This is the metamodel of the Unified Modeling Language (UML). It describes the constituents of all well-formed models that may be represented in the UML, using the UML itself. See http://www.rational.com/uml for updates.

The metamodel is organized according to the following packages:

- Foundation
  - Core
  - Auxiliary Elements
  - Extension Mechanisms
  - Data Types
- Behavioral Elements
  - Common Behavior
  - Collaborations
  - Use Cases
  - State Machines
- Model Management

[Diagram of the metamodel classes]
Top-Level Packages

- Behavioral Elements
- Model Management
- Foundation
Stereotypes, tagged values, and constraints are the mechanisms of extensibility in the UML. Stereotypes extend the classes in the metamodel, tagged values extend the attributes of classes in the metamodel, and constraints extend the semantics of the metamodel. Certain stereotypes, tagged values, and constraints are predefined in the UML; others may be user defined.

<table>
<thead>
<tr>
<th>Standard stereotypes</th>
<th>Standard tagged values</th>
<th>Standard constraints</th>
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<tbody>
<tr>
<td>becomes</td>
<td>documentation</td>
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State Machines:
Activity Models

- **StateMachine**
  - behavior
  - context

- **ActivityModel**
  - partition

- **ModelElement** (from Core)
  - contents

- **Partition**
  - context

- **StateVertex**

- **State**
  - inState

- **SimpleState**

- **ActivityState**

- **ActionState**

- **ObjectFlowState**

- **Classifier** (from Core)
  - type

- **ClassifierInState**
  - typeState
State Machines:
Events

- **Event**
  - **SignalEvent**
    - occurrence: *
    - 1
      - Signal
        - (from Common Behavior)
  - **CallEvent**
    - occurrence: *
    - 1
      - Operation
        - (from Core)
  - **TimeEvent**
    - duration: TimeExpression
    - 1
  - **ChangeEvent**
    - changeExpression: BooleanExpression
Auxiliary Elements: Dependencies

- Dependency
  - owningDependency
  - subDependency
  - requirement

- ModelElement (from Core)
  - client
  - template
  - templateParameter

- Refinement
  - mapping

- Usage

- Trace

- Binding
  - argument
    - 1..* (ordered)

- ModelElement (from Core)
Auxiliary Elements:  
Physical Structures and View Elements
Foundation Packages

Auxiliary Elements

Core

Extension Mechanisms

Data Types
Extension Mechanisms

GeneralizableElement
(from Core)

ModelElement
(from Core)

TaggedValue

tag : Name
value : Uninterpreted

requiredTag
*

stereotype
*

extendedElement
*

taggedValue
0..1

stereotypeConstraint
*

constrainedElement
1..* {ordered}

Constraint
(from Core)

constrainedElement
*

constrainedStereotype
0..1

stereotype
*

icon : Geometry
baseClass : Name

Stereotype

0..1

constraint
*

0..1
Common Behavior: Instances and Links

- **ModelElement** (from Core)
  - Association
    - Link
      - LinkEnd
        - instance
        - value
        - classifier
        - attribute
        - slot
      - LinkObject
      - Request
        - specification
        - message
      - MessageInstance
        - sender
        - receiver
      - Link
        - association
        - associationEnd
      - AssociationEnd
        - linkRole
        - linkEnd
  - Classifier (from Core)
  - Attribute (from Core)
  - Instance
  - DataValue
    - classifier
    - attribute
  - Object
Common Behavior:
Actions
Common Behavior: Requests

**ModelElement** (from Core)

**GeneralizableElement** (from Core)

**Parameter** (from Core)
- parameter
  - 0..* {ordered}
  - 0..1

**Signal**
- signal 1

**Request**

**BehavioralFeature**
- raisedException *
- context *

**Exception** *

**Operation** (from Core)
- isPolymorphic : Boolean
- specification : Uninterpreted
Model Management

Diagram:

- **ElementReference**
  - visibility : VisibilityKind
  - alias : Name

- **ModelElement** (from Core)
  - referencedElement *
  - ownedElement *

- **Namespace** (from Core)
  - namespace 0..1

- **GeneralizableElement** (from Core)

- **Classifier** (from Core)

- **Package** *

- **Subsystem**
  - isInstantiable : Boolean

- **Model**
Behavioral Elements Packages

- Collaborations
- Use Cases
- State Machines
- Common Behavior
Use Cases

- **Actor**
- **Classifier** (from Core)
  - realization
  - specification
- **UseCase**
  - extensionPoint : list of String
- **Instance** (from Common Behavior)

- **UseCaseInstance**