Blockchain and Cryptocurrency

By: Syeda Tayyaba Bukhari

Transactions

Mark	->	Me	0.1 BTC
Hadelin	->	Me	0.3 BTC
Helen	->	Me	0.6 BTC
Susan	->	Me	0.7 BTC

UTXOs: Unspent Transaction Output

Mark	->	Me	0.1 BTC
Hadelin	->	Me	0.3 BTC
Helen	->	Me	0.6 BTC
Susan	->	Me	0.7 BTC

} UTXOs

Example 1

Mark	->	Me	0.1 BTC
Hadelin	->	Me	0.3 BTC
Helen	->	Me	0.6 BTC
Susan	->	Me	0.7 BTC

} UTXOs

I want to Buy a bicycle for 0.5 BTC

TRANSACTION:

Input:
  0.6 BTC from Helen

Mark	->	Me	0.1 BTC
Hadelin	->	Me	0.3 BTC
Helen	->	Me	0.6 BTC
Susan	->	Me	0.7 BTC

} UTXOs

I want to Buy a bicycle for 0.5 BTC

TRANSACTION:

Input:
  0.6 BTC from Helen

Output:
  0.5 BTC to the bike shop,

Mark	->	Me	0.1 BTC
Hadelin	->	Me	0.3 BTC
Helen	->	Me	0.6 BTC
Susan	->	Me	0.7 BTC

UTXOs

I want to Buy a bicycle for 0.5 BTC

TRANSACTION:

Input:
  0.6 BTC from Helen

Output:
  0.5 BTC to the bike shop,
  0.1 BTC back to myself

Transactions and UTXOs

Mark	->	Me	0.1 BTC	
Hadelin	->	Me	0.3 BTC	
~~Helen~~	~~->~~	~~Me~~	~~0.6 BTC~~	UTXOs
Susan	->	Me	0.7 BTC	

I want to Buy a bicycle for 0.5 BTC

TRANSACTION:

Input:
  0.6 BTC from Helen

Output:
  0.5 BTC to the bike shop,
  0.1 BTC back to myself

UTXO
For the bike shop

UTXO
For me

Transactions and UTXOs

Mark	->	Me	0.1 BTC
Hadelin	->	Me	0.3 BTC
Susan	->	Me	0.7 BTC
Me	->	Me	0.1 BTC

UTXOs

Example 2:

Transactions and UTXOs

Mark	->	Me	0.1 BTC	
Hadelin	->	Me	0.3 BTC	
Susan	->	Me	0.7 BTC	UTXOs
Me	->	Me	0.1 BTC	

I want to Buy a 2nd bicycle for 1.1 BTC

Transactions and UTXOs

Mark	->	Me	0.1 BTC	
~~Hadelin~~	~~>~~	~~Me~~	~~0.3 BTC~~	} UTXOs
~~Susan~~	~~>~~	~~Me~~	~~0.7 BTC~~	
~~Me~~	~~>~~	~~Me~~	~~0.1 BTC~~	

I want to Buy a 2nd bicycle for 1.1 BTC

TRANSACTION:

Input:
  0.3 BTC from Hadelin,
  0.7 BTC from Susan,
  0.1 BTC from Me

Output:
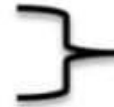 1.1 BTC to the bike shop,

UTXO
For the bike shop

Transactions and UTXOs

Mark -> Me 0.1 BTC]- UTXOs

Where do transaction fees come from?

Where do transaction fees come from?

Mark	->	Me	0.1 BTC	
Sarah	->	Me	0.1 BTC	
Hadelin	->	Me	0.4 BTC	UTXOs
Ebay	->	Me	0.3 BTC	
Hadelin	->	Me	0.3 BTC	

I want to Buy a 3rd bicycle for 0.9 BTC and an apple for 0.02 BTC

Where do transaction fees come from?

Mark	->	Me	0.1 BTC
Sarah	->	Me	0.1 BTC
~~Hadelin~~	~~->~~	~~Me~~	~~0.4 BTC~~
~~Ebay~~	~~->~~	~~Me~~	~~0.3 BTC~~
~~Hadelin~~	~~->~~	~~Me~~	~~0.3 BTC~~

} UTXOs

I want to Buy a 3rd bicycle for 0.9 BTC and an apple for 0.02 BTC

TRANSACTION:

Input:
  0.4 BTC from Hadelin,
  0.3 BTC from Ebay
  0.3 BTC from Hadelin

Output:
  0.9 BTC to the bike shop,
  0.02 BTC to the fruit shop,
  0.06 BTC to myself

UTXO for the bike shop

UTXO for the bike shop

← UTXO for me

Where do transaction fees come from?

Mark	->	Me	0.1 BTC	
Sarah	->	Me	0.1 BTC	
~~Hadelin~~	~~->~~	~~Me~~	~~0.4 BTC~~	UTXOs
~~Ebay~~	~~->~~	~~Me~~	~~0.3 BTC~~	
~~Hadelin~~	~~->~~	~~Me~~	~~0.3 BTC~~	

I want to Buy a 3rd bicycle for 0.9 BTC and an apple for 0.02 BTC

TRANSACTION:

Input:
  0.4 BTC from Hadelin,
  0.3 BTC from Ebay
  0.3 BTC from Hadelin

Output:
  0.9 BTC to the bike shop,
  0.02 BTC to the fruit shop,
  0.06 BTC to myself

Fees: 0.02 BTC

UTXO for the bike shop

UTXO for the bike shop

UTXO for me

UTXO of miner

Where do transaction fees come from?

Mark	->	Me	0.1 BTC
Sarah	->	Me	0.1 BTC
~~Hadelin~~	~~->~~	~~Me~~	~~0.4 BTC~~
~~Ebay~~	~~->~~	~~Me~~	~~0.3 BTC~~
~~Hadelin~~	~~->~~	~~Me~~	~~0.3 BTC~~

} UTXOs

I want to Buy a 3rd bicycle for 0.9 BTC and an apple for 0.02 BTC

TRANSACTION:

Input:
0.4 BTC from Hadelin,
0.3 BTC from Ebay
0.3 BTC from Hadelin

Output:
0.9 BTC to the bike shop,
0.02 BTC to the fruit shop,
0.06 BTC to myself

Fees: 0.02 BTC ← UTXO for the miner

UTXO for the bike shop

UTXO for the bike shop

← UTXO for me

Where do transaction fees come from?

Mark	->	Me	0.1 BTC	
Sarah	->	Me	0.1 BTC	} UTXOs
Me	->	Me	0.0.6 BTC	

Acknowledgement and Source:

- https://www.udemy.com/course/build-your-blockchain-az/