Scenario 1

**BACKGROUND**

You are a project manager for the Department of Education and you have been tasked with delivering a Workplace Health and Safety (WH&S) system for the Human Resource branch. A data analyst has just been employed to develop a logical information model for the “as is” state of data within the organisation. The logical information model will then be used to aid the development of a Business Process Model and Business Requirements Specification.

**REVEAL TO THE DATA ANALYST**

Whenever a Workplace Health & Safety incident occurs at a Department location (e.g. a school or office), it is the responsibility of the supervising officer to notify the Department. An incident can be of several types, including electrical (e.g. exposed wires), motor vehicle, environmental (e.g. building flooding), and/or an injury/illness to a person or multiple people.

If a person is injured or ill, their contact details are recorded if not already in the Payroll or Student systems. The following details are also recorded:

|  |  |
| --- | --- |
| **Information recorded** | **Examples** |
| Bodily locations | Hand, head, chest, back, leg, etc. |
| Nature of injury/illness | Cut, bruise, ache/pain, etc. |

If an incident is classified as a dangerous incident (according to legislation) or if the injury/illness is classified as an A or B class injury/illness, then the Department of Justice and Attorney-General needs to be notified.

An investigation may take place after an incident. A primary investigator is responsible for collecting details and making recommendations to the supervising officer.

**ONLY REVEAL IF ASKED**

* A supervising officer is always a staff member.
* A Department location only has a single supervising officer (e.g. principal).
* An incident can have one or more types (e.g. an injury suffered during a motor vehicle accident)
* A person injured or ill can be either a staff member or a student.
* All staff members have a staff Id and all students have a student Id that is used for all Departmental processes.
* Contact details are recorded to match up with the details from the Payroll or Student systems.
* A primary investigator is always a staff member.
* An example of a hazard is steep driveway or
* There may be many investigations for the same incident

**INCIDENT REPORT**

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| --- | --- |
| **Reporting Staff Id** | 661944 – Greg Marsden |
| **Incident Date** | 3 MAY 2010 |
| **Incident Location** | 1820 – Nirvana Secondary School |
| **Incident Summary** | Teacher slipped and fell down stairs |
| **Incident Description** | Angela Simpson was walking toward the playground when she slipped and fell down the stairs near B Block |
| **Incident Types**  **(tick one or more)** | Injury/Illness  Near Miss  Electrical  Motor Vehicle  Environmental |
| **Was this a dangerous event?** | Yes  No |

**INJURY/ILLNESS REPORT**

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| --- | --- |
| **Staff/Student Id** | 580738 – Angela Simpson |
| **Injury/Illness Description** | Fell down stairs injuring her leg. Felt pain in her lower back a few hours later. |
| **Bodily Location** | Leg, back |
| **Nature** | Ache/pain, bruising |

Scenario 2

**BACKGROUND**

You are on an industry standards committee tasked with developing a set of interoperability standards for engineering operations and maintenance. The core module of the standard is the asset registry, and a data analyst has been engaged to aid in the creation of an overall asset registry data model. The asset registry model must be flexible enough to support a variety of industries including oil and gas, mining, utilities, aerospace and military. A set of XML Schema definitions for common asset registry interoperability scenarios be created from the data model.

**REVEAL TO THE DATA ANALYST**

An asset is the core element of the model, and it can take on many different types, such as a motor, boiler, bridge, monitoring system, or vehicle. An asset is a physical instance of a model; the former created and the latter designed by a manufacturer. An asset is identified by a manufacturer by its serial number while a model is identified by its product family and any revision numbers.

Before an asset can be utilised by an organisation, it must first be installed on a segment. The history of an asset as it is installed on different segments must be tracked. The history also should track the agent that installed and uninstalled the asset.

Both assets are hierarchical in nature – an asset may be composed of other assets, such as a pump system composed of a pump, motor and flywheel.

Assets also have the ability to have various attributes. For example, a motor (asset) may have a maximum speed attribute while a pump may have a maximum flow attribute. The model should account for the ability to “attach” different sets of attributes depending on the circumstances. Attributes should always have a unit type (e.g. volts or metres) for context.

**ONLY REVEAL IF ASKED**

* Assets and models must be of the same type (e.g. a motor asset is created from a motor model).
* A segment can contain zero to many assets at any one time.
* An agent can be either a person, group, organisation or software.
* Asset children can only have a single containing parent.
* Attributes are always numeric.

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| --- | --- |
| Example Model and Segment Types  Armature  Bearing  Boiler  Clutch  Compressor  Engine  Motor  Pump  Turbine | Example Attribute Types  Current  Flow  Frequency  Pressure  Size, Depth  Size, Height  Size, Width  Speed  Temperature  Torque |
| Example Unit Types  Centimetres  Degrees Celsius  Grams  Hours  Kilograms  Metres  Metres per second  Millimetres  Newtons  Seconds |  |