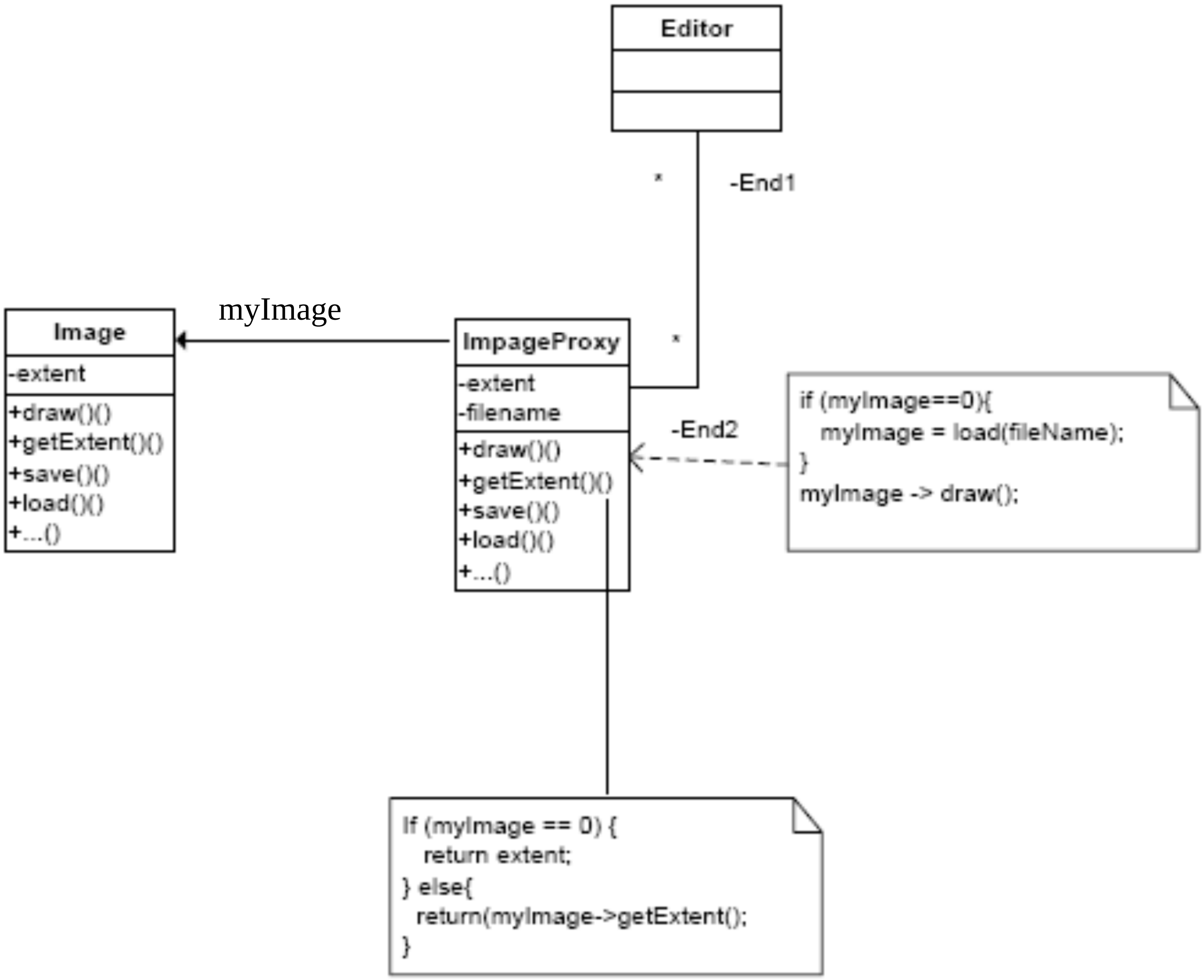
Fast Path

- Concerned with improving response time by reducing the amount of processing required for dominant workloads
  - Example: menus in automated telephone system
- Problem: ***dominant workload***
- Solution:
  - Create an express “train” that stops only at the most important stations along the route
  - Identify the data most frequently used together
  - Implemented by Proxy patterns
  - Based mainly on the ***centering principle***



```
if (myImage==0){
   myImage = load(fileName);
}
myImage -> draw();
```

```
If (myImage == 0) {
   return extent;
} else{
  return(myImage->getExtent();
}
```

Fast Path (Con’t)

- Benefits:
  - Reduces the response time for dominant workload functions by reducing the amount of processing required for the most frequent uses of the software
  - Reduces the overall load on the system by avoiding some resource consumption
- Consequences:
  - It is not enough to recognize the need for the Fast Path you must also ensure that it is likely to be used
  - Usage patterns change over time
  - Use the instrumenting principle to monitor usage patterns, and adapt your system to changing patterns

First Things First

- Focus on the important processing tasks to ensure that, if everything cannot be completed within the time available, then the least important tasks will be the ones omitted
- Problem:
  - Temporary overload may cause input data to be lost or response times to be unacceptably slow
  - Example: online-trading
- Solution:
  - Assign priorities to tasks and execute them so that the most important activities receive preference
  - Example: transaction of billions of dollars
  - Use the ***Centering Principle*** to focus attention on the most important work

First Things First (Con’t)

- Benefits
  - Focuses on the most important tasks and ensures that they complete
  - Maximizes the quality of service of the system and improves scalability
- Consequences
  - Only appropriate if the overload is temporary
  - If the overload is not temporary, reduce the amount of processing required by other means or upgrade the processing environment