or debit card. The payment is directly pullet from a credit or debit card rather than keeping a cash balance in the digital wallet.

On the other note, mobile payments hold a broad concept. Mobile payments can be made on-site at stores by scanning a barcode on an app, accepting or making payments from local stores to large retailers. The cost of amount will be deducted from a pre-loaded value on the account associated with the particular credit or debit card.

In mobile payment, the user generally pays by tapping on a point-of-sale terminal with a smartphone. For mobile

payments, business owners can integrate three technologies as per their business requirements.

1. NFC communication: It is ideal for the point-of-sale terminal at the brick-and-mortar stores. The device can transmit the payment information from the phone to the terminal through Near Field Communication technology.

2. QR Codes: Another technology in mobile payments is sending QR codes that the merchant can scan or the users can import through the phone's camera. Paytm is an excellent example of this kind of technology.

3. MST transaction: Magnetic stripe transactions are also a vital part of mobile payments. Samsung holds the proprietary of MST, which mimics the magnetic swipe and transmits the payment information like the physical card.

Role of Mobile payments and Digital wallets for Merchants

For merchants, mobile payments and digital wallets are redefined, but there is a significant difference between the two methods. If they are selling online or having a mobile app, then digital wallet payments are ideal for them. They need to add a new code to their online store or app store. They can hire a wallet app development company to integrate these payment options. Integrating digital wallet to as online

payment is quite different than other methods that enable to accept credit card with minimums steps.

Merchants who manage a traditional brick-and-mortar shop where the customers come and pay through the point-of-sale terminal, mobile payments are ideal. All you need is to integrate NFC terminal, and you are set to receive payments through Google Pay, Amazon Pay and other service providers. You can incorporate Samsung Pay if you want to stick to traditional magnetic stripe card payments.

So as said previously that the difference between digital wallets and mobile payments is that digital wallets enable the users to store their payment information. That's why in my application I try to do both benefits together as we use smart phones and store our information in a file. Figure 1 shows the Transaction file of the program.

Date	Time	Process	AmountOfMoney	RecieverName
12/06/21	20:03:56	Transfer	1.0	Gehad^nagah
12/06/21	20:04:11	withdraw	2.0	jojo
12/06/21	20:21:13	diposte	34567.0	Gehad^nagah
12/06/21	22:35:21	Process Diposte Not Successful!!		
12/06/21	23:02:46	diposte	400.0	Mohamed$we
12/06/21	23:05:11	Process Transfer Not Successful!!		
12/06/21	23:05:27	diposte	20.0	Omar$he
12/06/21	23:05:55	Transfer	20.0	ahmed
13/06/21	10:41:36	Transfer	4.0	H&M

Figure1

So at any time the user want to see his transaction the program will call the function responsible for this. So Information storage is one of the program features.

The functions used in my program are:

```
sign_up(username, password)
check_validity(username)
sign_in(username, password)
convert_file_to_dict()
Transaction_file(dict_array)
Transection_fun(your_name)
update_file(dict_file)
transfer_money_from_account_to_another(username_to
_transfer_to,my_username,
amount_of_money_to_send, dict_file)
diposte(your_user_name,
amount_of_money_to_diposte, dict_file)
withdraw(your_username,
amount_of_money_to_withdraw, dict_file)
all_Trans(username)
```

How the program works:

If the user has an account the program will check either the username and pass exist or not if they are true the program will start if not an error message will appear!!!

If the user does not have an account he/she will sign up.

In case we enter the program the message will say What action do you want either transaction or checking your account?!

If the user clicks on transaction he will do either transfer money or deposit or withdraw and each function of those is responsible for first check the validity (using check validity function) of the account then do its work then updating the (using update file function) then after the processes are done the transaction file will be updated with the new actions

On the other hand, if the user chooses to check his account the program will call the function called all trans to show all the transactions done on this account with its time and date.

The program repeated as soon as the user want to use it(says yes), of he says no the program will stop working

Here is the main of the application...

```
from Project_Functions import sign_up, sign_in,
Transection_fun, all_Trans
print('Hello To E-Wallet')
Account=input('Do you have an Account?! yes or no
')
if Account=='no':
    print('Please sign up :)')
    username =input('enter your username')
    passw=input('enter your pass')
    while sign_up(username, passw)==-1:
        username =input('enter your username')
        passw=input('enter your pass')
else:
    username =input('enter your username')
    passw=input('enter your pass')
    while sign_in(username, passw)==-1:
        username =input('enter your username')
        passw=input('enter your pass')
s='yes'
while s =='yes':
    f=int(input('What action do you
want?!!transaction or checking your account(1,
2)'))
    if f ==1:
        Transection_fun(username)
    elif f==2:
        all_Trans(username)
    s=input('Do you want to continue using the
program??!!!')
```

```
print('Thank you:)')
```

Thank you