

```
function atomicMatch(Order memory buy, Sig memory buySig, Order memory sell, Sig memory sellSig, bytes32 metadata){
```

```
    /* Core business logic non-related checks */
```

```
    ...
```

```
    /* Must be matchable. */
```

```
    require(ordersCanMatch(buy, sell));
```

```
    ...
```

```
    /* Execute funds transfer and pay fees. */
```

```
    uint price = executeFundsTransfer(buy, sell);
```

```
    ...
```

```
}
```

```
function ordersCanMatch(Order memory buy, Order memory sell){
```

```
    return (
```

```
        ...
```

```
        SaleKindInterface.canSettleOrder(buy.listingTime, buy.expirationTime) &&
```

```
        SaleKindInterface.canSettleOrder(sell.listingTime, sell.expirationTime)
```

```
    );
```

```
}
```

```
function canSettleOrder(uint listingTime, uint expirationTime){
```

```
    return (listingTime < now) && (expirationTime == 0 || now < expirationTime);
```

```
}
```

```
function executeFundsTransfer(Order memory buy, Order memory sell){
```

```
    ...
```

```
    /* Calculate match price. */
```

```
    uint price = calculateMatchPrice(buy, sell);
```

```
    if (price > 0 && sell.paymentToken != address(0))
```

```
        transferTokens(sell.paymentToken, buy.maker, sell.maker, price);
```

```
    ...
```

```
    return price;
```

```
}
```

```
function calculateMatchPrice(Order memory buy, Order memory sell){
```

```
    /* Calculate sell price. */
```

```
    uint sellPrice = SaleKindInterface.calculateFinalPrice(sell.side, sell.saleKind, sell.basePrice, sell.extra, sell.listingTime, sell.expirationTime);
```

```
    ...
```

```
    /* Require price cross. */
```

```
    require(buyPrice >= sellPrice);
```

```
    return sell.feeRecipient != address(0) ? sellPrice : buyPrice;
```

```
}
```

```
function calculateFinalPrice(Side side, SaleKind saleKind, uint basePrice, uint extra, uint listingTime, uint expirationTime) {
```

```
    ...
```

```
    uint diff = SafeMath.div(SafeMath.mul(extra, SafeMath.sub(now, listingTime)), SafeMath.sub(expirationTime, listingTime));
```

```
    return SafeMath.sub(basePrice, diff);
```

```
}
```

```
function transferFrom(address token, address from, address to, uint amount){
```

```
    return ERC20(token).transferFrom(from, to, amount);
```

```
}
```

← entry point

← safety rule

← safety rule

← sell price calculation

← token transfer