

L08 - Transactions and Blocks

4010 L08 pt1 Transactions and Blocks - <https://youtu.be/X8uBPt22AZ8>

4010 L08 pt2 Transactions and Blocks - <https://youtu.be/o0qkLigh2oE>

From Amazon S3 - for download (same as youtube videos)

4010 L08 pt1 Transactions and Blocks

4010 L08 pt2 Transactions and Blocks

Transactions in Blockchain

Data Structure from ./bsvr/block/block.go:

```
// BlockType is a single block in the block chain.
type BlockType struct {
    Index          int           // position of this
                                   // block in the
                                   // chain, 0, 1, ...
    Desc           string        // if "genesis" str.
                                   // then this is a
                                   // genesis block.
    ThisBlockHash  hash.BlockHashType //
    PrevBlockHash  hash.BlockHashType // This is 0 len.
                                   // if this is a
                                   // "genesis" block
    Nonce          uint64        //
    Seal           hash.SealType //
    MerkleHash     hash.MerkleHashType // Hw 02 2nd part
    Tx             []*transactions.TransactionType // Tx for Block
}
```

Data Structure from ./bsvr/transactions/tx.go:

```

type TransactionType struct {
    TxOffset      int           // The pos. of this in the block.
    Input          []TxInputType // Set of inputs to a transaction
    Output         []TxOutputType // Set of outputs to a transaction
    SCOwnerAccount addr.AddressType // ... for SmartContracts ...
    SCAddress      addr.AddressType // ... for SmartContracts ...
    SCOutputData   string         // ... for SmartContracts ...
    Account        addr.AddressType //
    Signature      lib.SignatureType // Used in HW 4 - Signature
    Message        string         // Used in HW 4 - Message
    Comment        string         //
}

type TxInputType struct {
    BlockNo      int // Which block is this from
    TxOffset     int // The transaction in the block.
                // In the block[BlockHash].Tx[TxOffset]
    TxOutputPos  int // Position of the output in the transaction.
                // In the block[BlockHash].Tx[TxOffset].
                // Output[TxOutputPos]
    Amount       int // Value $$
}

type TxOutputType struct {
    BlockNo      int           // Which block is this in
    TxOffset     int           // Which transaction in this block.
                // block[this].Tx[TxOffset]
    TxOutputPos  int           // Pos. of the output in this block.
                // In the block[this].Tx[TxOffset].
                // Output[TxOutputPos]
    Account      addr.AddressType // Account funds go to (If this is
                // ""change"" then this is the same
                // as TransactionType.Account
    Amount       int           // Amount to go to account
}

```

Portions of this are code that is MIT Licensed.

Copyright © University of Wyoming, 2018-2021.