

## 1.Components of the ERM

Entity	Relationship	Connectivity	Entity
User	Reserves	M:N	Villa
User	Favors	1:M	Villa
User	Writes	1:M	Review
User	Likes	M:N	Review
User	Contains	1:M	Owner
User	Contains	1:M	Manager
Villa	Has	1:M	Review
Villa	Has	1:M	Coupon
Villa	Has	1:M	Price
Villa	Has	M:N	Feature
Manager	Manages	1:M	Manager
Manager	Inspects	M:N	Villa
Manager	Manages	1:M	Owner
Owner	Manages	1:M	Villa

## 2. Design Specification

Class Owner and Manager are subclasses of Class User and they are overlapped.

In the diagram below, the solid line represents strong relationship, and the dash line represents weak relationship.

In the class User, the attribute User\_DoB can be composite attribute, because date of birth can be subdivided into year, month and day.

In the class User, the attribute User\_email can be Multivalued attribute. So is the attribute Owner\_number in the class Owner.

In the class Villa, the attribute Villa\_age can be derived from Villa\_construction, so Villa\_age can be derived attribute.

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