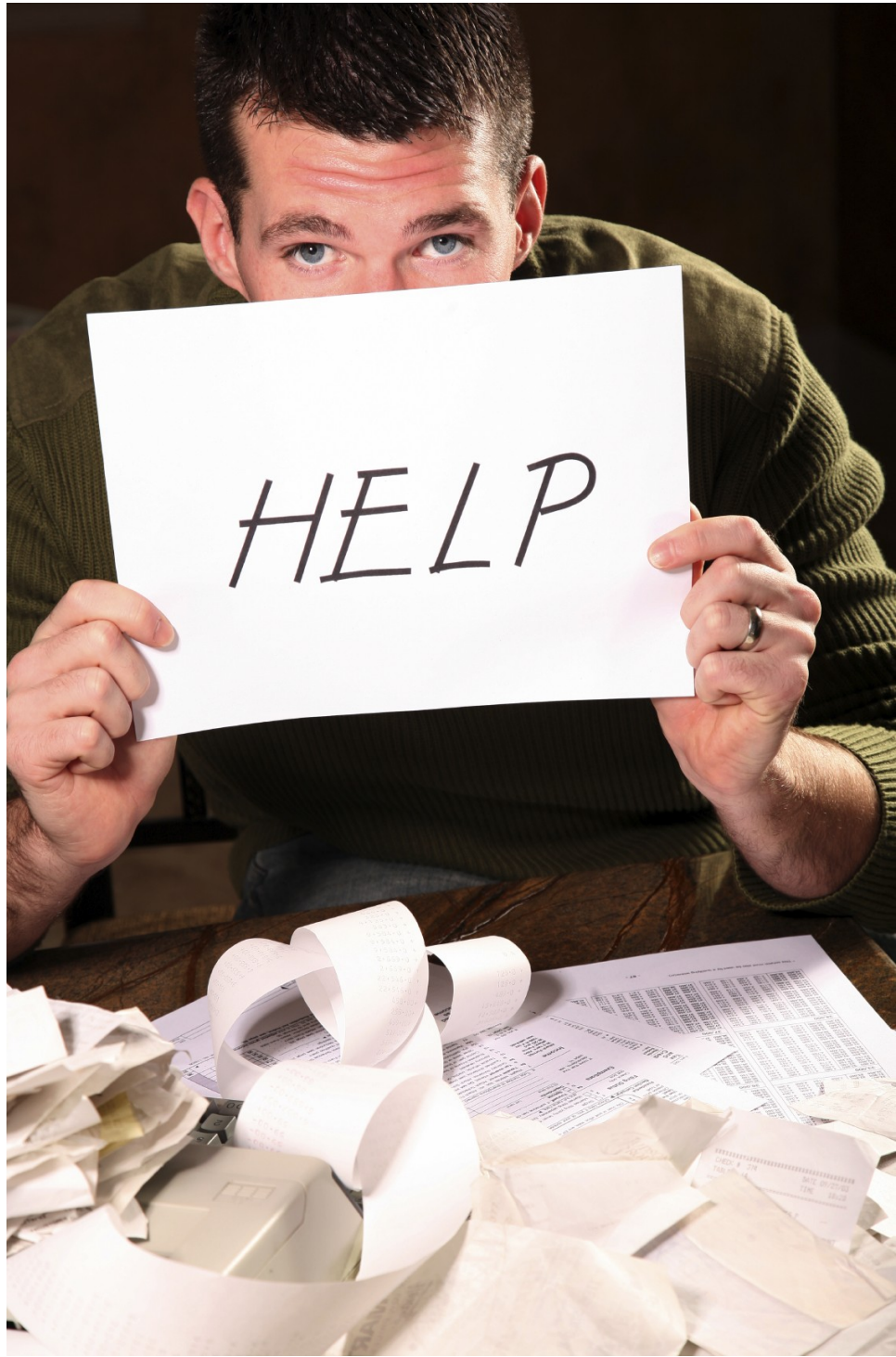


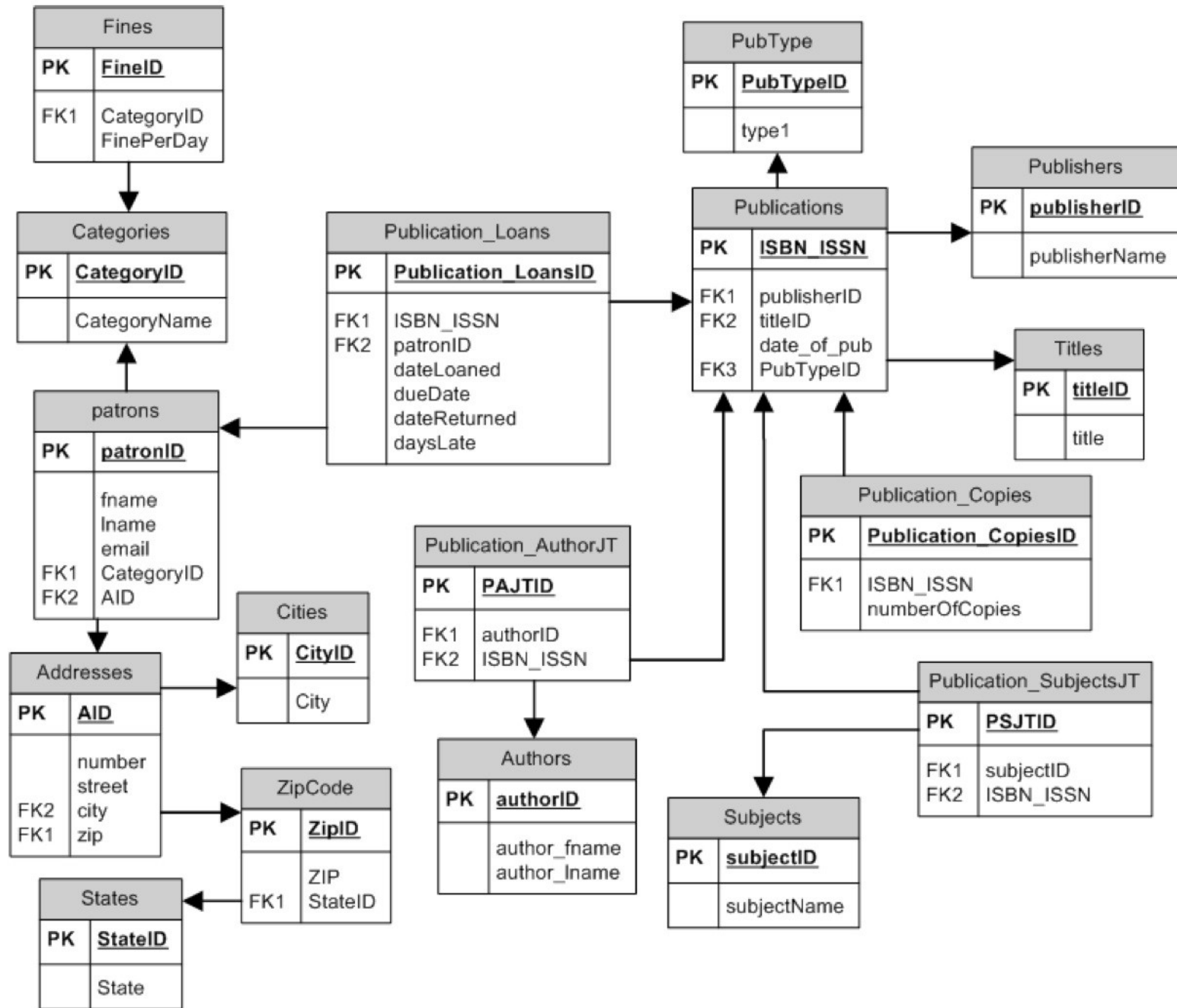
Event Sourcing

Greg Young : GOTO

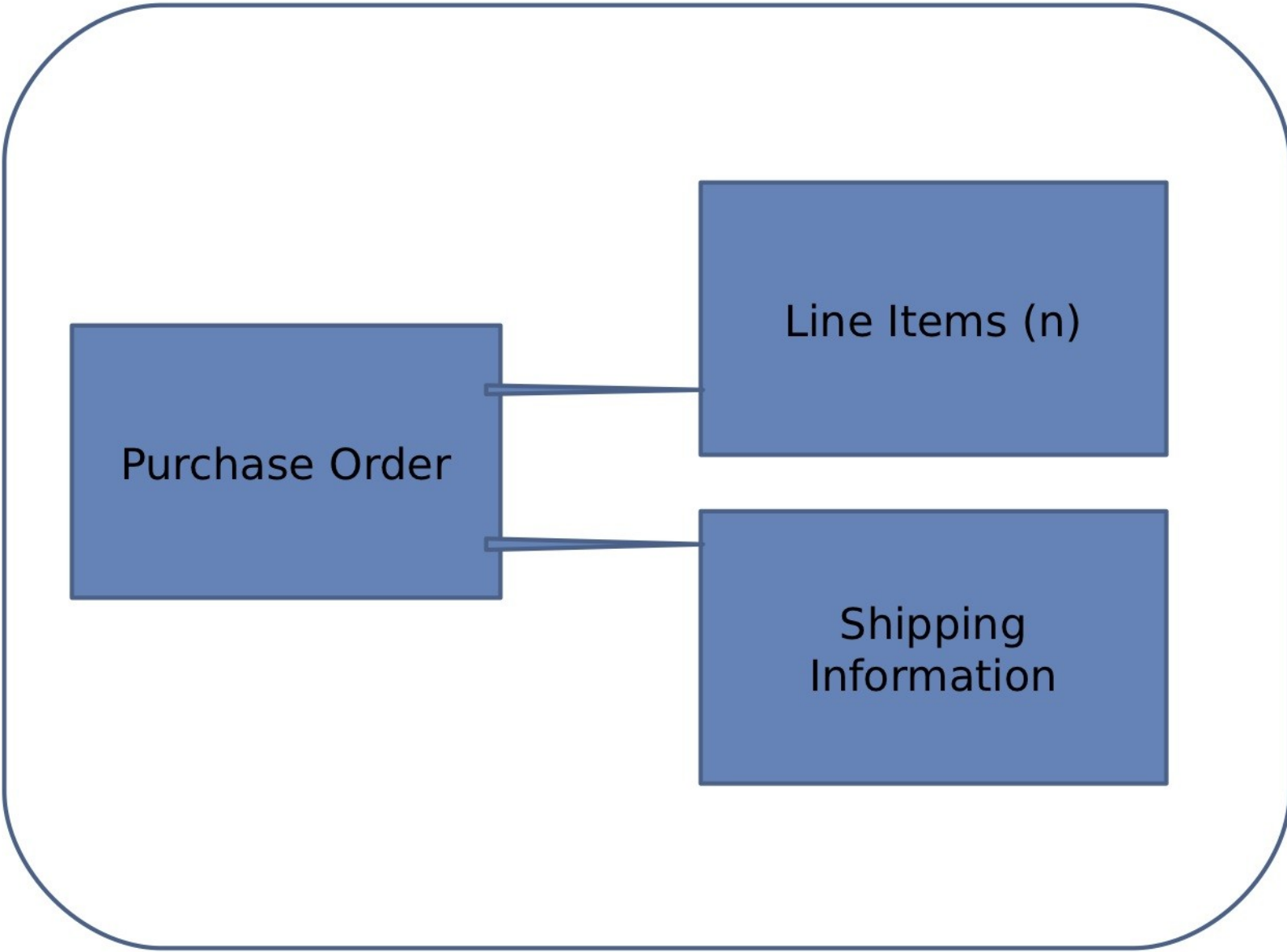


Volume	Chart	Value Change			
1.98		0.87%	--	11.60	11.30
0.58		0.73%	--	52.35	51.75
41.42		0.41%	92	5.82	6.28
		1.59%	313	24.27	25.32
		1.93%	--	4.06	4.10
		3.60%	--	12.05	12.52
		0.00%	--	9.46	9.98
		1.82%	228	46.99	48.10
		0.15%	38	3.82	3.72
		3.31%	390	7.83	8.22
			--	2.20	2.30









Cart
Created

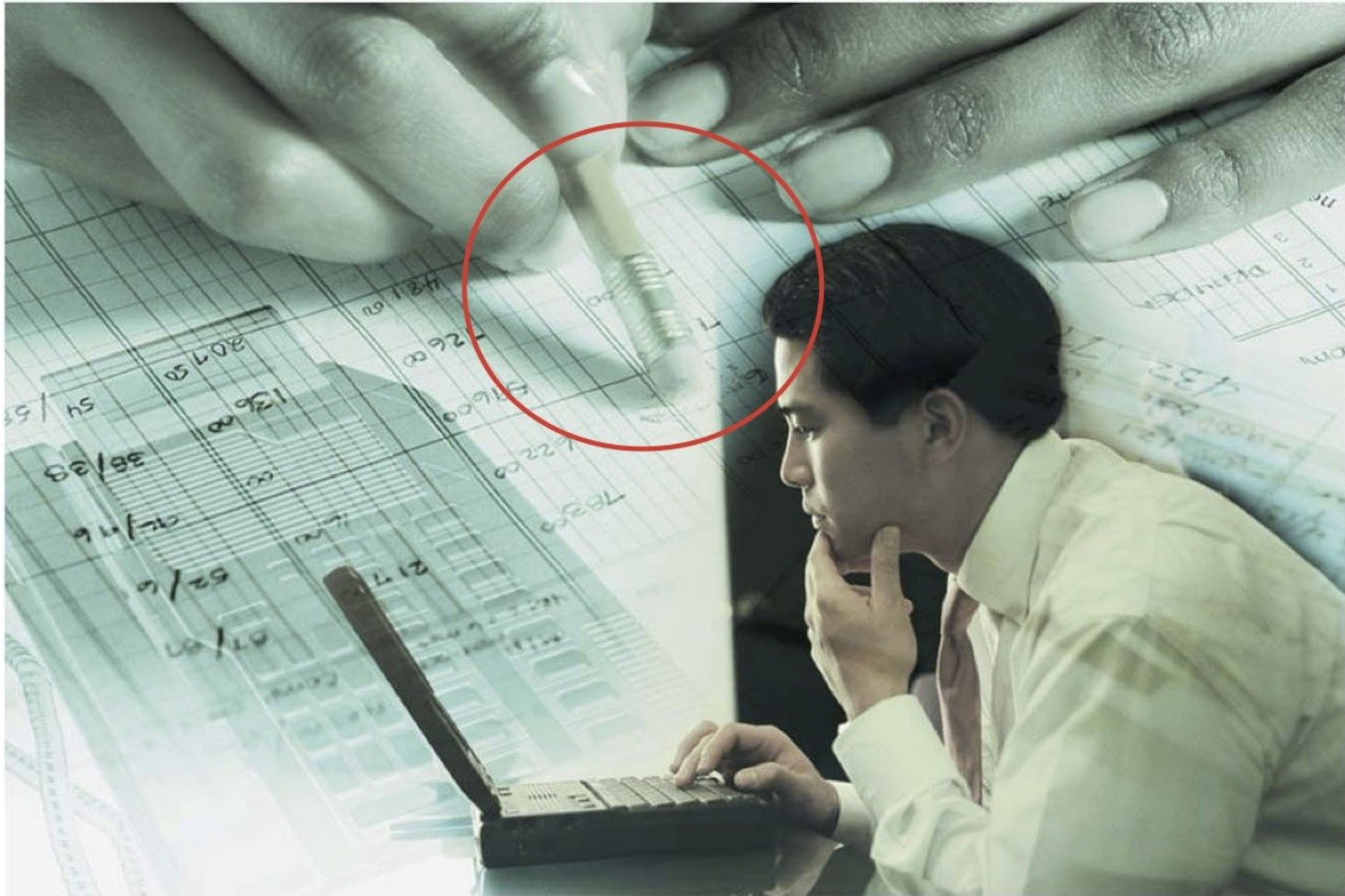
Line Item
Added

Line Item
Added

Line Item
Added

Address
Added

Events are **always** verbs in the past tense.



Cart
Created

Line Item
Added

Line Item
Added

Line Item
Added

Line Item
Removed

Address
Added

Cart
Created

Line Item
Added

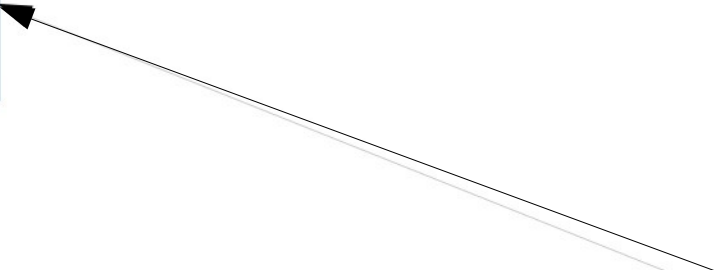
Line Item
Added

Line Item
Added

Address
Added

Previous behaviours are first class citizens.

Cart Object



Cart
Created

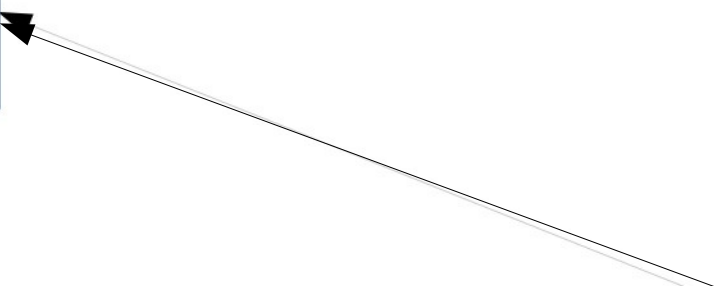
Line Item
Added

Line Item
Added

Line Item
Added

Address
Added

New Cart Object
(Looks totally
different)



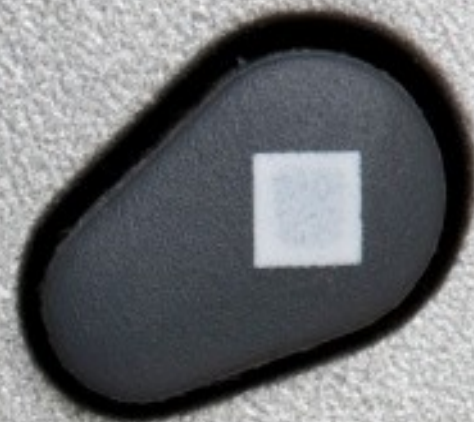
Cart
Created

Line Item
Added

Line Item
Added

Line Item
Added

Address
Added

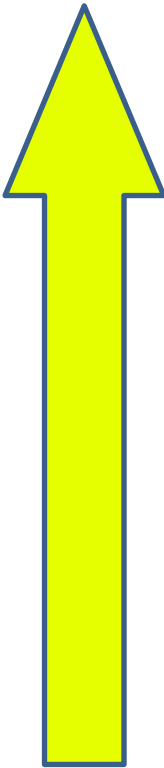


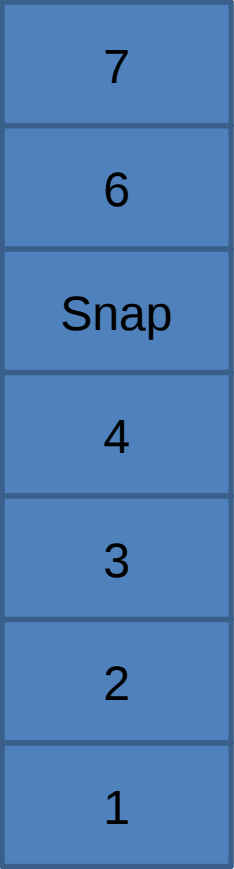
Replay

Skip









Must apply CQRS to apply Event Sourcing ...

```
private void Apply(InventoryItemDeactivated e)
{
    _activated = false;
}

public void Deactivate()
{
    if(!_activated) throw new
InvalidOperationException("already deactivated");
    ApplyChange(new InventoryItemDeactivated(_id));
}
```

```
Base {
    public IEnumerable<Event> GetUncommittedChanges()
    {
        return _changes;
    }

    public void MarkChangesAsCommitted()
    {
        _changes.Clear();
    }

    public void LoadsFromHistory(IEnumerable<Event> history)
    {
        foreach (var e in history) ApplyChange(e, false);
    }
}
```

```
Base {
    protected void ApplyChange(Event @event)
    {
        ApplyChange(@event, true);
    }

    private void ApplyChange(Event @event, bool isNew)
    {
        this.AsDynamic().Apply(@event);
        if(isNew) _changes.Add(@event);
    }
}
```



Overdraw attempts are rejected

Given

An account with \$100

When

A debit is requested for \$101

Then

An `InsufficientBalanceException` is thrown

Overdraw attempts are rejected

Given

An account was created.
An initial deposit was made for \$100

When

A debit is requested for \$101

Then

An `InsufficientBalanceException` is thrown

Overdraw attempts are rejected

Given

A series of events

When

A command

Then

A series of events

Volume	Chart	Value Change			
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Traveling Through Time.



