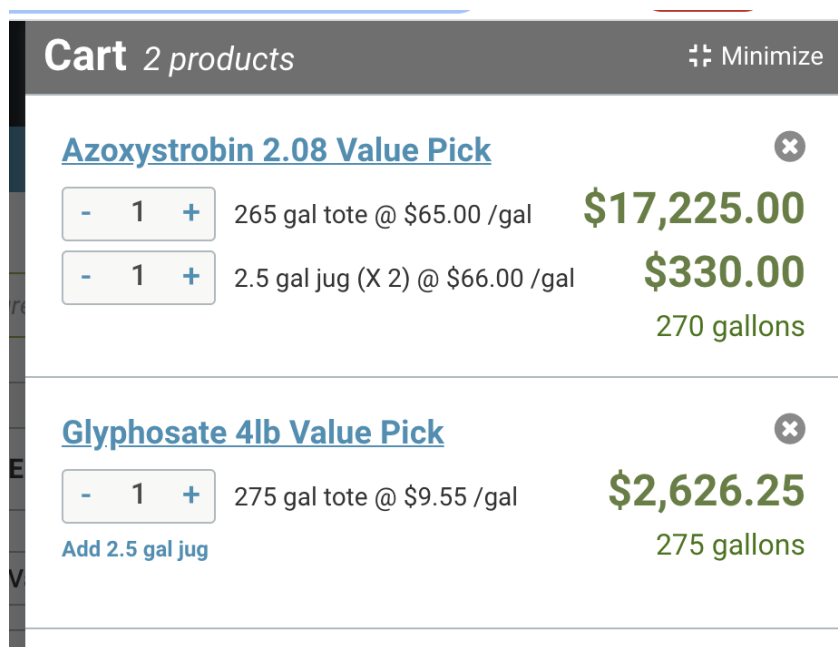# Task

Transform data from a given shape (`serverResponse`) to another (`uiInput`). This is a pair programming exercise with the goal of learning how one thinks and tackles programming problems, rather than completion.

Context

FBN has an ecommerce platform where users can shop for chemicals for their farm.

The HTML is rendered using data in a shape similar to:

```
const uiInput = {
    7080: {
        chemical_id: 13621,
        isd_id: 7080,
        name: 'Glyphosate 4lb Value Pick',
        upcs: [
            {
                price_mcu: 6675,
                quantity: 0,
                upc: 'UPC_011-00452'
            },
            {
                price_mcu: 291775,
```

```
                quantity: 1,
                upc: 'UPC_011-01375'
            }
        ]
    },
    7323: {
        chemical_id: 13710,
        isd_id: 7323,
        name: 'Azoxystrobin 2.08 Value Pick',
        upcs: [
            {
                price_mcu: 1749000,
                quantity: 1,
                upc: 'UPC_009-00030'
            },
            {
                price_mcu: 42647,
                quantity: 1,
                upc: 'UPC_009-00031'
            }
        ]
    }
}
```

The input shape is:

```
const serverResponse = {
    // Current items in the cart
    items: {
        // Azoxystrobin 2.08 Value Pick 2.5 gal jug
        'UPC_009-00030': {
            price: 42647,
            quantity: 1,
        },
        // Azoxystrobin 2.08 Value Pick 265 gal tote
        'UPC_009-00031': {
            price: 1749000,
            quantity: 1,
        },
        // Glyphosate 4lb Value Pick 275 gal tote
        'UPC_011-01375': {
            price: 291775,
            quantity: 1,
        },
    },
    metadata: {
        isd: {
            chemical: {
```

```
                '13621': {
                    chemical_id: 13621,
                    isd_id: 7080,
                    upcs: ['UPC_011-00450', 'UPC_011-00451', 'UPC_011-00452',
'UPC_011-01375'],
                    name: 'Glyphosate 4lb Value Pick',
                },
                '13710': {
                    chemical_id: 13710,
                    isd_id: 7323,
                    upcs: ['UPC_009-00030', 'UPC_009-00031'],
                    name: 'Azoxystrobin 2.08 Value Pick',
                },
            },
        },
        upcs: {
            // Azoxystrobin 2.08 Value Pick
            'UPC_009-00030': {
                amount_per_package: {
                    amount: 265,
                },
                availability: {
                    can_add_to_cart: true,
                },
                chemical_id: 13710,
                isd_id: 7323,
                // 265x1 gal tote, 265 gal tote
                package: {
                    amount_per_container: 265.0,
                    container: 'tote',
                    containers_per_package: 1,
                    package: 'tote',
                    package_capacity: 265,
                    unit: 'us_liquid_gallon',
                },
                price_mcu: 1749000,
                upc: 'UPC_009-00030',
            },
            // Azoxystrobin 2.08 Value Pick
            'UPC_009-00031': {
                amount_per_package: {
                    amount: 5,
                },
                availability: {
                    can_add_to_cart: true,
                },
                chemical_id: 13710,
                isd_id: 7323,
                // 2.5x2 gal jug, 5 gal case
```

```
        package: {
            amount_per_container: 2.5,
            container: 'jug',
            containers_per_package: 2,
            package: 'case',
            package_capacity: 5,
            unit: 'us_liquid_gallon',
        },
        price_mcu: 42647,
        upc: 'UPC_009-00031',
    },
    // Glyphosate 4lb Value Pick
    'UPC_011-00450': {
        amount_per_package: {
            amount: 265,
        },
        availability: {
            can_add_to_cart: false,
        },
        chemical_id: 13621,
        isd_id: 7080,
        // 265x1 gal tote, 265 gal tote
        package: {
            amount_per_container: 265.0,
            container: 'tote',
            containers_per_package: 1,
            package: 'tote',
            package_capacity: 265,
            unit: 'us_liquid_gallon',
        },
        price_mcu: 268975,
        upc: 'UPC_011-00450',
    },
    // Glyphosate 4lb Value Pick
    'UPC_011-00451': {
        amount_per_package: {
            amount: 3975,
        },
        availability: {
            can_add_to_cart: false,
        },
        chemical_id: 13621,
        isd_id: 7080,
        // 265x15 gal totes, 3975 gal tote
        package: {
            amount_per_container: 265.0,
            container: 'tote',
            containers_per_package: 15,
            package: 'tote',
```

```
            package_capacity: 3975,
            unit: 'us_liquid_gallon',
        },
        price_mcu: 4368525,
        upc: 'UPC_011-00451',
    },
    // Glyphosate 4lb Value Pick
    'UPC_011-00452': {
        amount_per_package: {
            amount: 5,
        },
        availability: {
            can_add_to_cart: true,
        },
        chemical_id: 13621,
        isd_id: 7080,
        // 2.5x2 gal jugs, 5 gal case
        package: {
            amount_per_container: 2.5,
            container: 'jug',
            containers_per_package: 2,
            package: 'case',
            package_capacity: 5,
            unit: 'us_liquid_gallon',
        },
        price_mcu: 6675,
        upc: 'UPC_011-00452',
    },
    // Glyphosate 4lb Value Pick
    'UPC_011-01375': {
        amount_per_package: {
            amount: 275,
        },
        availability: {
            can_add_to_cart: true,
        },
        chemical_id: 13621,
        isd_id: 7080,
        // 275x1 gal tote, 275 gal tote
        package: {
            amount_per_container: 275.0,
            container: 'tote',
            containers_per_package: 1,
            package: 'tote',
            package_capacity: 275,
            unit: 'us_liquid_gallon',
        },
        price_mcu: 291775,
        upc: 'UPC_011-01375',
```

```
            },
        },
    },
};
```

There are 3 ID spaces -- a "chemical id", "item source data" (isd), and upc. ISDs and chemical IDs have a one-to-one mapping. UPCs are the ids for the actual packages, and map to ISDs. There are multiple UPCs per ISD.