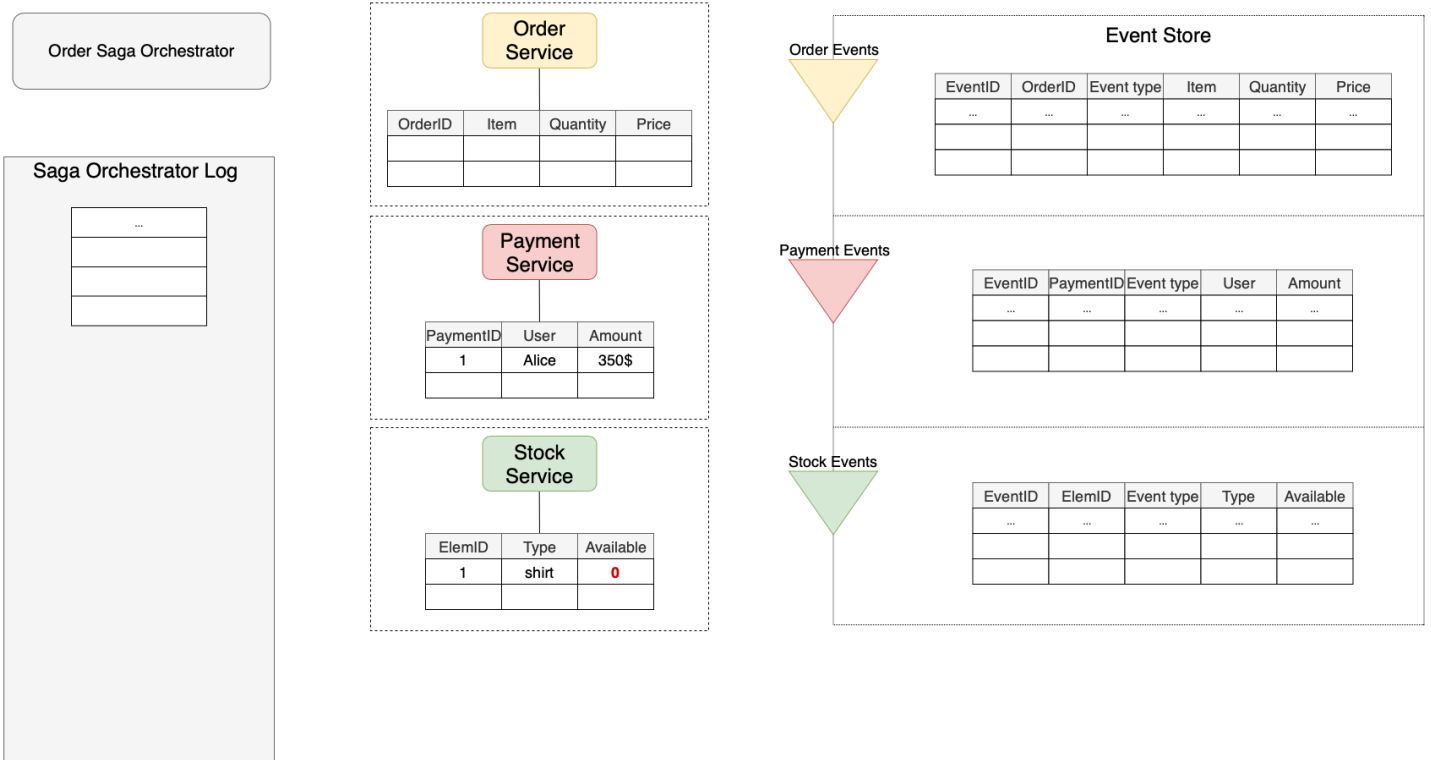


SAGA Example

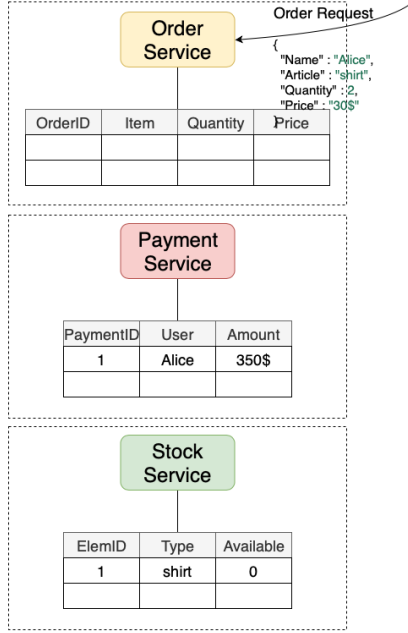
Andrea Cifola



Order Saga Orchestrator

Saga Orchestrator Log

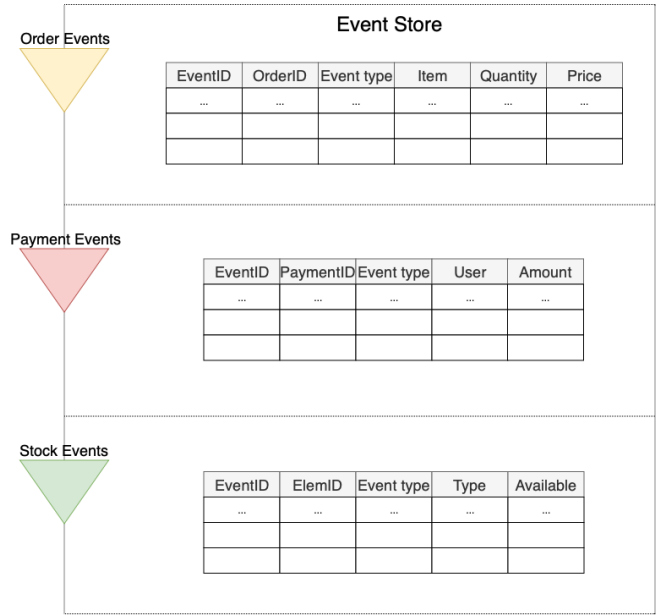
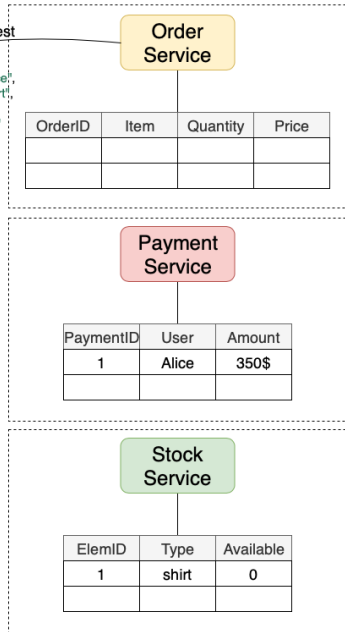
...



Order Saga Orchestrator

Saga Orchestrator Log

...



Order Saga Orchestrator

Start Saga Order 1

Saga Orchestrator Log

...

Order Service

OrderID	Item	Quantity	Price

Payment Service

PaymentID	User	Amount
1	Alice	350\$

Stock Service

ElemID	Type	Available
1	shirt	0

Event Store

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 Orchestrator Log

...
Start Saga Order 1
{
"Name": "Alice",
"Article": "shirt",
"Quantity": 2,
"Price": "350\$"
}

Order Service

OrderID	Item	Quantity	Price

Payment Service

PaymentID	User	Amount
1	Alice	350\$

Stock Service

ElemID	Type	Available
1	shirt	0

Event Store

Order Events

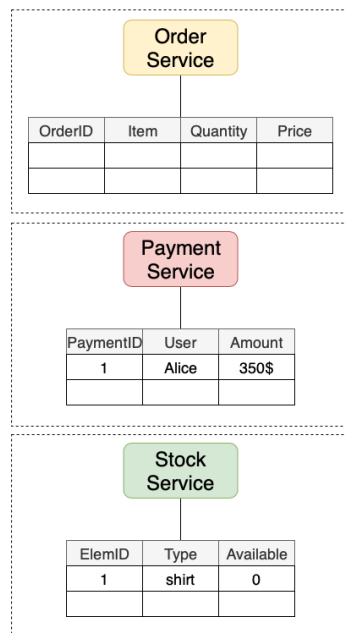
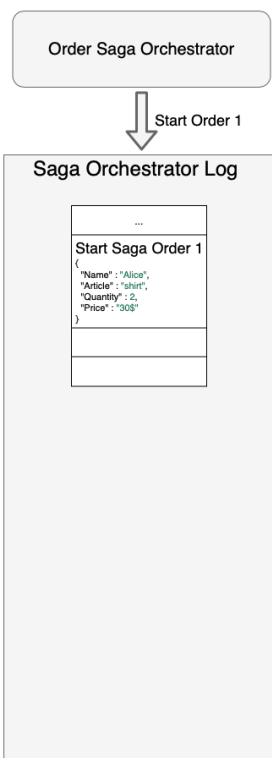
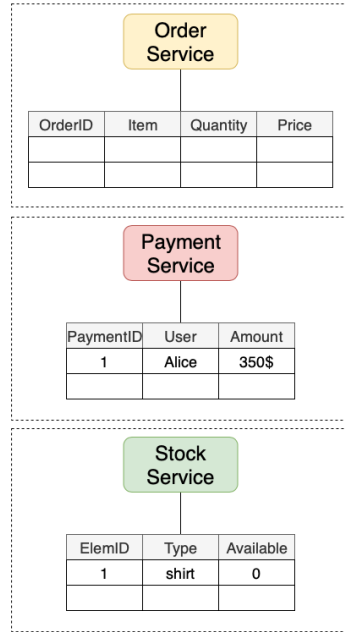
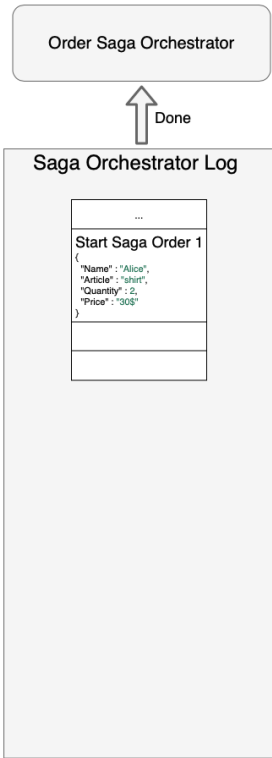
EventID	OrderID	Event type	Item	Quantity	Price
...

Payment Events

EventID	PaymentID	Event type	User	Amount
...

Stock Events

EventID	ElemID	Event type	Type	Available
...



Order Saga Orchestrator

Saga Orchestrator Log

```
...  
Start Saga Order 1  
{  
  "Name": "Alice",  
  "Article": "shirt",  
  "Quantity": 2,  
  "Price": "350$"  
}  
  
Start Order 1
```

Order Service

OrderID	Item	Quantity	Price

Payment Service

PaymentID	User	Amount
1	Alice	350\$

Stock Service

ElemID	Type	Available
1	shirt	0

Event Store

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 Orchestrator Log

```
...  
Start Saga Order 1  
{  
  "Name": "Alice",  
  "Article": "shirt",  
  "Quantity": 2,  
  "Price": "350$"  
}  
  
Start Order 1
```

Done

Order Service

OrderID	Item	Quantity	Price

Payment Service

PaymentID	User	Amount
1	Alice	350\$

Stock Service

ElemID	Type	Available
1	shirt	0

Event Store

Order Events

EventID	OrderID	Event type	Item	Quantity	Price
...

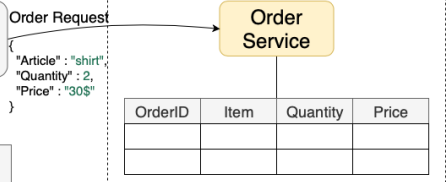
Payment Events

EventID	PaymentID	Event type	User	Amount
...

Stock Events

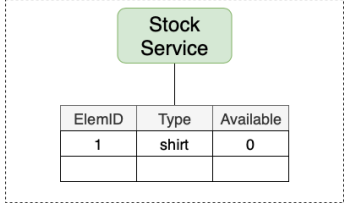
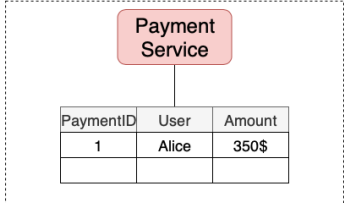
EventID	ElemID	Event type	Type	Available
...

Order Saga Orchestrator

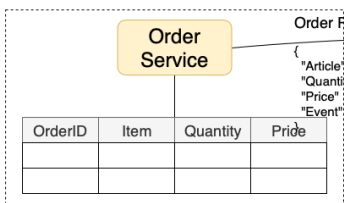


Saga Orchestrator Log

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

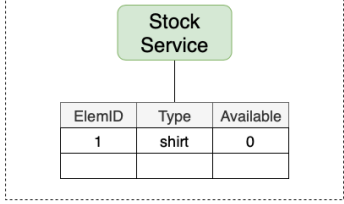
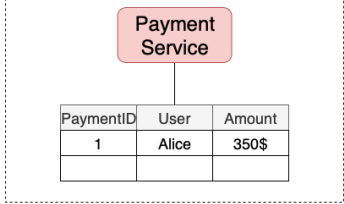


Order Saga Orchestrator



Saga Orchestrator Log

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



Order Saga Orchestrator

Saga Orchestrator Log

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

Order Service

OrderID	Item	Quantity	Price

Payment Service

PaymentID	User	Amount
1	Alice	350\$

Stock Service

ElemID	Type	Available
1	shirt	0

Event Store

Order Events

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

Payment Events

EventID	PaymentID	Event type	User	Amount
...

Stock Events

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
```

Order Service

OrderID	Item	Quantity	Price

Payment Service

PaymentID	User	Amount
1	Alice	350\$

Stock Service

ElemID	Type	Available
1	shirt	0

Event Store

Order Events

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

Payment Events

EventID	PaymentID	Event type	User	Amount
...

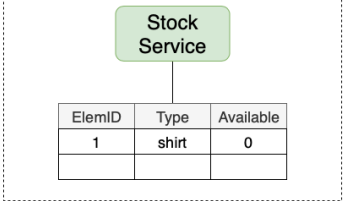
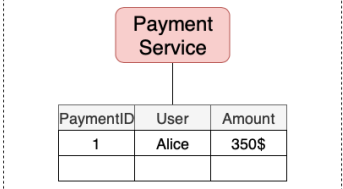
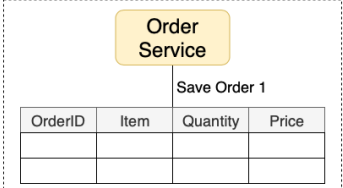
Stock Events

EventID	ElemID	Event type	Type	Available
...

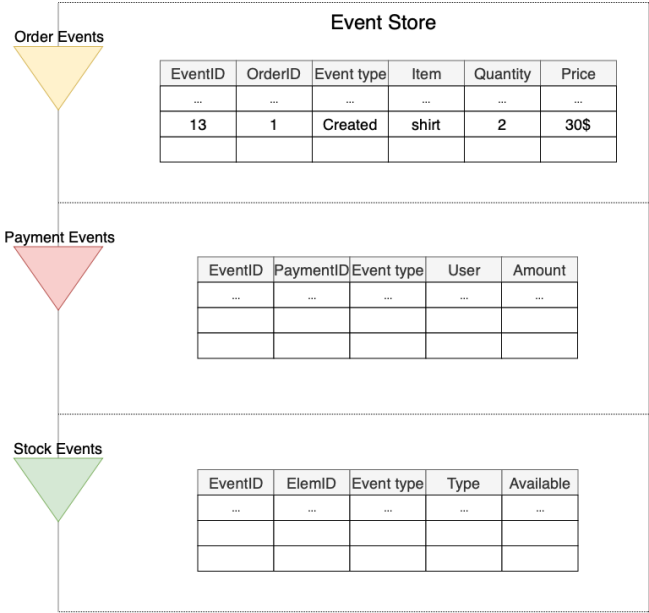
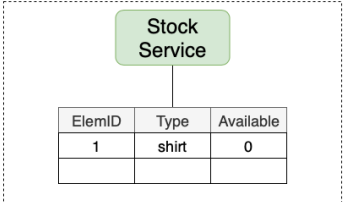
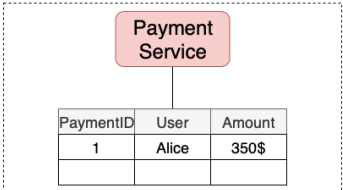
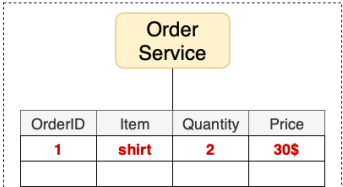
Order 1 Created

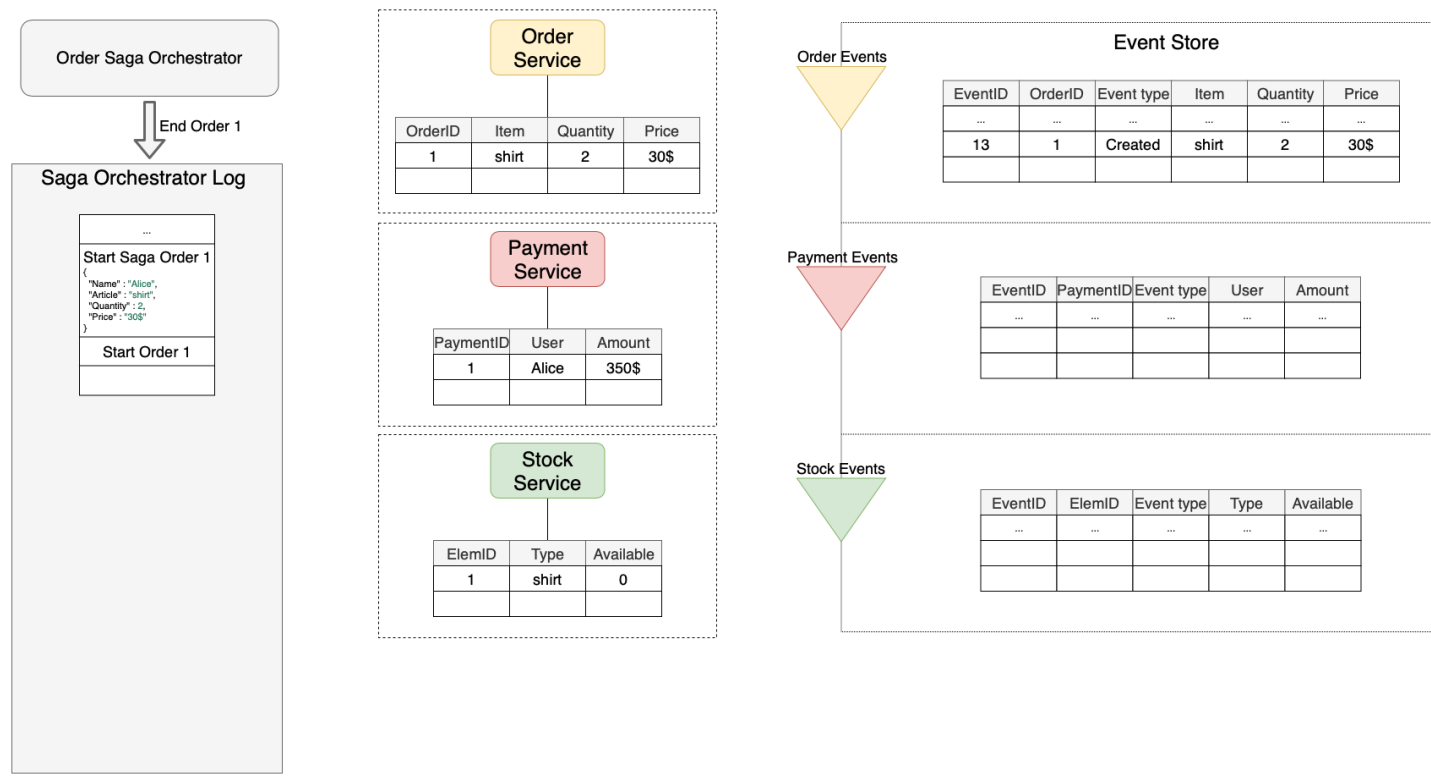
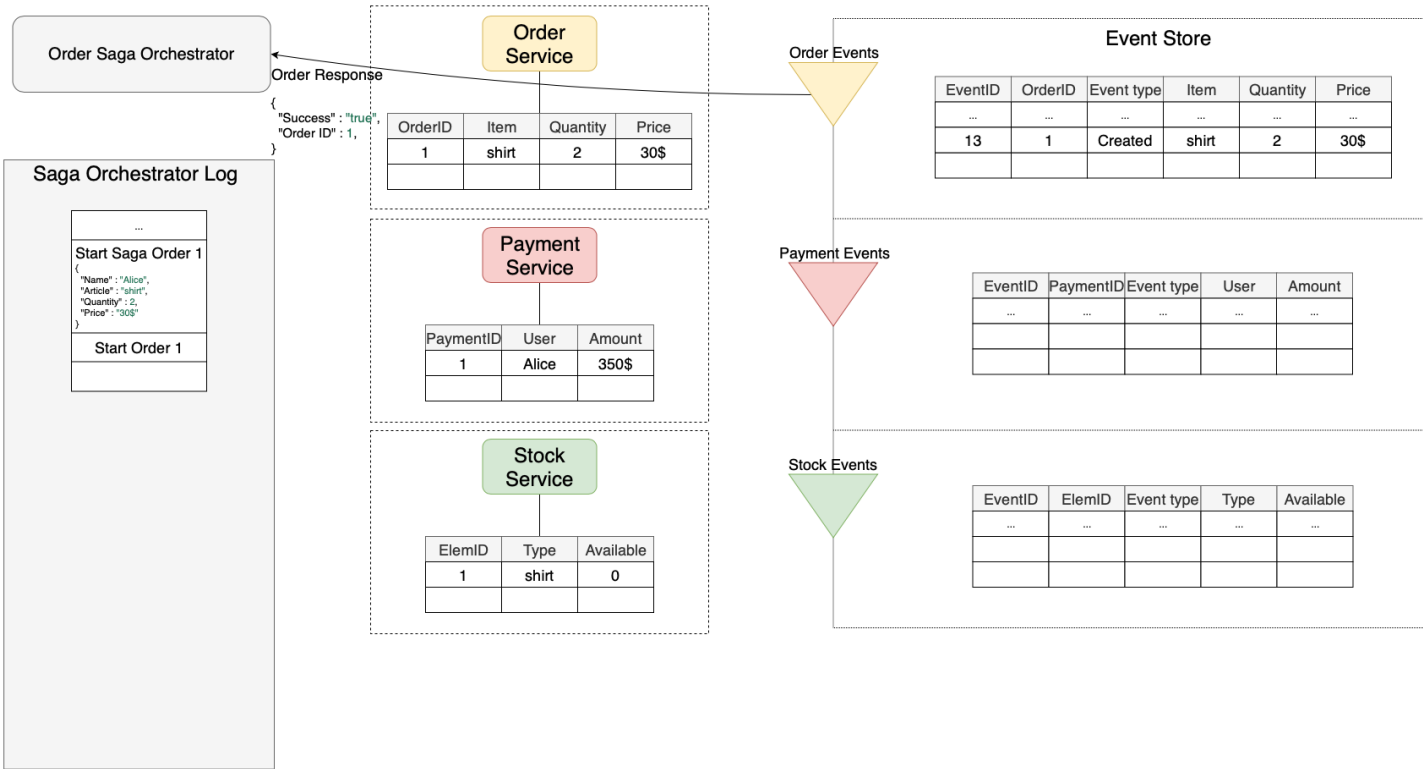
```
{  
  "Article": "shirt",  
  "Quantity": 2,  
  "Price": "30$"  
  "OrderID": 1,  
}
```

Order Saga Orchestrator



Order Saga Orchestrator





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 Service

OrderID	Item	Quantity	Price
1	shirt	2	30\$

Payment Service

PaymentID	User	Amount
1	Alice	350\$

Stock Service

ElemID	Type	Available
1	shirt	0

Event Store

Order Events

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

Payment Events

EventID	PaymentID	Event type	User	Amount
...

Stock Events

EventID	ElemID	Event type	Type	Available
...

Order Saga Orchestrator

Saga Orchestrator Log

↑ Done

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

Order Service

OrderID	Item	Quantity	Price
1	shirt	2	30\$

Payment Service

PaymentID	User	Amount
1	Alice	350\$

Stock Service

ElemID	Type	Available
1	shirt	0

Event Store

Order Events

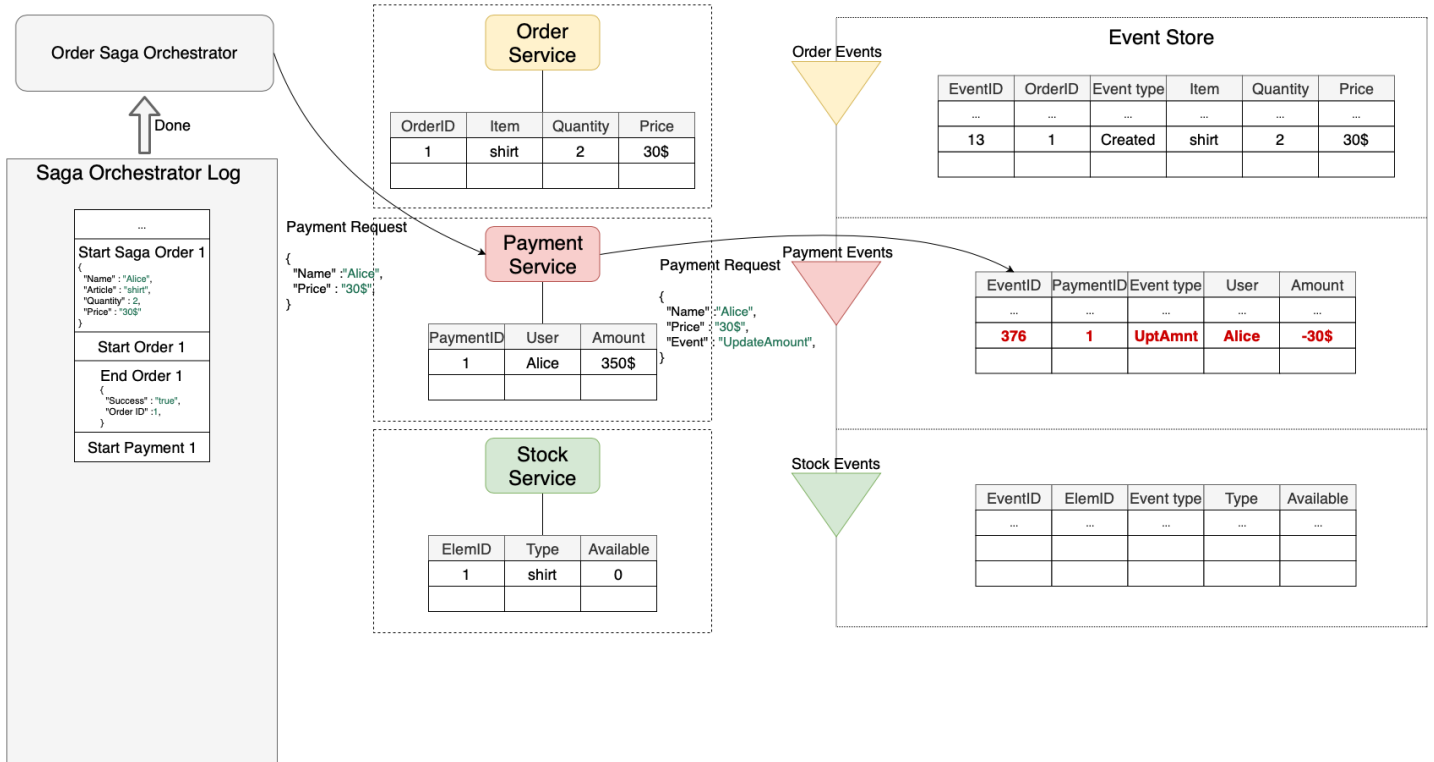
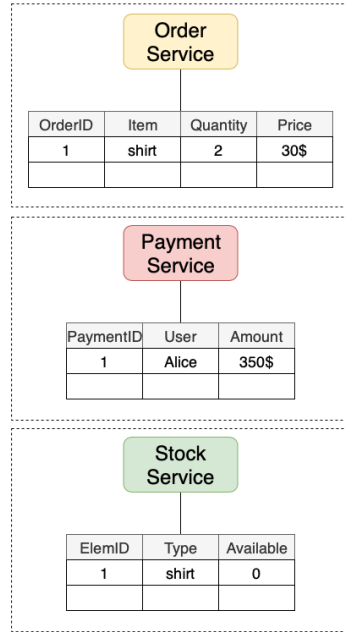
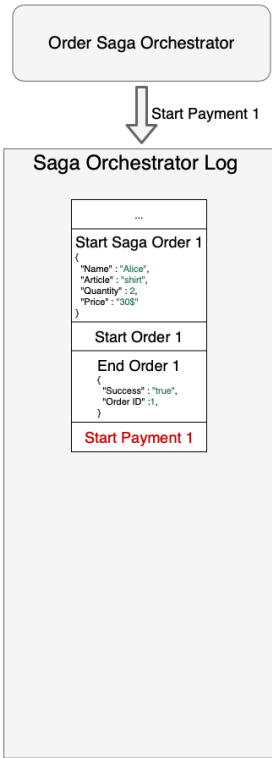
EventID	OrderID	Event type	Item	Quantity	Price
...
13	1	Created	shirt	2	30\$

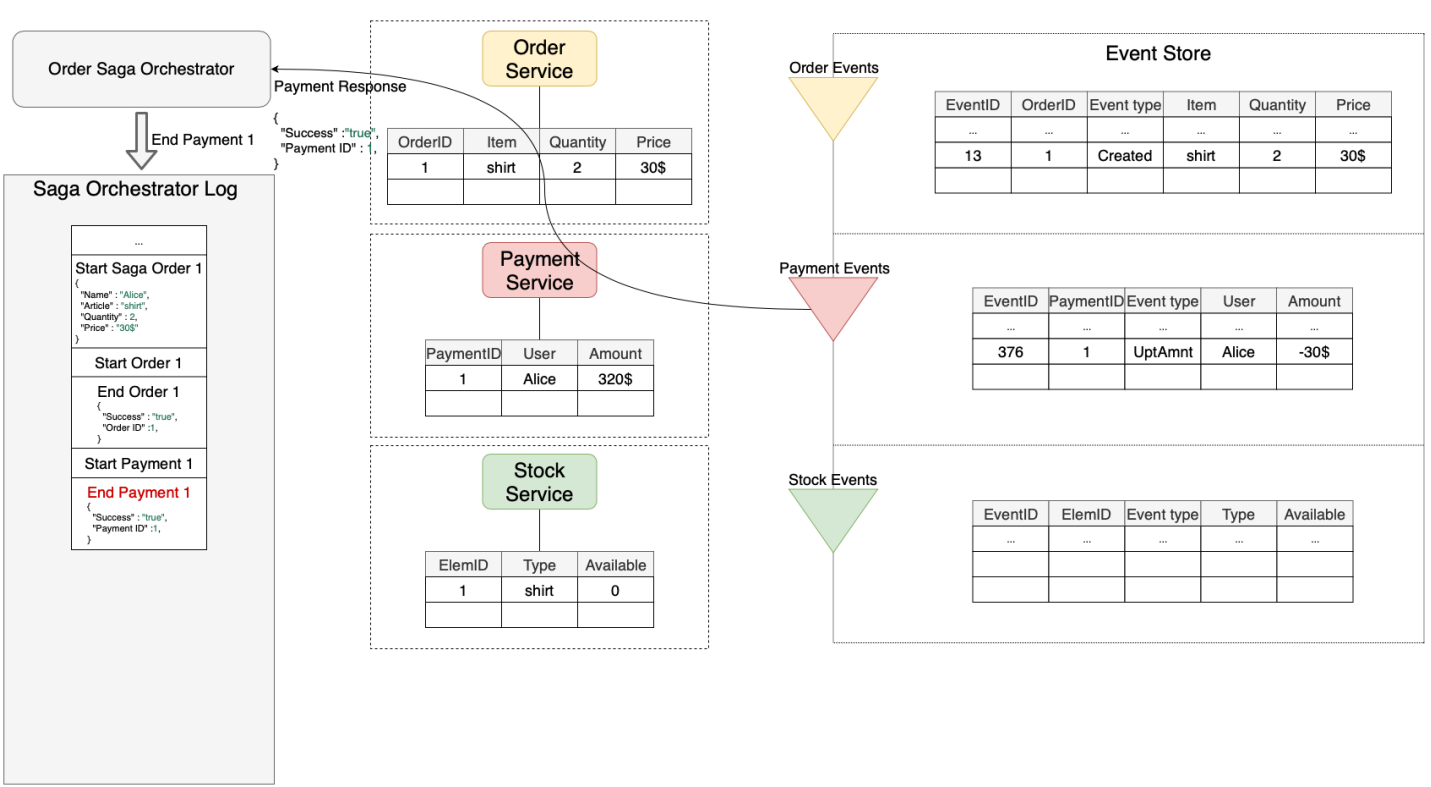
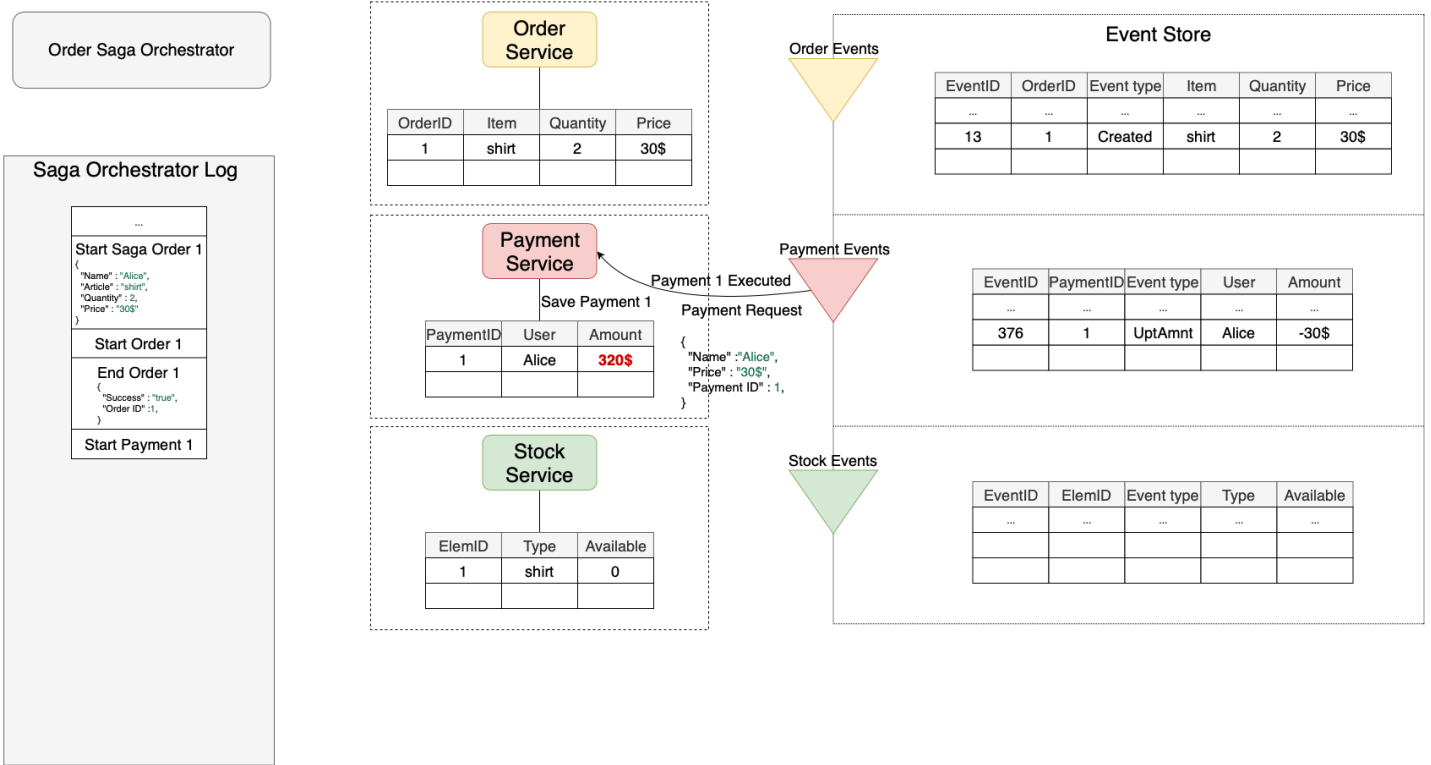
Payment Events

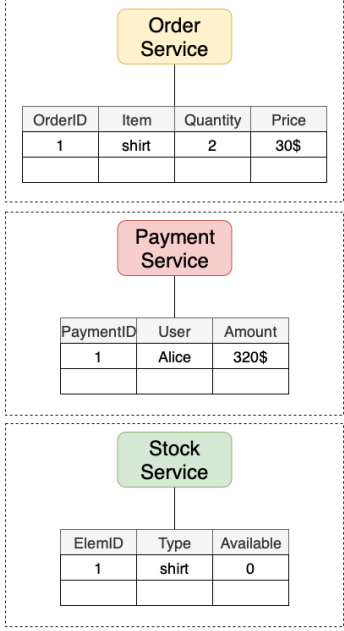
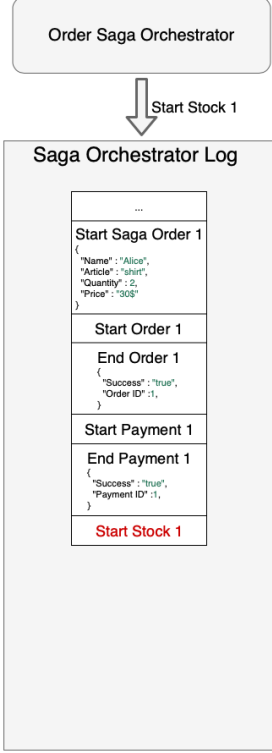
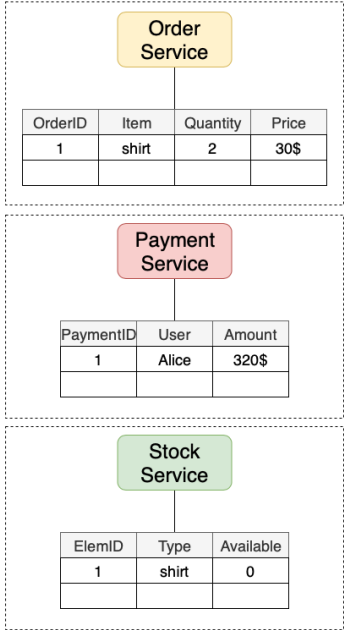
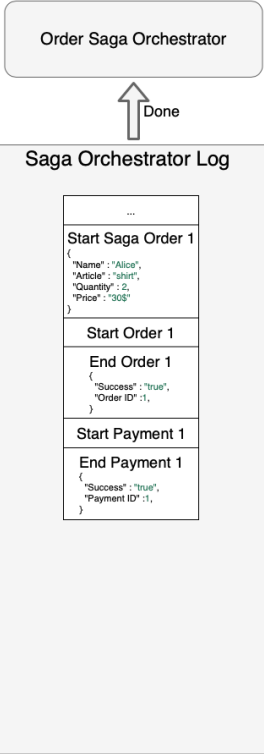
EventID	PaymentID	Event type	User	Amount
...

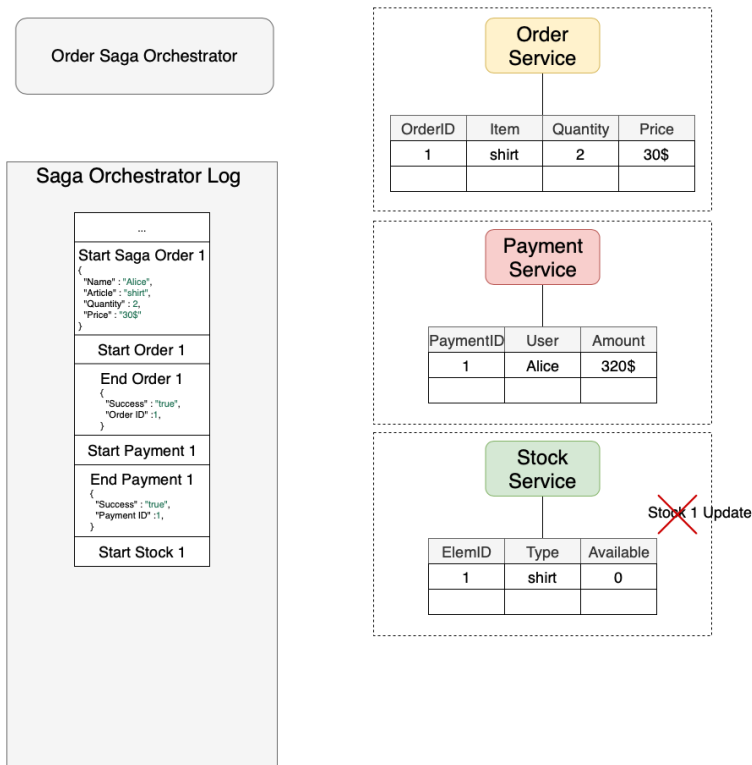
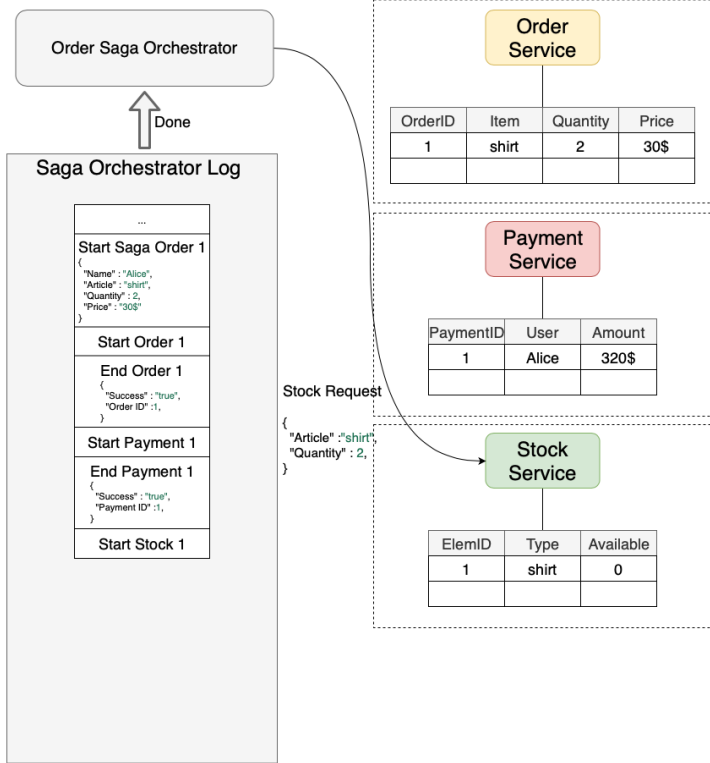
Stock Events

EventID	ElemID	Event type	Type	Available
...









Order Saga Orchestrator

Order Service

OrderID	Item	Quantity	Price
1	shirt	2	30\$

Payment Service

PaymentID	User	Amount
1	Alice	320\$

Stock Service

ElemID	Type	Available
1	shirt	0

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
  
```

Stock Response
 {
 "Success": "false",
 }

Event Store

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

Order Service

OrderID	Item	Quantity	Price
1	shirt	2	30\$

Payment Service

PaymentID	User	Amount
1	Alice	320\$

Stock Service

ElemID	Type	Available
1	shirt	0

↓ 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
  
```

Event Store

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
...
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 Service

OrderID	Item	Quantity	Price
1	shirt	2	30\$

Payment Service

PaymentID	User	Amount
1	Alice	320\$

Stock Service

ElemID	Type	Available
1	shirt	0



Order Saga Orchestrator

↑ Done

```
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 Service

OrderID	Item	Quantity	Price
1	shirt	2	30\$

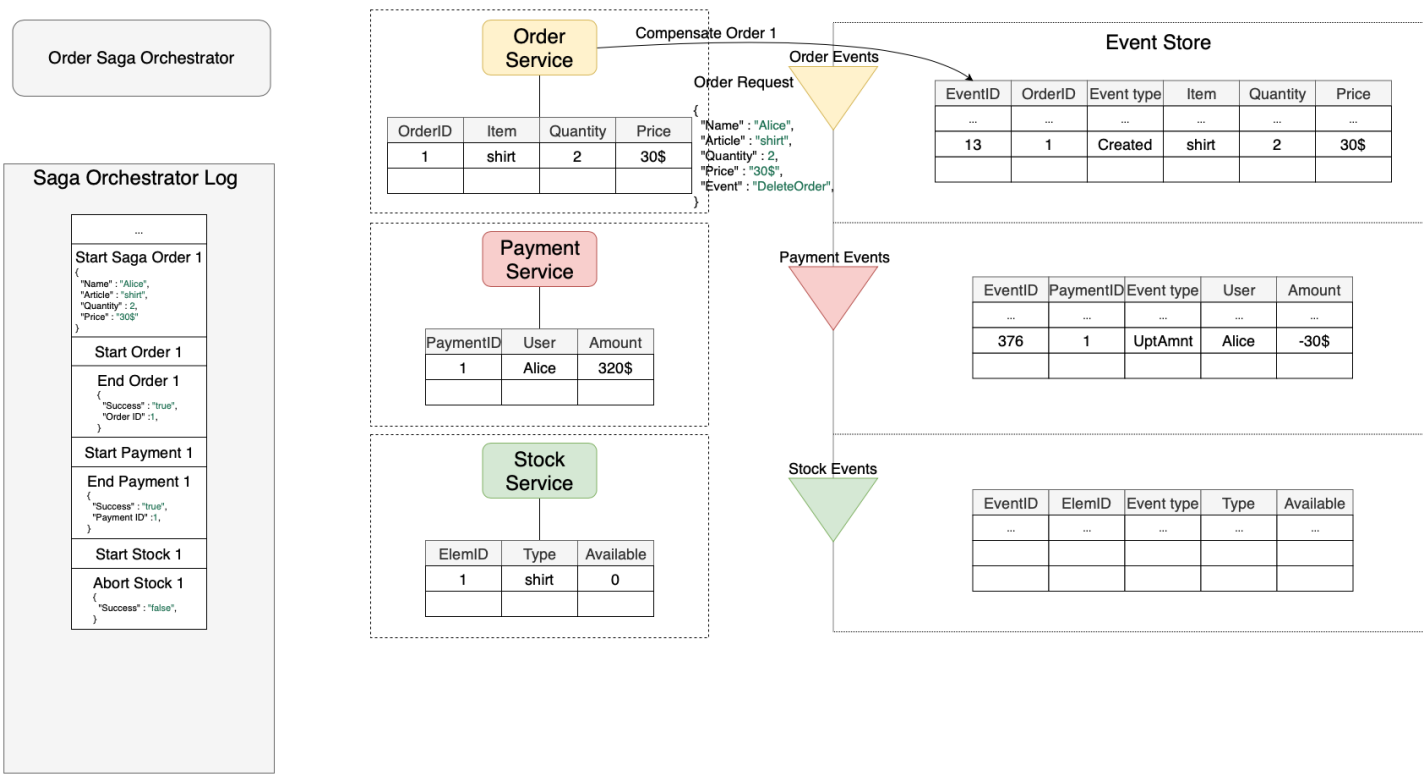
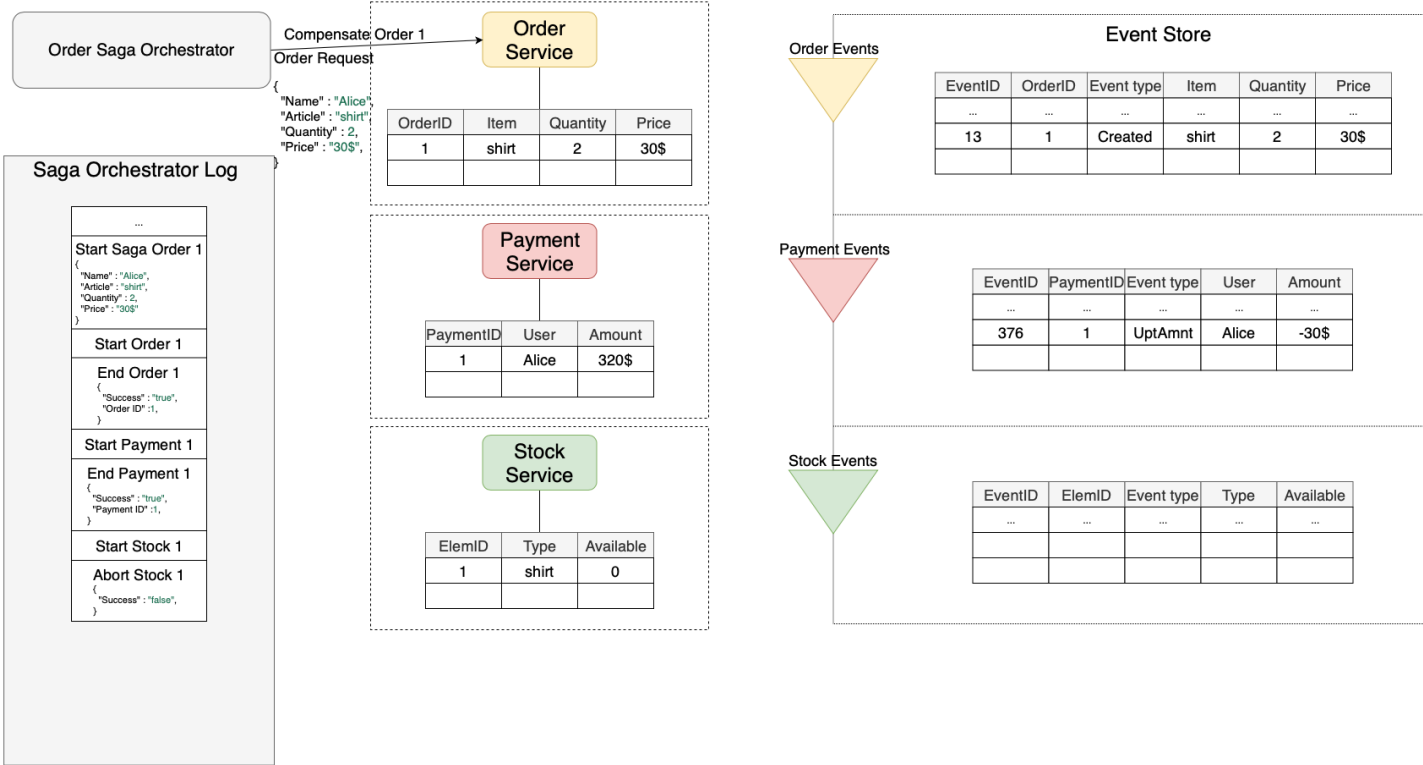
Payment Service

PaymentID	User	Amount
1	Alice	320\$

Stock Service

ElemID	Type	Available
1	shirt	0





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 Service

OrderID	Item	Quantity	Price
1	shirt	2	30\$

Payment Service

PaymentID	User	Amount
1	Alice	320\$

Stock Service

ElemID	Type	Available
1	shirt	0



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 Service

OrderID	Item	Quantity	Price
1	shirt	2	30\$

Payment Service

PaymentID	User	Amount
1	Alice	320\$

Stock Service

ElemID	Type	Available
1	shirt	0



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 Service

Cancel Order 1

OrderID	Item	Quantity	Price
1	shirt	2	30\$

Payment Service

PaymentID	User	Amount
1	Alice	320\$

Stock Service

ElemID	Type	Available
1	shirt	0



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 Service

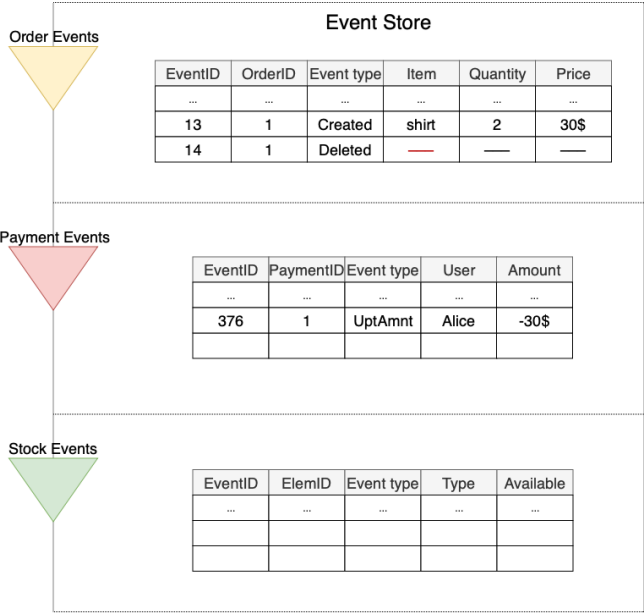
OrderID	Item	Quantity	Price

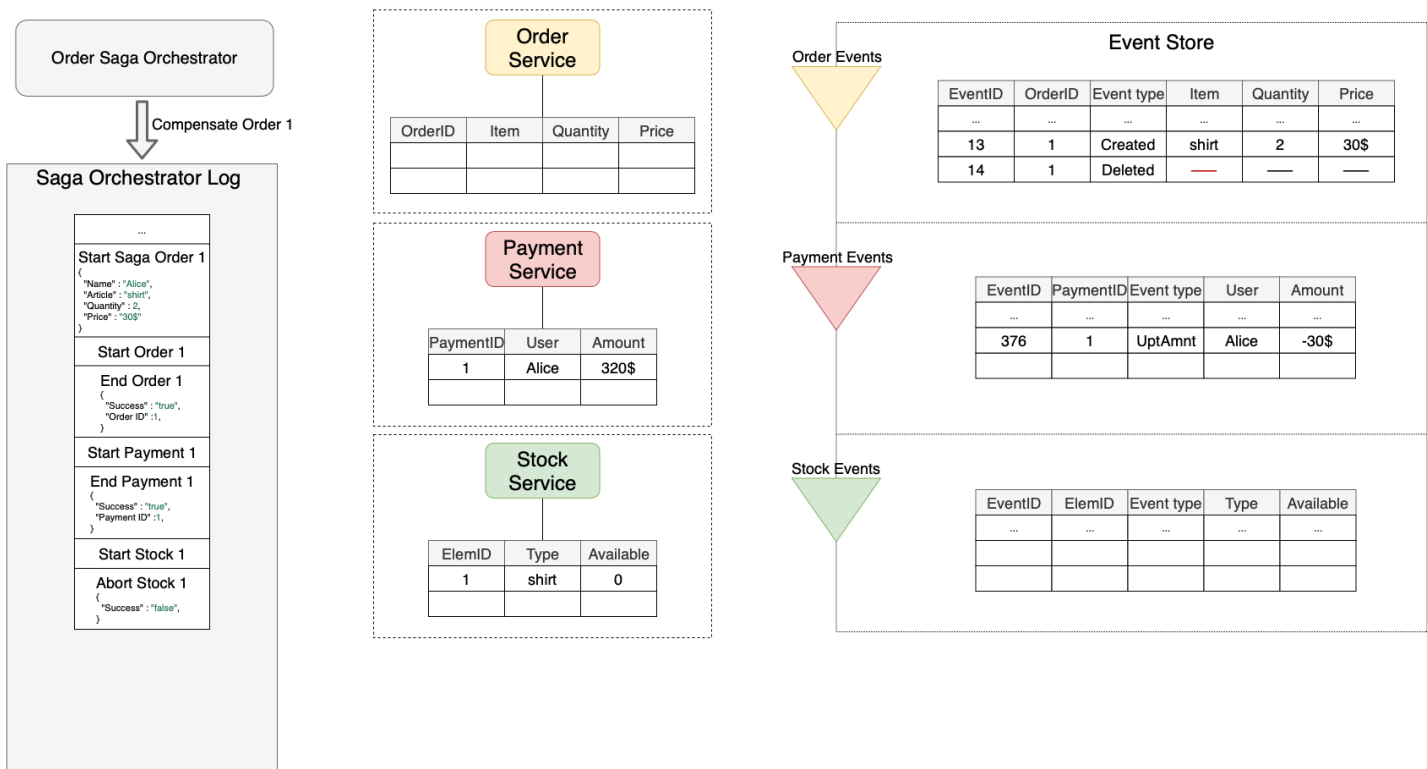
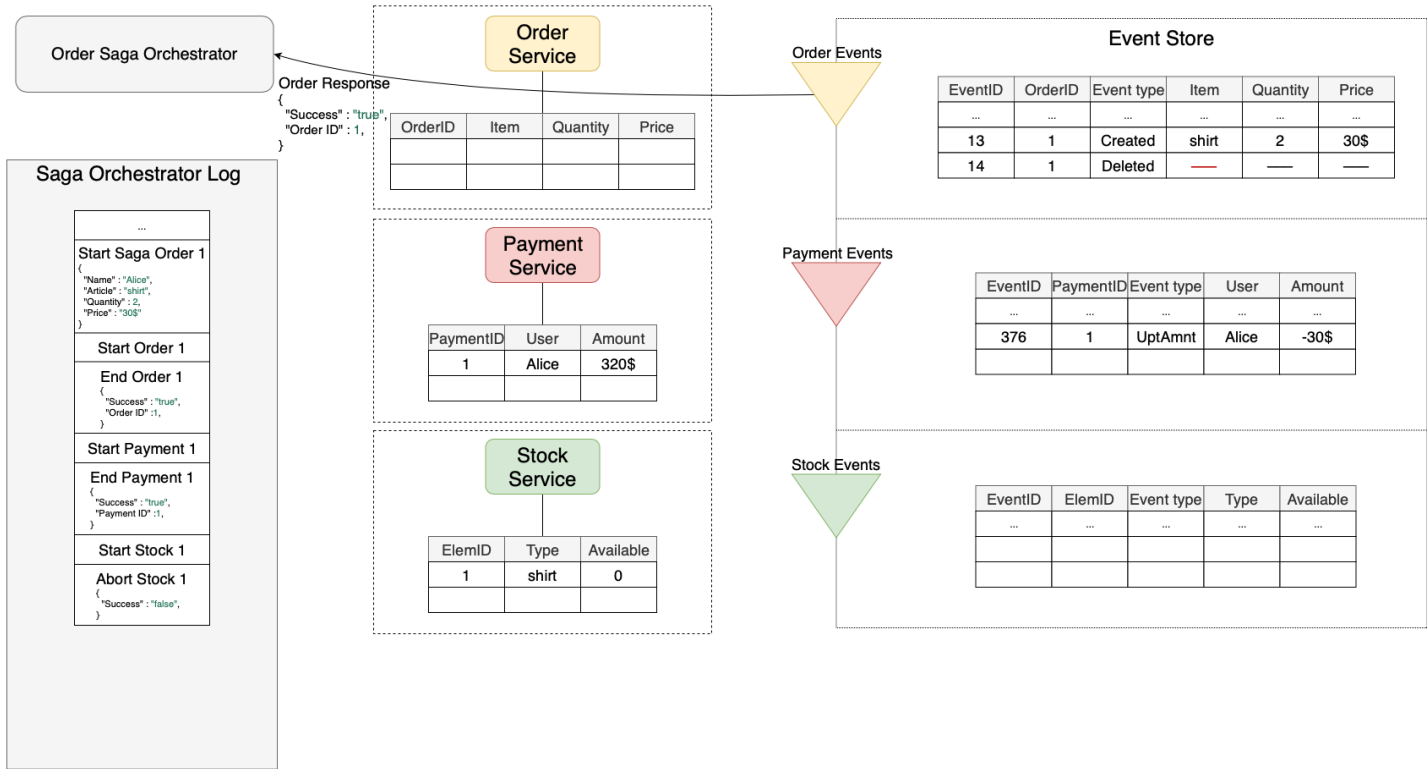
Payment Service

PaymentID	User	Amount
1	Alice	320\$

Stock Service

ElemID	Type	Available
1	shirt	0





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

Event Store

Order Events

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

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

```

...
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
  
```

↑ Done

Order Service

OrderID	Item	Quantity	Price

Payment Service

PaymentID	User	Amount
1	Alice	320\$

Stock Service

ElemID	Type	Available
1	shirt	0

Event Store

Order Events

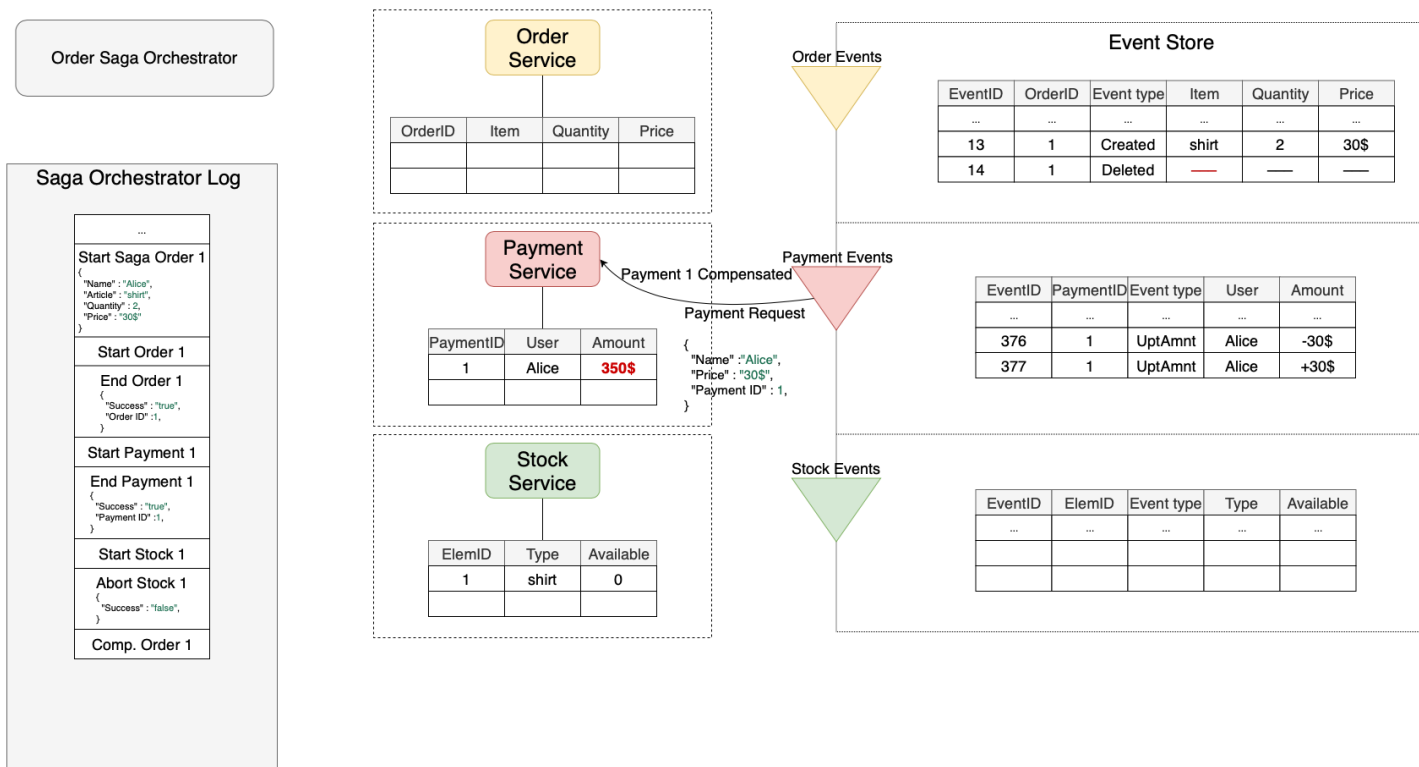
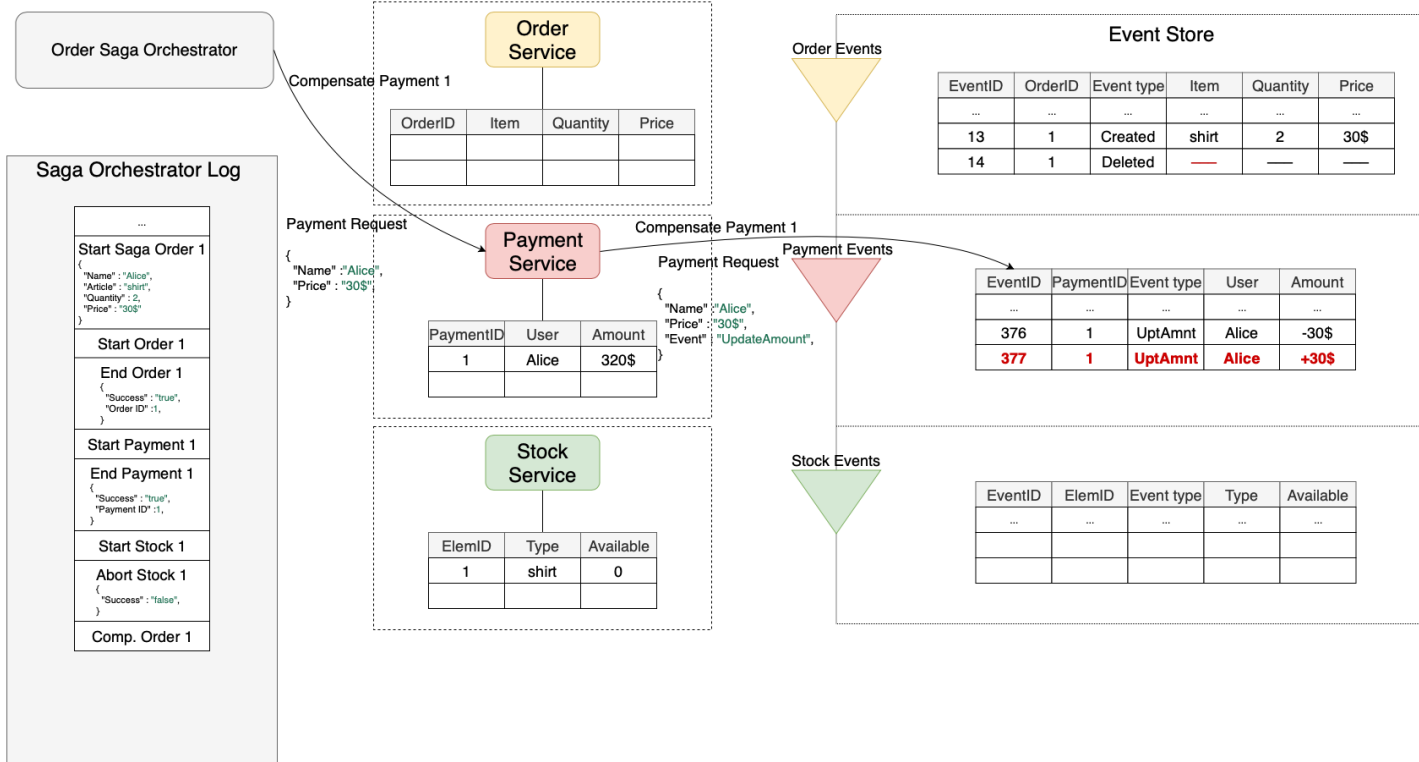
EventID	OrderID	Event type	Item	Quantity	Price
...
13	1	Created	shirt	2	30\$
14	1	Deleted	shirt	—	—

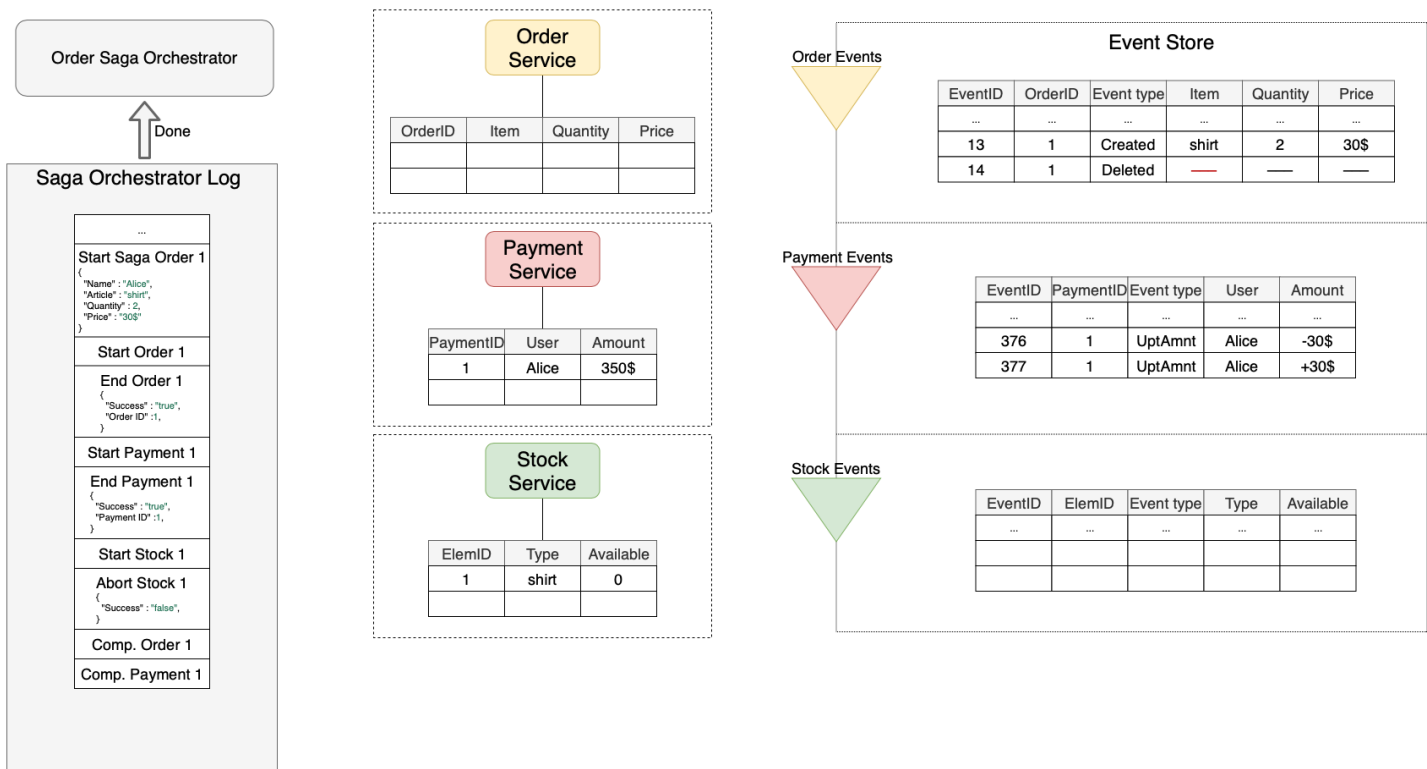
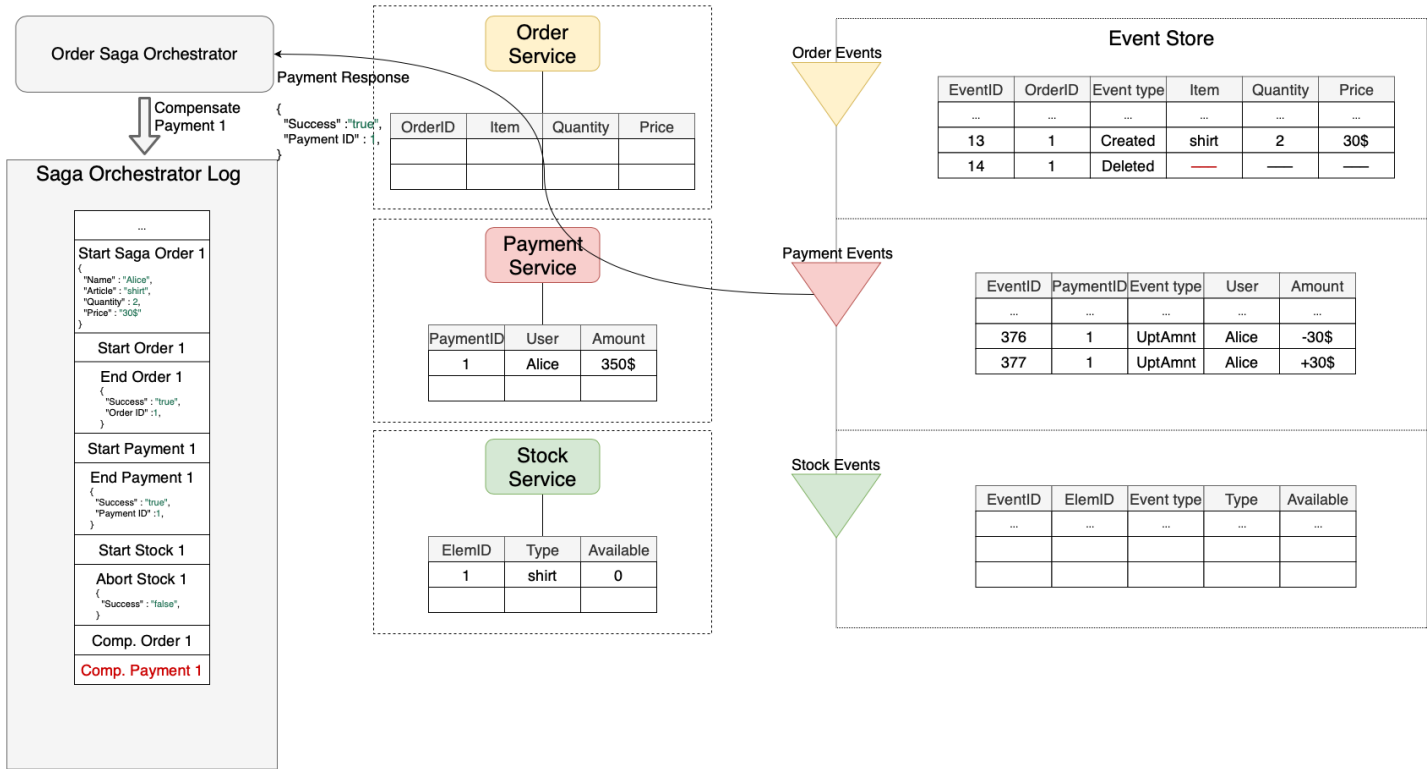
Payment Events

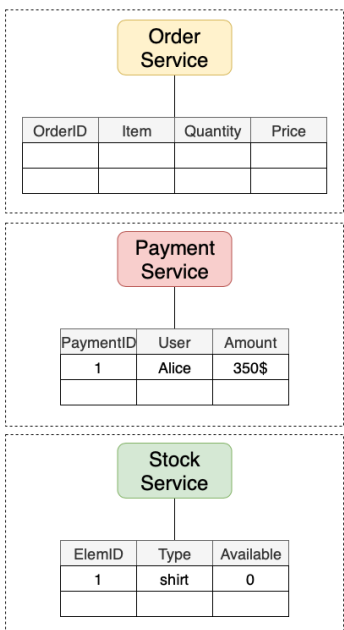
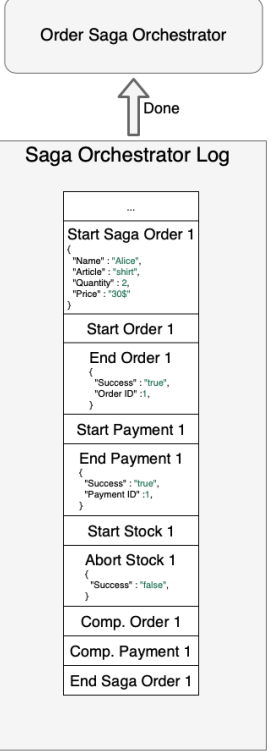
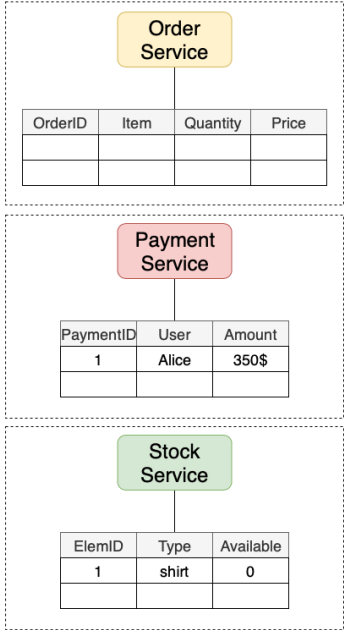
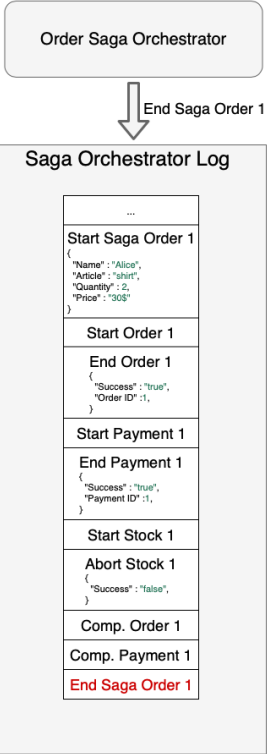
EventID	PaymentID	Event type	User	Amount
...
376	1	UptAmnt	Alice	-30\$

Stock Events

EventID	ElemID	Event type	Type	Available
...







Order Saga Orchestrator

Saga Orchestrator Log

```

...
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
  
```

Order Service

OrderID	Item	Quantity	Price

Payment Service

PaymentID	User	Amount
1	Alice	350\$

Stock Service

ElemID	Type	Available
1	shirt	0

Event Store

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\$
377	1	UptAmnt	Alice	+30\$

Stock Events

EventID	ElemID	Event type	Type	Available
...