

Defining the events

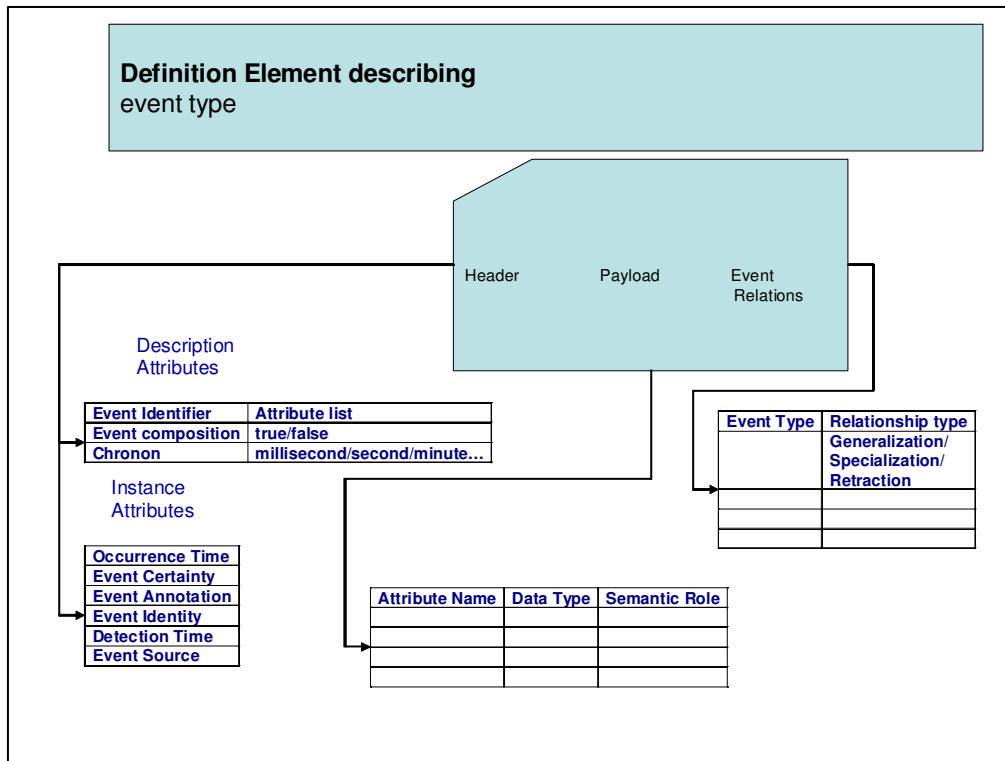
We now start our deep dive journey by explaining how event types are defined. This will give you the opportunity to see definition elements in use. In this chapter we discuss the following topics:

- *Event type* definition elements
- Temporal and spatial characteristics of events
- Relationships between events and other things: event generalization and other relationships between events; references from events to application entities
- The first step in building the "Fast Flower Delivery" application, which is to create definition elements for all the event types that we will be using in the application
- How event formats are represented in some event processing systems.

We will start with a discussion of event types and attributes, moving to the definition elements that describe them. This is our first in-depth discussion of a definition element; we will be following a similar approach in the following chapters as we work through all of the components of our application.

Definition

An *event type* is a specification for a set of event objects that have the same semantic intent and same structure; every event is considered as an instance of an event type.



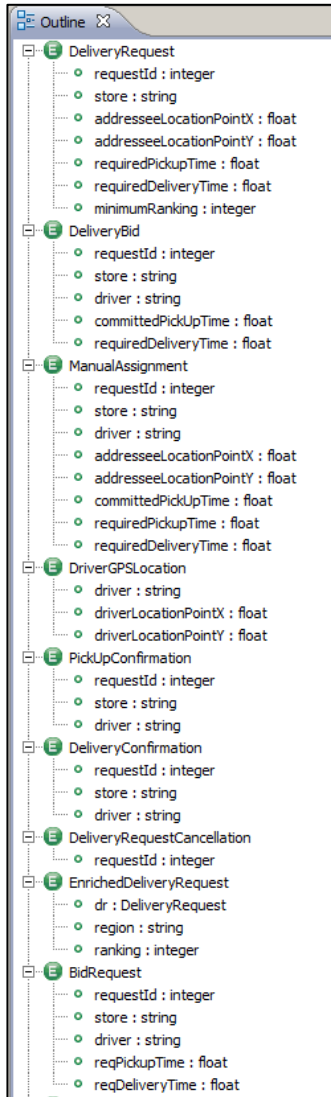
Listing 3.6 shows the information that might be carried in a run-time event instance.

There is, at present, no standard for the way that events or event types are represented. There are various structural representations that can be found in various products:

- Flat representation: similar to a normalized tuple in a database.
- Structure representation: similar to a record that may include arrays and tuples within the structure.
- XML representation: using XML schema to define the structure.
- Object: The event is represented as an object; methods have to be applied in order to retrieve its content.

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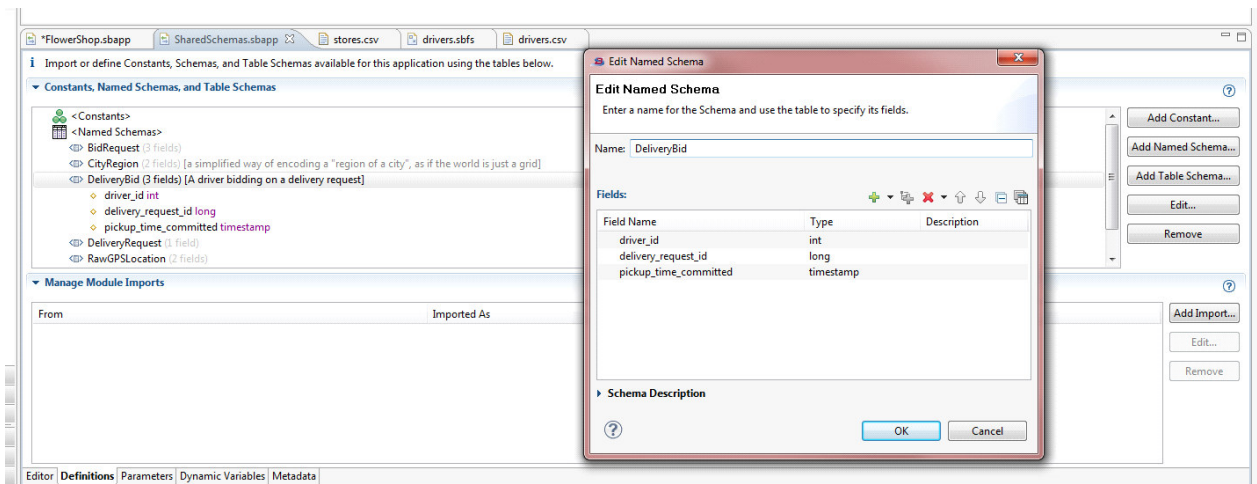


Event type definition in XML

```

<base:XPath>string(base:EventBody/user:RequestId) </base:XPath>
</Property>
<Property name="Store">
  <base:XPath>string(base:EventBody/user:Store) </base:XPath>
</Property>
<Property name="Driver">
  <base:XPath>string(base:EventBody/user:Driver) </base:XPath>
</Property>
<Property name="AddresseeLocation">
  <base:XPath>string(base:EventBody/user:AddresseeLocation) </base:XPath>
</Property>
<Property name="RequiredPickupTime">
  <base:XPath>string(base:EventBody/user:RequiredPickupTime) </base:XPath>
</Property>
<Property name="RequiredDeliveryTime">
  <base:XPath>string(base:EventBody/user:RequiredDeliveryTime) </base:XPath>
</Property>
</Properties>
</EventDef>

```



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