Assumption :

BUILDING →FIRE_EVENT :

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In the instruction, FDAS said "A bushfire **may** impact a property and damage buildings located on that property." Therefore, it is assumed BUILDING can be damaged by many bushfires for few times. As in a bushfire in 2009 damage BUILDING A. A bushfire in 2019 damage BUILDING A again. Therefore the maximum number is **many**. With the word "may", the minimum is **0**.

FIRE_EVENT → PROPERTY :

"**A** bushfire may impact **a** property and damage buildings located on that property. " Likewise, it is assumed PROPERTY can be damaged by many bushfires for few times. A FIRE_EVENT can impact PROPERTY for many times. Therefore the maximum number is **many**. With the word "may", the minimum is **0**.

PROPERTY → FIRE_EVENT :

PROPERTY can be impacted by a bushfire in 2009 then again bush fire in 2019. Therefore, PROPERTY is impacted by FIRE_EVENT many times. The maximum number is **many**. And PROPERTY may not be impacted, with **0** as minimum number.

ASSESSOR → DAMAGE :

When ASSESSOR is employed by an INSURER, he or she often is signed with a contract or permanent-based. ("Assessors work for insurance company on a fix-term contract or on a permanent basis. They do not work on single assessment basis." Quoted from the forum.) It is assumed that ASSESSOR will assess damages more than one times, which means **many** times. That is when ASSESSOR finish assessing damage in BUILDING A then will assess damage in BUILDING B. Therefore the maximum number is **many**.

Moreover, as the forum mentioned that if the one particular assessor is assigned to the one particular building, however, has not yet assessed the damages and provided a cost, the event still will exist within the database so it is assumed that the minimum is **0**.

DAMAGE → FIRE_EVENT :

The instruction said "A bushfire **may** impact a property and damage buildings located on that property.". If a damage really happened, it will only belong to one FIRE_EVENT, given that it is rare to have two damages by the same FIRE_EVENT on the same date. Even so, that will only considered one event. In the forum, FDAS said **they only record one fire event (the major one) per damage**, therefore, it is one and only one.

BUILDING → DAMAGE :

    The **DAMAGE** is only recored for BUILDING with insurance cover. Even though there is fire, some BUILDING can be of no insurance so the minimum number is **0.**

LGA → FIRE_EVENT :

    Given the sentence in the narrative that "A given fire event **may** involve **many** LGAs.", it is assumed that many LGA is involved in a FIRE_EVENT. Therefore, the maximum number is **many**. The word "may" implies that there might not be any LGA involved so the minimum number is **0**.

FIRE_EVENT → LGA :

    Given the sentence in the narrative that One fire event occur within **many** Local Government Areas so the maximum number is **many.**
    When a fire event occurred, it is assumed that at least one LGA will get involved, therefore the minimum number is **1**.

    INSURER → ASSESSOR :
    It is assumed that the database only is interested in those hiring ASSESSOR so the minimum number is **0.**

Why is there an associative entity between FIRE_EVENT and LGA ?
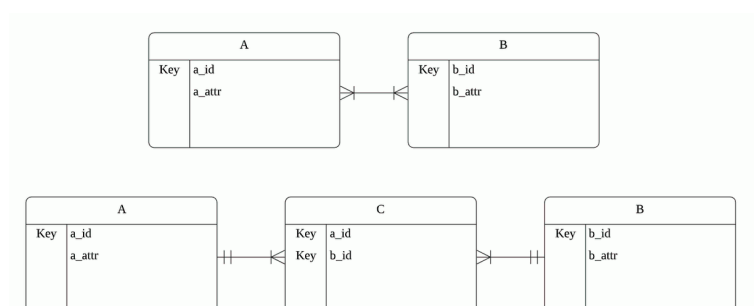
In the forum, the FDAS mentioned that it is fine to one of the below ways to describe the relationship. I chose not to include an associative entity so as to simplify the diagram with as least entities as possible.

Why is there no the entity of INSURANCE COMPANY ?

    In this diagram as it is assumed that insurance company is insurer who insures a building is recorded.

The reason why there are relationship BUILDING →FIRE_EVENT and BUILDING → PROPERTY :

> FDAS has said not all damages will be recorded unless the building is insured. I would assumed that there are buildings that have not yet be insured but damaged. Therefore relationship BUILDING →FIRE_EVENT and BUILDING →PROPERTY exist.