Outline

- Diagramming classes
- Aggregation
- Cardinalities
- Example Diagram

Diagramming Classes

- Common notation for class

<table>
<thead>
<tr>
<th>Passenger</th>
<th>Class Name</th>
</tr>
</thead>
<tbody>
<tr>
<td>Name</td>
<td>Fields</td>
</tr>
<tr>
<td>Address</td>
<td>Operations</td>
</tr>
<tr>
<td>Reservation</td>
<td></td>
</tr>
<tr>
<td>changeReservation</td>
<td></td>
</tr>
</tbody>
</table>

- List only important fields and operations

Class Relationships

- Has Aggregation

- Uses Association

- Is Inheritance

Aggregation

- Not every relationship is one-to-one
- Specify cardinalities of relationships by numbers/symbols at ends of lines
- Possibilities: 1:1, 1:2, 1:0…n, 1:*; 2:2, *:*;
- Aggregations are always 1:x
- Associations may be more complex

Cardinalities
Example Code

```cpp
class Applicant {
public:
    // methods
private:
    string name;
    string id;
    Preferences pref;
};
```

Diagrams and C++

- At least as many classes as shown in diagram
- Perhaps more
  - sometimes hide container classes (lists, etc.)
- Not all data fields shown
- Some implied by relationship