



# BLOCKCHAIN ASSIGNMENT 4

EscrowPayments Smart Contract using Truffle and Ganache

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## Successful contract deployed using truffle with the name 'EscrowPayments'

As we can see contract is deployed on ganache (local blockchain) using truffle

Ganache			
ACCOUNTS	BLOCKS	TRANSACTIONS	CONTRACTS
CURRENT BLOCK 13	GAS PRICE 20000000000	GAS LIMIT 6721975	HARDFORK MUIRGLACIER
NETWORK ID 5777	RPC SERVER HTTP://127.0.0.1:7545	MINING STATUS AUTOMINING	WORKSPACE SORDID-PLAY
ass4 E:\truffle\ass4			
NAME EscrowPayments	ADDRESS 0x1334f48626b7dA25Ef8aeb592da617E626A4229B	TX COUNT 0	DEPLOYED
NAME Migrations	ADDRESS 0xa1dBD7173CCa62093E390A2fAF99Ed29894A7619	TX COUNT 1	DEPLOYED

Using truffle console we view the owner of our contract and the trusted third party (TTP) we have set and we can double check the account hash with ganache,

```
truffle(ganache)> items.owner().then(value=>value.toString())
'0xed8e7115c18fb9a40054d403eb7f2fDd7A438D27'
truffle(ganache)> items.ttp().then(value=>value.toString())
'0xdc86AeBE0a503ab6CbBB445463eec8f90F051922'
```

Ganache	
ACCOUNTS	BLOCKS
CURRENT BLOCK 17	GAS PRICE 20000000000
GAS LIMIT 6721975	HARDFORK MUIRGLACIER
NETWORK ID 5777	RPC SERVER HTTP://127.0.0.1:7545
MINING STATUS AUTOMINING	
MNEMONIC couple type curtain chef fatigue prison grain hood tuna pride civil erosion	
ADDRESS 0xed8e7115c18fb9a40054d403eb7f2fDd7A438D27	BALANCE 99.91 ETH
ADDRESS 0xe66D5FB12326603a09D0Eced90C5635bA7a7f75F	BALANCE 100.00 ETH
ADDRESS 0xdc86AeBE0a503ab6CbBB445463eec8f90F051922	BALANCE 100.00 ETH
ADDRESS 0xc4c1cd7d3909ba6b4d41707e7DD90EaBedA54b67	BALANCE 100.00 ETH
ADDRESS 0xfCD63c1EdFfcB405C1778ca2CeE455571Af0434	BALANCE 100.00 ETH
ADDRESS 0x8AA6787B9E656F4584c38E54A85a0A54C74CFFf6	BALANCE 100.00 ETH
ADDRESS 0x02AA58e7B43F610336176eA323b8215c5ed89a9b	BALANCE 100.00 ETH

After adding items to the list stored in contract, we can view the items as shown below:

```
truffle(ganache)> items.listItems().then(value=>value.toString())
'ItemA,1,10,A,0x00000000000000000000000000000000,ItemB,1,20,A,0x00000000000000000000000000000000,ItemC,1,30,A,0x00000000000000000000000000000000'
```

## Success Scenario

Item B is bought by account[1] and we can see it is now in pending i.e awaiting confirmation from buyer of successful item reception.

[illegible]

Payment is deducted from buyer

```
truffle(ganache)> web3.eth.getBalance(accounts[1])
'79998730260000000000'
```

After Item is received successfully buyer confirms and item is considered Confirm (C)

[illegible]

Owner can then retrieve item payment as shown below owner's account balance before and after retrieving amount

```
truffle(ganache)> web3.eth.getBalance(accounts[0])
'1198683818200000000000'
```

```
truffle(ganache)> web3.eth.getBalance(accounts[0])
'99869261380000000000'
```

## Dispute Scenario

If item not successfully received buyer can open a dispute as shown in below scenario.

In this scenario account[4] buys item C but wishes opens dispute (D) as buyer is not satisfied

```
truffle(ganache)> items.listItems().then(value=>value.toString())
```

```
'ItemA,1,10,A,0x0000000000000000000000000000000000000000000000000000000000000000'
,ItemB,0,20,C,0xe66d5fb12326603a09D0Eced90C5635bA7a7f75F
,ItemC,1,30,D,0xfcd63c1edFfcB405C1778ca2eCeE455571Af0434'
```

In case of dispute, it is handled externally and then TTP will update the item status in the blockchain. In this case object needed to be returned thus status was updated to 'R' i.e return as shown below:

```
truffle(ganache)> items.listItems().then(value=>value.toString())
```

Since item is returned thus buyer (accounts[4]) can retrieve their amount back from using the contract as shown below in the before and after retrieving payment:

```
truffle(ganache)> web3.eth.getBalance(accounts[4])
'99996844640000000000'

truffle(ganache)> web3.eth.getBalance(accounts[4])
'69997805980000000000'
```