

Student Example 1: Pitcher/Catcher

Experiment 1 - Instructions

(Copy example files to your local directory. Example: `cp $CSIM_ROOT/demo_examples/demo7/* .`)

1. Bring up the GUI to a new project:

`gui test.sim`

2. Draw the diagram (figure 1, on next page):

- **Add** the boxes:
 - a.) Select: *Add: Box/Node*
 - b.) Click or stretch boxes on canvas to add.
 - c.) Move boxes by selecting: *Select/Move*
- **Add** the connection link:
 - a.) Select: *Add: Link/Arc*
 - b.) Click on canvas once at starting-point.
 - c.) Click once for each new vertex.
 - d.) Double-click to end.
 - e.) Move link by selecting: *Select/Move*
- **Set** the box attributes:
 - a.) Select: *Select/Move*
 - b.) Double-click on a box.
(Or, Click on a box to high-light it, and then click “Open Properties”.)
 - c.) Select the appropriate *Type-Name*. (A1)
 - d.) Click *Ok*.
 - e.) Do this for each box.
- **Set** the link attributes:
 - a.) Double-click on a link.
(Or, Click on a link to high-light it, and then click *Open Properties*.)
 - b.) Select the appropriate port-names.
(Both port names must be set. *From: - To:*)
 - c.) Click *Ok*.
 - d.) Do this for each link.

3. Build simulation:

- From top menu:
 - Select: *Tools / Build Simulation*
 - Acknowledge *Ok* to “*Save+Build*”.
- Watch the messages in your text window.
- Fix any errors, if they are found.

4. Run simulation:

- From top menu:
 - Select: *Tools / Run Simulation*
- The simulation window will pop-up.
- Click “Run” and watch the simulation.
Notice also the printouts to your text window.

Experiment 1

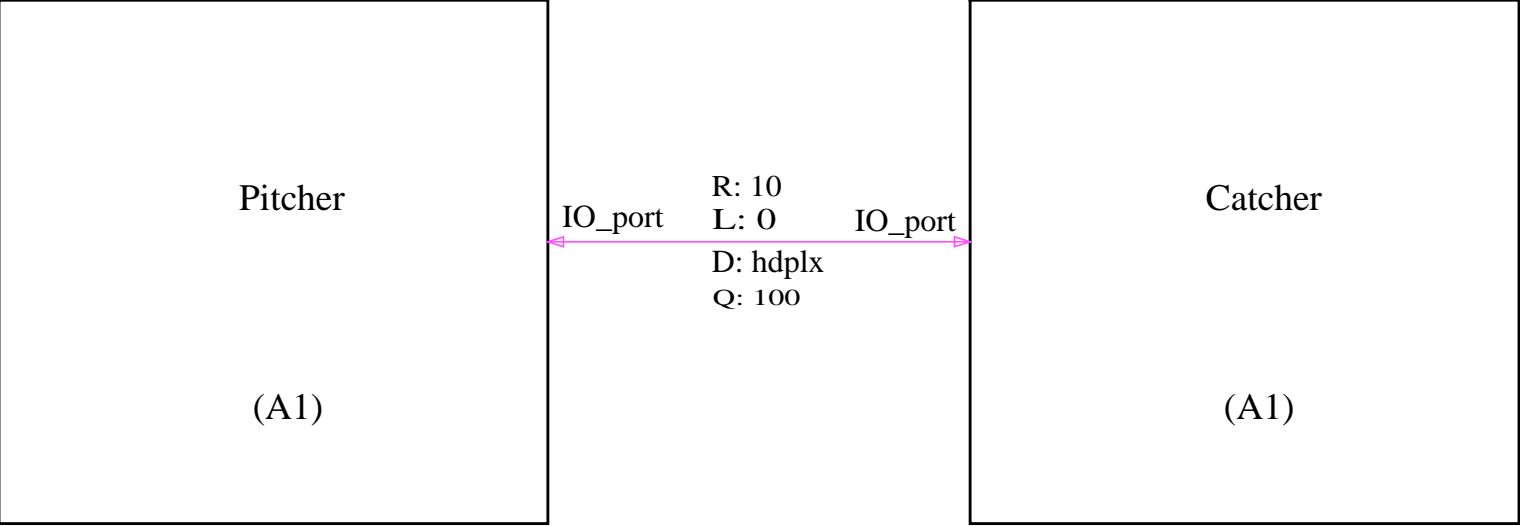


Figure 1

Student Example 2: Queue/Server Model

Experiment 2.1 - Instructions

(Assumes you have already copied demo7 files to your local directory, as shown above in example 1.)

1. Bring up the GUI to a new project:

gui q1.sim

2. Attach to a Library:

From top menu:

- a.) Select: *File / Import / by Copy*
- b.) Choose: *queue_lib1.sim*

3. Draw the diagram (figure 2.1, on next page):

- **Add** the boxes:
 - a.) Select: *Add: Box/Node*
 - b.) Click or stretch boxes on canvas to add.
 - c.) Move boxes by selecting: *Select/Move*
- **Add** the connection links:
 - a.) Select: *Add: Link/Arc*
 - b.) Click on canvas once at starting-point.
 - c.) Click once for each new vertex.
 - d.) Double-click to end.
 - e.) Move links by selecting: *Select/Move*
- **Set** the box attributes:
 - a.) Select: *Select/Move*
 - b.) Double-click on a box.
(Or, Click on a box to high-light it, and then click *Open Properties*.)
 - c.) Select the appropriate "Type-Name". (*requestor, QueueBox, server*)
 - d.) Click "Ok".
 - e.) Do this for each box.
- **Set** the link attributes:
 - a.) Double-click on a link.
(Or, click on a link to high-light it, and hen click *Open Properties*.)
 - b.) Select the appropriate port-names. (Both port names must be set: *from - to*.)
 - c.) Click "Ok".
 - d.) Do this for each link.

4. Build Simulation:

- From top menu:
 - Select: *Tools / Build Simulation*
 - Acknowledge *Ok* to "Save+Build".
- Watch the messages in your text window.
- Fix any errors, if they are found.

5. Run Simulation:

- From top menu:
 - Select: *Tools / Run Simulation*
- The simulation window will pop-up.
- Click "Run" and watch the simulation.

6. Plot Results:

- From top menu:
 - Select: *Tools / Plot Proc Timeline*

Experiment 2.1

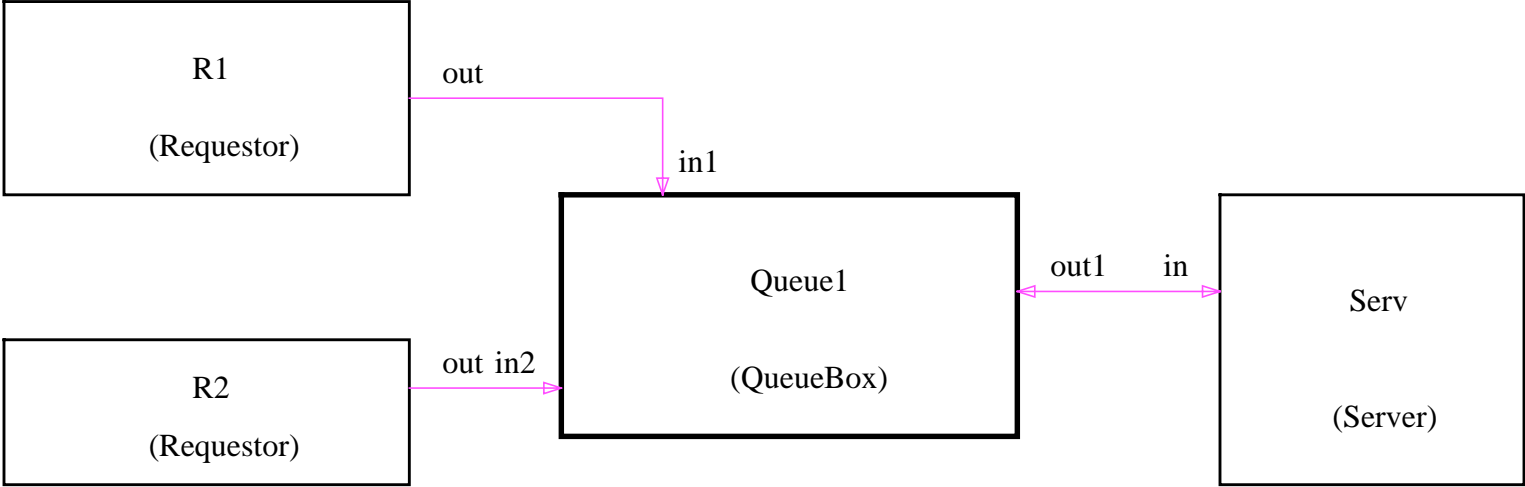


Figure 2.1

Experiment 2.2: Add a Performance Gauge.

1. **Add** a new box and link as shown in figure 2.2.
2. **Set** the type name of the box.
3. **Set** the port names on the link.
4. **Build** the Sim.
Tools / Build Simulation
5. **Run** the Sim.
Tools / Run Simulation

Experiment 2.3: Add another Requestor Box.

1. **Add** a new box and link as shown in figure 2.3.
2. **Set** the type name of the box.
3. **Set** the port names on the link.
4. **Build** the Sim.
Tools / Build Simulation
5. **Run** the Sim.
Tools / Run Simulation

Experiment 2.4: Change Simulation Parameters.

1. **Change** the requestor time_span to 400.0.
 - a.) Open a "requestor" box's properties.
 - b.) Press the "Attributes" button.
 - c.) Press the "Default Attributes" button.
 - d.) Select the "time_span" attribute.
 - e.) Change it's value from 200.0 to 400.0.
 - f.) Press "ok" to leave properties dialogues.
 - g.) Repeat for the other requestors.
2. **Build** the sim.
Tools / Build Simulation
3. **Run** the sim.
Tools / Run Simulation

You should notice that the simulation runs twice as long, and that the queue depth builds to a higher value.

– Alternatively, a faster way to change the attributes on all boxes would be to set the attribute at the global-level instead of on the individual boxes. To change attributes with a global graph variable:

1. Remove the attribute setting on each box. (Because the local setting would override the global setting.)
2. From the top menu:
 - a.) Select: *Edit / Macro*
A new window pops-up for editing graph macros.
 - b.) Enter: *time_span=400.0*
 - c.) Click "Ok".
3. Build the sim.
Tools / Build Simulation
4. Run the sim.
Tools / Run Simulation

Experiment 2.2

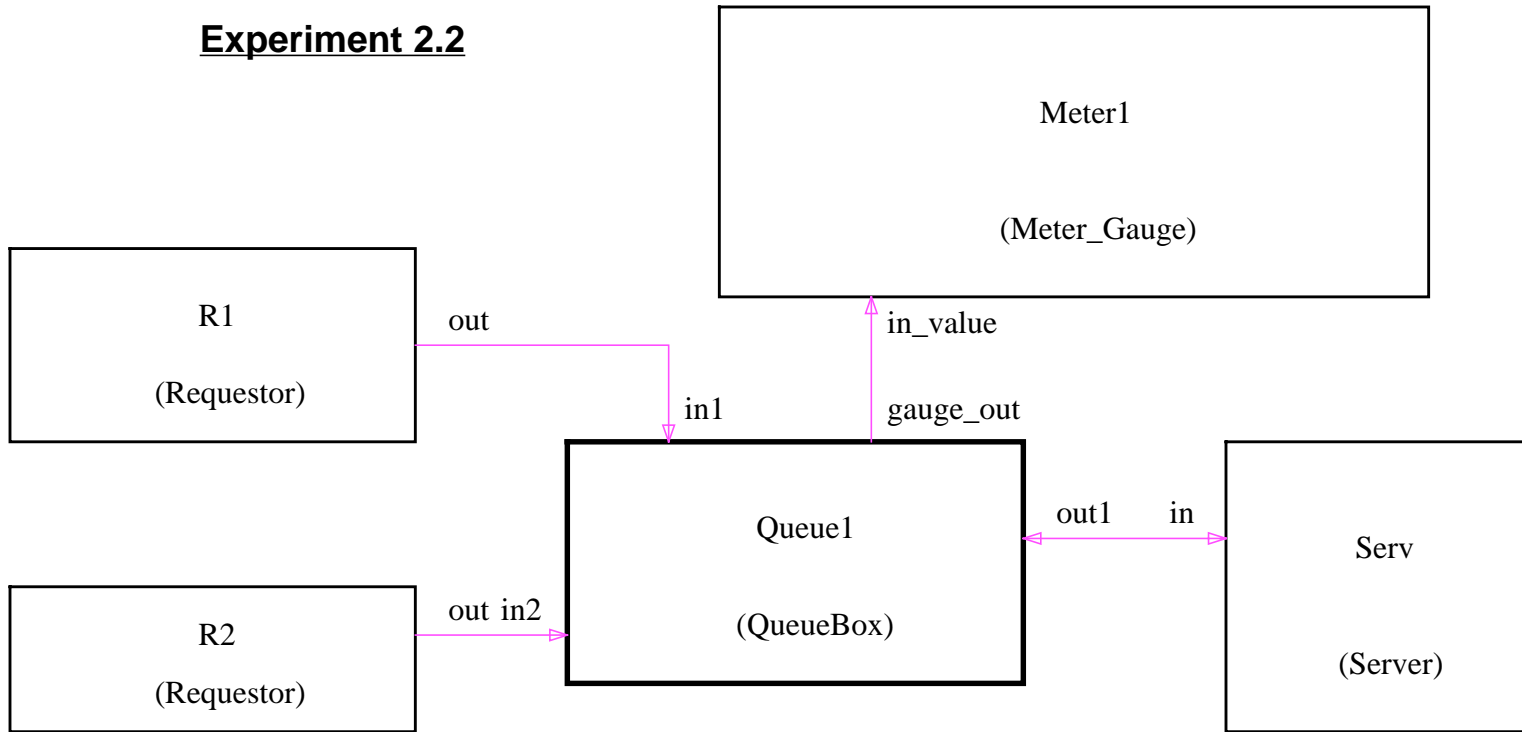


Figure 2.2

Experiment 2.3

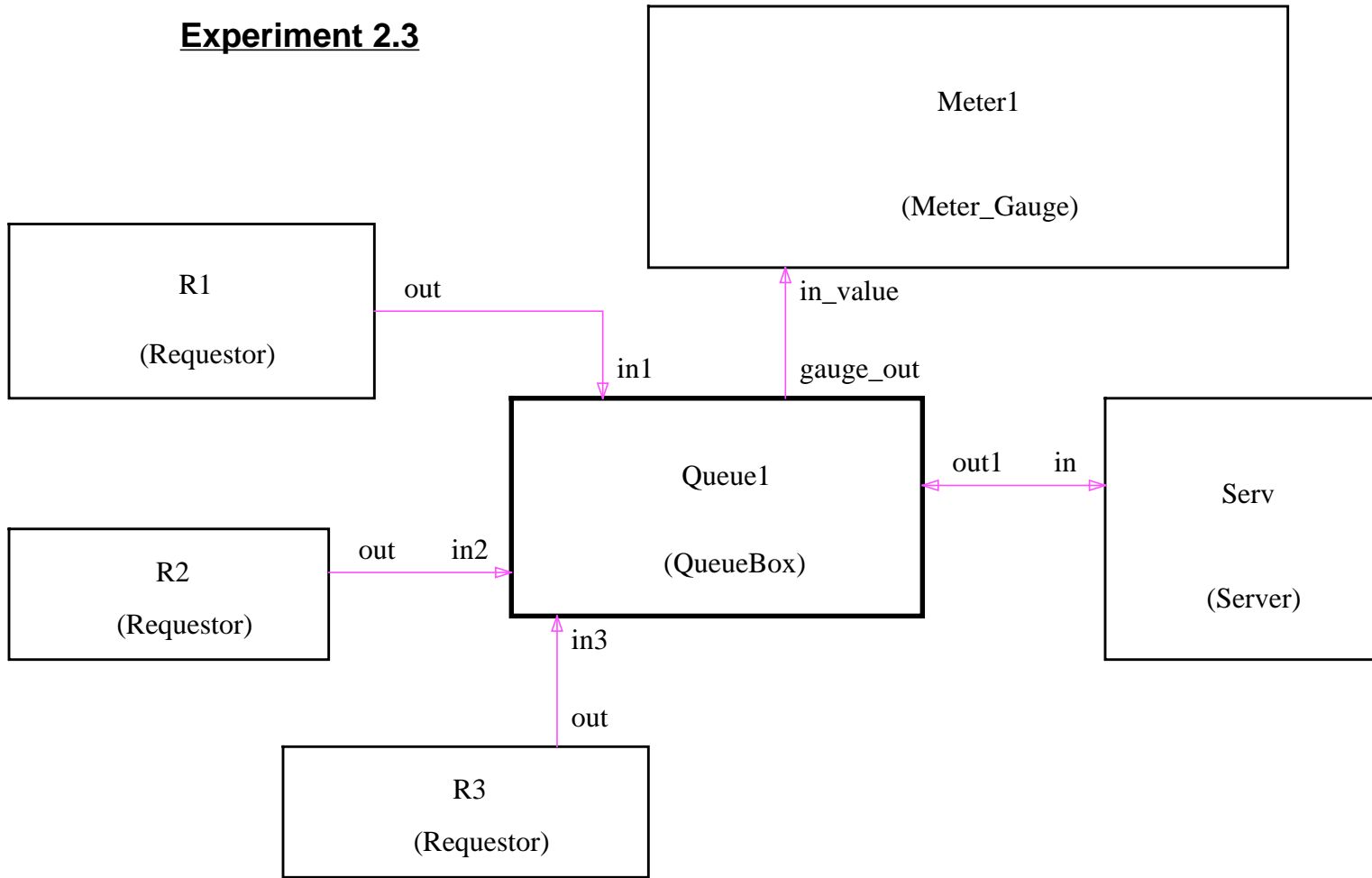


Figure 2.3