Finding Attributes Answer

• A person who might receive a letter
  • first name, last name, address, etc.
• A person suspected in a criminal case
  • photograph, fingerprint, measurements, alibi, etc.
• The person the phone bill is sent to
  • first name, last name, address, dialing number, connection rate, communication cost
• An employee using a security access card
  • “his” access card number
Association Solution

• The printer Neo, of type Phaser 4400N, *made by* Xerox, *located* in room McConnell 322...

• Mr. Rich, business man, 42 years old, *living in* Zug, Switzerland, *married with* Mrs. Dufour, ...

• Mr. Rich *owns* an account with the Swiss Union Bank.

• A *flight* corresponds to an aircraft flying a route on some weekday.
• Develop a Domain Model, including multiplicities, for a system where a person works for exactly one company.
Employee Answer (1)

Diagram:

- **Person**
  - **Woman**
  - **Man**
- **Employee**
  - **President**
  - **Personnel Manager**
  - **Usher**
- **Company**
  - **Head of President**
  - **Personnel**
  - **Employee**
Employee Answer (2)

- Person
  - Woman
  - Man

- Job

- Company

- Personnel

- Usher
- Personnel Manager
- President

- 1 head
**Relationships Answer**

- A country has a capital.
  - composition, aggregation or association
- A file is a regular file or a directory.
  - generalization-specialization
- A file belongs to a directory.
  - aggregation (Unix), composition (Windows)
- Files contain records.
  - composition
- A polygon is composed of segments.
  - aggregation
- A person uses a programming language.
  - association
Graph Answer

Graph

<table>
<thead>
<tr>
<th>Vertex * end 0..*</th>
<th>Arc *</th>
</tr>
</thead>
<tbody>
<tr>
<td>origin 0..*</td>
<td>length</td>
</tr>
</tbody>
</table>
Multigraph Answer

Multigraph

<table>
<thead>
<tr>
<th>Vertex</th>
<th>Arc</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 origin</td>
<td>0..*</td>
</tr>
<tr>
<td>1 end</td>
<td>*</td>
</tr>
<tr>
<td>length</td>
<td>0..*</td>
</tr>
</tbody>
</table>
**Context:** Loan

\[ \text{self.security.owner} = \text{self.debtor} \]