

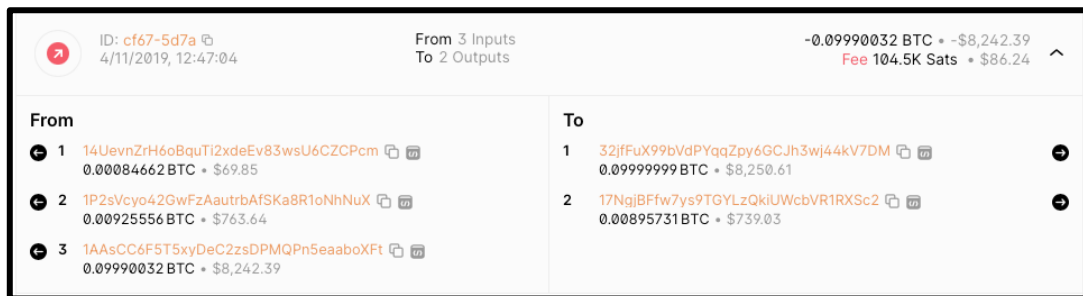
# FITE7409 Exercise 1

Q1)

**1AAsCC6F5T5xyDeC2zsDPMQPn5eaaboXFt:**

- 1) The active period for this address is 2018-02-21 05:16:37 to 2019-10-21:07:37:22 (489 days)
- 2) The balance currently in this address is 0 BTC.
- 3) There are 26 transactions related to this wallet
- 4) Total amount of bitcoin received is 1.41361225 BTC
- 5) In the most recent transaction, there are 2 output addresses. But it seems like the address starting 17NgjBFfw seems to be a change address.
- 6) In the most recent receive transaction, 0.13419300 BTC has been sent to this address
- 7) The following address **is not used** as a self-changing address:

Justification:



The screenshot shows a Bitcoin transaction interface. At the top, it displays the transaction ID 'cf67-5d7a', the date '4/11/2019, 12:47:04', and the status 'From 3 Inputs To 2 Outputs'. The total amount is '-0.09990032 BTC • -\$8,242.39' with a fee of 'Fee 104.5K Sats • \$86.24'. The 'From' section lists three inputs: 1. '14UevnZrH6oBquTi2xdeEv83wsU6CZCPcm' (0.00084662 BTC • \$69.85), 2. '1P2sVcyo42GwFzAautrbAfSKa8R1oNhNuX' (0.00922556 BTC • \$763.64), and 3. '1AAsCC6F5T5xyDeC2zsDPMQPn5eaaboXFt' (0.09990032 BTC • \$8,242.39). The 'To' section lists two outputs: 1. '32jfFuX99bVdPYqqZpy6GCJh3wj44kV7DM' (0.09999999 BTC • \$8,250.61) and 2. '17NgjBFfw7ys9TGYLzQkiUWcbVR1RXSc2' (0.00895731 BTC • \$739.03).

From		To	
1	14UevnZrH6oBquTi2xdeEv83wsU6CZCPcm 0.00084662 BTC • \$69.85	1	32jfFuX99bVdPYqqZpy6GCJh3wj44kV7DM 0.09999999 BTC • \$8,250.61
2	1P2sVcyo42GwFzAautrbAfSKa8R1oNhNuX 0.00922556 BTC • \$763.64	2	17NgjBFfw7ys9TGYLzQkiUWcbVR1RXSc2 0.00895731 BTC • \$739.03
3	1AAsCC6F5T5xyDeC2zsDPMQPn5eaaboXFt 0.09990032 BTC • \$8,242.39		

We can see from the image that this address is not receiving the change back to the same address and uses other address.

**1HWw9E5ehigRtdiZvQwkCvF9FzUcgoX4gQ**

- 1) The active period for this address is 2020-09-13 21:13:04 to 2021-12-30 16:45:31 (505days)
- 2) The balance currently in this address is 0 BTC.
- 3) There are 20 transactions related to this wallet
- 4) Total amount of bitcoin received is 0.31551964 BTC
- 5) In the most recent send transaction, there seems to be two output addresses (one is showing as null). The address starting with bc1qpv4sx seems to be the change address.
- 6) In the most recent receive transaction, 0.0259 BTC has been sent to this address
- 7) The following address **is not used** as a self-changing address:

Justification:

From	To
1 1J5TaWw6zPqGGJWLANRfV8oh9FqPsmnpUw 0.05817875 BTC • \$4,801.90	1 1C6c43YhLiRrCuFdLsUJCN2iJRpSMrbJdL 0.90672213 BTC • \$74,838.08
2 17T3ibv28RzoS6KNwUVUuHJYpenpu8MLZT 0.04240584 BTC • \$3,500.05	2 1NBSSGX3gqxcuHfdq41sQQWFpqFUCIHq 0.11485003 BTC • \$9,479.37
3 192VdM8LxbjefXIEQFI8q93Vxh3uyFEyk 0.05174580 BTC • \$4,270.94	3 3LqX53RPXRzWpF1F6opNu1ShACdaxW8Y3 0.00401394 BTC • \$331.30
4 17otcT4VmzqM3tbqN4dWvraQ6ontmQoN5 0.05900000 BTC • \$4,869.68	4 1MEsAyRPvDSLufDwPAnx3sH2b4hdWaNXvo 0.01062249 BTC • \$876.75
5 1L8vJkmgjHNBXYABMW2YwptSxp2kyCLz 0.05193700 BTC • \$4,286.72	
6 1CcB3gWnHjbcQ24LbuFuaVDbpHJvLeS6Dv 0.00069464 BTC • \$57.33	
7 1HWw9ESehigRtdiZvQwkCyF9FzUcgoX4gQ 0.08135000 BTC • \$6,714.38	
8 14EfmN6ekNBRfe9Bz2AWW7pMg9NrVLC2MY 0.03710704 BTC • \$3,062.70	
9 1FrWjPyUzS4NGBvE3XhAweY6fKpYvbU6VT 0.12931137 BTC • \$10,672.97	
10 1Gpfjd5zVLePCpAuKSTZZex2UJC1x2zo 0.18245662 BTC • \$15,059.41	

We can see from the image that this address is not receiving the change back to the same address and uses other address.

## 155vPxtHAuS6WiM4613eniLRS9wPiAEN6c

- 1) The active period for this address is 2019-09-11 18:22:23 to 2020-02-29 18:45:52 (505days)
- 2) The balance currently in this address is 0 BTC.
- 3) There are 90 transactions related to this wallet
- 4) Total amount of bitcoin received is 0.23694517 BTC
- 5) In the most recent send transaction, there is one output addresses that bitcoin has been sent to
- 6) In the most recent receive transaction, 0.00010338 BTC has been sent to this address
- 7) The following addresses **is used** as self-change addresses:

Justification:

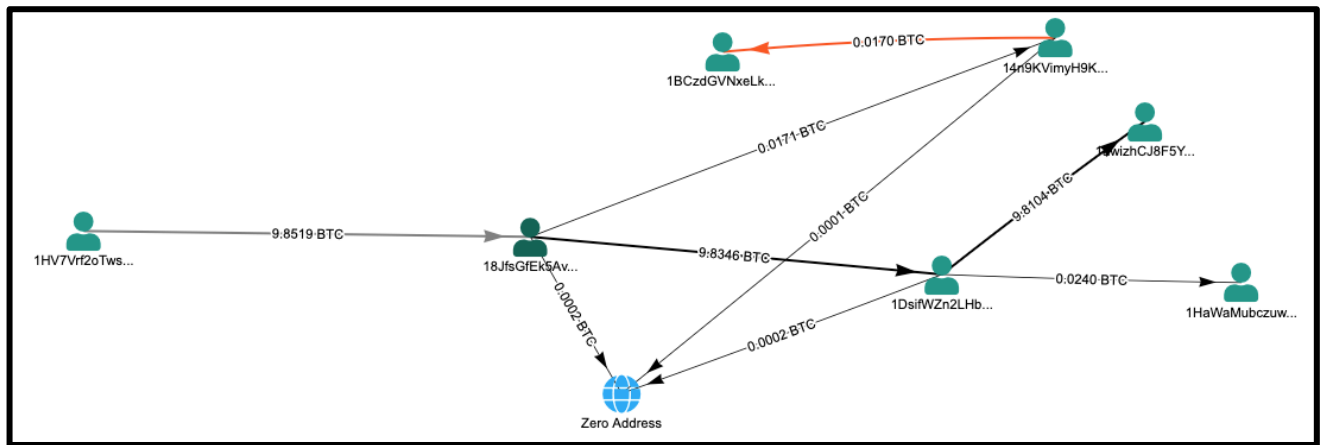
<div> <div>ID: 7a5d-bf0a</div> <div>9/21/2019, 08:16:48</div> </div> <div> <div>From 155v-EN6c</div> <div>To 2 Outputs</div> </div> <div>-0.00032115 BTC • -\$26.58</div> <div>Fee 1.0K Sats • \$0.83</div>	
From	To
1 155vPxtHAuS6WiM4613eniLRS9wPiAEN6c 0.00035117 BTC • \$29.07	1 1LjayukBd9T24tseBFGxhfWcRpPre6U9qi 0.00031115 BTC • \$25.76
	2 155vPxtHAuS6WiM4613eniLRS9wPiAEN6c 0.00003002 BTC • \$2.49

We can see from the image that this address is receiving the change back to the same address and not to any other address.

Q2)

## 18JfsGfEk5AvT6JsLS6MwaN9pm83wLzZkr:

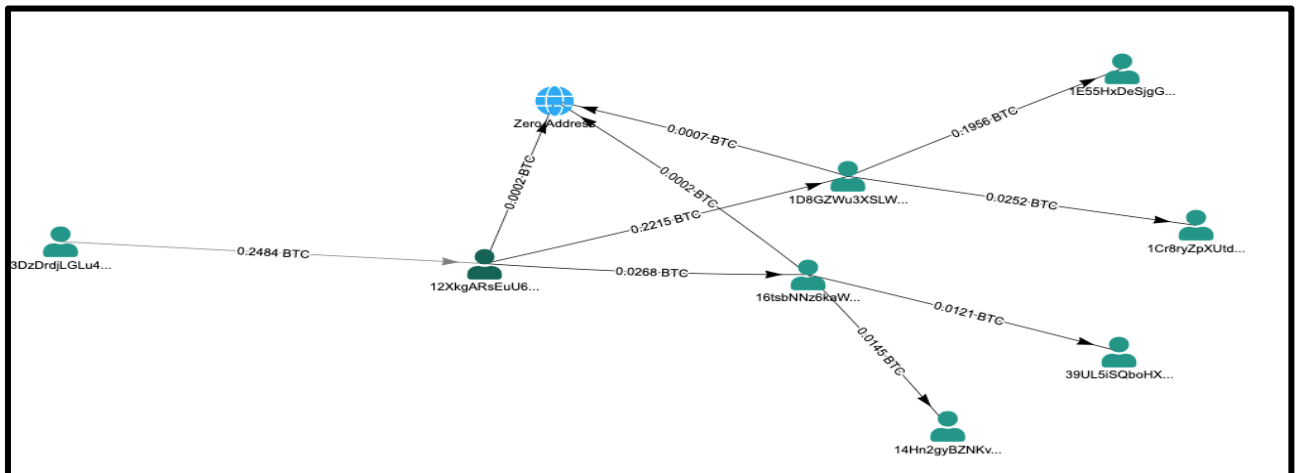
- 1)



- 2) There are 7 addresses in total: 1 address is the input address and 5 output and 1 target address
- 3) No, in this diagram the second layer addresses don't belong to the same wallet. In fact, all the addresses in the second layer belong to separate wallets
- 4) There seems to be no address associated with the bitcoin exchange
- 5) Since there is no address associated, we don't need to find active period

**12XkgARsEuU62kwpppqMNe9RJ7DRzWsbSw:**

1)



- 2) There are 8 addresses in total: 1 input, 1 target and 6 output addresses
- 3) No, in this diagram the second layer addresses don't belong to the same wallet. In fact, all the addresses in the second layer belong to separate wallets
- 4) Yes, the address 39UL5iSQboHX7jjpzJqbBUJtmcBdpDpDnn belongs to a bitcoin exchange called **cubits.com**. The exchange has not been active since 2018.

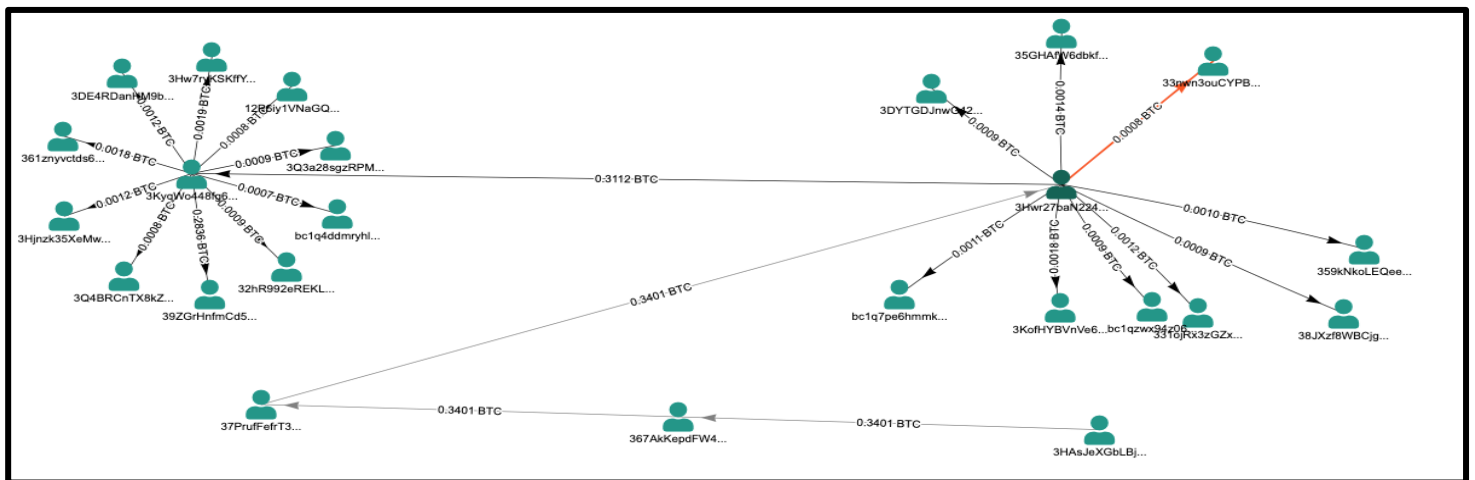
**Address** **39UL5iSQboHX7jjpzJqbBUJtmcBdpDpDnn**  
 part of wallet [Cubits.com](https://cubits.com)

- 5) This address has been active from 2016-06-04 08:58:15 to 2017-01-14 01:15:44 (225 days). The timezone followed is UTC.

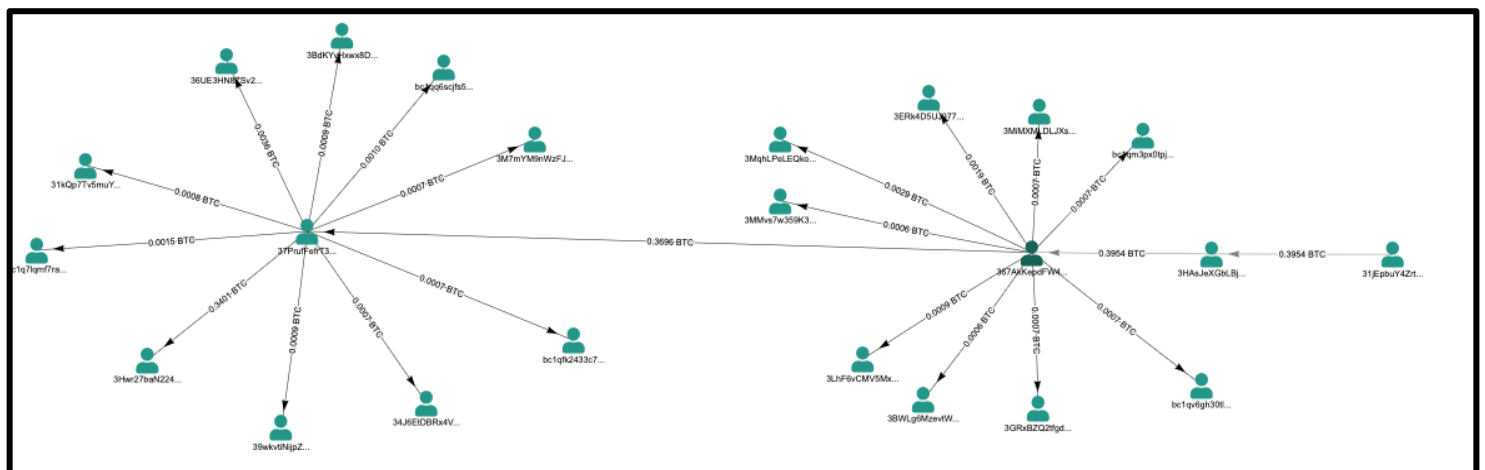
**Q3)**

Address	Wallet
13T2p59HLYK4TrSHMLoGhxZQUMvgUG3THs	d16ba1e214
1BuzgcBBmJefMyWD9tUwzpejpFHkg2Ktwz	bed0300250
3LpsmotMNxRGw3XorfZXyDdhmvza6Mac4a	Bitstamp.net
3Hwr27baN224zPFmUkSNEmkuUABvoJP5QQ	6cebcff043
367AkKepdFW4B7xX11J8xDiWPkjmMj3zBD	1c68f2bcd1
3PziXSRFSWKDhf5QAKUtWVzAeQwsA3q2La	bdc2e50ed0

### Money Flow for 3Hwr27baN224zPFmUkSNEmkuUABvoJP5QQ:



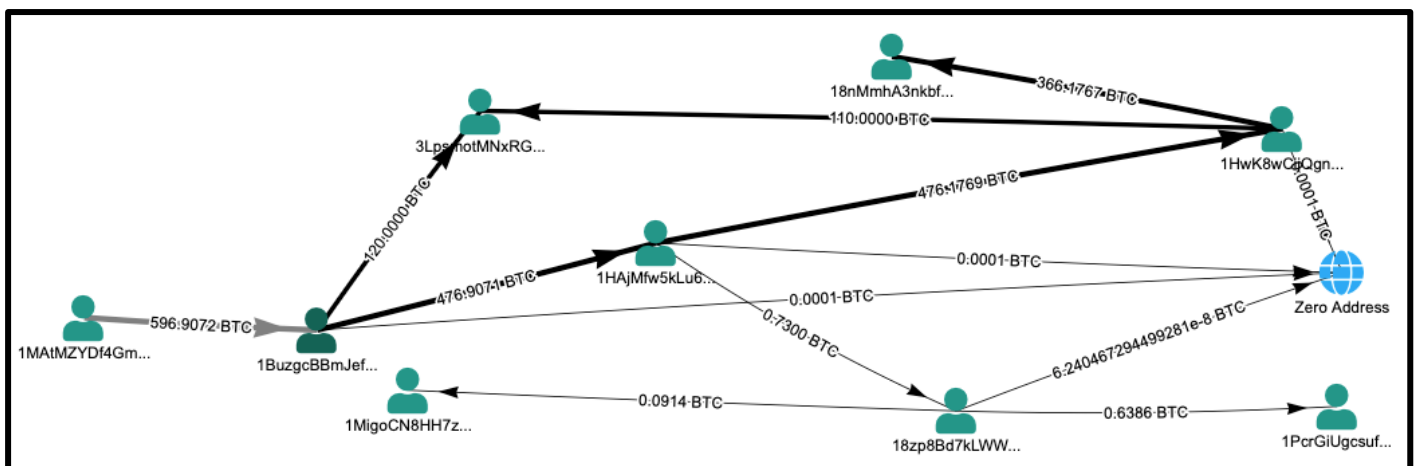
### Money Flow for 367AkKepdFW4B7xX11J8xDiWPkjmMj3zBD:



## Conclusion from the images:

From these two images, we can see that addresses 3Hwr27baN224zPFmUkSNEmkuUABvoJP5QQ and 367AkKepdFW4B7xX11J8xDiWPkjmMj3zBD are **related**. From the money flow diagram, we can see a pattern where addresses starting with 3HAsJeX, 31Epbu have two transactions only and they transfer all the BTC from 31Epbu to 3HAsJeX. Later, the address of our interest: 367AkKepdFW4B7xX11J8xDiWPkjmMj3zBD receives BTC from the previous mentioned chain and even this address seems to have only two transactions and transfers most of its BTC in the outbound transaction to address starting with 37PrufFefr and this address sends most of its BTC to our second address of interest: 3Hwr27baN224zPFmUkSNEmkuUABvoJP5QQ. This seems to be very suspicious as addresses mentioned previously have only two transactions that gets some BTC and sends out all of it and they seem to be created to just be an intermediary address. Addresses 367AkKepdFW4B7xX11J8xDiWPkjmMj3zBD and 3Hwr27baN224zPFmUkSNEmkuUABvoJP5QQ have an incoming transaction and send most of its BTC to another address and the remaining small amounts to other addresses. This pattern seems to continue with subsequent addresses. This seems to be an example of a money laundering technique called layering. This shows that 3Hwr27baN224zPFmUkSNEmkuUABvoJP5QQ and 367AkKepdFW4B7xX11J8xDiWPkjmMj3zBD have a chance of being created by the same entity to launder money and hence are related.

## Money Flow image of 1BuzgcBBmJefMyWD9tUwzpejpFHkg2Ktwz



## Conclusion from this image:

There seems to be a transaction from 1BuzgcBBmJefMyWD9tUwzpejpFHkg2Ktwz to 3LpsmotMNxRGw3XorfZXyDdhmvza6Mac4a which is a bitcoin exchange address. Even in the second outbound layer of 1BuzgcBBmJefMyWD9tUwzpejpFHkg2Ktwz there seems to be a transaction to 3LpsmotMNxRGw3XorfZXyDdhmvza6Mac4a from address starting with 1HwK8wC. But since it's an exchange, there is a high possibility for this to happen and there seems to be nothing suspicious with this. Therefore, there is **no strong** evidence that 1BuzgcBBmJefMyWD9tUwzpejpFHkg2Ktwz and 3LpsmotMNxRGw3XorfZXyDdhmvza6Mac4a are related.

The other two addresses 3PziXSRFSWKDhf5QAKUtWVzAeQwsA3q2La and 13T2p59HLYK4TrSHMLoGhxZQUMvgUG3THs seem to have no relationship with each other and other addresses. The dates of transaction in these addresses don't match with the time-period of the other addresses.