Conceptual Modeling

- OSM
  - model
  - application model
- OSM components
  - ORM (Object-Relationship Model)
  - OBM (Object-Behavior Model)
  - OIM (Object-Interaction Model)
- OSM ontology
  - advantage: direct, real-world modeling of an application
  - disadvantage: larger gap to concrete implementation

Objects and Relationships

```
*J’s BandB*  Room1  Room2  Room3
               |       |
               v       v
                Room1  Room2  Room3
                  |       |
                  v       v
               Guest1  Guest2
          occupies  occupies
```

Chapter 4 - 1

Chapter 4 - 2
Object and Relationship Sets

```
Room
  has
  Room1
  Room2
  Room3

"J's BandB"

Room
  has
  Room1
  Room2
  Room3

"J's BandB"

Guest
  occupies
  Room
  
Guest
  occupies
  Room

1:*

"J's BandB"

Sample Application Model

```

```
Room
  has
  RoomNumber

"J's BandB"

Cost
  is equivalent to
  Amount

Currency
  -> Amount

Cost, Currency
  -> Amount

Amount, Currency
  -> Cost

Guest
  has reservation
  for Room on ArrivalDate
  for NrDays

Guest with Name lives
  on StreetNr in City

Room, ArrivalDate
  -> Guest, NrDays

a + b > 0

```

Chapter 4 - 3

Chapter 4 - 4
Chapter 4 - 5

Generalization/Specialization

Chapter 4 - 6

Roles
(template)
Aggregation
(Template)

Guest

has

Credit Card

Type, Number -> Credit Card

1:*
Type

1:*
Number

1:*
Expiration Date

High-Level
Object and Relationship Sets

Room

has

RoomNr

has

Name

Guest

has reservation on Arrival Date for Room

GuestNr

has

Name

Arrival Date

a + b > 0

has reservation for

Room

0:*

has reservation for

Guest

0:*
Allegro