测试文档

课程名称	区块链原理与技术	任课老师	黄华威
年级	2018级	**专业**	软件工程
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一、 大致流程

    具体测试的数据并未严格按照项目所给示例演示，数据有变动。

二、 具体测试

1. 第一步：调用addBank方法，新建一个银行。

```
{
transactionHash: "0x2fa9e3420599c545d7145e1197b36845e631c0766eaedca1b40753daea559120"
transactionIndex: 0
blockHash: "0xb712ff7d04d63ba79f2570312cc32c2ec043795cdb895b6d6fd61c756366ad1c"
blockNumber: 28
gasUsed: 86477
contractAddress: "0x0000000000000000000000000000000000000000"
root: "0xac842d8d3dc376cae857087bab7c886eee5a251bd673370977039c92067f286b"
status: 0x0
message: "success"
from: "0x56339dfb9222efa7e30c17d3657bf3aab4000066"   //issuer        银行地址
to: "0xab971203c27ffd89c1d8ad8a34b1ba66b63047b9"
input:
"0x32366d7800000000000000000000000000000000000000004000000000000000000000000056339dfb9222efa7e30c17d3657bf3aab400006600000000
00000000000000000000000000000000000000000000000000442616e6b00000000000000000000000000000000000000000000000000000000000000000"
output:
function AddBank(string _name,address _ad) returns(bool)
data:

bool

true
logs: []
logsBloom:
"0x000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000
000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000
000000000000000000000000000000000000000000000000000000000000000"
txProof: null
receiptProof: null
}
```

2. 第二步：车企和轮胎公司之间签署1000万的应收账款，该应收账款由轮胎公司持有，欠债人为车企，收款人为轮胎公司，期限为一年，输入时使用20200101作为开始时间，用20201230作为截止时间。

{
  transactionHash: "0x1edf00d82140b5360b32aabc4f0e848332087c4fc0127649b115d61593e88294"
  transactionIndex: 0
  blockHash: "0x074f8abbaccf7d697718638402ce37a73a6a9f4358f25c61fa3c80fdad9c8f2b"
  blockNumber: 29
  gasUsed: 137906
  contractAddress: "0x0000000000000000000000000000000000000000"
  root: "0xa351b2e0563bb469f5ded3103e201fcee75101c9ad034558bcae197ff95d8bf2"
  status: 0x0
  message: "success"
  from: "0x6e6661ed578361fc972cd33a553d394f786639ef"//轮胎公司
  to: "0xab971203c27ffd89c1d8ad8a34b1ba66b63047b9"//
  input:
"0xa3b82aee0000000000000000000000006e6661ed578361fc972cd33a553d394f786639ef000000000000000000000000b2709a875b7f16d4c5a9cf8137723ecaaf30596e00000000
0000000000000000000000000000000000000000000004c4b40000000000000000000000000000000000000000000000000000000000004c4b40"
  output:
  function IssueReceipt(address owner,address client,uint256 amount,uint256 ddl) returns(uint256 id_)
  data:
  id_

  uint256

  1 ← 收据编号
  logs: [
  {
  removed:
  logIndex: null
  transactionIndex: null
  transactionHash: null
  blockHash: null
  blockNumber: null
  address: 0xab971203c27ffd89c1d8ad8a34b1ba66b63047b9
  eventName : ReceiptIssued(address owner,string desc)
  data:
  owner

  0x6E6661ed578361fC972CD33A553D394F786639EF ← 轮胎公司
  desc

  receipt Issued
  type:
  topics: ["0xdd91c789e2f77f49578e3773aba9afdb5d18009c042af1b762669c8708cf8577"]
  logIndexRaw:
  }
  ]
  logsBloom:
"0x0000000000000000000000000000020000004000000000000000000040000000000000000000000000000000000000000000000000000000000000000000000000000
0000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000
004000000000000000000000000000000000000000000000000008800000000000000000000000000000000000000000000000000000000000000000000000000000000000
0000000000000000000000000000000000000000000000000000000001000000"
  txProof: null
  receiptProof: null
  }

3. 第三步：验证只有车企可以签署这份应收账款；

{
  transactionHash: "0xe7cc0143560fb5d8a354c46d5a4892bc9c02d26986bfa3d3a9349a56dd3640c7"
  transactionIndex: 0
  blockHash: "0x9c3df297d9183f5c9f0f76288f5c7e804a6bd715dd6e70c55f5b6fd35e2bcb78"
  blockNumber: 30
  gasUsed: 169820
  contractAddress: "0x0000000000000000000000000000000000000000"
  root: "0xe398476399fe9af733fa90575ab043b939b5b7ab39c1dfd1dbc2280c94cbb291"
  status: 0x0
  message: "success"
  from: "0xb2709a875b7f16d4c5a9cf8137723ecaaf30596e" ← 车企
  to: "0xab971203c27ffd89c1d8ad8a34b1ba66b63047b9"
  input: "0x503e9d5d0000000000000000000000000000000000000000000000000000000000000001"
  output:
  function SignReceipt(uint256 _id) returns(bool)
  data:

  bool   返回值为真

  true
  logs: [
  {
  removed:
  logIndex: null
  transactionIndex: null
  transactionHash: null
  blockHash: null
  blockNumber: null
  address: 0xab971203c27ffd89c1d8ad8a34b1ba66b63047b9
  eventName : ReceiptIssued(address owner,string desc)
  data:
  owner

  0xB2709A875B7F16D4c5A9cF8137723ECaaf30596e
  desc

  receipt signed   使用车企的地址可以成功签署
  type:
  topics: ["0xdd91c789e2f77f49578e3773aba9afdb5d18009c042af1b762669c8708cf8577"]
  logIndexRaw:
  }
  ]
  logsBloom:
"0x0000000000000000000000000000020000004000000000000000000040000000000000000000000000000000000000000000000000000000000000000000000000000
0000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000
004000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000
0000000000000000000000000000000000000000000000000000001000000"
  txProof: null
  receiptProof: null
  }

如果使用别的用户，例如alice的地址去验证就不可以。

```
{
transactionHash: "0xb781b019ac981f33547d5c3a13cded58dec29ffe30c34efaed5d574c55ff1489"
transactionIndex: 0
blockHash: "0x2125feb2ea6afda82433b581a3d3b31bf4000895631b269b45e27ea376bf1e81"
blockNumber: 32
gasUsed: 22439
contractAddress: "0x0000000000000000000000000000000000000000"
root: "0x0000000000000000000000000000000000000000000000000000000000000000"
status: 0x16
message: "your don't have permission to sign this receipt."          会显示没有签署收据的权益
from: "0x736749e2d79eae1da91f338840d973a8ceeb6cba"
to: "0xab971203c27ffd89c1d8ad8a34b1ba66b63047b9"
input: "0x503e9d5d0000000000000000000000000000000000000000000000000000000000000001"
output:
function SignReceipt(uint256 _id) returns(bool)
data:


bool

true
logs: []
logsBloom:
"0x0000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000
0000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000
0000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000
000000000000000000000000000000000000000000000000000000"
txProof: null
receiptProof: null
}
```

轮胎公司将应收账款的500,000转让给轮毂公司

4. 第四步：轮胎公司和轮毂公司产生了50万应收账款，因为车企和轮胎公司之间存在1000万的应收账款，所以轮胎公司转让50万的应收账款给轮毂公司。

```
{
transactionHash: "0x636d579c39cfaeff63917e2dc80b8805fb38978766388f78fcfa2df308a7dafb"
transactionIndex: 0
blockHash: "0x0cf0e05d09baede08f2974a86cefc1f0a1672e4109895b9fc8d72ecf91985dd0"
blockNumber: 33
gasUsed: 183627
contractAddress: "0x0000000000000000000000000000000000000000"
root: "0x293b1813546d6330ef4a6e06c79a427d1e45662a3ff6fc8c12bfd3a36d33053b"
status: 0x0
message: "success"
from: "0x6e6661ed578361fc972cd33a553d394f786639ef"          →  轮胎公司
to: "0xab971203c27ffd89c1d8ad8a34b1ba66b63047b9"
input:
"0xd11cf84c000000000000000000000000000000000000000000000000000000000000000100000000000000000000000000f1a18bb7a1bb7dcf4df5a4f4be2340b53206ab710000000
00000000000000000000000000000000000000000000000000000007a120"
output:
function TransferTo(uint256 receiptid,address to,uint256 amount) returns(uint256 id_)
data:
id_


uint256

                  →  产生新的收据编号

2
logs: [
{
removed:
logIndex: null
transactionIndex: null
transactionHash: null
blockHash: null
blockNumber: null
address: 0xab971203c27ffd89c1d8ad8a34b1ba66b63047b9
eventName : Transfered(address fromadd,address toadd,uint256 amount,string desc)
data:
fromadd

0x6E6661ed578361fC972CD33A553D394F786639EF    轮胎公司
toadd

0xF1a18Bb7a1Bb7dcF4DF5a4F4be2340B53206ab71    轮毂公司
amount

500000    转移金额
desc

transfer successfully
type:
topics: [ "0x81605e79a6ce894dcc5405b9c68a7fe731c37f26a8f38067f1b54cc7672931d8" ]
logIndexRaw:
}
]
logsBloom:
"0x0000000000000000000000000000000002000000400000004000000000000000000000000000000000000000000000000000
0000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000100
0000000000000000000000000000000000000000000000000000000000000000000000020000000000000000000000000000000
00000000000000000000000000000000000000001000000"
txProof: null
receiptProof: null
}
```

5. 第五步：轮毂公司依靠这50万的应收账款单据向银行贷款1元，银行信任车企，因此也就愿意贷款给轮毂公司，本轮融资成功。

{
  transactionHash: "0x1fe62a16b568917a254abb172ba941073ba3f1a9afe66b4ad5f45900a70cce32"
  transactionIndex: 0
  blockHash: "0xdee6ab7bb06aee7816034c449952b15700565c3972d0eb41f294b3c5cc13ee89"
  blockNumber: 47
  gasUsed: 48652
  contractAddress: "0x0000000000000000000000000000000000000000"
  root: "0x3b2e2945d22dbd453959ea3c9efd8f76f70690bee356b3ee7ae1114c10b13e18"
  status: 0x0
  message: "success"
  from: "0x56339dfb9222efa7e30c17d3657bf3aab4000066" ────────→银行
  to: "0x5e71c35dd3e8017ab29d091a314f85f93ae4e509"
  input:
  "0x8a4b62fa0000000000000000000000000f1a18bb7a1bb7dcf4df5a4f4be2340b53206ab7100000000000000000000000000000000000000000000000000000000000000010000000
  00000000000000000000000000000000000000000000000000000000001"
  output:
  function MakeLoan(address loanTo,uint256 loanAmount,uint256 receiptid) returns(bool)
  data:

  bool

  true
logs: [
{
removed:
logIndex: null
transactionIndex: null
transactionHash: null
blockHash: null
blockNumber: null
address: 0x5e71c35dd3e8017ab29d091a314f85f93ae4e509
eventName : Loaned(address who,uint256 amount,string desc)
data:
who

0xF1a18Bb7a1Bb7dcF4DF5a4F4be2340B53206ab71 ────────→轮毂公司
amount

1 ────────→借贷金额
desc

Loan Successfully. 成功借贷
type:
topics: ["0xc6d694653f520b6cae7af7508f40044cfa02102553af4a98c1af36316eeeae6c"]
logIndexRaw:
}
]
logsBloom:
"0x0000000000000000040000000000000000000000000800000000000000000000000000000000000000000000000000000000000000000000000000020000000000000
000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000201000000000
0000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000
0000000000000000000000001000000000000000000000000000000000000000000"
txProof: null
receiptProof: null
}