



GST 55 – Events

Formal Description

An event is an identifiable occurrence involving one or more entities at a particular time or during a particular period. Events are recognised through changes in the states of entities or systems and are therefore identified by observers rather than existing as independent objects. Events may be instantaneous or extended in time and often form parts of larger processes.

Plain English Explanation

As the world changes, we naturally recognise certain occurrences as significant. A tree falls, a meeting begins, a train arrives, or a light switches on. These recognisable occurrences are called events.

An event is identified because something has changed or because a particular interaction has taken place. When a person presses a light switch, an interaction occurs between the switch and the electrical circuit. We recognise the moment at which the light turns on as an event because the state of the lighting system has changed.

Some events appear to happen almost instantaneously. A balloon bursts, a starter's pistol fires, or a goal is scored in a football match. Other events extend over longer periods. A concert, a rainfall, a conversation or the construction of a bridge all occupy periods of time. Although they continue for minutes, hours or even years, we still recognise them as identifiable events because they represent coherent occurrences.

The boundaries of an event are often determined by the purpose of the observer. A civil engineer may regard the construction of a bridge as a single event, while a project manager may recognise thousands of individual events within the same project. Both descriptions are valid because they are intended for different purposes.

Events therefore provide a convenient way of describing what happens within systems. They identify meaningful occurrences without necessarily describing every individual interaction involved. In the next module we shall see how sequences of related interactions and events form processes.



EVENTS

Events are identifiable occurrences which may be either brief or extended in time.

EXAMPLE

DESCRIPTION

TIMELINE (not to scale)

1 LIGHT SWITCHED ON

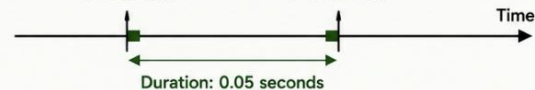


The light is switched on: almost instantaneous.

A very brief event.

Event begins
(12:00:00.00)

Event ends
(12:00:00.05)



2 TREE FALLING DURING A STORM



The tree starts to fall and comes to rest on the ground.

A moderate-duration event.

Event begins
(14:23:10)

Event ends
(14:23:40)



3 MEETING TAKING PLACE



The meeting starts when participants assemble and ends when it concludes.

An extended event.

Event begins
(09:00)

Event ends
(10:30)



KEY POINT

- Events are identifiable occurrences.
- They have a beginning and an end.
- Events can be very brief or can extend over longer periods of time.

We identify events by comparing what happens over time.

Examples

When a person sends an email, many interactions occur within computers and communication networks. Most users, however, simply recognise the action as the event "email sent." The event provides a convenient description of a much more complex collection of interactions.

Similarly, a football match consists of countless individual interactions between players, officials, the ball and the environment. Nevertheless, we naturally regard the match itself as a single event because it forms a recognisable occurrence with a beginning and an end.

Provenance and Links

The concept of events has been studied in philosophy, history, linguistics and the sciences. Philosophers have long distinguished between enduring entities and occurrences that take place through time, while event-based approaches are widely used in computing, engineering and process modelling. Within General Systems Theory, events provide a way of recognising and describing meaningful occurrences arising from interactions and changes of state, forming a bridge between individual interactions and larger processes.



Practical Exercise

Observe a familiar activity, such as travelling to work, shopping, preparing a meal or attending a meeting.

Identify at least ten events that occur during the activity. For each event, describe the entities involved, explain what change or interaction makes it recognisable, and estimate whether the event is best regarded as instantaneous or extended over time.

Finally, choose one of the longer events and identify several smaller events that occur within it.

Explain why different observers might describe the same situation using different event boundaries.