Problem Wk.1.4.11: Warehouse [Optional]

We'll be building a set of procedures to model a simple warehouse accounting system, which maintains the inventory for a set of commodities, which we will represent by strings, e.g. 'a', 'b', 'c'. So, the warehouse could have 10 units of 'a', 20 of 'b' and 0 of 'c'.

There will be transactions on the warehouse which either increase the amount of a commodity, e.g. `('receive', 'a', 10)` which increases the total for 'a' by 10, or `('ship', 'a', 10)` which decreases the total for 'a' by 10.

We will represent the totals for the various commodities using a dictionary where the keys are the commodity names and the values are the current totals for the commodities.

Part 1: Process

Write a procedure `warehouseProcess` that takes two arguments: a dictionary representing the warehouse totals and a transaction which is a list as illustrated above. Make sure to handle the case for a `receive` transaction when the commodity is not present in the dictionary; simply treat the current total for that commodity as zero. Assume, for now, that there will always be enough supply to fill all the `ship` transactions.

We suggest using a structured assignment to name the subcomponents of the transaction.

Read about dictionaries in the Python documentation or course notes; remember that `d.has_key(x)` will return `True` if dictionary `d` already has an entry for key `x`, and `False` otherwise.

Part 2: Process traffic

Write the definition of the `Warehouse` class which has the following methods:

- `__init__`, which initializes the dictionary that holds the inventory
- `process`, which processes a transaction, as described in the previous problem
- `lookup`, which returns the current total supply for a given commodity (0 if not present)

A typical interaction could be like this:

```
>>> w = Warehouse()
>>> w.process(('receive', 'a', 10))
>>> w.process(('ship', 'a', 7))
>>> w.lookup('a')
3
>>> w.lookup('b')
0
```

A definition of `warehouseProcess` (from the previous subproblem) is available if you want to use it.

```
class Warehouse:
```

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