

区块链大数据分析 测试报告

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(使用 \LaTeX 编辑)

注: 测试运行环境为macOS Mojave 10.14.6, 终端是iTerm2, Shell是Oh My Zsh. 以下截图均基于此环境.

1 模块1——某账号某时间短内最高转账记录

1.1 测试数据

1. 5 0 14000000000 1GgydFcZhnbjZpZ62NjYLZEF9avAqwVKA8
2. 3 0 14000000000 1Ah4FWJU6TQDwiVVvKUtwQgwgY81PHRV1V
3. 3 0 14000000000 1MMd9tQB6iiaouGnxwLLDA6qKmT92WuNnw
4. -1

1.2 测试结果

```
>>> A
Top k biggest Txns of an account between two timestamps.
Please enter k(>0):5
Please enter start and end timestamps:0 14000000000
Please enter an account:1GgydFcZhnbjZpZ62NjYLZEF9avAqwVKA8
Total: 126 record(s).
Out: 126 record(s).
In: 0 record(s).
Top 5 Txns:
1: 1GgydFcZhnbjZpZ62NjYLZEF9avAqwVKA8 -> 1Ah4FWJU6TQDwiVVvKUtwQgwgY81PHRV1V, Amount: 28.2421
2: 1GgydFcZhnbjZpZ62NjYLZEF9avAqwVKA8 -> 1DMkNe3cUHLt6DaHzVwMfFWJ1UtgkWFxYc, Amount: 6.2607
3: 1GgydFcZhnbjZpZ62NjYLZEF9avAqwVKA8 -> 1E48ZhJoH8GHZQSWbvbNFq156H9aEHxmAN, Amount: 5.6226
4: 1GgydFcZhnbjZpZ62NjYLZEF9avAqwVKA8 -> 1BcdLczkeaZ4qzdZidLzkeUAAJDk4CsVe8, Amount: 5.4437
5: 1GgydFcZhnbjZpZ62NjYLZEF9avAqwVKA8 -> 1Dp7jL1yJRGbGiET8tbm4cFJX8CqaYAB4X, Amount: 5.0386
Time: 0.000128 seconds.
```

结果一

结果二

```
>>> A
Top k biggest Txns of an account between two timestamps.
Please enter k(>0):3
Please enter start and end timestamps:0 1400000000
Please enter an account:1Ah4FWJU6TQDwiVVvKUtwQgwgY81PHRV1V
Total: 24 record(s).
Out: 0 record(s).
In: 24 record(s).
Top 3 Txns:
1: 12QHN6PTXyHbn6nY8ETEXHKKY9sqmExhf -> 1Ah4FWJU6TQDwiVVvKUtwQgwgY81PHRV1V, Amount: 31.5242
2: 19emYy5QtCy2W79HspX3B7gfmBZci55uET -> 1Ah4FWJU6TQDwiVVvKUtwQgwgY81PHRV1V, Amount: 30.4286
3: 1GgydFcZhnbjZpZ62NjYLZEF9avAqwVKA8 -> 1Ah4FWJU6TQDwiVVvKUtwQgwgY81PHRV1V, Amount: 28.2421
Time: 0.000060 seconds.
```

结果三

```
>>> A
Top k biggest Txns of an account between two timestamps.
Please enter k(>0):3
Please enter start and end timestamps:0 1400000000
Please enter an account:1MMd9tQB6iiaouGnxwLLDA6qKmT92WuNnw
Total: 1 record(s).
Out: 0 record(s).
In: 1 record(s).
Top 3 Txns:
1: 1BAjnzBx6jvuQJWxByQGtiYVJUCdjwiz37 -> 1MMd9tQB6iiaouGnxwLLDA6qKmT92WuNnw, Amount: 3.54
Time: 0.000030 seconds.
```

结果四

```
>>> A
Top k biggest Txns of an account between two timestamps.
Please enter k(>0):-1
Too small k!
```

2 模块2——某账号截止某时刻金额

2.1 测试数据

1. 1400000000 1GgydFcZhnbjZpZ62NjYLZEF9avAqwVKA8
2. 1400000000 1Ah4FWJU6TQDwiVVvKUtwQgwgY81PHRV1V

2.2 测试结果

结果一

```
>>> B
Total money of an account before a certain timestamp.
Please enter an end timestamp:1400000000
Please enter an account:1GgydFcZhnbjZpZ62NjYLZEF9avAqwVKA8
Account: 1GgydFcZhnbjZpZ62NjYLZEF9avAqwVKA8. Sum before @1400000000 : -100.997.
Time: 0.000061 seconds.
```

结果二

```
>>> B
Total money of an account before a certain timestamp.
Please enter an end timestamp:1400000000
Please enter an account:1Ah4FWJU6TQDwiVVvKUtWQgwgY81PHRV1V
Account: 1Ah4FWJU6TQDwiVVvKUtWQgwgY81PHRV1V. Sum before @1400000000 : 311.97.
Time: 0.000027 seconds.
```

3 模块3——某时刻福布斯排行榜

3.1 测试数据

1. 5 1400000000

3.2 测试结果

结果

```
>>> C
Top k most valuable accounts before a certain timestamp.
Please enter k(>0):5
Please enter an end timestamp:1400000000
Top 5 most valuable accounts:
1: 1VayNert3x1KzbpzMGt2qdqrAThIRovi8, Sum: 434322.0213
2: 122semdHkeMzS1naK83wVxW2DgpM2CvUfX, Sum: 135140.0000
3: 1Q7L195hFoiEARiAyNu8XntJbFXDLMxyB9, Sum: 60000.0000
4: 13TUWDE7foufgGNMsMqXHf9xpPUhoeMzNJ, Sum: 58333.4513
5: 1K6xtaY8VqfEYQqnWHpFJnhdcBaj4Tw4uu, Sum: 58309.5925
Time: 1.796252 seconds.
```

4 模块4——交易图输出

4.1 测试数据

1. (无需输入)

4.2 测试结果

结果 (只能显示部分结果)

```
/Users/CuiGuanyu/Desktop/大作业/代码/main; exit
1048553: 1BVbpxXbQibbBcmJwganYnNxFy6U1TzPDD -> 1ANsBqTCTDxX5EtEggRqYxttvJxs8pP7ws Sum: 0.2009
1048554: 1M8h4wTsvqSGEnnwt4mJL54pPdGgYRz4Ry -> 1NYS8fC7fU74RifHkWRwAcpmKJhgZ2XRuq Sum: 0.01
1048555: 1M8h4wTsvqSGEnnwt4mJL54pPdGgYRz4Ry -> 1Kix4wV8z3FiiSQcfNRonctnTwZtRKzDh Sum: 13.86
1048556: 16m4rTkohUzN85eYMWVZrrGRRaPJ26FY5m -> 19U8e755hKHu45JV9caD67xNeN3vn6XZ5d Sum: 0.8633
1048557: 16m4rTkohUzN85eYMWVZrrGRRaPJ26FY5m -> 1dice8EMZmqKvrGE4Qc9bUff9PX3xaYDp Sum: 0.25
1048558: 1HLdDwYJykEUF5F8cZA1szkzbXPEq67Y6M -> 13PsLMzVnZnTJ3o4aHZYkBDYKnk6qHPk2E Sum: 0.01
1048559: 1HLdDwYJykEUF5F8cZA1szkzbXPEq67Y6M -> 13qG8w5qqoJgeqtbYekAwaoy9GAFbqSZ4G Sum: 15.53
1048560: 1JA9NKqZ5QJZEbxrvUkVpUfJDjVRaGDgfG -> 12wmLv9BrJrpFF1Txeyqc1AAj1dX34k8Y8 Sum: 0.01
1048561: 1JA9NKqZ5QJZEbxrvUkVpUfJDjVRaGDgfG -> 17MURuXWPEiErZnwzZUiTwsKLEahhgjBV5 Sum: 1.21
1048562: 1CZyWwPjviTcfst7LykhCkWUJJK3zTzyrf -> 1AyiupiditgkBxHq2C7mEb7gVDYsCimTz Sum: 1.55
1048563: 1CZyWwPjviTcfst7LykhCkWUJJK3zTzyrf -> 12wmLv9BrJrpFF1Txeyqc1AAj1dX34k8Y8 Sum: 0.01
1048564: 187ZJUrfJFzZYXcBtBBqyHMBUNKy5vqYwJo -> 12wmLv9BrJrpFF1Txeyqc1AAj1dX34k8Y8 Sum: 0.01
1048565: 187ZJUrfJFzZYXcBtBBqyHMBUNKy5vqYwJo -> 1CzvJp1MpHnW42GkwUdGiwGaEhcRLZUu9Y Sum: 2.65
1048566: 1A84t5fr5FQRQ9ouBPgFVoJTVjMTZAMYCE -> 1E1Lhsy68wYZVhnKykwSQQoTv74asEgVaU Sum: 2.68
1048567: 1A84t5fr5FQRQ9ouBPgFVoJTVjMTZAMYCE -> 12wmLv9BrJrpFF1Txeyqc1AAj1dX34k8Y8 Sum: 0.01
1048568: 1Hhb9NtKFUj421fVaYQFrmcyha23E9ArUL -> 12wmLv9BrJrpFF1Txeyqc1AAj1dX34k8Y8 Sum: 0.01
1048569: 1Hhb9NtKFUj421fVaYQFrmcyha23E9ArUL -> 18k7D6WfDh1EfEm5u1JNXRLg8nKXYf92AY Sum: 3.22
1048570: 1JF1n9kdtZeSsQTENo3TrdZfLSzS3ESokx -> 1dice7fUkz5h4z2wPc1wLMPWgB5mDwKDX Sum: 0.02
1048571: 1JF1n9kdtZeSsQTENo3TrdZfLSzS3ESokx -> 1dice7EYzJag7SxkdKXLr8Jn14WUb3Cf1 Sum: 0.02
1048572: 1JF1n9kdtZeSsQTENo3TrdZfLSzS3ESokx -> 1dice6YgEVBf88erBFra9BHF6ZMoyvG88 Sum: 0.02
1048573: 1JF1n9kdtZeSsQTENo3TrdZfLSzS3ESokx -> 14z1fVwxMG71WcijX9J9te8G1wyp7tVqdz Sum: 0.0018
1048574: 1BAjnzBx6jvuQJWxByQGtiYVJUCdjwiz37 -> 1MMd9tQB6iiaouGnxwLLDA6qKmT92WuNnw Sum: 3.54
1048575: 1BAjnzBx6jvuQJWxByQGtiYVJUCdjwiz37 -> 12wmLv9BrJrpFF1Txeyqc1AAj1dX34k8Y8 Sum: 0.01
Total: 1048575 TxS.
Time: 3.473019 seconds.
```

5 模块5——平均出入度以及出入度前 k 条最高账号

5.1 测试数据

1. 5.

5.2 测试结果

```
>>> E
Average in/out degree and top k in/out degree accounts.
Please enter k(>0):5
Total: 877501 accounts, 1048575 degree(s).
Average degree: 1.19496

Top 5 indegree accounts:
1: 1dice8EMZmqKvrGE4Qc9bUFf9PX3xaYDp, Indegree: 39132
2: 1dice97ECuByXAvqXpaYzSaQuPVvrtmz6, Indegree: 21455
3: 1dice9wcMu5hLF4g81u8nioL5mmSHTApw, Indegree: 12909
4: 1VayNert3x1KzbpzMGt2qdqrAThIRovi8, Indegree: 9017
5: 1dice7W2AicHosf5EL3GFDUVga7TgtPFn, Indegree: 7861

Top 5 outdegree accounts:
1: 1L9vtoGrRztaTr1qzDFTVhbSfEPb9hRANC, Outdegree: 1002
2: 15wcGkfqerUqYv5xYVi6gp6XxvFWhEpntg, Outdegree: 830
3: 1BrFwk1NeeX2koCpbmPYc77YXaPLCiN4B4, Outdegree: 830
4: 12pnBYWTd8rnL1ahxSY9mwcDF1hNJnNsL8, Outdegree: 818
5: 14LBBe1WXT9Guvjxjx17h7xtfivqEaaEy9, Outdegree: 675
Time: 1.412735 seconds.
```

结果

6 模块6——环路检测

6.1 测试数据

- (无输入)

6.2 测试结果

```
>>> F
Are there circles in the market graph?
Result: No.
Time: 2.954830 seconds.
```

结果

7 模块7——单账号最短转账路径

7.1 测试数据

1. 1EQcSy9BDMZsKY3qdbvirFY7enETVafKEG
2. 1Cx4adnBYkZsYBHtsJM1QUVEPjRUF2iAS
3. 16nXmxXK5FTFBg2VgWzJVjFJJijNWjEWzV

7.2 测试结果

```
Path 575 :  
1EQcSy9BDMZsKY3qdbvirFY7enETVafKEG ->  
19By8VzAxx4LKyoQ9WxZMctTbEdHJGvpZU ->  
1LkKsjgh6r4FdKYAuUZX7TmR4iJgbqtkcZ.  
Weight: 312.675  
  
Path 576 :  
1EQcSy9BDMZsKY3qdbvirFY7enETVafKEG ->  
1AC2aPFPkyDhNUZmVoTuKgtyw6GWPQUBPR ->  
15YoKismFnr5KsayuN6acrzSswSxp76bPi.  
Weight: 482.857  
  
Path 577 :  
1EQcSy9BDMZsKY3qdbvirFY7enETVafKEG ->  
1GbPVH1tpHVSDbcMG2mhQLCpNrzhY6R8L ->  
13U8bgfZKm5vgE24EnY3PRJCrbJuXZ7gVi.  
Weight: 781.857
```

结果一 (只显示部分结果)

```
Time: 0.008109 seconds.
```

```

Path 75 :
1Cx C4adnBYkZsYBHtsJM1QUVEPjRUF2iAS ->
179BrEkRUrWTaouq61f86dLXaAvV42GzgA ->
1FLqHy9m3oGooVBdWxDbSyxVjHsp18yRvx.
Weight: 10.89

Path 76 :
1Cx C4adnBYkZsYBHtsJM1QUVEPjRUF2iAS ->
1AKDTvoU4uyzQJBPKrhvpMVmJR7bWS3BY9 ->
1PxT7aN8zZN736wH4SwotdvULHSaj15pi.
Weight: 12.821

Path 77 :
1Cx C4adnBYkZsYBHtsJM1QUVEPjRUF2iAS ->
14vdw2bSo6YyqE4MuUpp7sBYH5AweE7mWj.
Weight: 16.6473

Time: 0.001370 seconds.

```

结果二 (只显示部分结果)

```

Path 28 :
16nXmxXK5FTFBg2VgWzJVjFJJijNWjEWzV ->
1FqdjF6jrSMoRCPsGgfAPnhF3oX53NJw2d ->
1C78vWJQhQRaHCdV28HsDBoA947mFUzT4A ->
1CLVnMWEwzuGVcQ6L2WBoUJQFj3B9XeVmx.
Weight: 86.53

Path 29 :
16nXmxXK5FTFBg2VgWzJVjFJJijNWjEWzV ->
1FqdjF6jrSMoRCPsGgfAPnhF3oX53NJw2d ->
1C78vWJQhQRaHCdV28HsDBoA947mFUzT4A ->
1CLVnMWEwzuGVcQ6L2WBoUJQFj3B9XeVmx ->
13h7Xo2A3sddyZLKiyYmvtTAz4x4UD4KBV.
Weight: 91.53

Path 30 :
16nXmxXK5FTFBg2VgWzJVjFJJijNWjEWzV ->
1FqdjF6jrSMoRCPsGgfAPnhF3oX53NJw2d ->
1C78vWJQhQRaHCdV28HsDBoA947mFUzT4A ->
1CLVnMWEwzuGVcQ6L2WBoUJQFj3B9XeVmx ->
1PkSo8T7y9c1uiqHh8LtxF9axzkVapToBN.
Weight: 107.51

Time: 0.000530 seconds.

```

结果三 (只显示部分结果)

8 测试结论

每个模块进行了一定的测试(有很多测试因为篇幅原因没有加入报告中, 结果均为正确)后, 我们有理由相信我们设计的分析器具有一定程度的健壮性与可靠性, 可以在一定范围内使用.