Go Eth开发笔记

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之前已经把make geth 之前的环境配好了，本次从geth version开始。

geth version的GOPATH和GOROOT需要对go进行配置， 默认为空，参考
https://www.jianshu.com/p/358cbc939569：

```
export GOPATH=/usr/local/Cellar/go/1.10.3
export GOBIN=$GOPATH/bin
export PATH=$PATH:$GOBIN
```

最终再进行一次geth version

下一步参考https://www.cnblogs.com/lion.net/p/7809862.html（有的地方有问题，可能版本更新参数不正确，需要调试）

找个文件夹，新建genesis.json（最新版本的参考官方文档https://github.com/ethereum/go-ethereum）：

```
{
  "config": {
      "chainId": 0,
      "homesteadBlock": 0,
      "eip155Block": 0,
      "eip158Block": 0
    },
  "alloc"      : {},
  "coinbase"   : "0x0000000000000000000000000000000000000000",
  "difficulty" : "0x20000",
  "extraData"  : "",
  "gasLimit"   : "0x2fefd8",
  "nonce"      : "0x0000000000000042",
  "mixhash"    : "0x0000000000000000000000000000000000000000000000000000000000000000",
  "parentHash" : "0x0000000000000000000000000000000000000000000000000000000000000000",
  "timestamp"  : "0x00"
}
```

命令行输入：geth init ./genesis.json --datadir "./chain"

再输入（后面两个参数原因参考https://blog.csdn.net/hpp24/article/details/79401298）：

```
JunmingKedeMacBook-Air:GEth junmingke$ geth --datadir "./ethdev" --nodiscover co
nsole 2>>eth_output.log --dev --dev.period 1
Welcome to the Geth JavaScript console!

instance: Geth/v1.8.10-stable/darwin-amd64/go1.10.2
coinbase: 0x71055ba76d082a6c0e80927ee3bff70256dddb00
at block: 1 (Sat, 28 Jul 2018 23:18:15 CST)
 datadir: /Users/junmingke/GEth/GEth/ethdev
 modules: admin:1.0 clique:1.0 debug:1.0 eth:1.0 miner:1.0 net:1.0 personal:1.0
rpc:1.0 shh:1.0 txpool:1.0 web3:1.0
```

进入web3控制台，--dev有一个测试用户，且有很多Ether，可以直接转账，创建一个用户，解锁测试用户：

web3.personal.newAccount()

web3.personal.unlockAccount(acc0)

转账并在input里写入随机数据（通过在线网站https://www.bejson.com/convert/ox2str/把想写入的数据转成16进制前面加上0x即可），转码操作和交易操作都可以写入js并load：

```
 ● ● ●                  GEth — geth --datadir ./ethdev --nodiscover console --dev --dev.period 1 — 80×24
> web3.eth.getBalance(acc1)
3e+21
> eth.blockNumber
1000
> web3.eth.sendTransaction({from:acc0,to:acc1,value:web3.toWei(3000,"ether"),inp
ut:"0x4675636b696e6720476f6f64"})
"0xfa49470c51ff1d87424265da1cfc6bd5ec43513b81cc07458f18775f003080af"
> miner.start()

null
> transactionHash0 = "0xb8ebdaecb5c4028cd8efda70df1bf9ae5c510346ddd65fb424b75820
d3baa182"
"0xb8ebdaecb5c4028cd8efda70df1bf9ae5c510346ddd65fb424b75820d3baa182"
> transactionHash0
"0xb8ebdaecb5c4028cd8efda70df1bf9ae5c510346ddd65fb424b75820d3baa182"
> transactionHash1 = "0xfa49470c51ff1d87424265da1cfc6bd5ec43513b81cc07458f18775f
003080af"
"0xfa49470c51ff1d87424265da1cfc6bd5ec43513b81cc07458f18775f003080af"
> web3.eth.getTransaction(transactionHash0).then(console.log)
TypeError: 'then' is not a function
    at <anonymous>:1:1

> web3.eth.getTransaction(transactionHash0)
{
```

然后挖矿，miner.start(),一开始同步区块，大约一分钟后可以输入eth.blockNumber查看。

此时，可以通过交易hash获取交易，查看input即可读取数据：

```
",
    blockNumber: 644,
    from: "0x71055ba76d082a6c0e80927ee3bff70256dddb00",
    gas: 90000,
    gasPrice: 1,
    hash: "0xb8ebdaecb5c4028cd8efda70df1bf9ae5c510346ddd65fb424b75820d3baa182",
    input: "0x57cb2fc4",
    nonce: 0,
    r: "0xe8f4ab68e793c1615038273c697d6ed63a680feea2b8fb4507eeb06a01895367",
    s: "0x42817a7ee662edff875b23fee773c59e8a12cd3aad87f1470b66d335234c6fd2",
    to: "0x32e596f8b586ec4ecf4c802484a690090599473f",
    transactionIndex: 0,
    v: "0xa95",
    value: 3e+21
}
> web3.eth.getTransaction(transactionHash0).input
"0x57cb2fc4"
> eth.blockNumber
1394
> miner.stop()
true
> web3.eth.getTransaction(transactionHash1).input
"0x4675636b696e6720476f6f64"
>
```

16进制到文本字符串的转换，在线实时转换

16进制到文本字符串的转换，在线实时转换（支持中文转换）

```
4675636b696e6720476f6f64
```

[16进制转字符] [字符转16进制] [清空结果]

```
Fucking Good
```

更多web3的操作可以参考http://cw.hubwiz.com/card/c/web3.js-1.0/和http://web3.tryblockchain.org/Web3.js-api-refrence.html#toc_0。

solidity的代码可以转成16进制写入data中，参考sendTransaction。