How to Draw a Systems Diagram

Step-by-Step Instructions for a
Simple Example

Basic Steps to Follow:

1. Identify components of system:
   - Things
   - Events
   - Measured Value/Data
2. Characterize the behavior of the system components:
   - Are they static?
   - How do they change with time? Sketch graphs!
3. Identify linkages and connections between components.
4. Draw the linkages between system components, indicating feedback loops.
5. As you draw components and connections on the diagram, make sure that you have included all of the relevant components.
   - Add new components and connections as needed.
   - Pay attention to the level of detail you are including – is a component or connection too specific for the diagram you are making?

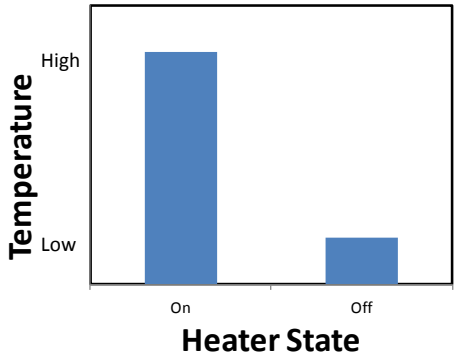
A Simple Example: Heating a Room

Step 1: Identify Components of the System

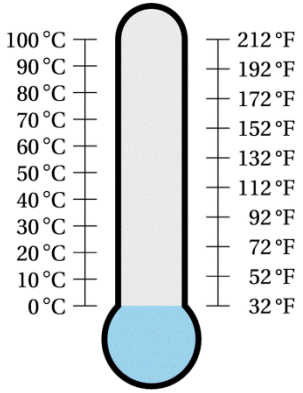
- Components:
  - Heater with on/off switch
  - Room
  - Thermostat (optional)
- Events:
  - Turning on/off the heater
- Measured Value:
  - Temperature of the room

Step 2: Characterize the Behavior of the System Components:

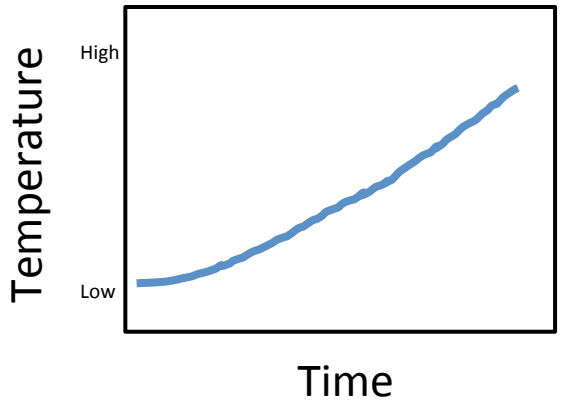
- Components:
  - Heater with on/off switch
  - Room
  - Thermostat
- Events:
  - Turning on/off the heater
- Measured Value:
  - Temperature of the room



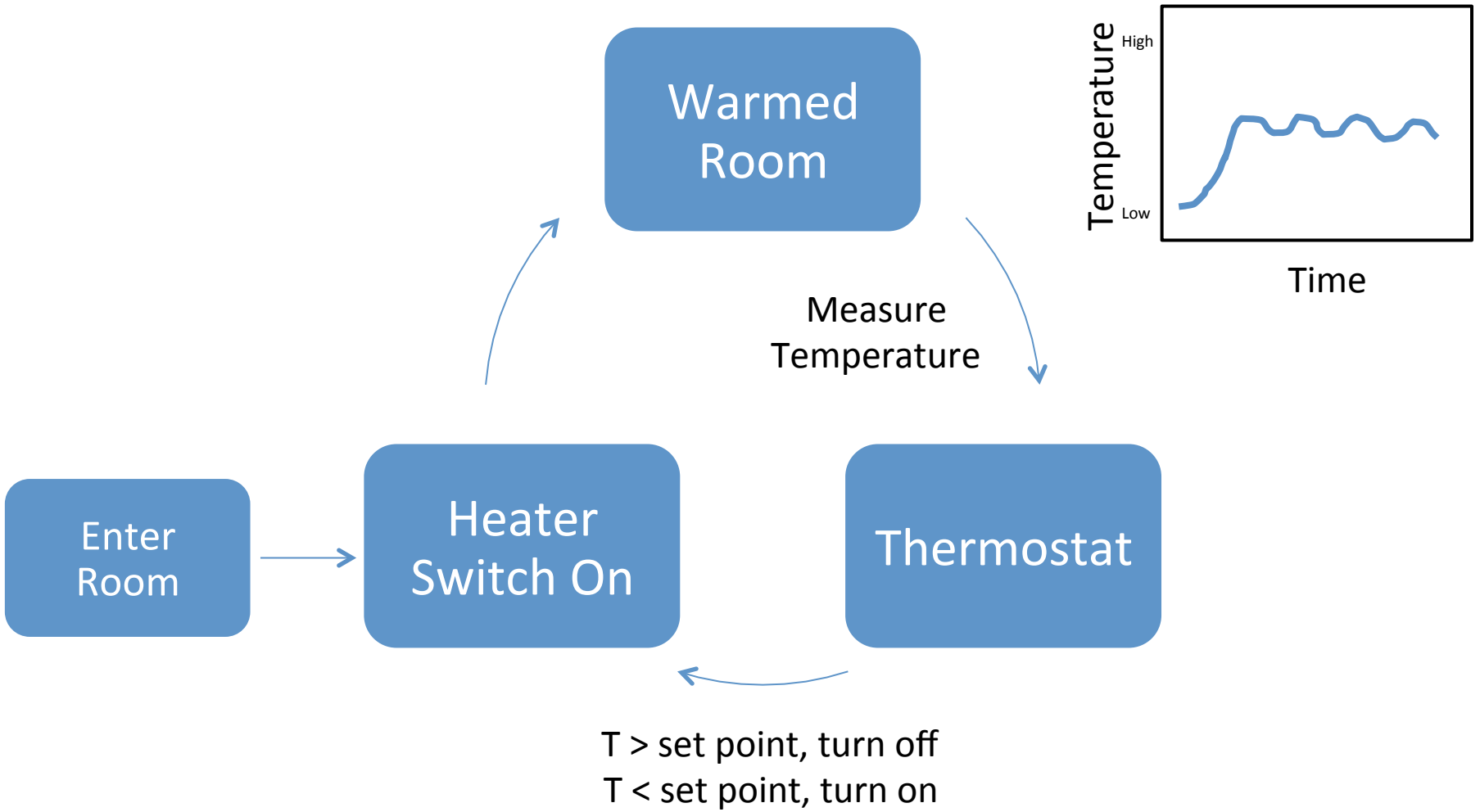
T > set point, switch off
T < set point, switch on



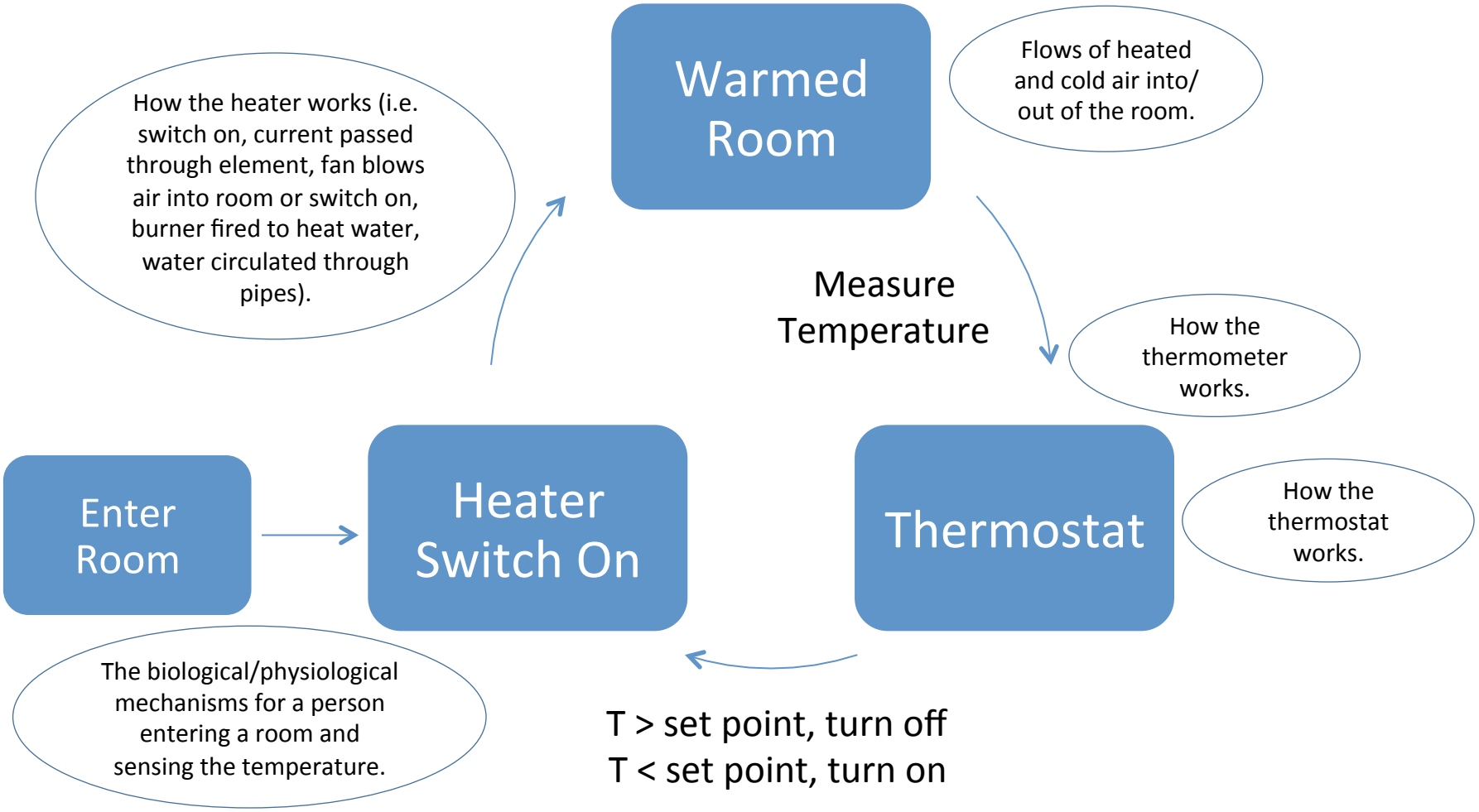
Steps 3 & 4: Identify and Draw Linkages Between Components (Without Thermostat):



Steps 3 & 4: Identify and Draw Linkages Between Components (With Thermostat):



Step 5: Consider Where Additional Detail Could Be Added:



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