

UML

Diagram Types

- structural-gives us the structural relationships between system
- behavioral-concerned with the execution of the system

Class Model Diagram

- most popular
- also called static model
- it is an example of a structured diagram (shows system structures)
- shows classes and relationships

UML classes

- 3 compartments separated by horizontal lines

Counter
- count : int
+increment():void +display():void +set(aCount : int=0):void

Name of the class
attributes of the class (instance variables)
methods and operations the class provides

another formal example:

An ADT representing a rectangle:

```
class Rectangle
{
    private:
```

```

    double width;
    double length;
    string name;
    void initName(string n);
public:
    //constructors
    Rectangle();
    Rectangle(double, double,
               string);
    //destructor
    ~Rectangle();
    void setWidth(double);
    void setLength(double);
    void setName(string);
    double getWidth() const;
    double getLength() const;
};

```

Rectangle

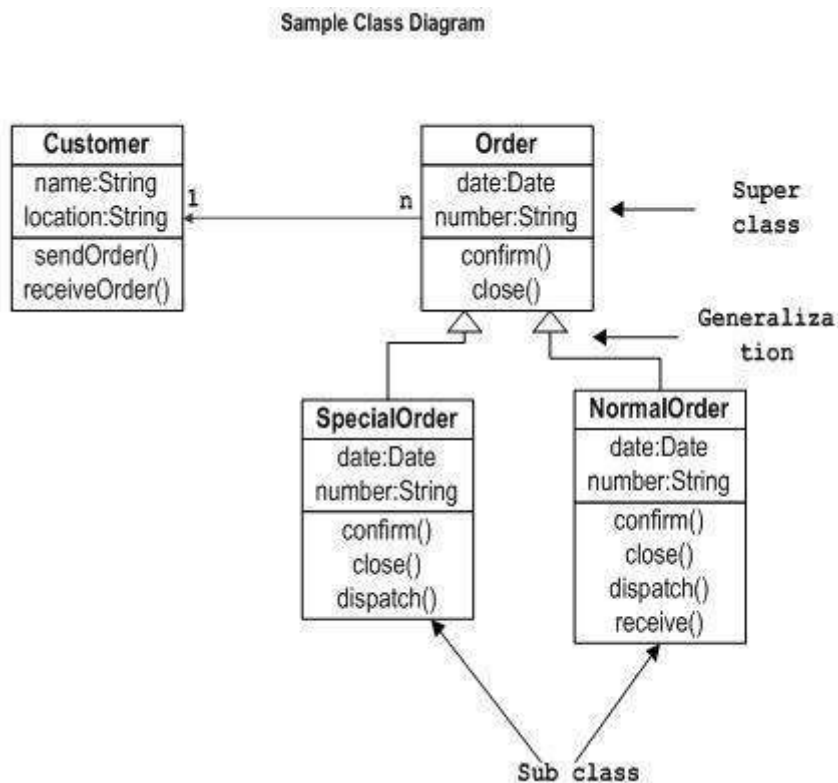
- width: double
- length: double
- name: string

+ Rectangle() :
+Rectangle(w : double, l : double, n : string) :
- initName(n : string) : void
+setWidth(w : double) : void
+setLength(l : double) : void
+setName(n : string) : void
+getWidth() : double
{query}
+getLength() : double
{query}

UML Relationships

- dependency: x uses y - - - - -> (dashed direct line)
- associations: x affects Y _____ (solid undirected line)
- generalization: x is a kind of y ____>(solid with open arrowhead)

Example of class diagram



Object Diagram

- conveys objects and links instead of classes and relationships
- name is composed by the class name and the specific instance
- for example in the first box the class is customer and the instance is c, they are separated by a colon
- some instances also have their attribute fields with values filled in (example in the class order, the instance o1 has the attribute number = 12)

Object diagram of an order management system

