

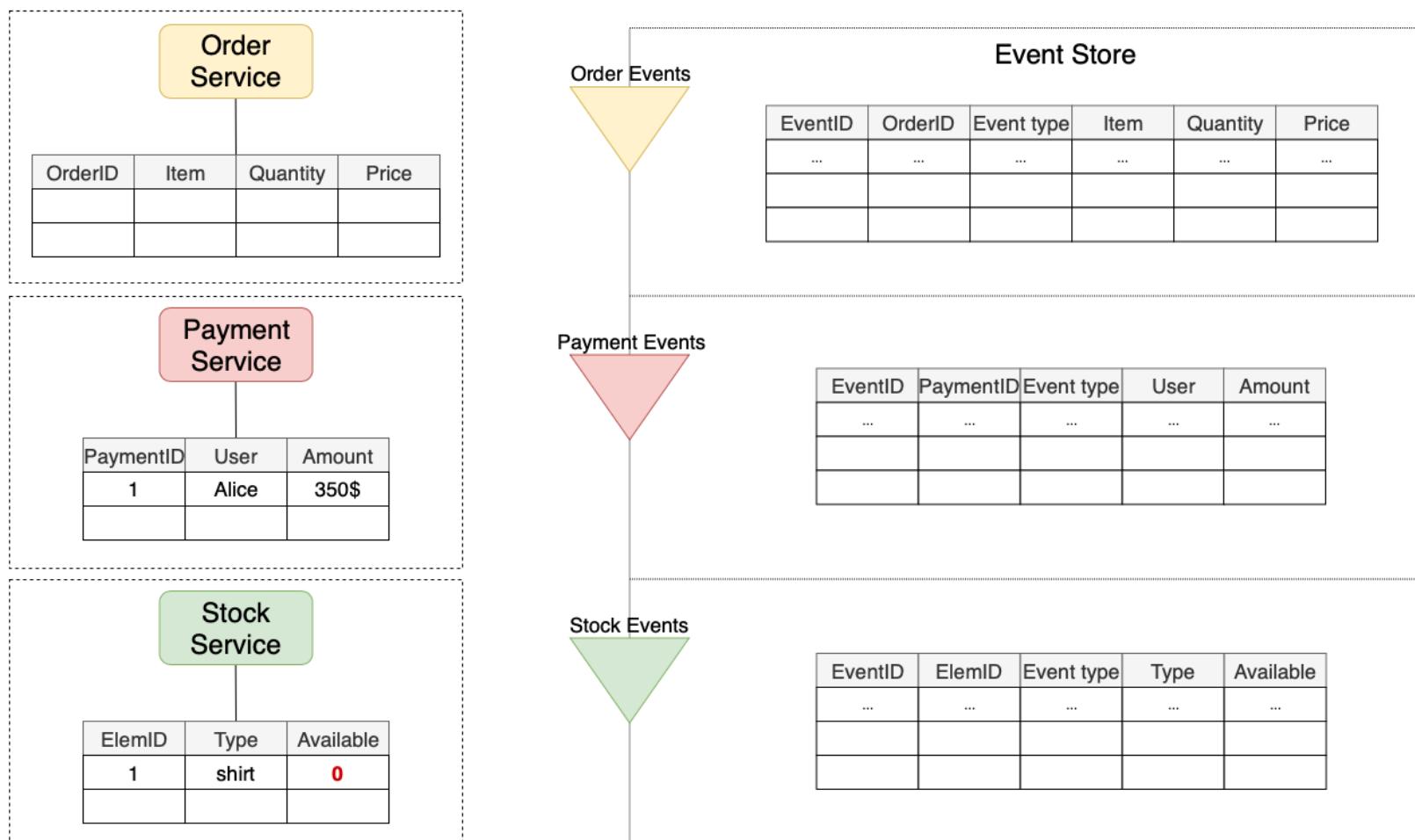
SAGA Example

Andrea Cifola

Order Saga Orchestrator

Saga Orchinator Log

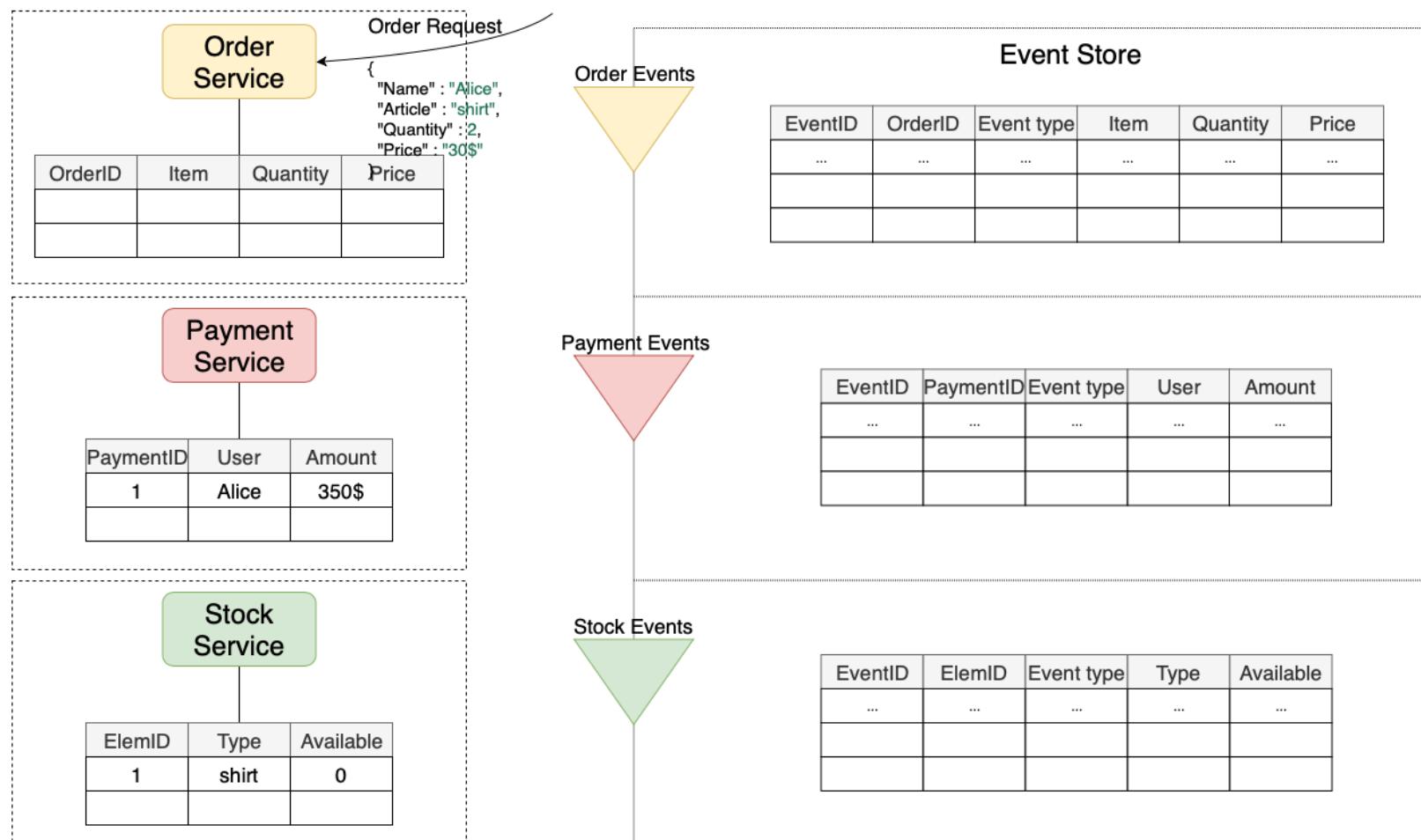
...

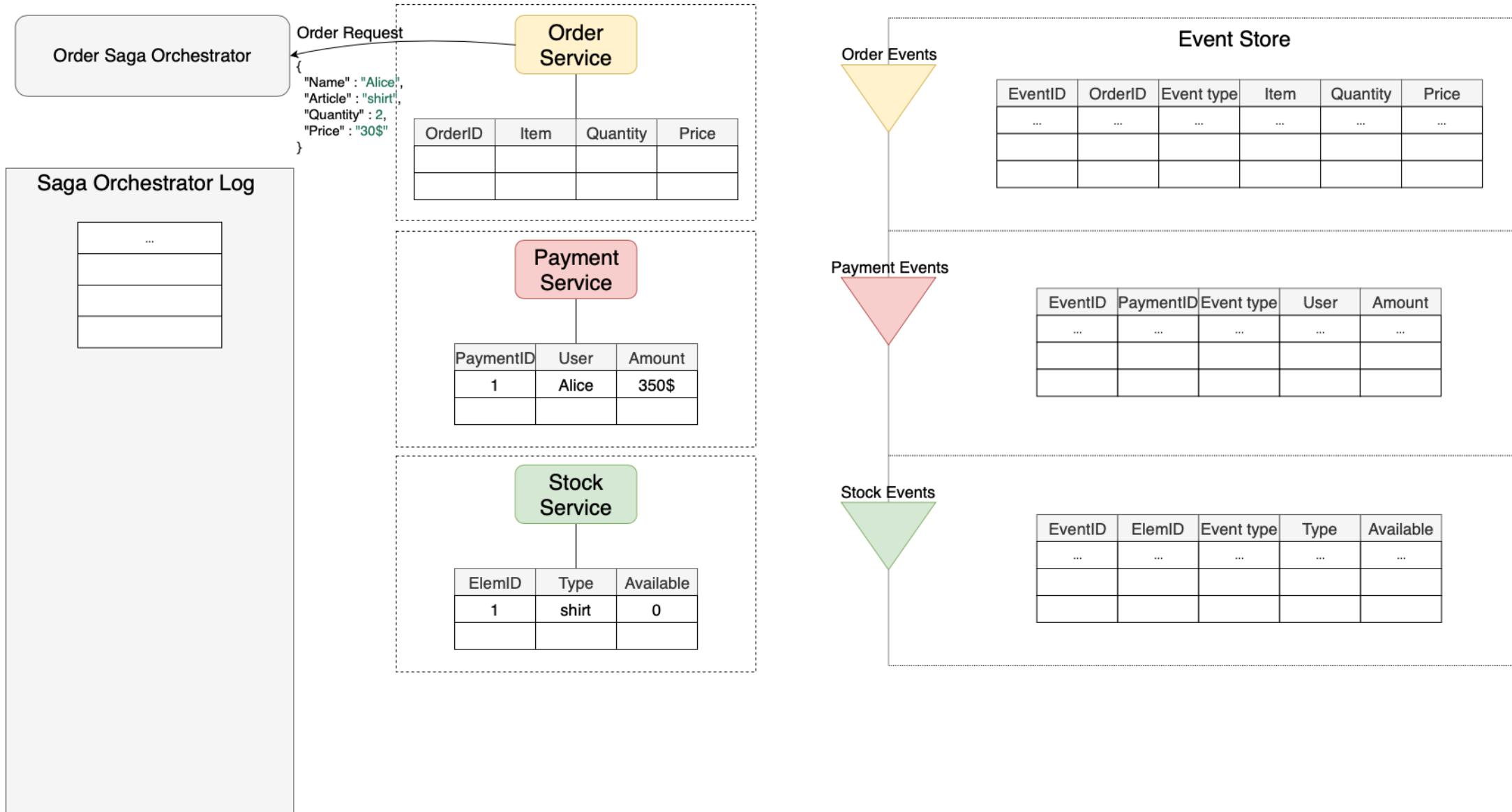


Order Saga Orchestrator

Saga Orchinator Log

...



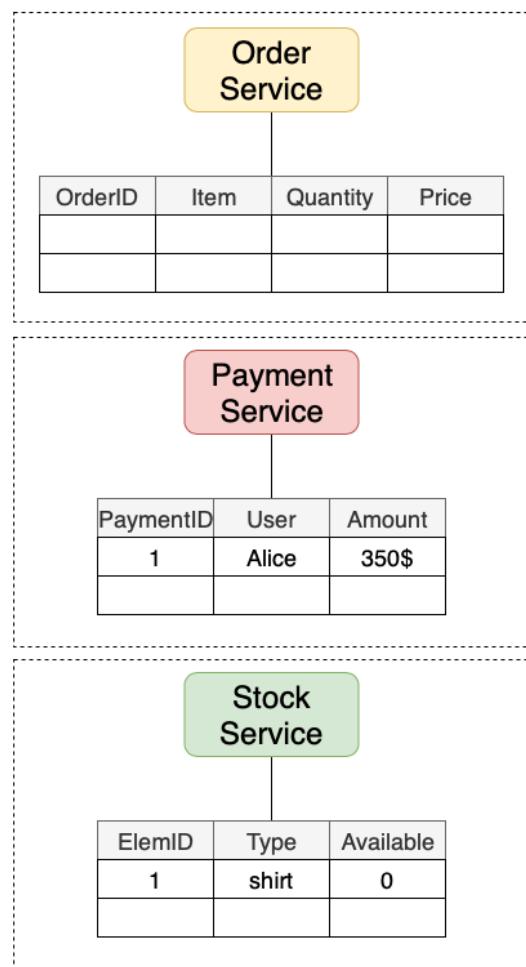


Order Saga Orchestrator

Start Saga Order 1

Saga Orchestrator Log

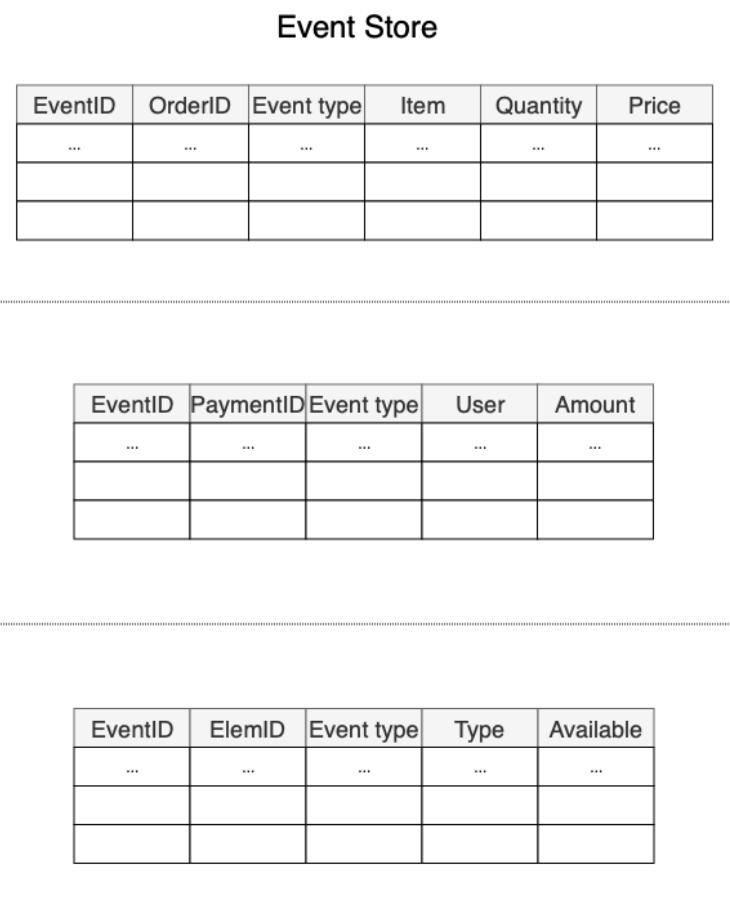
...



Order Events

Payment Events

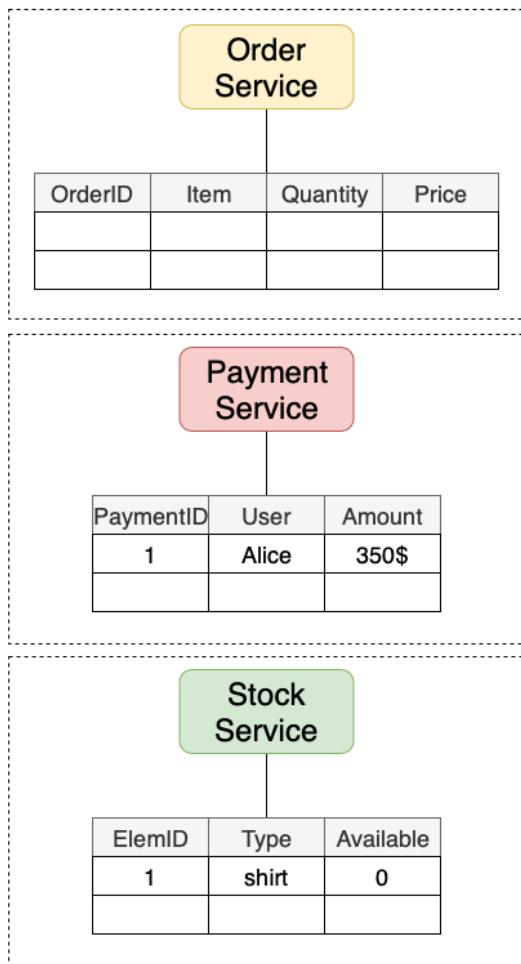
Stock Events



Order Saga Orchestrator

Saga Orchinator Log

...
Start Saga Order 1
{
"Name" : "Alice",
"Article" : "shirt",
"Quantity" : 2,
"Price" : "30\$"
}



Order Events

EventID	OrderID	Event type	Item	Quantity	Price
...

Payment Events

EventID	PaymentID	Event type	User	Amount
...

Stock Events

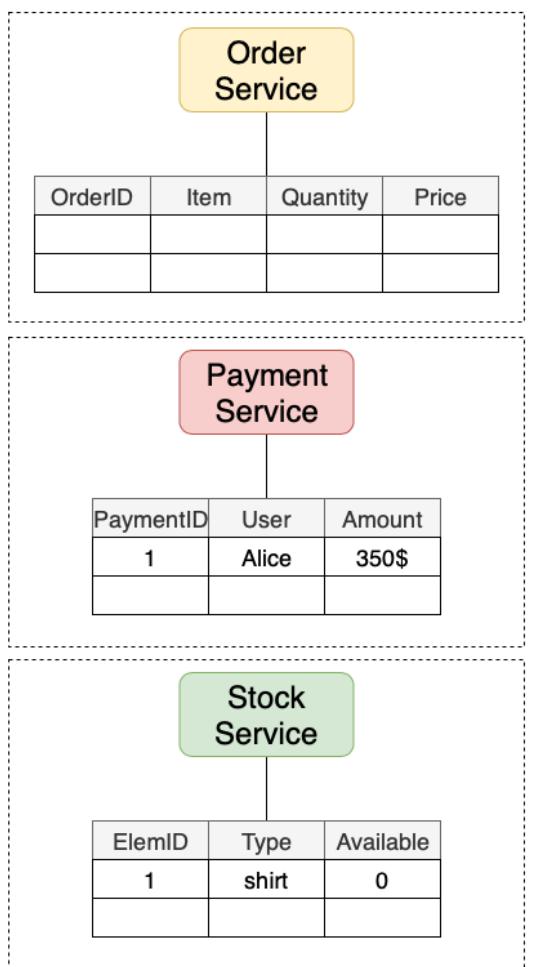
EventID	ElemID	Event type	Type	Available
...

Order Saga Orchestrator



Saga Orchinator Log

...
Start Saga Order 1
{
"Name" : "Alice",
"Article" : "shirt",
"Quantity" : 2,
"Price" : "30\$"
}



Order Events

Payment Events

Stock Events

Event Store

EventID	OrderID	Event type	Item	Quantity	Price
...

EventID	PaymentID	Event type	User	Amount
...

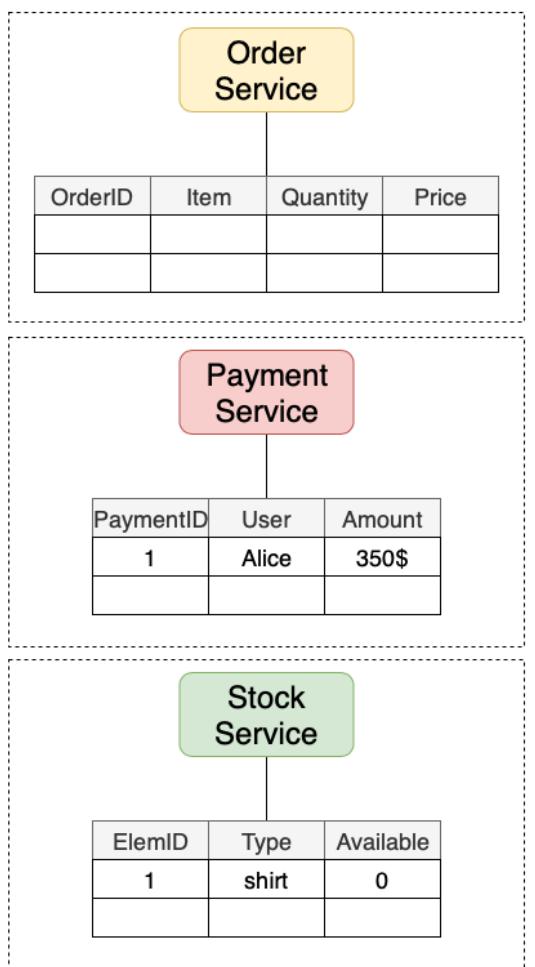
EventID	ElemID	Event type	Type	Available
...

Order Saga Orchestrator

↓
Start Order 1

Saga Orchestrator Log

...
Start Saga Order 1
{
"Name" : "Alice",
"Article" : "shirt",
"Quantity" : 2,
"Price" : "30\$"
}



Order Events

Payment Events

Stock Events

EventID	OrderID	Event type	Item	Quantity	Price
...

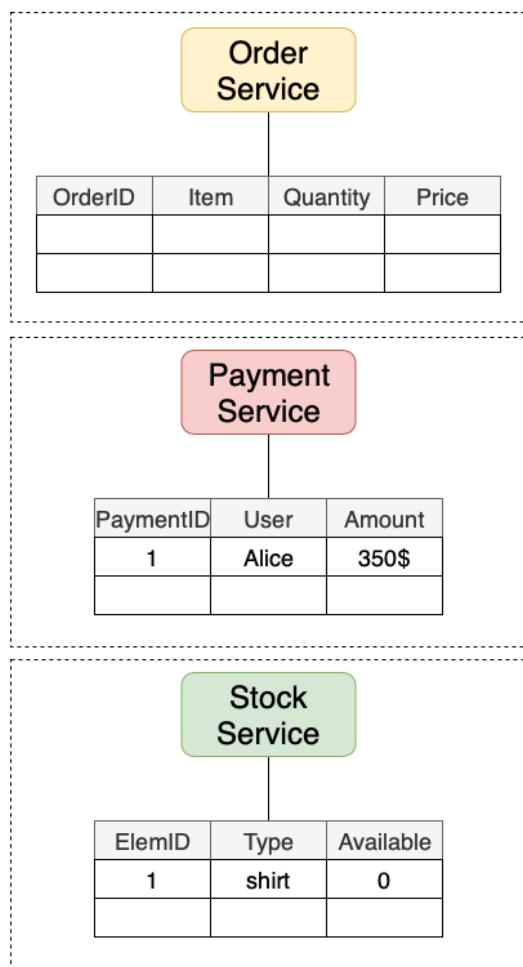
EventID	PaymentID	Event type	User	Amount
...

EventID	ElemID	Event type	Type	Available
...

Order Saga Orchestrator

Saga Orchinator Log

```
...
Start Saga Order 1
{
  "Name": "Alice",
  "Article": "shirt",
  "Quantity": 2,
  "Price": "30$"
}
Start Order 1
```



Order Events

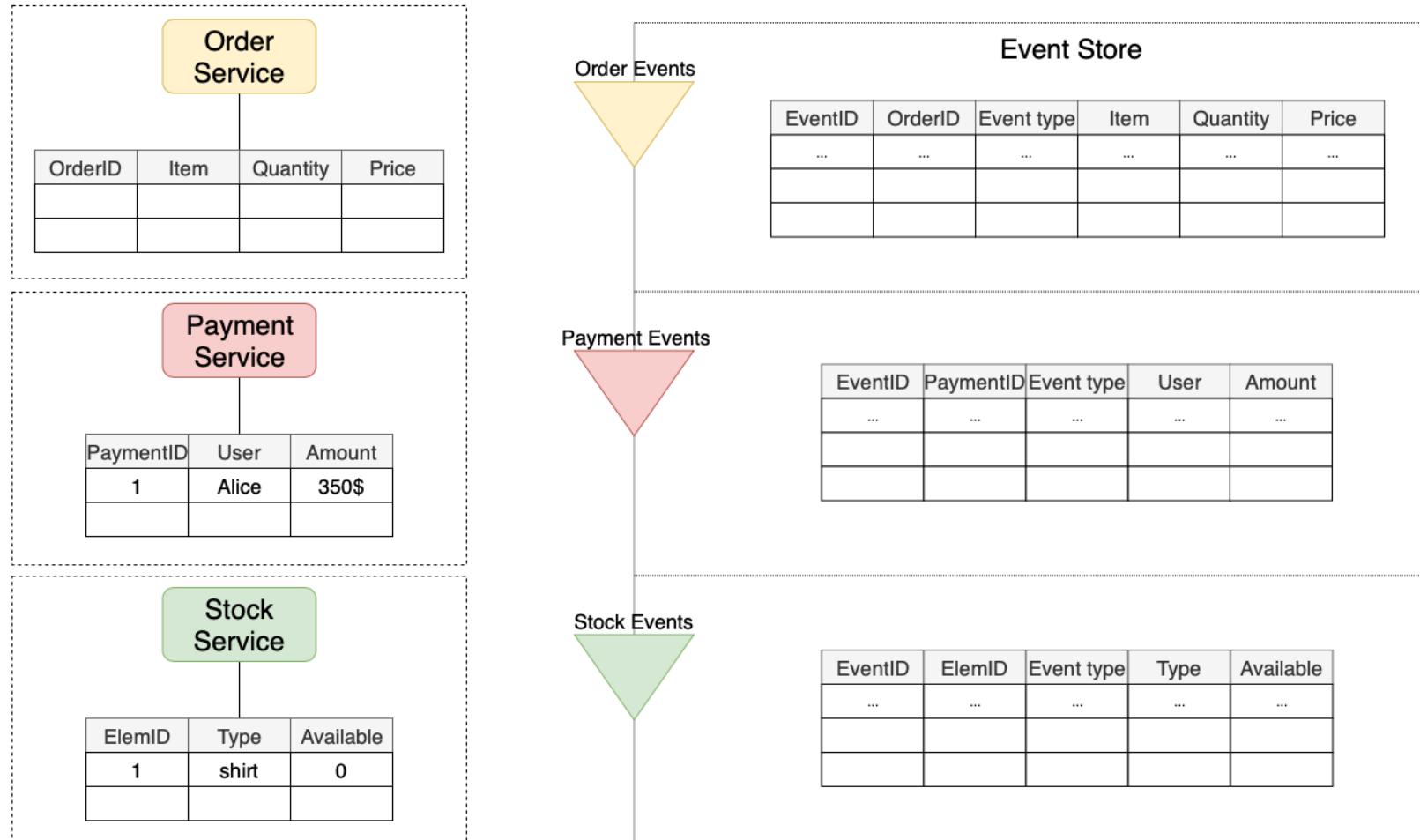
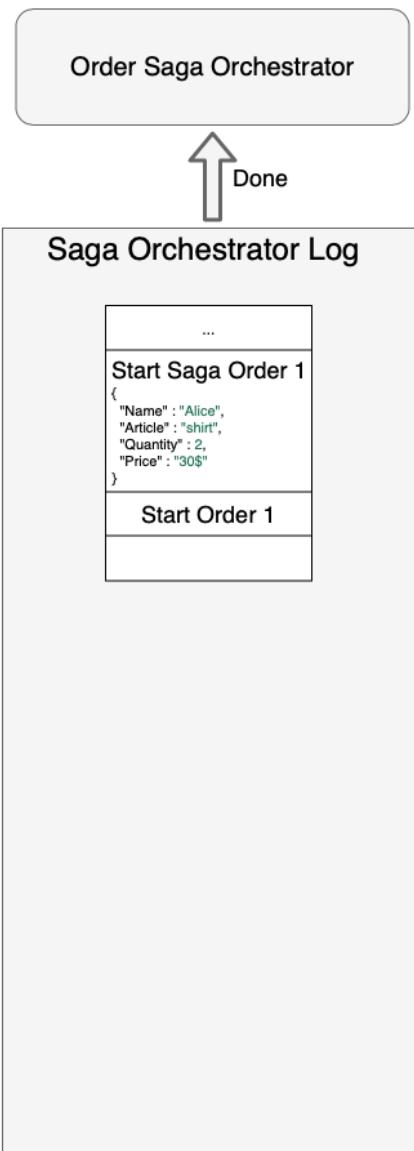
EventID	OrderID	Event type	Item	Quantity	Price
...

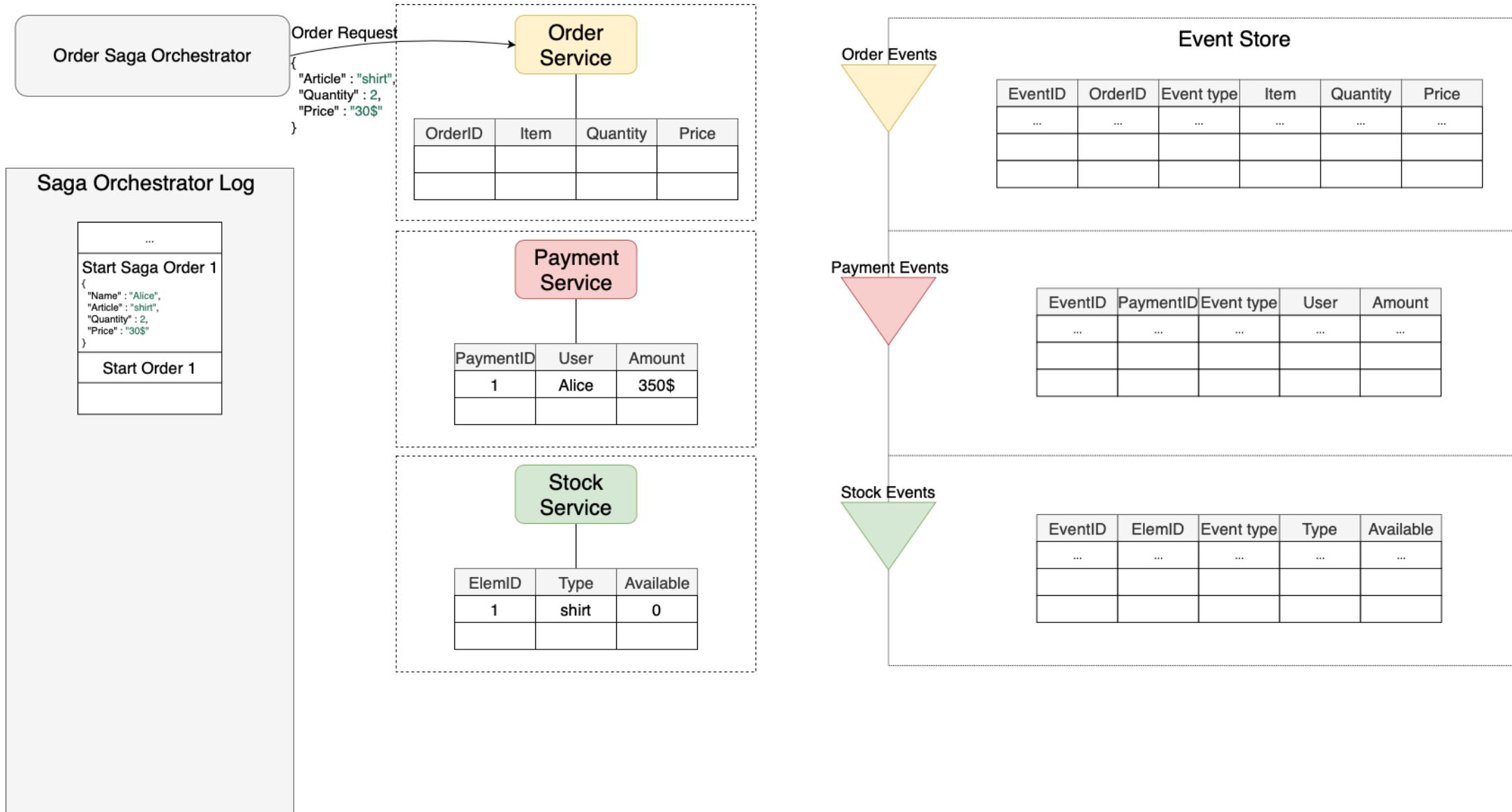
Payment Events

EventID	PaymentID	Event type	User	Amount
...

Stock Events

EventID	ElemID	Event type	Type	Available
...

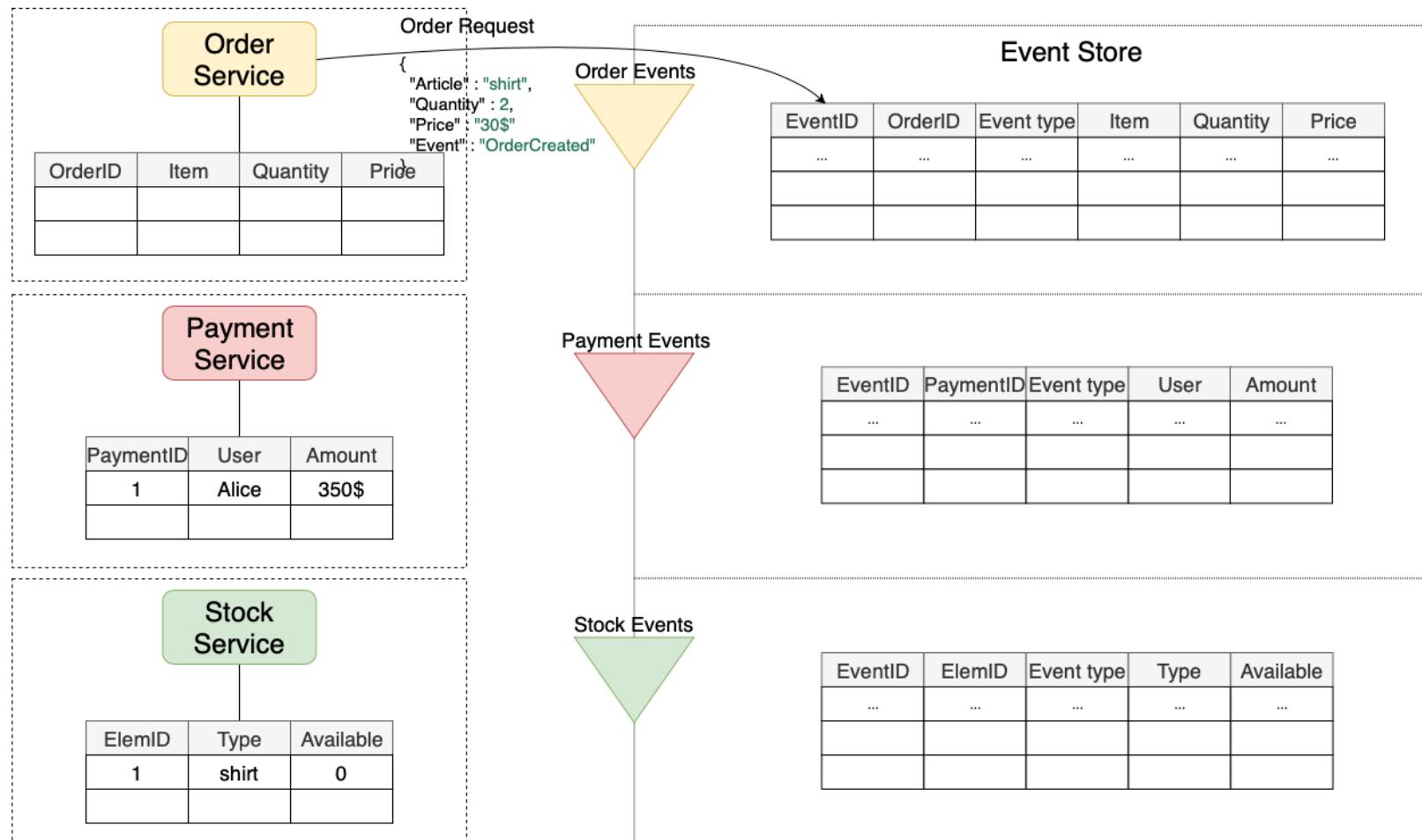




Order Saga Orchestrator

Saga Orchinator Log

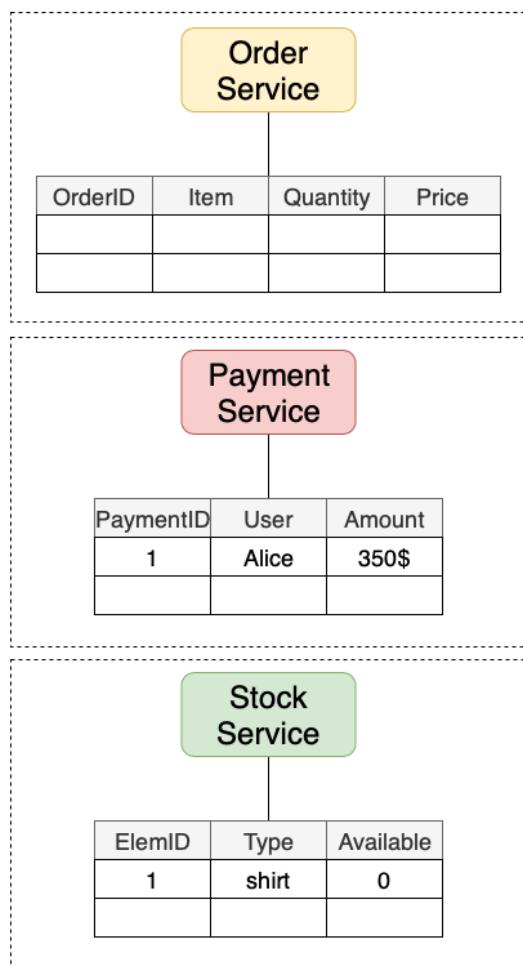
...
Start Saga Order 1
{
"Name" : "Alice",
"Article" : "shirt",
"Quantity" : 2,
"Price" : "30\$"
}
Start Order 1



Order Saga Orchestrator

Saga Orchinator Log

...
Start Saga Order 1
{
"Name" : "Alice",
"Article" : "shirt",
"Quantity" : 2,
"Price" : "30\$"
}
Start Order 1



Order Events

Payment Events

Stock Events

Event Store

EventID	OrderID	Event type	Item	Quantity	Price
...
13	1	Created	shirt	2	30\$

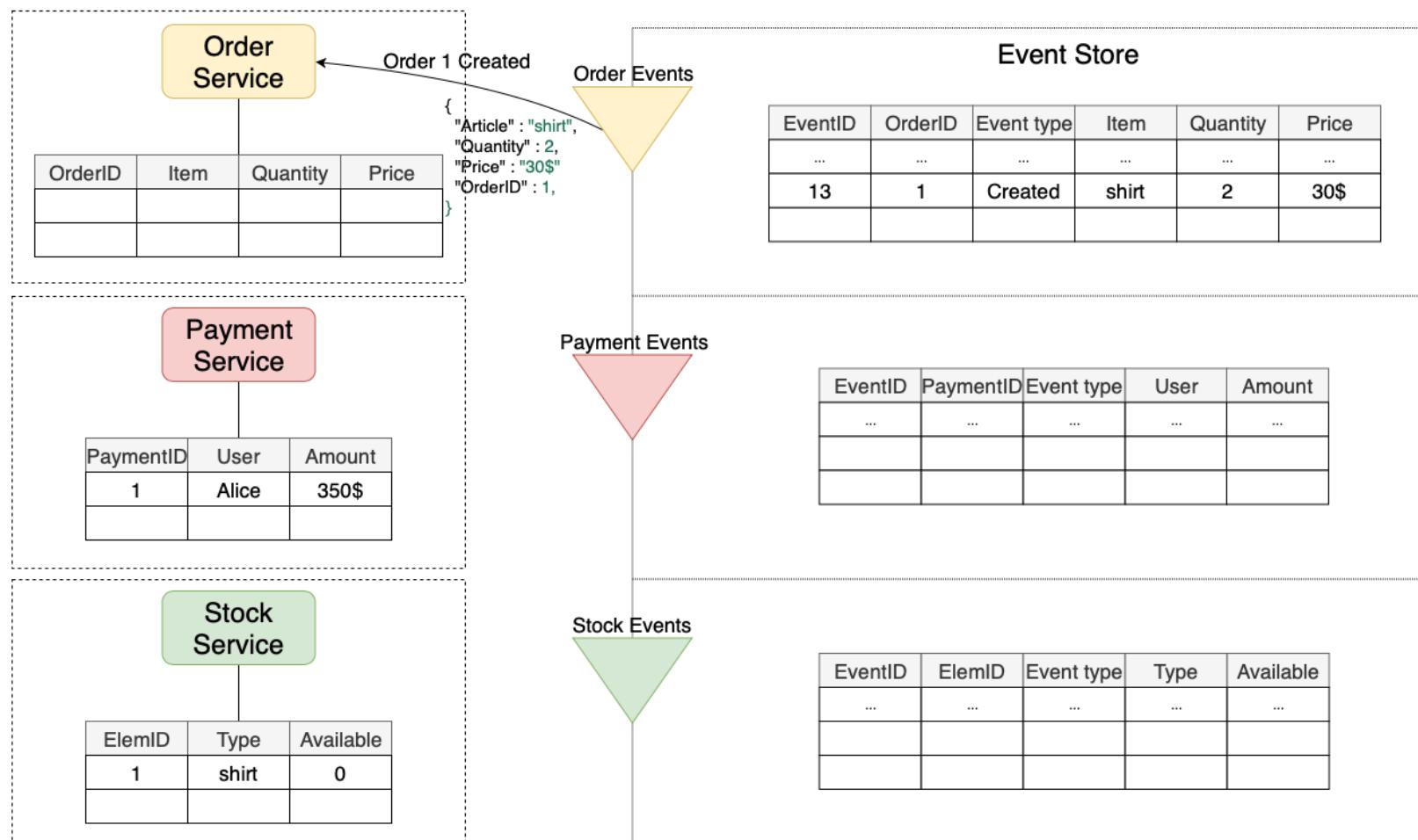
EventID	PaymentID	Event type	User	Amount
...

EventID	ElemID	Event type	Type	Available
...

Order Saga Orchestrator

Saga Orchinator Log

...
Start Saga Order 1
{ "Name" : "Alice", "Article" : "shirt", "Quantity" : 2, "Price" : "30\$" }
Start Order 1



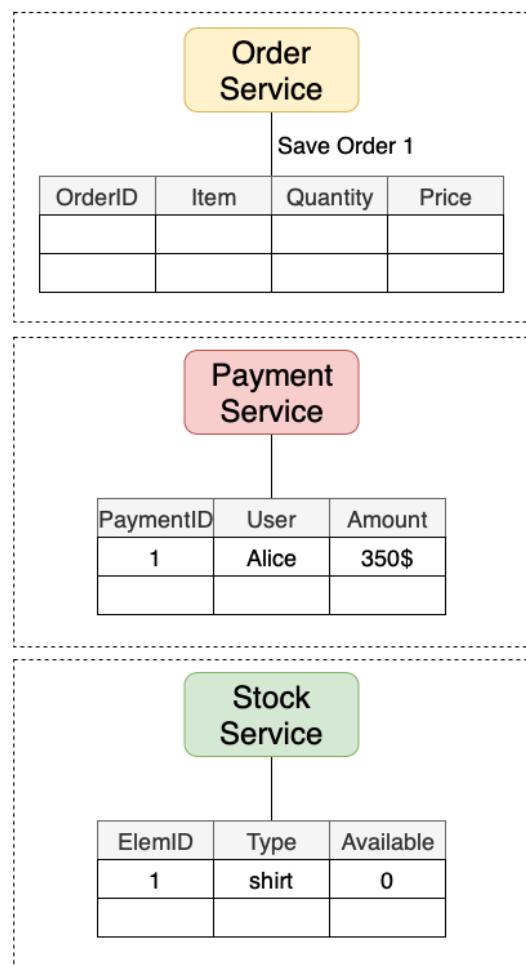
Order Saga Orchestrator

Saga Orchinator Log

```

...
Start Saga Order 1
{
  "Name": "Alice",
  "Article": "shirt",
  "Quantity": 2,
  "Price": "30$"
}
Start Order 1

```



Order Events

Payment Events

Stock Events

Event Store

EventID	OrderID	Event type	Item	Quantity	Price
...
13	1	Created	shirt	2	30\$

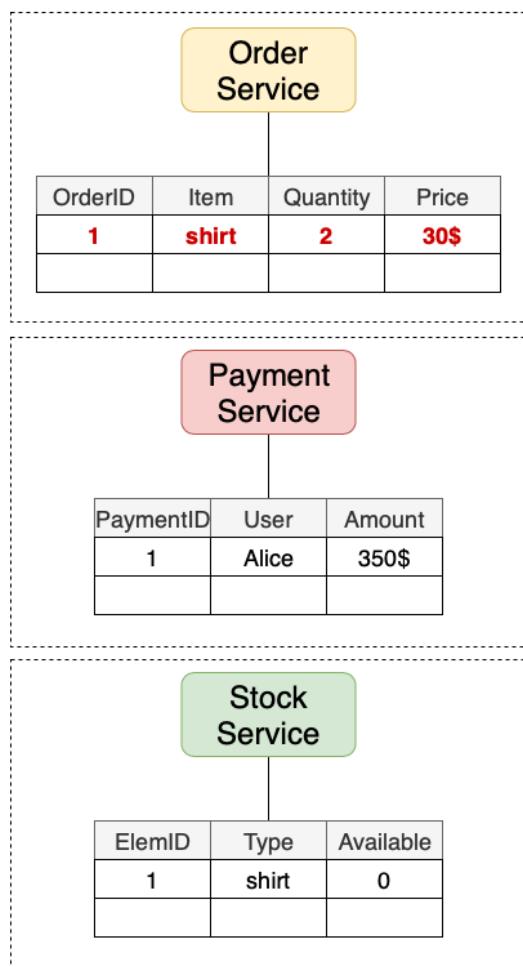
EventID	PaymentID	Event type	User	Amount
...

EventID	ElemID	Event type	Type	Available
...

Order Saga Orchestrator

Saga Orchinator Log

...
Start Saga Order 1
{
"Name" : "Alice",
"Article" : "shirt",
"Quantity" : 2,
"Price" : "30\$"
}
Start Order 1



Order Events

Payment Events

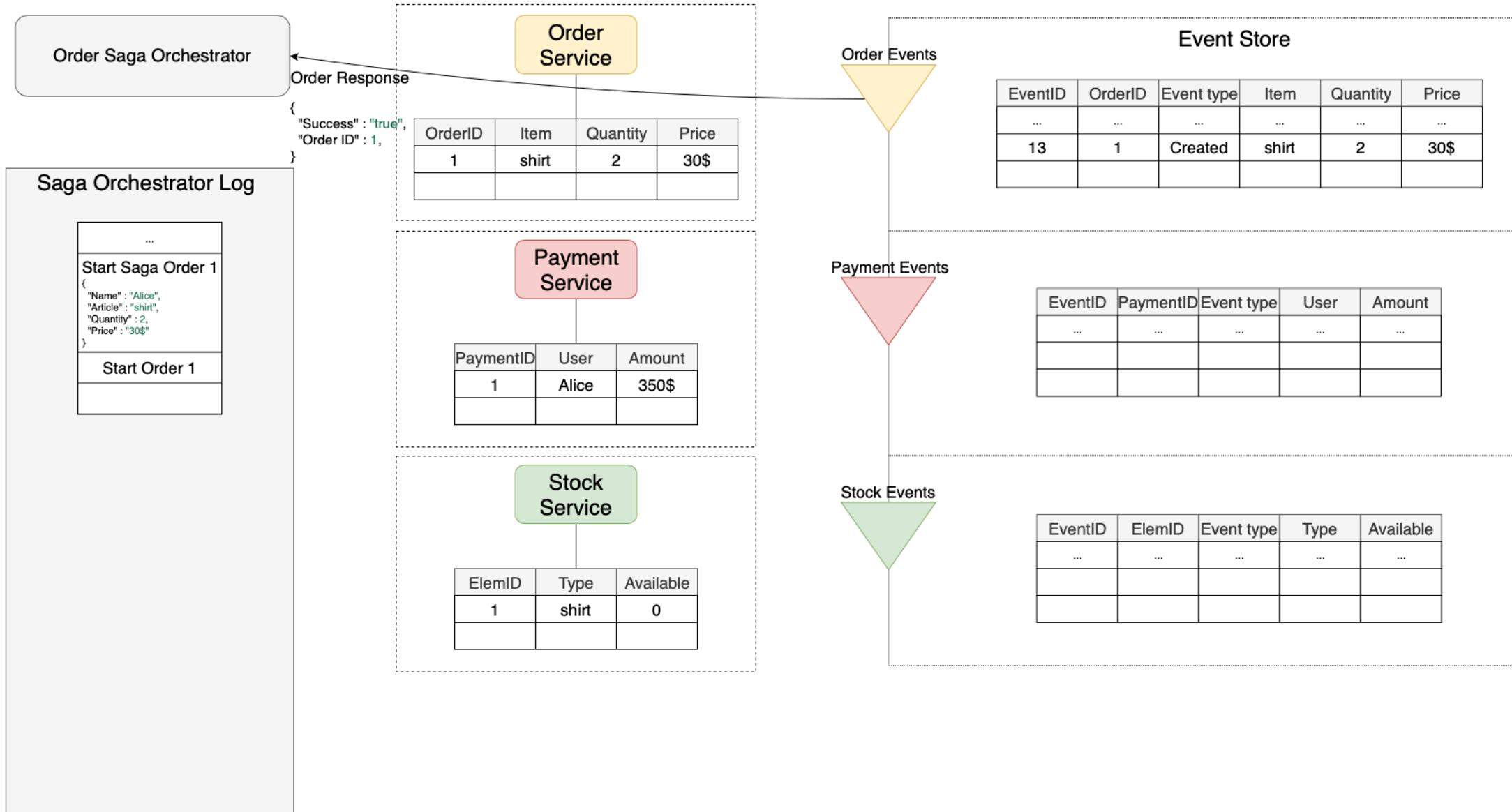
Stock Events

Event Store

EventID	OrderID	Event type	Item	Quantity	Price
...
13	1	Created	shirt	2	30\$

EventID	PaymentID	Event type	User	Amount
...

EventID	ElemID	Event type	Type	Available
...

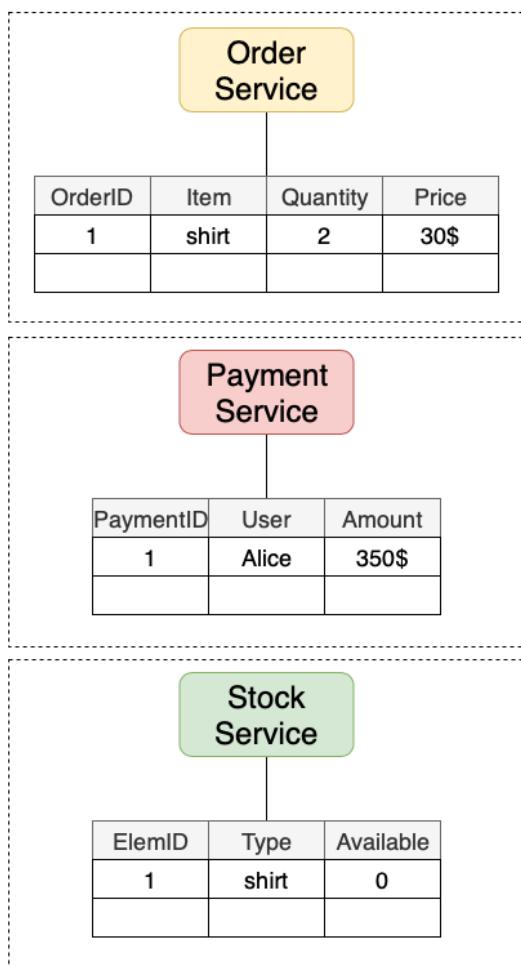


Order Saga Orchestrator

 End Order 1

Saga Orchestrator Log

...
Start Saga Order 1
{
"Name" : "Alice",
"Article" : "shirt",
"Quantity" : 2,
"Price" : "30\$"
}
Start Order 1



Order Events

Payment Events

Stock Events

Event Store

EventID	OrderID	Event type	Item	Quantity	Price
...
13	1	Created	shirt	2	30\$

EventID	PaymentID	Event type	User	Amount
...

EventID	ElemID	Event type	Type	Available
...

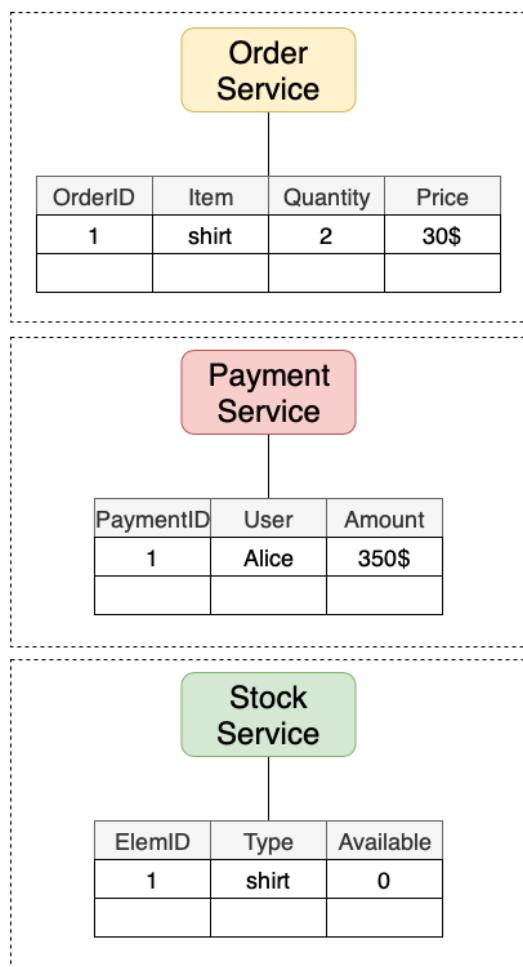
Order Saga Orchestrator

Saga Orchinator Log

```

...
Start Saga Order 1
{
  "Name": "Alice",
  "Article": "shirt",
  "Quantity": 2,
  "Price": "30$"
}
Start Order 1
End Order 1
{
  "Success": "true",
  "Order ID": 1,
}

```



Order Events

Payment Events

Stock Events

Event Store

EventID	OrderID	Event type	Item	Quantity	Price
...
13	1	Created	shirt	2	30\$

EventID	PaymentID	Event type	User	Amount
...

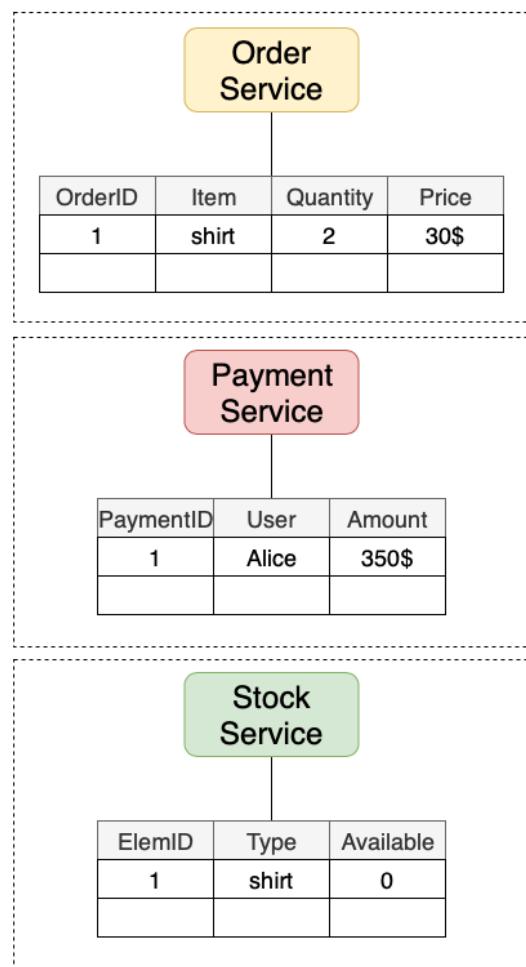
EventID	ElemID	Event type	Type	Available
...

Order Saga Orchestrator



Saga Orchestrator Log

```
...
Start Saga Order 1
{
  "Name": "Alice",
  "Article": "shirt",
  "Quantity": 2,
  "Price": "30$"
}
Start Order 1
End Order 1
{
  "Success": "true",
  "Order ID": 1,
}
```



Order Events

Payment Events

Stock Events

Event Store

EventID	OrderID	Event type	Item	Quantity	Price
...
13	1	Created	shirt	2	30\$

EventID	PaymentID	Event type	User	Amount
...

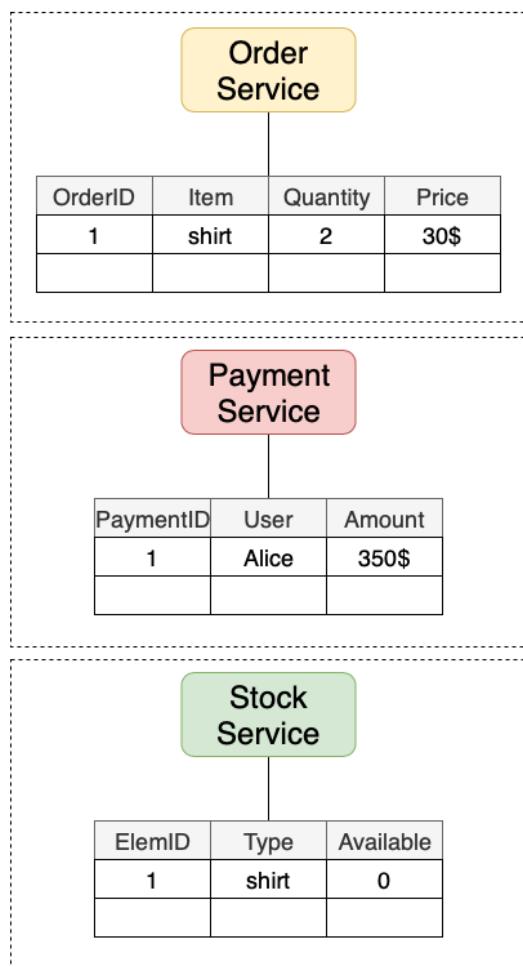
EventID	ElemID	Event type	Type	Available
...

Order Saga Orchestrator

Start Payment 1

Saga Orchestrator Log

```
...
Start Saga Order 1
{
  "Name": "Alice",
  "Article": "shirt",
  "Quantity": 2,
  "Price": "30$"
}
Start Order 1
End Order 1
{
  "Success": "true",
  "Order ID": 1,
}
Start Payment 1
```



Order Events

Payment Events

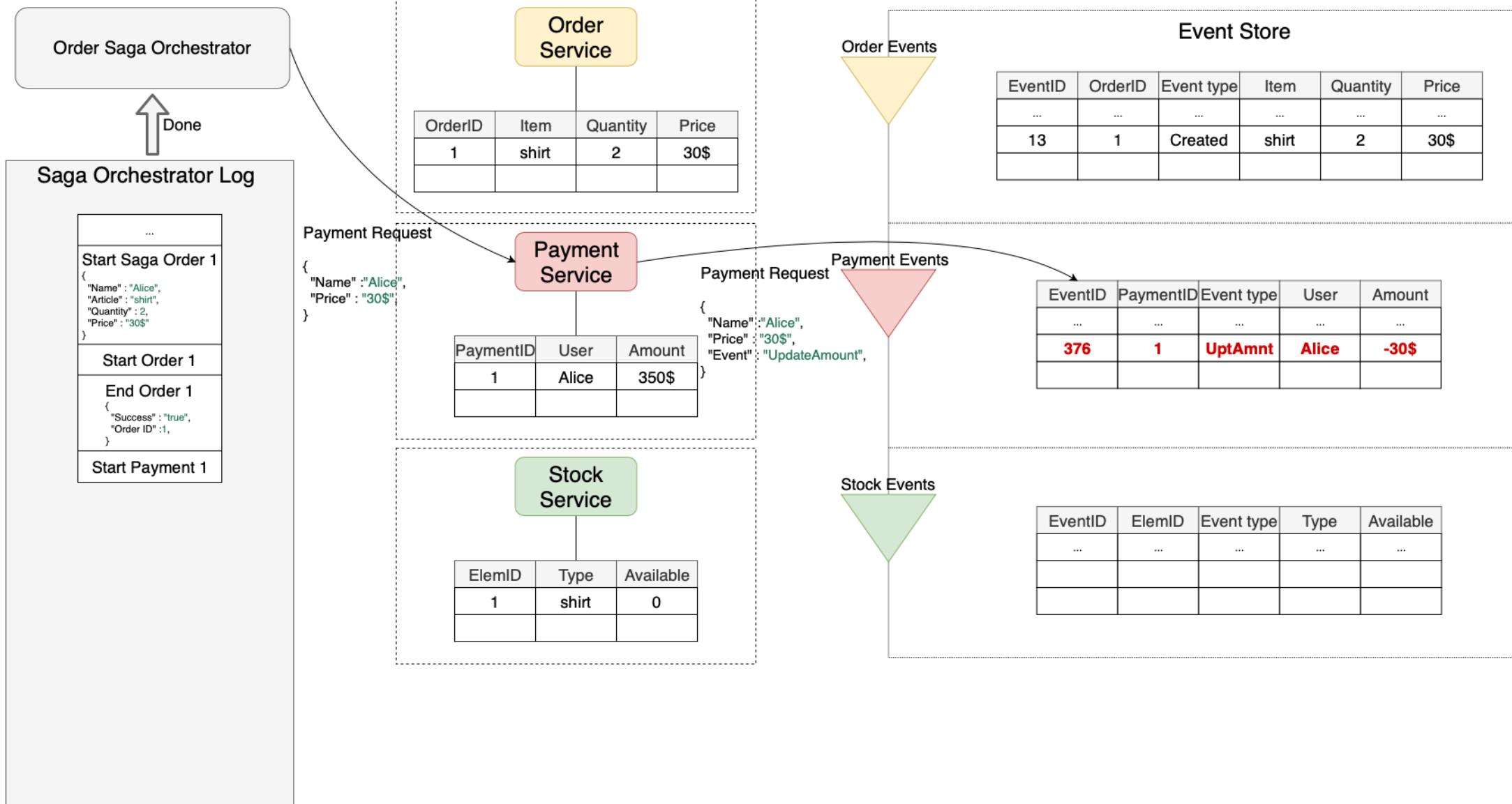
Stock Events

Event Store

EventID	OrderID	Event type	Item	Quantity	Price
...
13	1	Created	shirt	2	30\$

EventID	PaymentID	Event type	User	Amount
...

EventID	ElemID	Event type	Type	Available
...



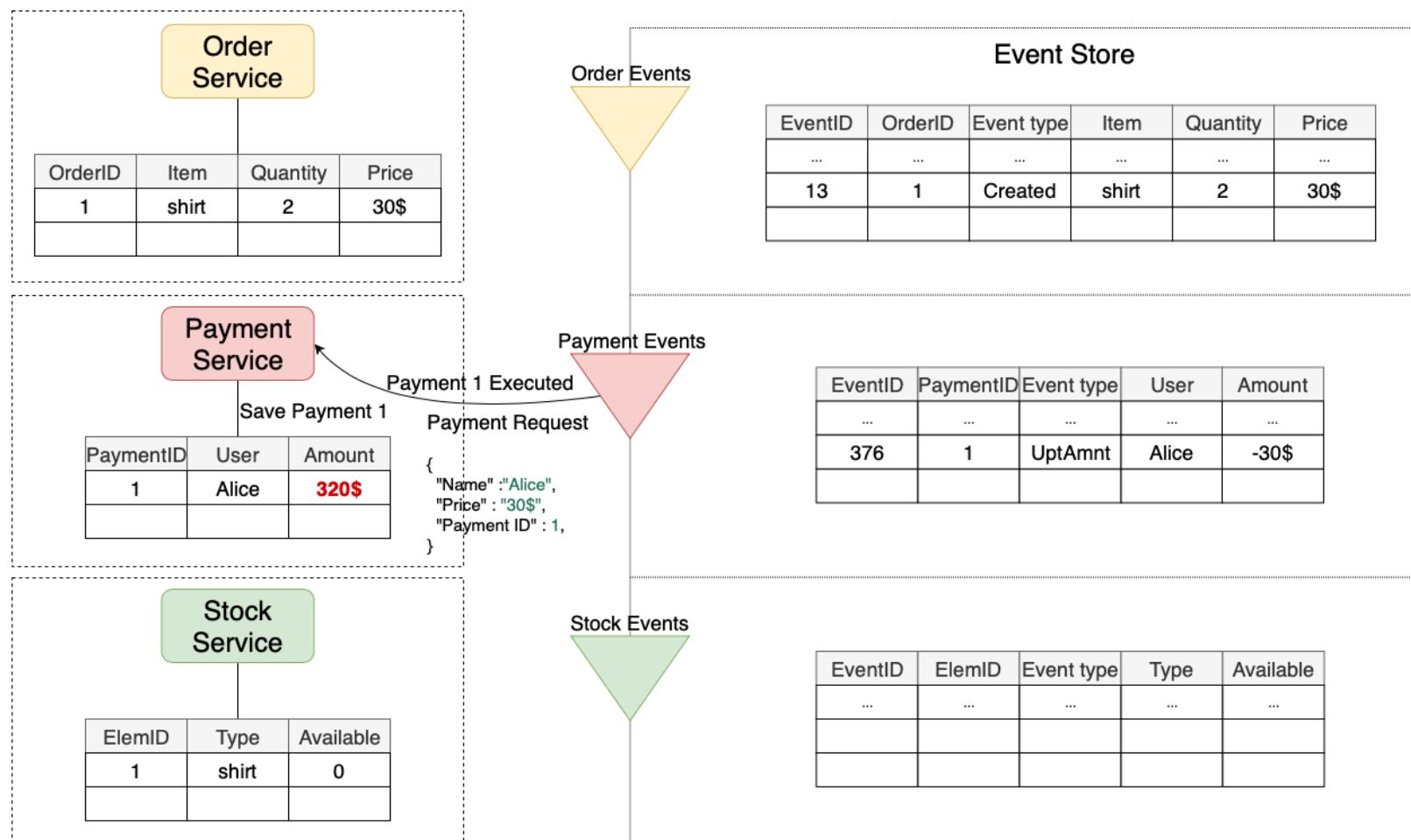
Order Saga Orchestrator

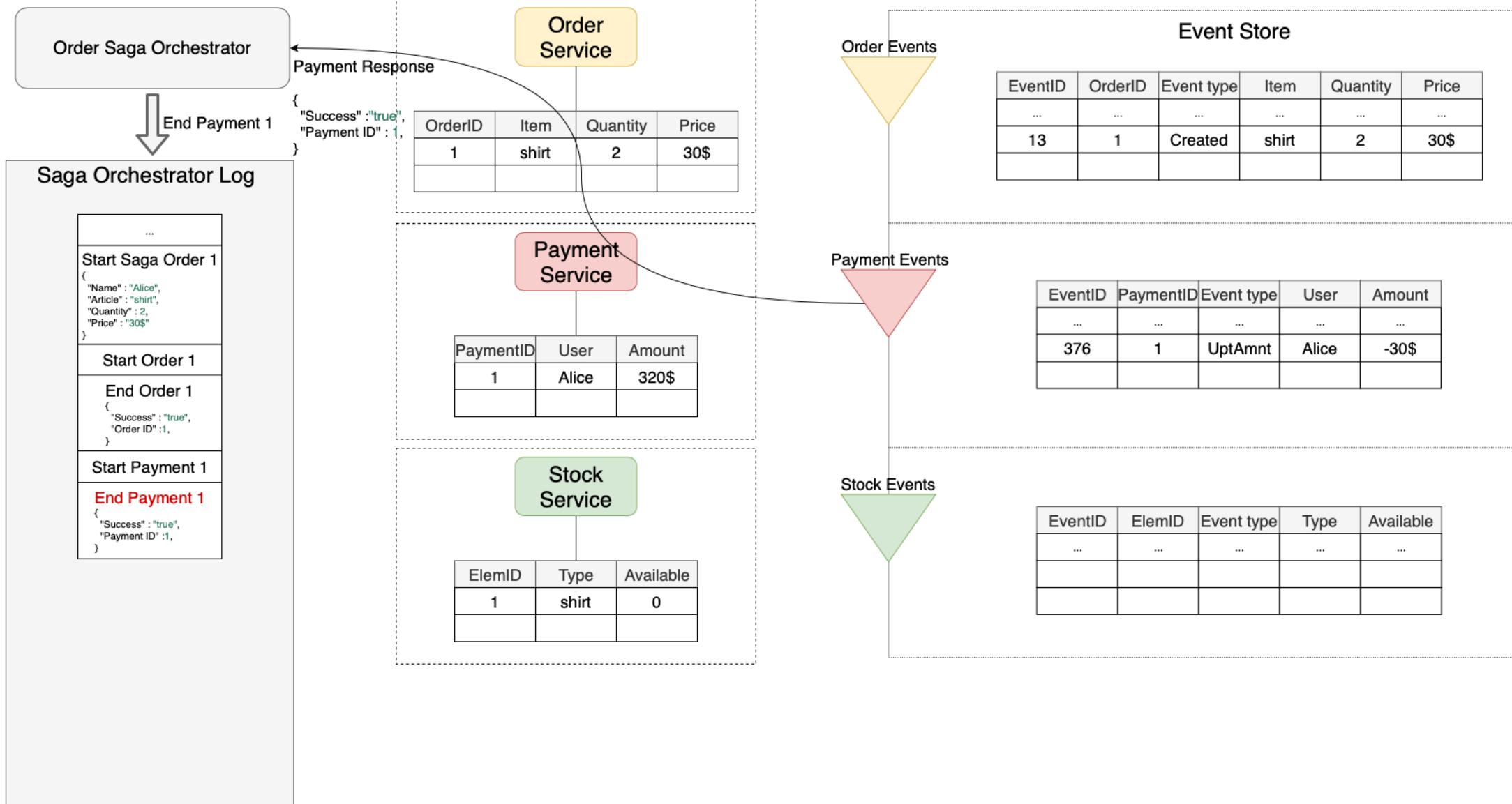
Saga Orchinator Log

```

...
Start Saga Order 1
{
  "Name": "Alice",
  "Article": "shirt",
  "Quantity": 2,
  "Price": "30$"
}
Start Order 1
End Order 1
{
  "Success": "true",
  "Order ID": 1,
}
Start Payment 1

```





Order Saga Orchestrator

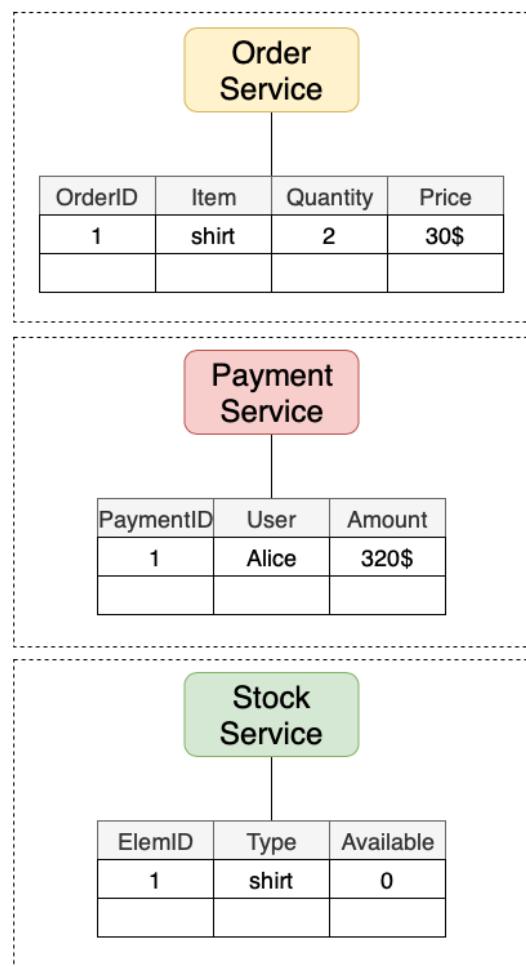


Saga Orchestrator Log

```

...
Start Saga Order 1
{
  "Name" : "Alice",
  "Article" : "shirt",
  "Quantity" : 2,
  "Price" : "30$"
}
Start Order 1
End Order 1
{
  "Success" : "true",
  "Order ID" : 1,
}
Start Payment 1
End Payment 1
{
  "Success" : "true",
  "Payment ID" : 1,
}

```



Order Events

Payment Events

Stock Events

Event Store

EventID	OrderID	Event type	Item	Quantity	Price
...
13	1	Created	shirt	2	30\$

EventID	PaymentID	Event type	User	Amount
...
376	1	UptAmnt	Alice	-30\$

EventID	ElemID	Event type	Type	Available
...

Order Saga Orchestrator

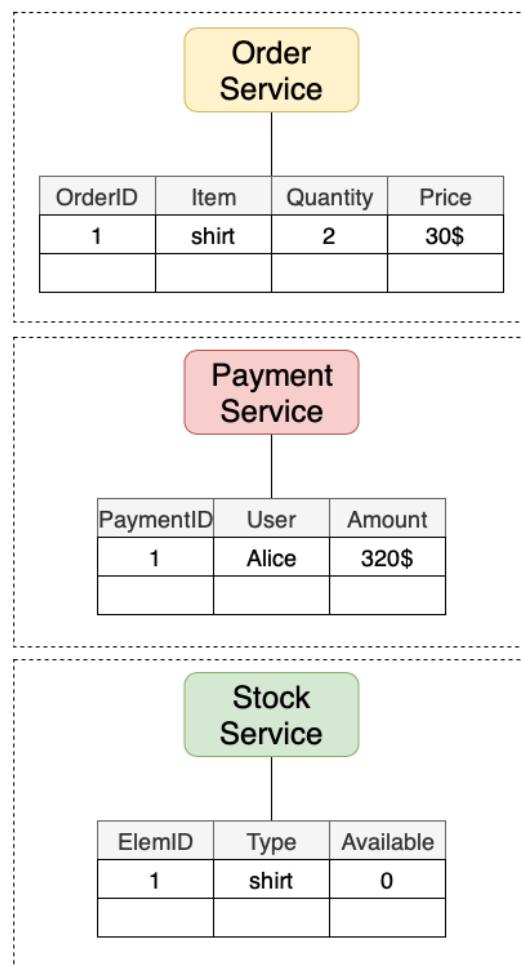
Start Stock 1

Saga Orchestrator Log

```

...
Start Saga Order 1
{
  "Name" : "Alice",
  "Article" : "shirt",
  "Quantity" : 2,
  "Price" : "30$"
}
Start Order 1
End Order 1
{
  "Success" : "true",
  "Order ID" :1,
}
Start Payment 1
End Payment 1
{
  "Success" : "true",
  "Payment ID" :1,
}
Start Stock 1

```



Order Events

Payment Events

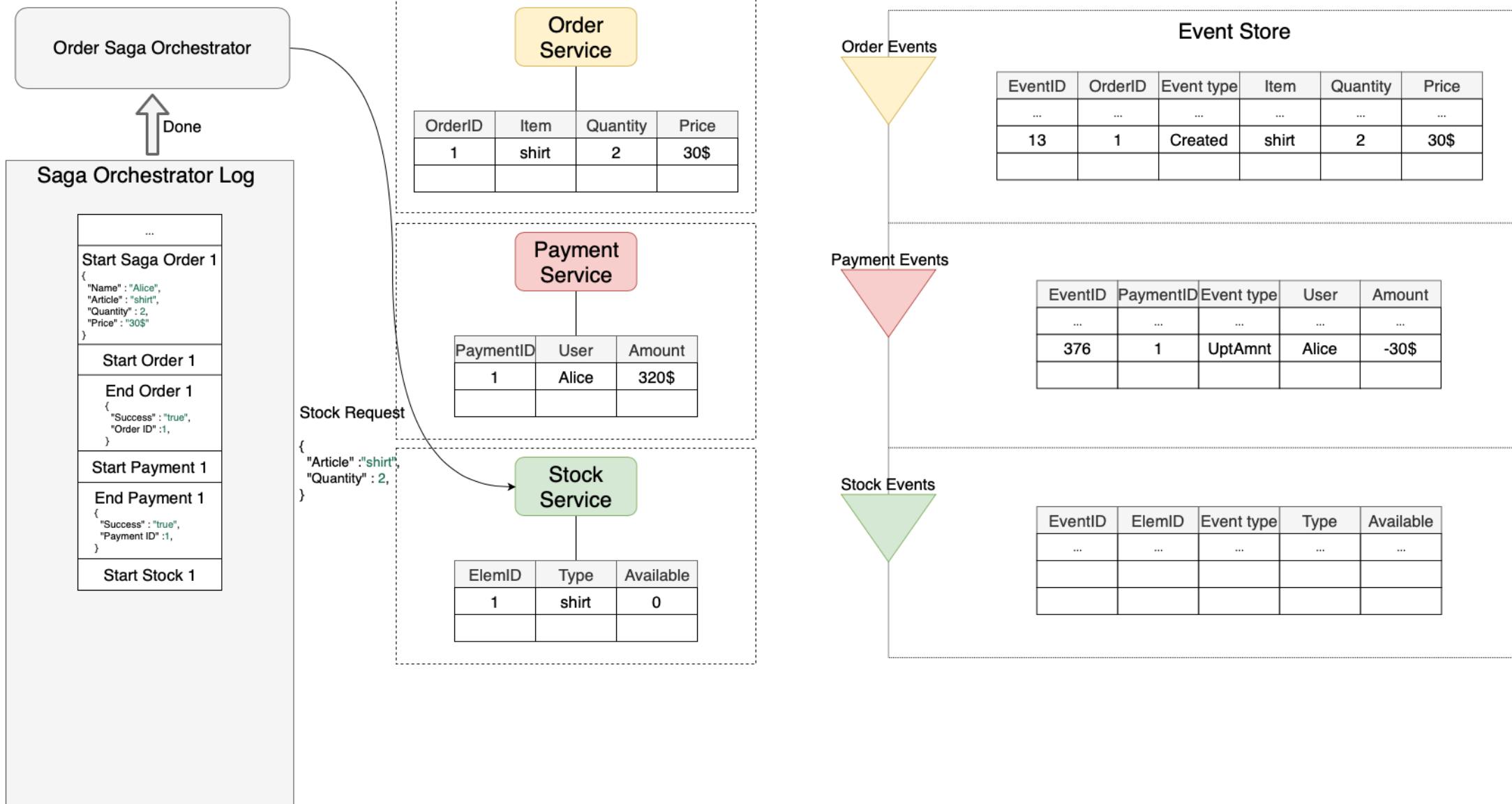
Stock Events

Event Store

EventID	OrderID	Event type	Item	Quantity	Price
...
13	1	Created	shirt	2	30\$

EventID	PaymentID	Event type	User	Amount
...
376	1	UptAmnt	Alice	-30\$

EventID	ElemID	Event type	Type	Available
...



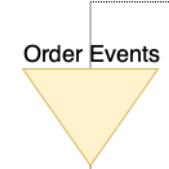
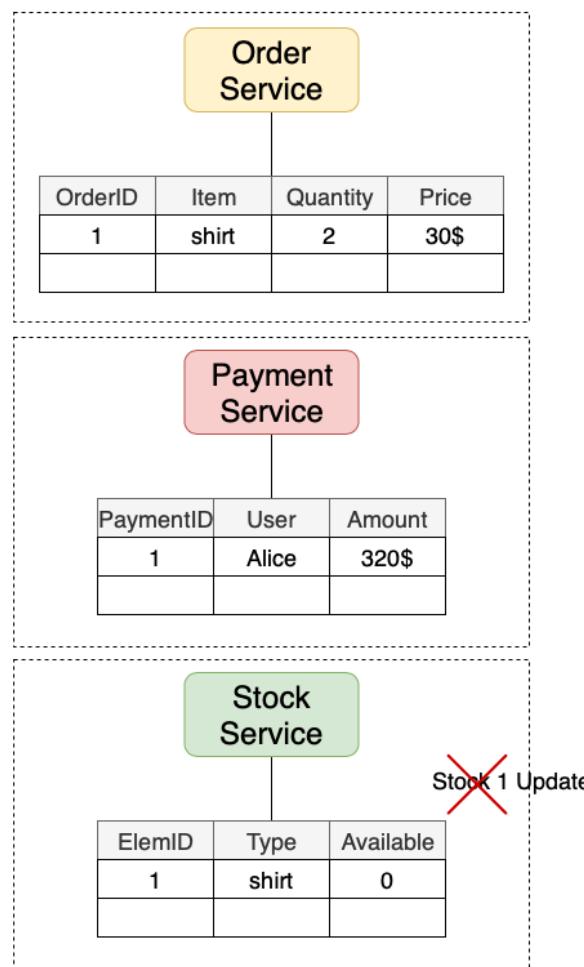
Order Saga Orchestrator

Saga Orchestrator Log

```

...
Start Saga Order 1
{
  "Name" : "Alice",
  "Article" : "shirt",
  "Quantity" : 2,
  "Price" : "30$"
}
Start Order 1
End Order 1
{
  "Success" : "true",
  "Order ID" :1,
}
Start Payment 1
End Payment 1
{
  "Success" : "true",
  "Payment ID" :1,
}
Start Stock 1

```



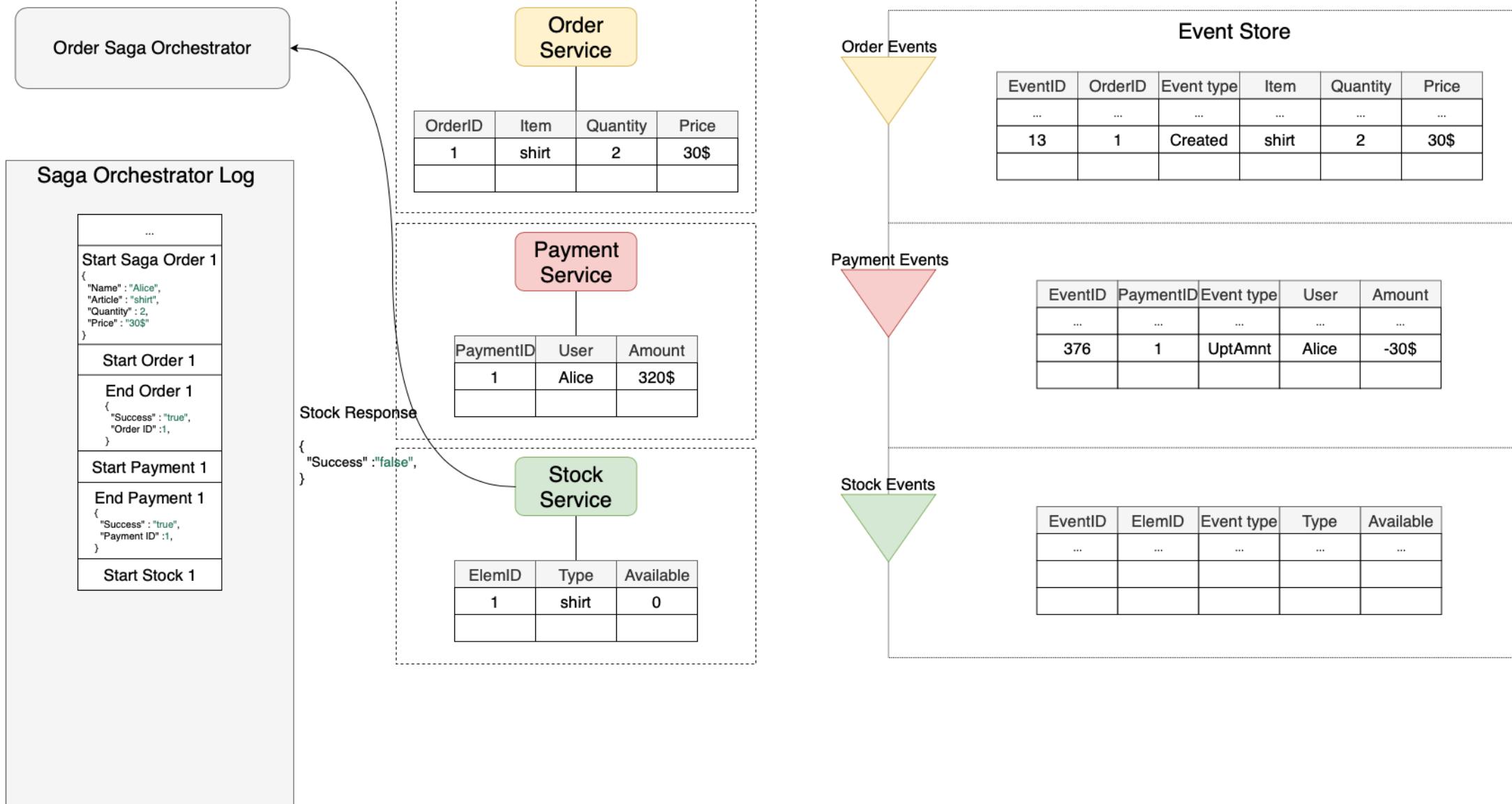
EventID	OrderID	Event type	Item	Quantity	Price
...
13	1	Created	shirt	2	30\$



EventID	PaymentID	Event type	User	Amount
...
376	1	UptAmnt	Alice	-30\$



EventID	ElemID	Event type	Type	Available
...



Order Saga Orchestrator

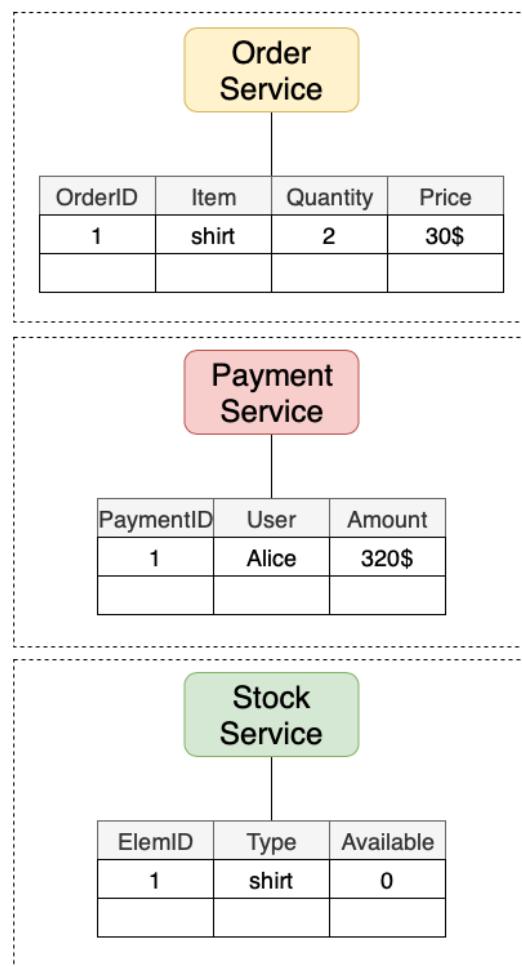
Abort Stock 1

Saga Orchestrator Log

```

...
Start Saga Order 1
{
  "Name": "Alice",
  "Article": "shirt",
  "Quantity": 2,
  "Price": "30$"
}
Start Order 1
End Order 1
{
  "Success": "true",
  "Order ID": 1,
}
Start Payment 1
End Payment 1
{
  "Success": "true",
  "Payment ID": 1,
}
Start Stock 1

```



Order Events

Payment Events

Stock Events

Event Store

EventID	OrderID	Event type	Item	Quantity	Price
...
13	1	Created	shirt	2	30\$

EventID	PaymentID	Event type	User	Amount
...
376	1	UptAmnt	Alice	-30\$

EventID	ElemID	Event type	Type	Available
...

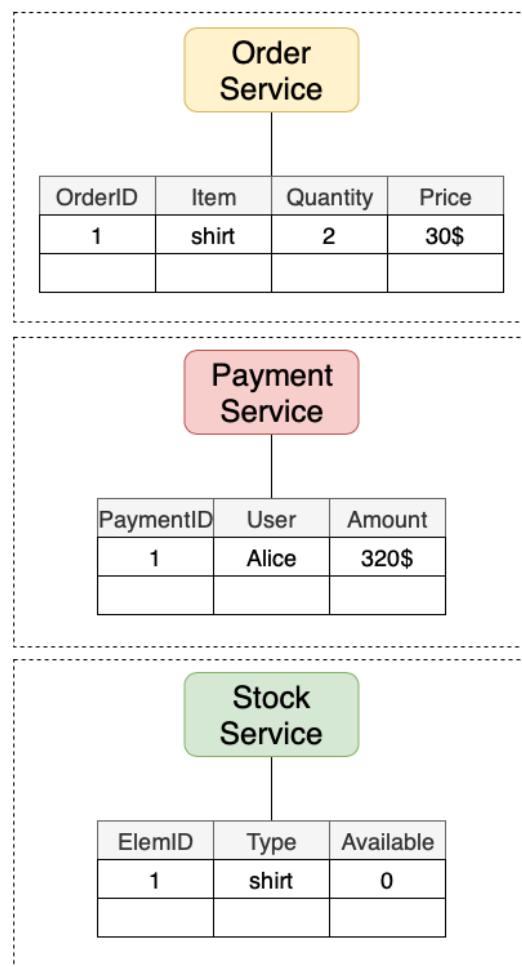
Order Saga Orchestrator

Saga Orchinator Log

```

...
Start Saga Order 1
{
  "Name" : "Alice",
  "Article" : "shirt",
  "Quantity" : 2,
  "Price" : "30$"
}
Start Order 1
End Order 1
{
  "Success" : "true",
  "Order ID" :1,
}
Start Payment 1
End Payment 1
{
  "Success" : "true",
  "Payment ID" :1,
}
Start Stock 1
Abort Stock 1
{
  "Success" : "false",
}

```



Order Events

Payment Events

Stock Events

Event Store

EventID	OrderID	Event type	Item	Quantity	Price
...
13	1	Created	shirt	2	30\$

EventID	PaymentID	Event type	User	Amount
...
376	1	UptAmnt	Alice	-30\$

EventID	ElemID	Event type	Type	Available
...

Order Saga Orchestrator

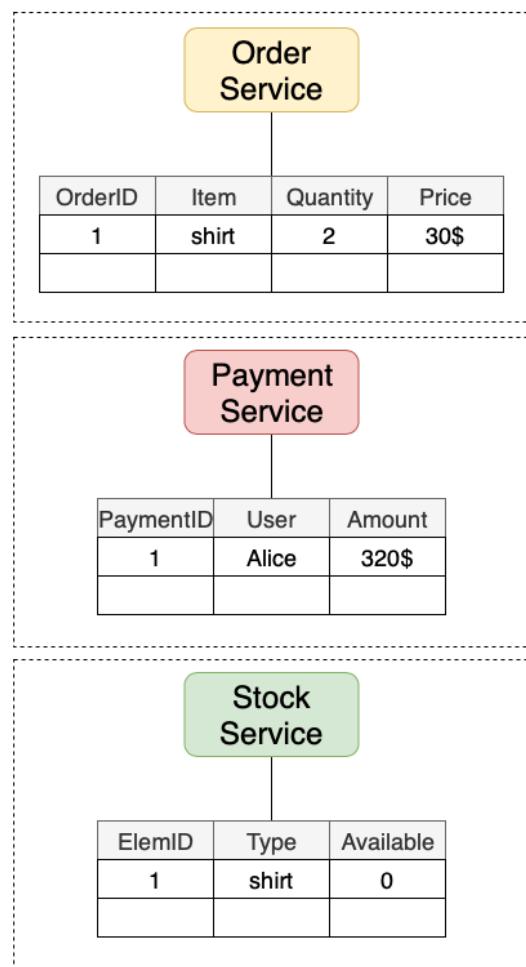


Saga Orchestrator Log

```

...
Start Saga Order 1
{
  "Name": "Alice",
  "Article": "shirt",
  "Quantity": 2,
  "Price": "30$"
}
Start Order 1
End Order 1
{
  "Success": "true",
  "Order ID": 1,
}
Start Payment 1
End Payment 1
{
  "Success": "true",
  "Payment ID": 1,
}
Start Stock 1
Abort Stock 1
{
  "Success": "false",
}

```



Order Events

Payment Events

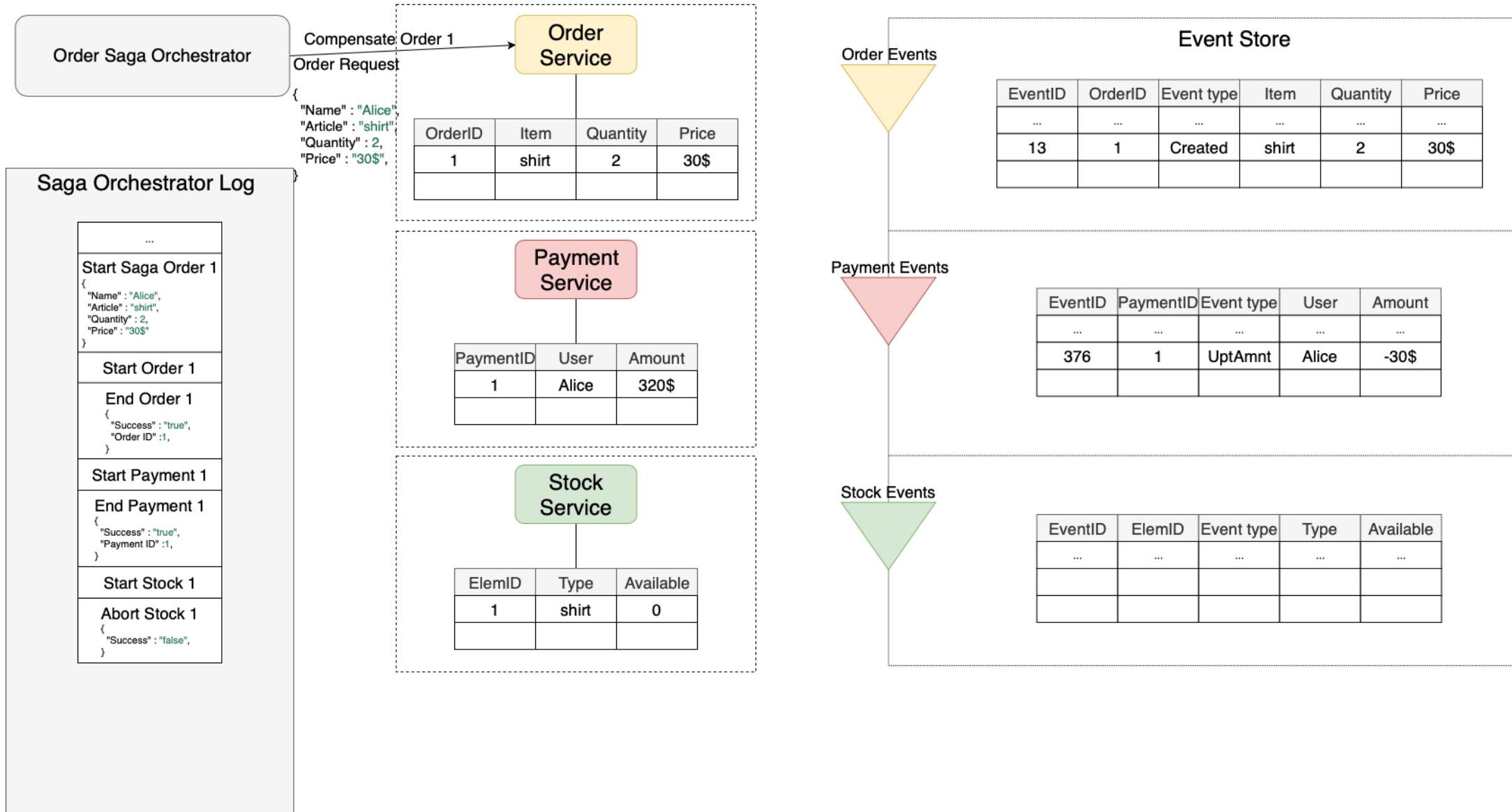
Stock Events

Event Store

EventID	OrderID	Event type	Item	Quantity	Price
...
13	1	Created	shirt	2	30\$

EventID	PaymentID	Event type	User	Amount
...
376	1	UptAmnt	Alice	-30\$

EventID	ElemID	Event type	Type	Available
...



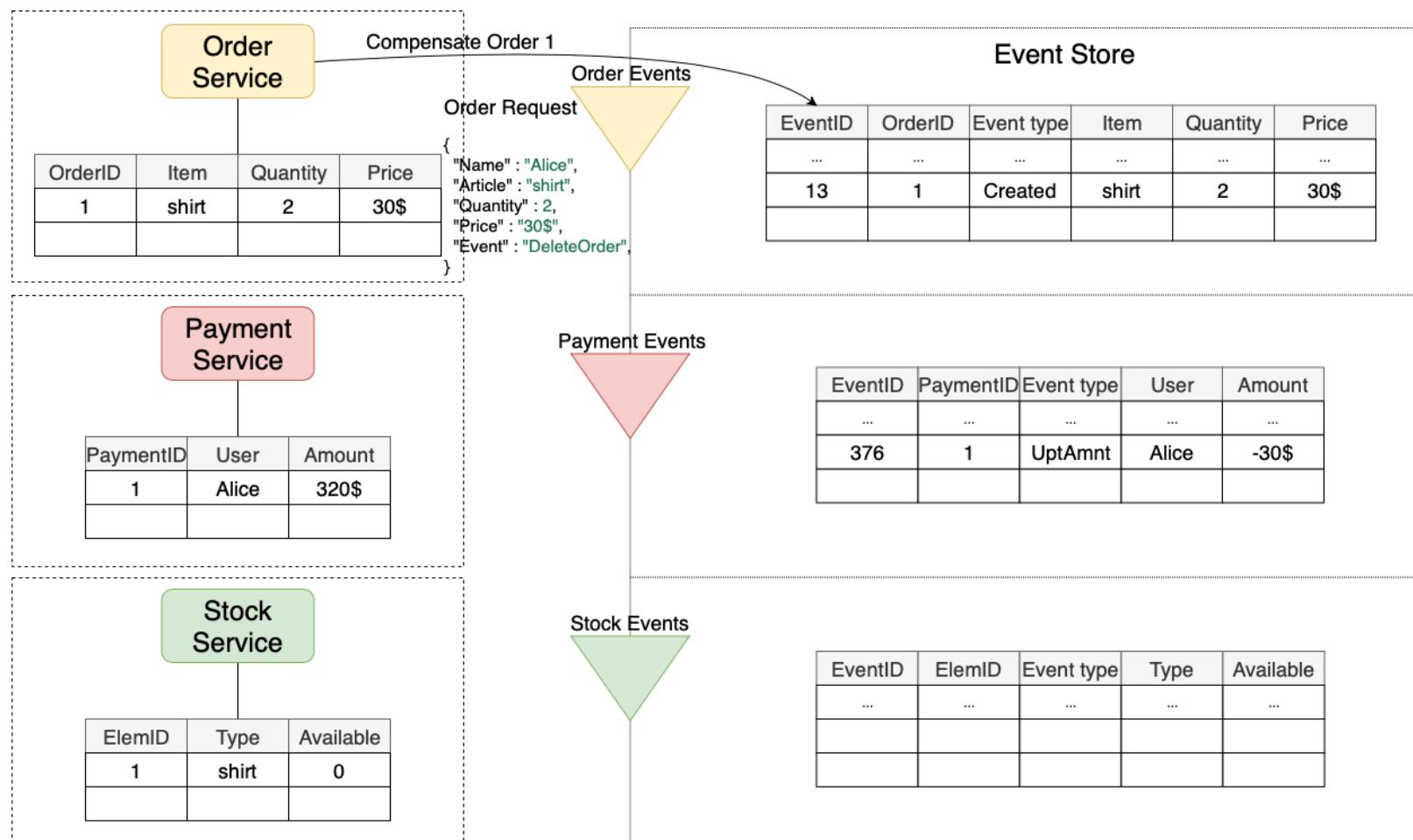
Order Saga Orchestrator

Saga Orchinator Log

```

...
Start Saga Order 1
{
  "Name" : "Alice",
  "Article" : "shirt",
  "Quantity" : 2,
  "Price" : "30$"
}
Start Order 1
End Order 1
{
  "Success" : "true",
  "Order ID" :1,
}
Start Payment 1
End Payment 1
{
  "Success" : "true",
  "Payment ID" :1,
}
Start Stock 1
Abort Stock 1
{
  "Success" : "false",
}

```



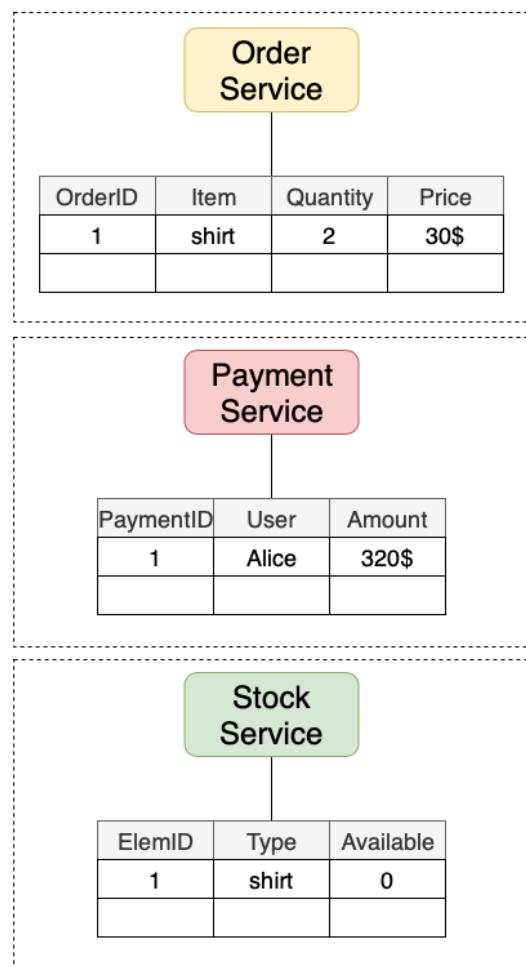
Order Saga Orchestrator

Saga Orchinator Log

```

...
Start Saga Order 1
{
  "Name" : "Alice",
  "Article" : "shirt",
  "Quantity" : 2,
  "Price" : "30$"
}
Start Order 1
End Order 1
{
  "Success" : "true",
  "Order ID" :1,
}
Start Payment 1
End Payment 1
{
  "Success" : "true",
  "Payment ID" :1,
}
Start Stock 1
Abort Stock 1
{
  "Success" : "false",
}

```



Order Events

Payment Events

Stock Events

Event Store

EventID	OrderID	Event type	Item	Quantity	Price
...
13	1	Created	shirt	2	30\$

EventID	PaymentID	Event type	User	Amount
...
376	1	UptAmnt	Alice	-30\$

EventID	ElemID	Event type	Type	Available
...

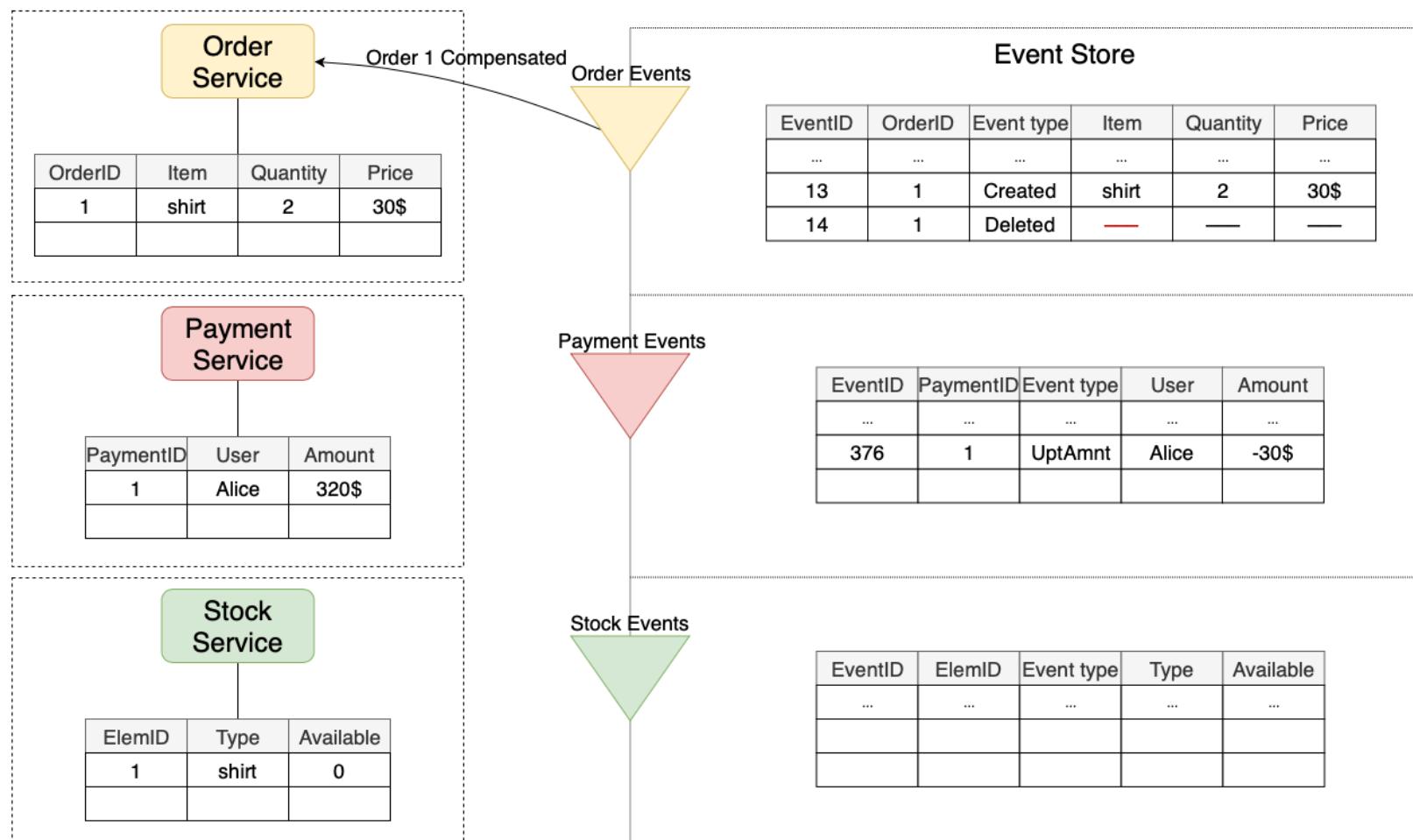
Order Saga Orchestrator

Saga Orchinator Log

```

...
Start Saga Order 1
{
  "Name" : "Alice",
  "Article" : "shirt",
  "Quantity" : 2,
  "Price" : "30$"
}
Start Order 1
End Order 1
{
  "Success" : "true",
  "Order ID" :1,
}
Start Payment 1
End Payment 1
{
  "Success" : "true",
  "Payment ID" :1,
}
Start Stock 1
Abort Stock 1
{
  "Success" : "false",
}

```



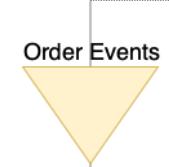
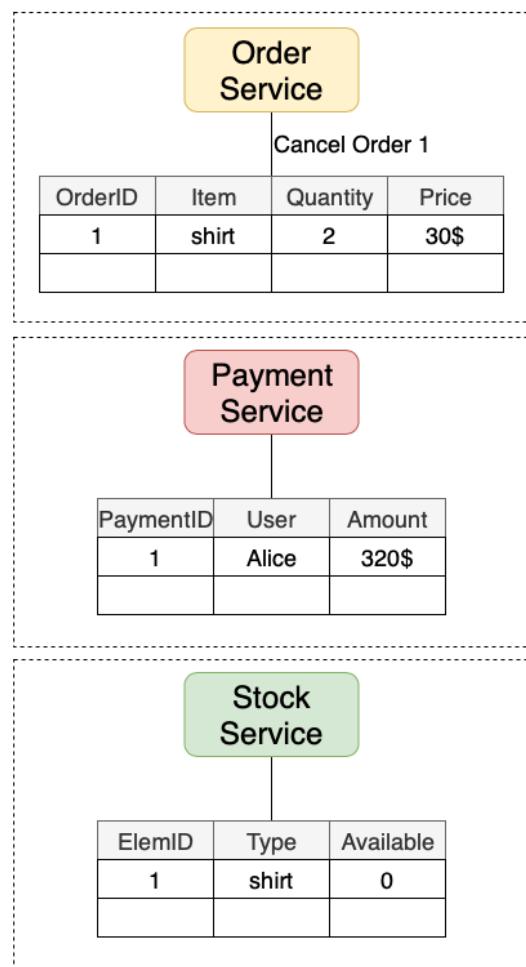
Order Saga Orchestrator

Saga Orchinator Log

```

...
Start Saga Order 1
{
  "Name" : "Alice",
  "Article" : "shirt",
  "Quantity" : 2,
  "Price" : "30$"
}
Start Order 1
End Order 1
{
  "Success" : "true",
  "Order ID" :1,
}
Start Payment 1
End Payment 1
{
  "Success" : "true",
  "Payment ID" :1,
}
Start Stock 1
Abort Stock 1
{
  "Success" : "false",
}

```



Event Store

EventID	OrderID	Event type	Item	Quantity	Price
...
13	1	Created	shirt	2	30\$



EventID	PaymentID	Event type	User	Amount
...
376	1	UptAmnt	Alice	-30\$



EventID	ElemID	Event type	Type	Available
...

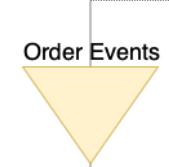
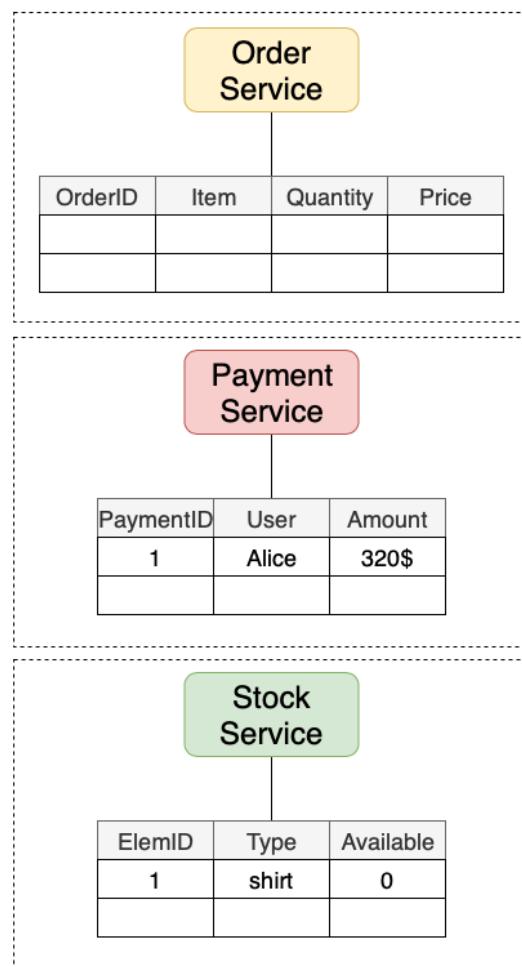
Order Saga Orchestrator

Saga Orchinator Log

```

...
Start Saga Order 1
{
  "Name" : "Alice",
  "Article" : "shirt",
  "Quantity" : 2,
  "Price" : "30$"
}
Start Order 1
End Order 1
{
  "Success" : "true",
  "Order ID" :1,
}
Start Payment 1
End Payment 1
{
  "Success" : "true",
  "Payment ID" :1,
}
Start Stock 1
Abort Stock 1
{
  "Success" : "false",
}

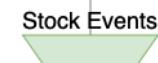
```



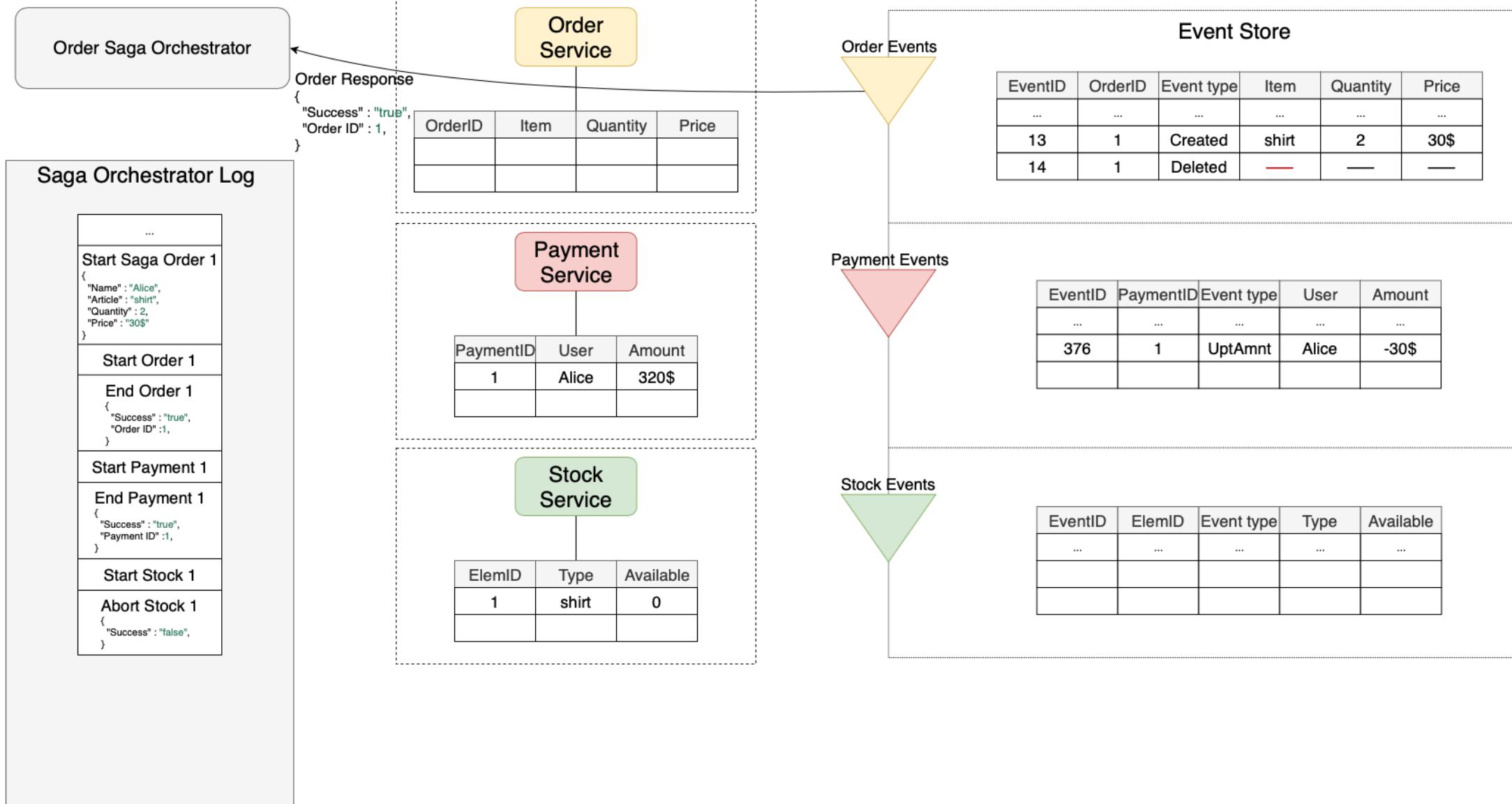
EventID	OrderID	Event type	Item	Quantity	Price
...
13	1	Created	shirt	2	30\$



EventID	PaymentID	Event type	User	Amount
...
376	1	UptAmnt	Alice	-30\$



EventID	ElemID	Event type	Type	Available
...

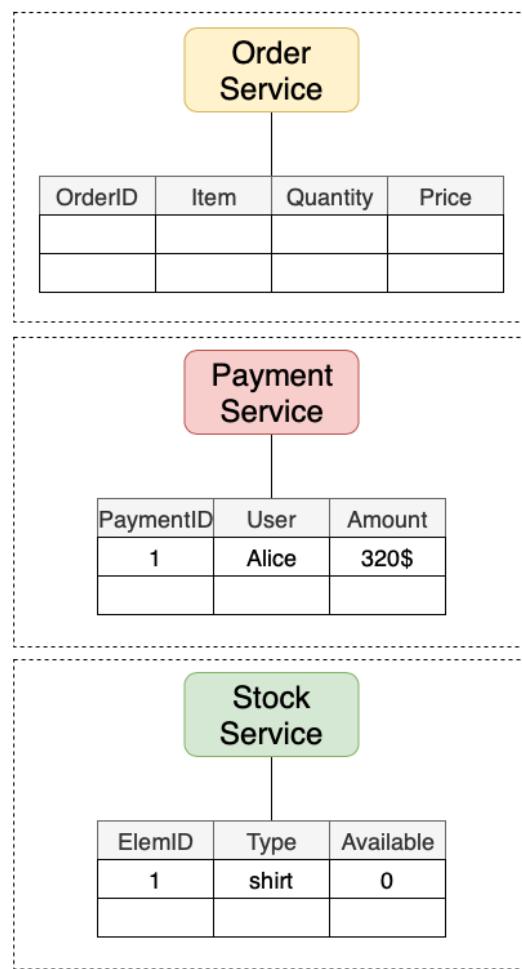


Order Saga Orchestrator

↓
Compensate Order 1

Saga Orchestrator Log

...
Start Saga Order 1
{ "Name" : "Alice", "Article" : "shirt", "Quantity" : 2, "Price" : "30\$" }
Start Order 1
End Order 1
{ "Success" : "true", "Order ID" : 1, }
Start Payment 1
End Payment 1
{ "Success" : "true", "Payment ID" : 1, }
Start Stock 1
Abort Stock 1
{ "Success" : "false", }



Order Events

Payment Events

Stock Events

Event Store

EventID	OrderID	Event type	Item	Quantity	Price
...
13	1	Created	shirt	2	30\$
14	1	Deleted	—	—	—

EventID	PaymentID	Event type	User	Amount
...
376	1	UptAmnt	Alice	-30\$

EventID	ElemID	Event type	Type	Available
...

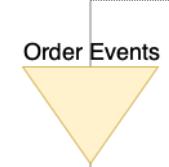
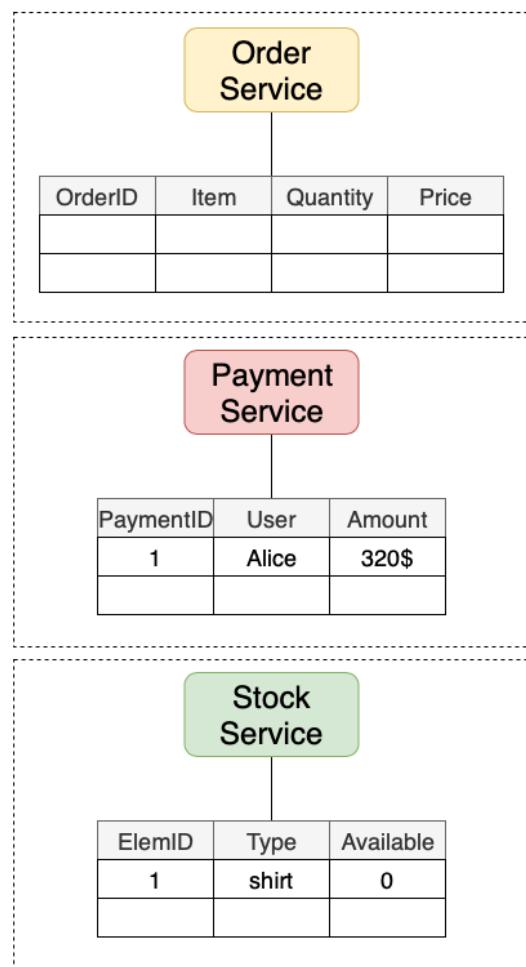
Order Saga Orchestrator

Saga Orchinator Log

```

...
Start Saga Order 1
{
  "Name" : "Alice",
  "Article" : "shirt",
  "Quantity" : 2,
  "Price" : "30$"
}
Start Order 1
End Order 1
{
  "Success" : "true",
  "Order ID" :1,
}
Start Payment 1
End Payment 1
{
  "Success" : "true",
  "Payment ID" :1,
}
Start Stock 1
Abort Stock 1
{
  "Success" : "false",
}
Comp. Order 1

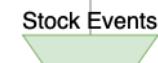
```



EventID	OrderID	Event type	Item	Quantity	Price
...
13	1	Created	shirt	2	30\$



EventID	PaymentID	Event type	User	Amount
...
376	1	UptAmnt	Alice	-30\$



EventID	ElemID	Event type	Type	Available
...

Order Saga Orchestrator



Saga Orchestrator Log

```

...
Start Saga Order 1
{
  "Name": "Alice",
  "Article": "shirt",
  "Quantity": 2,
  "Price": "30$"
}
Start Order 1
End Order 1
{
  "Success": "true",
  "Order ID": 1,
}
Start Payment 1
End Payment 1
{
  "Success": "true",
  "Payment ID": 1,
}
Start Stock 1
Abort Stock 1
{
  "Success": "false",
}
Comp. Order 1

```

Order Service

OrderID	Item	Quantity	Price

Payment Service

PaymentID	User	Amount
1	Alice	320\$

Stock Service

ElemID	Type	Available
1	shirt	0

Order Events

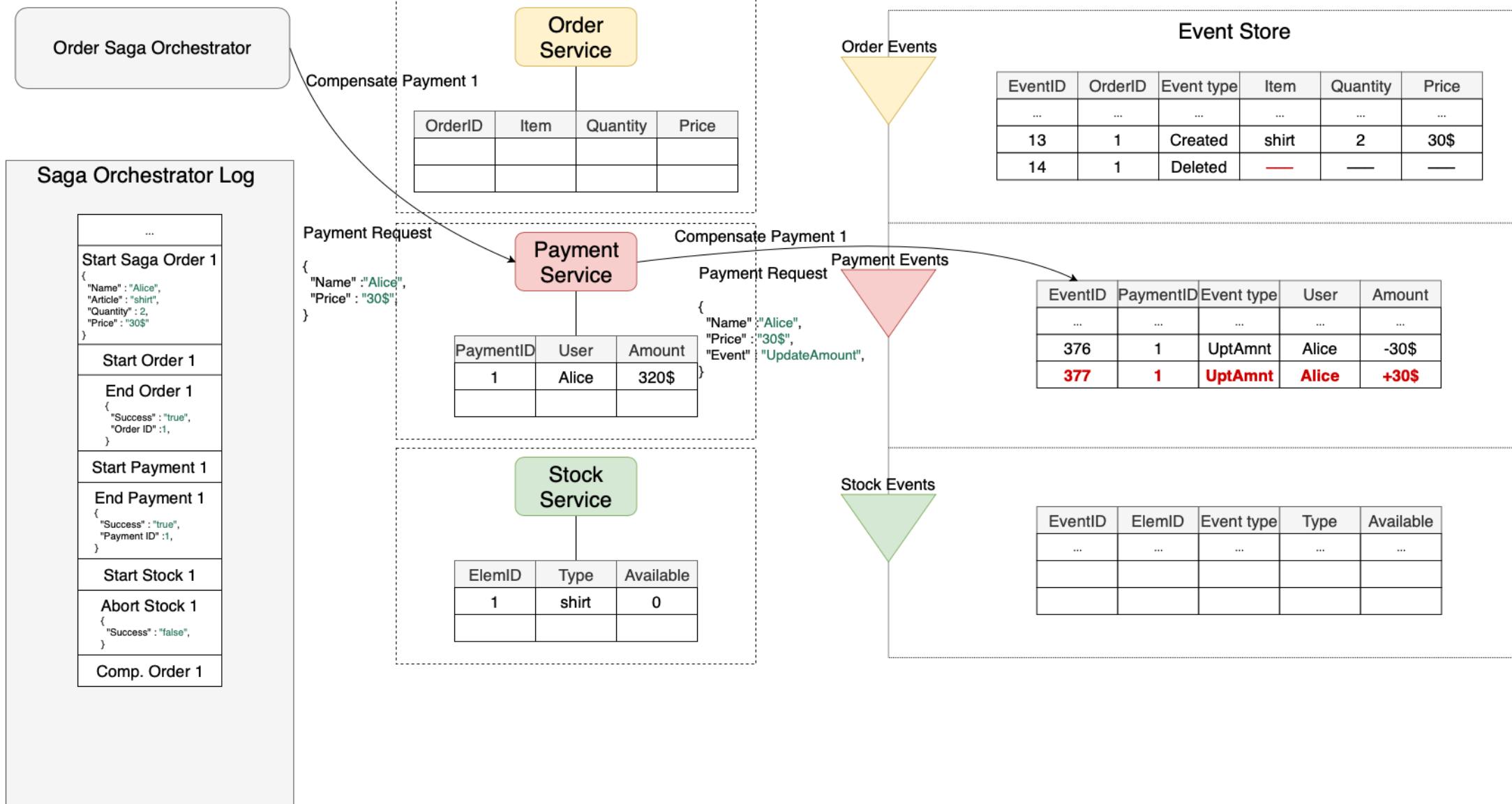
EventID	OrderID	Event type	Item	Quantity	Price
...
13	1	Created	shirt	2	30\$
14	1	Deleted	—	—	—

Payment Events

EventID	PaymentID	Event type	User	Amount
...
376	1	UptAmnt	Alice	-30\$

Stock Events

EventID	ElemID	Event type	Type	Available
...



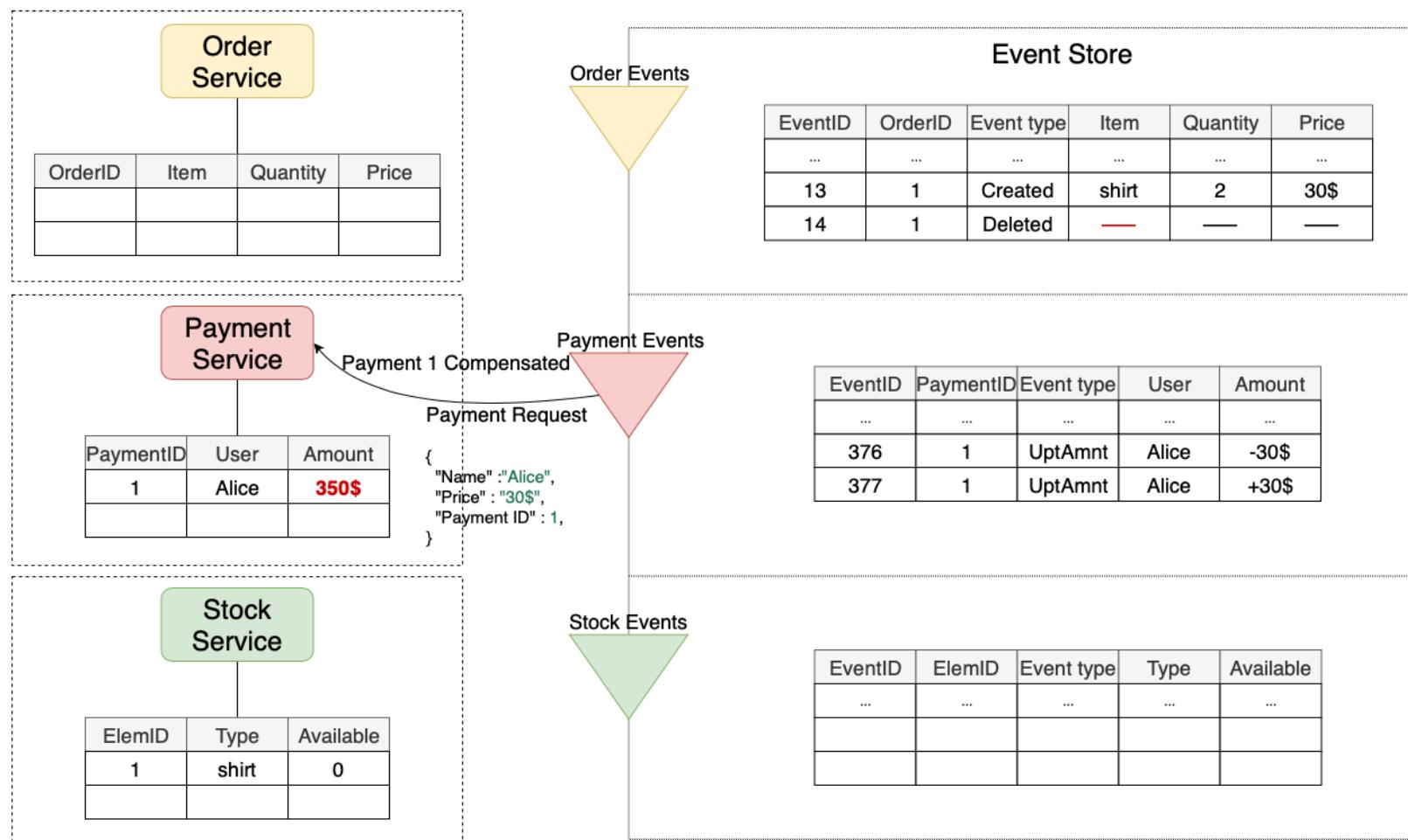
Order Saga Orchestrator

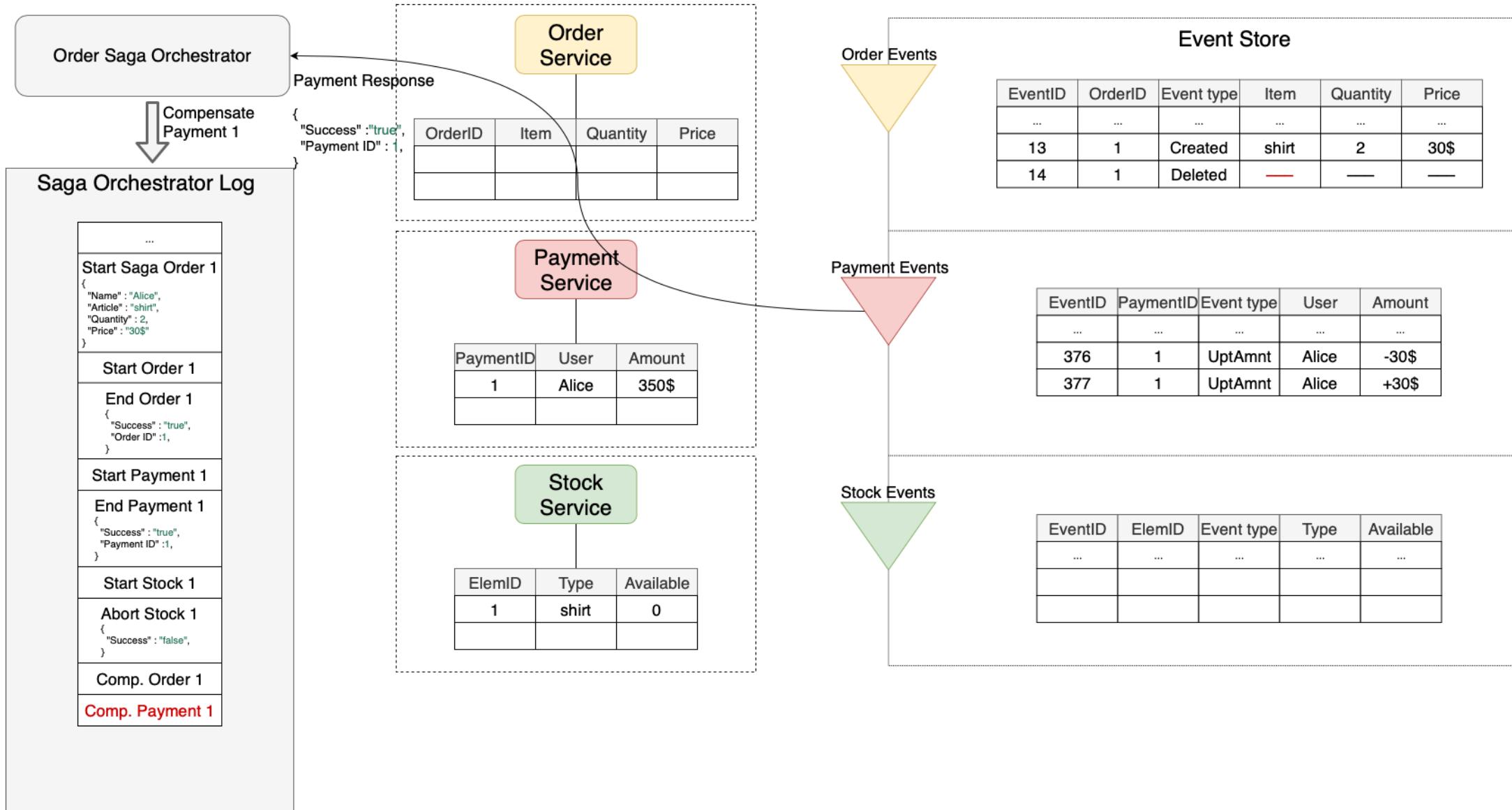
Saga Orchinator Log

```

...
Start Saga Order 1
{
  "Name" : "Alice",
  "Article" : "shirt",
  "Quantity" : 2,
  "Price" : "30$"
}
Start Order 1
End Order 1
{
  "Success" : "true",
  "Order ID" : 1,
}
Start Payment 1
End Payment 1
{
  "Success" : "true",
  "Payment ID" : 1,
}
Start Stock 1
Abort Stock 1
{
  "Success" : "false",
}
Comp. Order 1

```





Order Saga Orchestrator

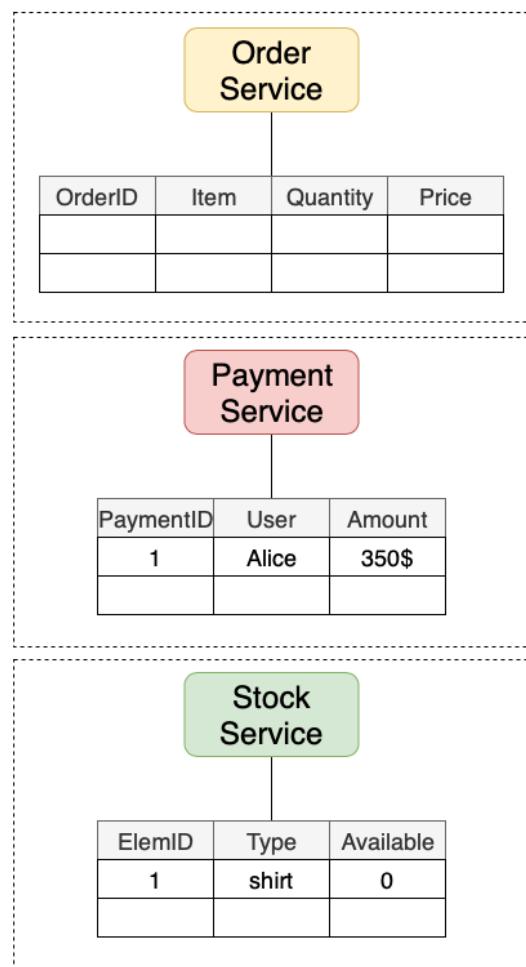


Saga Orchinator Log

```

...
Start Saga Order 1
{
  "Name": "Alice",
  "Article": "shirt",
  "Quantity": 2,
  "Price": "30$"
}
Start Order 1
End Order 1
{
  "Success": "true",
  "Order ID": 1,
}
Start Payment 1
End Payment 1
{
  "Success": "true",
  "Payment ID": 1,
}
Start Stock 1
Abort Stock 1
{
  "Success": "false",
}
Comp. Order 1
Comp. Payment 1

```



Order Events

EventID	OrderID	Event type	Item	Quantity	Price
...
13	1	Created	shirt	2	30\$

Payment Events

EventID	PaymentID	Event type	User	Amount
...
376	1	UptAmnt	Alice	-30\$

Stock Events

EventID	ElemID	Event type	Type	Available
...

Order Saga Orchestrator

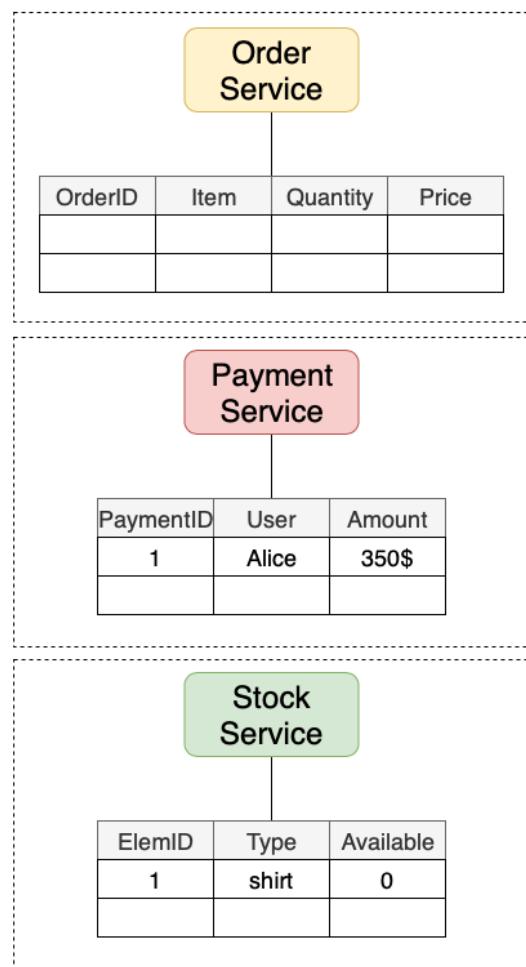


Saga Orchestrator Log

```

...
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{
  "Name" : "Alice",
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  "Quantity" : 2,
  "Price" : "30$"
}
Start Order 1
End Order 1
{
  "Success" : "true",
  "Order ID" : 1,
}
Start Payment 1
End Payment 1
{
  "Success" : "true",
  "Payment ID" : 1,
}
Start Stock 1
Abort Stock 1
{
  "Success" : "false",
}
Comp. Order 1
Comp. Payment 1
End Saga Order 1

```



Order Events

EventID	OrderID	Event type	Item	Quantity	Price
...
13	1	Created	shirt	2	30\$

Payment Events

EventID	PaymentID	Event type	User	Amount
...
376	1	UptAmnt	Alice	-30\$

Stock Events

EventID	ElemID	Event type	Type	Available
...

Order Saga Orchestrator

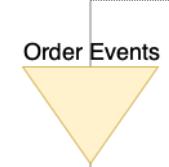
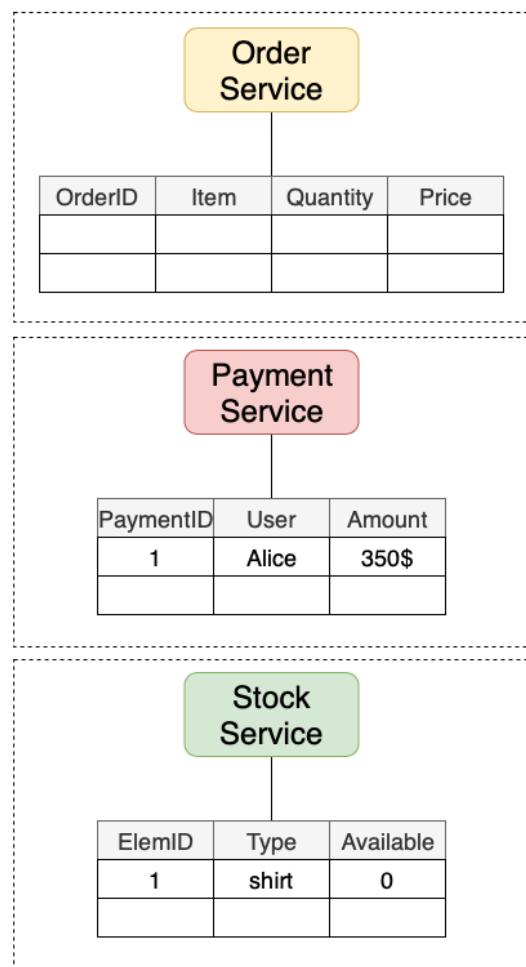


Saga Orchinator Log

```

...
Start Saga Order 1
{
  "Name": "Alice",
  "Article": "shirt",
  "Quantity": 2,
  "Price": "30$"
}
Start Order 1
End Order 1
{
  "Success": "true",
  "Order ID": 1,
}
Start Payment 1
End Payment 1
{
  "Success": "true",
  "Payment ID": 1,
}
Start Stock 1
Abort Stock 1
{
  "Success": "false",
}
Comp. Order 1
Comp. Payment 1
End Saga Order 1

```

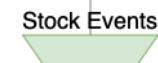


Event Store

EventID	OrderID	Event type	Item	Quantity	Price
...
13	1	Created	shirt	2	30\$



EventID	PaymentID	Event type	User	Amount
...
376	1	UptAmnt	Alice	-30\$



EventID	ElemID	Event type	Type	Available
...

Order Saga Orchestrator

Saga Orchinator Log

```

...
Start Saga Order 1
{
  "Name" : "Alice",
  "Article" : "shirt",
  "Quantity" : 2,
  "Price" : "30$"
}
Start Order 1
End Order 1
{
  "Success" : "true",
  "Order ID" :1,
}
Start Payment 1
End Payment 1
{
  "Success" : "true",
  "Payment ID" :1,
}
Start Stock 1
Abort Stock 1
{
  "Success" : "false",
}
Comp. Order 1
Comp. Payment 1
End Saga Order 1

```

