

Ignify Consulting

Class Diagram and Use Case

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What is a Class Diagram

- A class is a collection of objects with common structure, common behavior, common relationships and common semantics
- A class is drawn as a rectangle with three compartments
- A Class diagram is used to show a static picture and highlight the important relationships. It is not the highest level of detail.
- Classes should be named using the vocabulary of the domain
Naming standards should be created
e.g., all classes are singular nouns starting with a capital letter

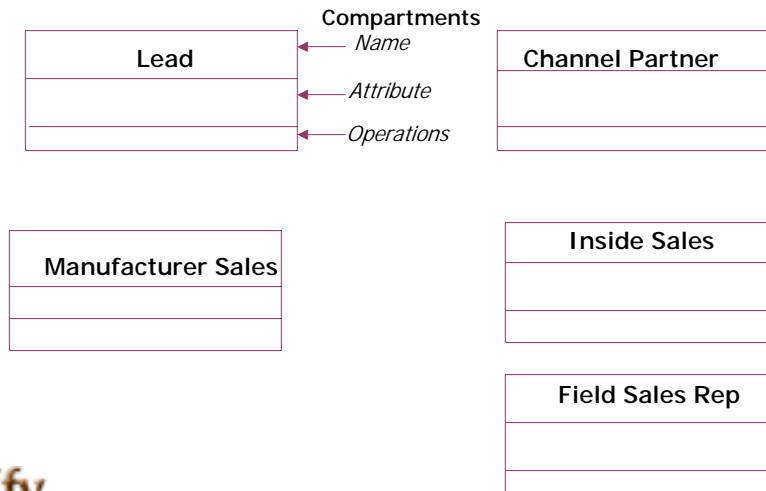


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Lead Management – Classes



Relationships

Relationships provide a pathway for communication between objects

Three types of relationships are:

- Association (majority of relationships)
- Aggregation ('comprises' relationship. Destroying the whole does not destroy the part)
- Dependency (*User* uses *Resource*, but *Resource* is not a member of the *User* class. If *Resource* is modified, some method of *User* might need to be modified)

Inheritance

Inheritance is a relationships between a superclass and its subclasses

There are two ways to find inheritance:

- Generalization
- Specialization

Common attributes, operations, and/or relationships are shown at the highest applicable level in the hierarchy

Multiplicity/ Navigability

Multiplicity defines how many objects participate in a relationships

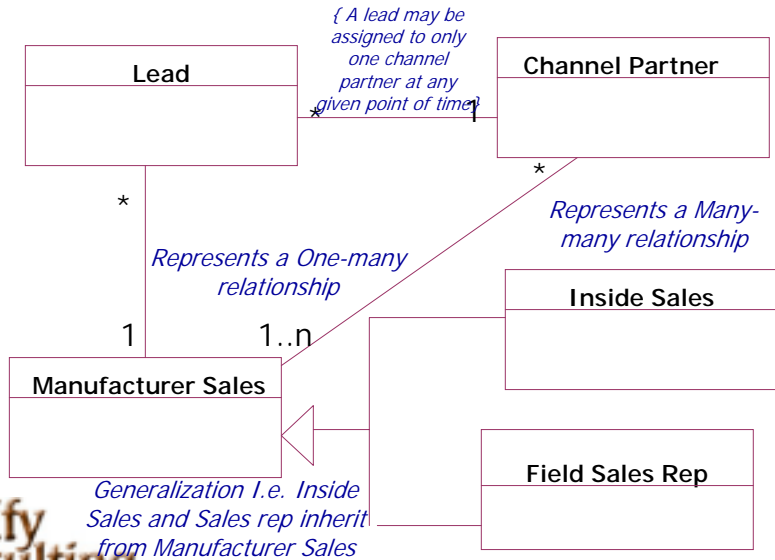
Multiplicity is the number of instances of one class related to ONE instance of the other class

For each association and aggregation, there are two multiplicity decisions to make: one for each end of the relationship

Although associations and aggregations are bi-directional by default, it is often desirable to restrict navigation to one direction

If navigation is restricted, an arrowhead is added to indicate the direction of the navigation

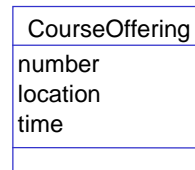
Relationships/ Inheritance/Multiplicity



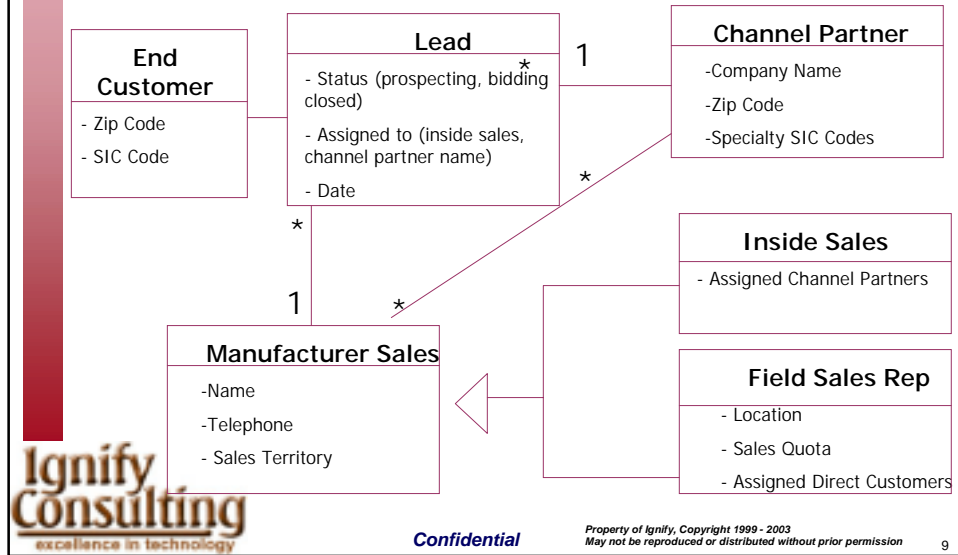
Attributes

The structure of a class is represented by its attributes
Attributes may be found by examining class definitions, the problem requirements, and by applying domain knowledge

Each course offering has a number, location and time



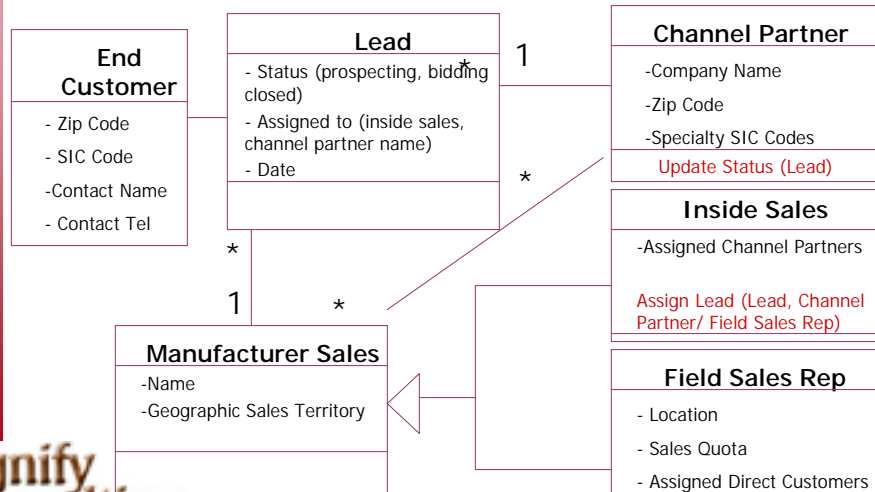
Lead Management – Attributes



Operations

- The behavior of a class is represented by its operations
- Translates into methods into Object Oriented Programming

Lead Management – Operations



Use Case

A use case is a pattern of behavior the system exhibits



Maintain Schedule

Each use case is a sequence of related transactions performed by an actor and the system in a dialogue



Channel Partner

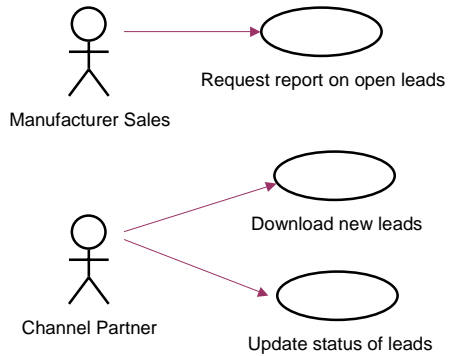
An actor is someone or some thing that must interact with the system under development

Actors are examined to determine their needs

Channel Partner – Receive Leads

Manufacturer Sales – request report on Open Leads, Closed leads

Use Case – Update Lead Status



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