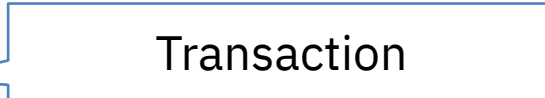


Transaction Ordering Examples

github.com/sambacha/mev-slides


Naive approach implementation examples (FIXME)

```
//approach 1
transactions := self.eth.TxPool().GetTransactions()
sort.Sort(types.TxByNonce{transactions})
```




Transaction

```
//approach 2
transactions := self.eth.TxPool().GetTransactions()
sort.Sort(types.TxByPriceAndNonce{transactions})
```



order by price & nonce

```
// approach 3
// commit transactions for this run.
txPerOwner := make(map[common.Address]types.Transactions)
// Sort transactions by owner
for _, tx := range self.eth.TxPool().GetTransactions() {
    from, _ := tx.From() // we can ignore the sender error
    txPerOwner[from] = append(txPerOwner[from], tx)
}
```



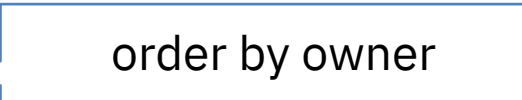
sort by owner

```
var (
    singleTxOwner types.Transactions
    multiTxOwner  types.Transactions
)
```



input data

```
// Categorize transactions by
// 1. 1 owner tx per block
// 2. multi txs owner per block
for _, txs := range txPerOwner {
    if len(txs) == 1 {
        singleTxOwner = append(singleTxOwner, txs[0])
    } else {
        multiTxOwner = append(multiTxOwner, txs...)
    }
}
```



order by owner

```
sort.Sort(types.TxByPrice{singleTxOwner})
sort.Sort(types.TxByNonce{multiTxOwner})
transactions := append(singleTxOwner, multiTxOwner...)
```

Acknowledgements

Slides based from:

Takenobu Tani 2018:

github.com/takenobu-hs/ethereum-evm-illustrated,
BSD 3-Clause License

Reference Documents