20 Entity Relationship Diagram

Based on the Information Engineering notation.

This is an extension to the existing Class Diagram. This extension adds:

- Additional relations for the Information Engineering notation.
- An `entity` alias that maps to the class diagram `class`.
- An additional visibility modifier `*` to identify mandatory attributes.

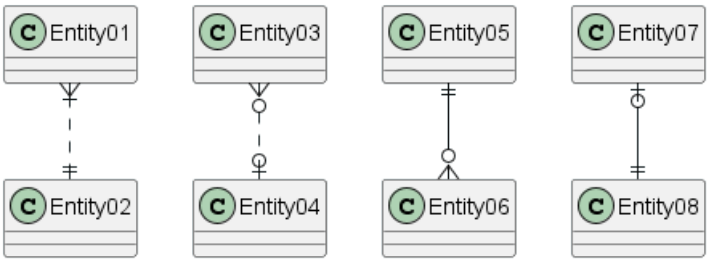
Otherwise, the syntax for drawing diagrams is the same as for class diagrams. All other features of class diagrams are also supported.

20.1 Information Engineering Relations

Type	Symbol
Zero or One	`|o--`
Exactly One	`||--`
Zero or Many	`}o--`
One or Many	`}|--`

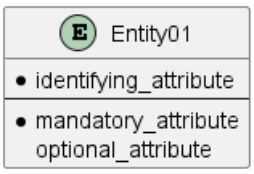
Examples:

```
@startuml
Entity01 }|..|| Entity02
Entity03 }o..o| Entity04
Entity05 ||--o{ Entity06
Entity07 |o--|| Entity08
@enduml
```



20.2 Entities

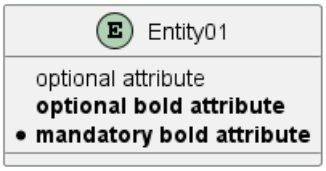
```
@startuml
entity Entity01 {
  * identifying_attribute
  --
  * mandatory_attribute
  optional_attribute
}
@enduml
```



Again, this is the normal class diagram syntax (aside from use of `entity` instead of `class`). Anything that you can do in a class diagram can be done here.

The * visibility modifier can be used to identify mandatory attributes. A space can be used after the modifier character to avoid conflicts with the creole bold:

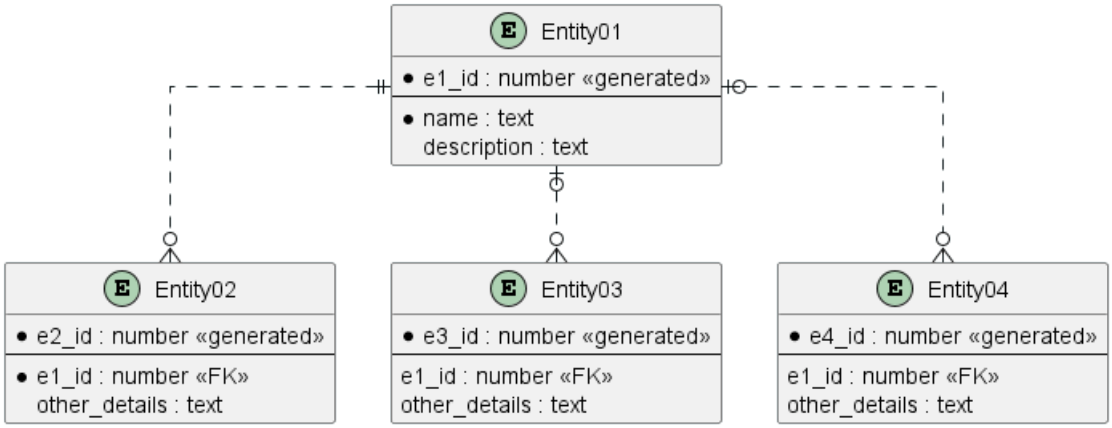
```
@startuml
entity Entity01 {
   optional attribute
   **optional bold attribute**
   * **mandatory bold attribute**
}
@enduml
```



20.3 Complete Example

```
@startuml

' hide the spot
' hide circle

' avoid problems with angled crows feet
skinparam linetype ortho

entity "Entity01" as e01 {
  *e1_id : number <<generated>>
  --
  *name : text
  description : text
}

entity "Entity02" as e02 {
  *e2_id : number <<generated>>
  --
  *e1_id : number <<FK>>
  other_details : text
}

entity "Entity03" as e03 {
  *e3_id : number <<generated>>
  --
  e1_id : number <<FK>>
  other_details : text
}

entity "Entity04" as e04 {
  *e4_id : number <<generated>>
  --
  e1_id : number <<FK>>
  other_details : text
}

e01 ||..o{ e02
e01 |o..o{ e03
e01 |o..o{ e04
```

```
@enduml
```



Currently the crows feet do not look very good when the relationship is drawn at an angle to the entity. This can be avoided by using the `linetype ortho` skinparam.