

C++ Programming

Multiplicity

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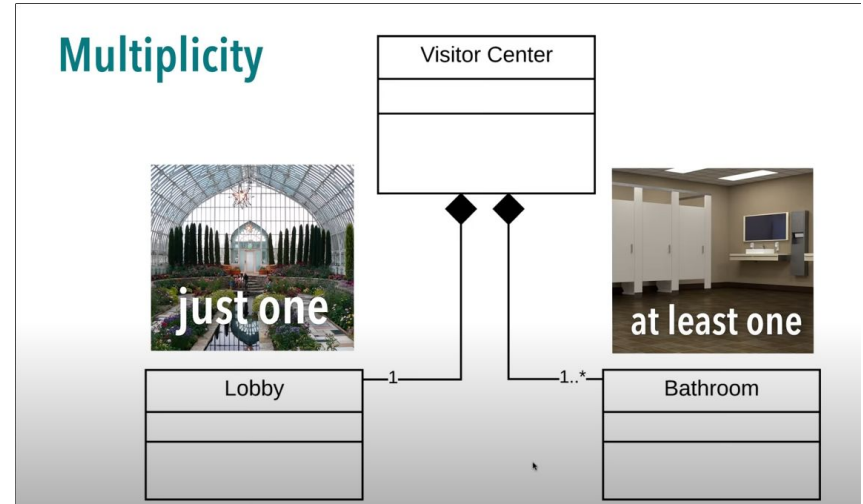
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Multiplicity

- Multiplicity = Specify cardinality (number of elements)
 - Each center will have only 1 lobby
 - But there is at least 1 bathroom
- We can enhance diagram with such information



Multiplicity

| Multiplicity | Option | Cardinality |
|--------------|--------|---|
| 0..0 | 0 | Collection must be empty |
| 0..1 | | No instances or one instance |
| 1..1 | 1 | Exactly one instance |
| 0..* | * | Zero or more instances |
| 1..* | | At least one instance |
| 5..5 | 5 | Exactly 5 instances |
| m..n | | At least m but no more than n instances |

Back to Associations

- One-to-one Associations
 - Each citizen has a single national ID
- One-to-many Associations
 - Car class has 4 wheels
 - Customer has Bank Account(s)
- Many-to-many Associations
 - Student has vector<courses>
 - Course has vector<students>
- Optional [reading](#)

“Acquire knowledge and impart it to the people.”

“Seek knowledge from the Cradle to the Grave.”