TECHNICAL RECIPE

Bond Issuer

AssetConfigTxn(asset_id = par_token, decimal = 1, total = volume)

ALGORAND STANDARDIZED ASSETS

AssetConfigTxn(asset_id = interest_token, decimal = 1, total = volume * total_payments)

create_escrow_account(coupon, par, first_round, period, ...) → based on TEAL template

Escrow Account

AssetTransferTxn(asset_id = stablecoin, amt = 0)

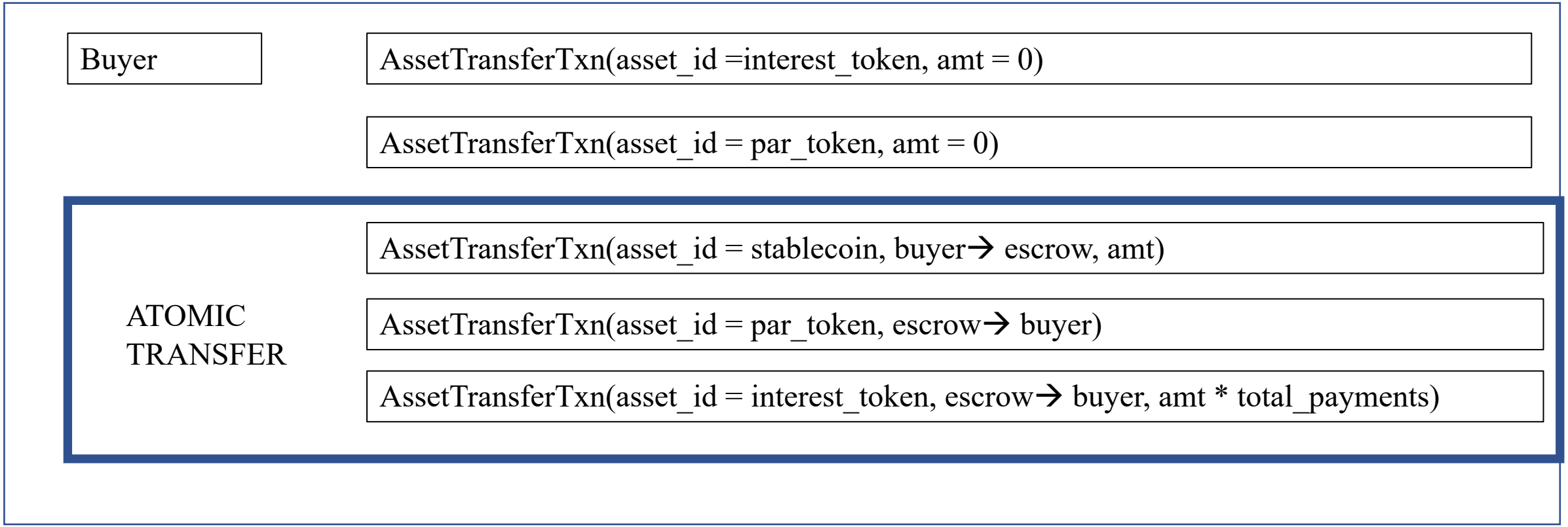
AssetTransferTxn(asset_id = interest_token, amt = 0)

AssetTransferTxn(asset_id = par_token, amt = 0)

Bond Issuer

AssetTransferTxn(asset_id = interest_token, amt = volume)

AssetTransferTxn(asset_id = par_token, amt = volume * total_payments)


Buyer
AssetTransferTxn(asset_id =interest_token, amt = 0)
AssetTransferTxn(asset_id = par_token, amt = 0)
ATOMIC TRANSFER
AssetTransferTxn(asset_id = stablecoin, buyer→ escrow, amt)
AssetTransferTxn(asset_id = par_token, escrow→ buyer)
AssetTransferTxn(asset_id = interest_token, escrow→ buyer, amt * total_payments)

Buyer

DOUBLE CLAIMING? **LEASE**

ATOMIC TRANSFER

- AssetTransferTxn(asset_id = interest_tokn, buyer→ escrow, amt)
- AssetTransferTxn(asset_id = par_token, buyer→ buyer, amt)
- AssetTransferTxn(asset_id = stablecoin, escrow→ buyer, amt * coupon)

Buyer

ATOMIC TRANSFER

- AssetTransferTxn(asset_id = par_token, buyer→escrow , amt)
- AssetTransferTxn(asset_id = stablecoin, escrow→ buyer, amt * par)

WHAT GOES ON INSIDE OF TEAL CONTRACTS?

A glimpse into the PyTeal code for “purchase”

```
purchase =  And(
    Gtxn[0].type_enum() == TxnType.AssetTransfer,
    Gtxn[0].xfer_asset() == Int(accepted_payment),
    Gtxn[0].asset_amount() % Int(par) == Int(0),
    Gtxn[0].first_valid() < Int(closure),
    Gtxn[1].type_enum() == TxnType.AssetTransfer,
    Gtxn[1].xfer_asset() == Int(par_id),
    Gtxn[1].asset_amount() == Gtxn[0].asset_amount() / Int(par),
    Gtxn[0].sender() == Gtxn[1].asset_receiver(),
    Gtxn[2].type_enum() == TxnType.AssetTransfer,
    Gtxn[2].xfer_asset() == Int(interest_id),
    Gtxn[2].asset_amount() == Gtxn[1].asset_amount() * Int(total_payment),
    Gtxn[0].sender() == Gtxn[2].asset_receiver(),
)
```

WHAT GOES ON INSIDE OF TEAL CONTRACTS?

A glimpse into the PyTeal code for “interest_payment”

```
interestPayment =  And(
    Gtxn[0].type_enum() == TxnType.AssetTransfer,
    Gtxn[0].xfer_asset() == Int(interest_id),
    Gtxn[0].lease() == tmpl_lease,
    Gtxn[1].type_enum() == TxnType.AssetTransfer,
    Gtxn[1].sender() == Gtxn[0].sender(),
    Gtxn[1].asset_receiver() == Gtxn[0].sender(),
    Gtxn[1].xfer_asset() == Int(par_id),
    Gtxn[1].asset_amount() == Gtxn[0].asset_amount(),
    Gtxn[2].type_enum() == TxnType.AssetTransfer,
    Gtxn[2].xfer_asset() == Int(accepted_payment),
    Gtxn[2].asset_receiver() == Gtxn[0].sender(),
    Gtxn[2].first_valid() % Int(period) == Int(0),
    Gtxn[2].last_valid() == Gtxn[1].first_valid() + Int(span),
    Gtxn[2].asset_amount() == Gtxn[0].asset_amount() * Int(coupon)
)
```

DEMO TIME!

In this demo, you will see:

(1) Bond Issuer creates a new bond contract and specifies its terms

(2) Buyer purchases bond

(3) Buyer claims the first interest payment

(4) All happening in real time and confirmed on Algorand TestNet!

(5) All codes available on GitHub!