

Sequencer Lab

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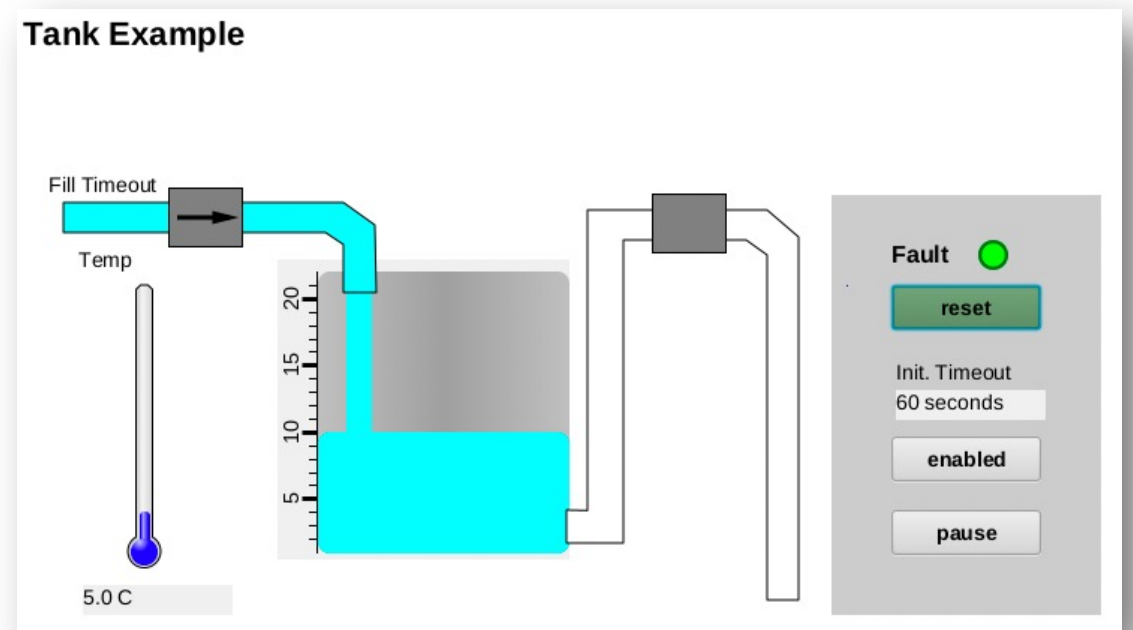
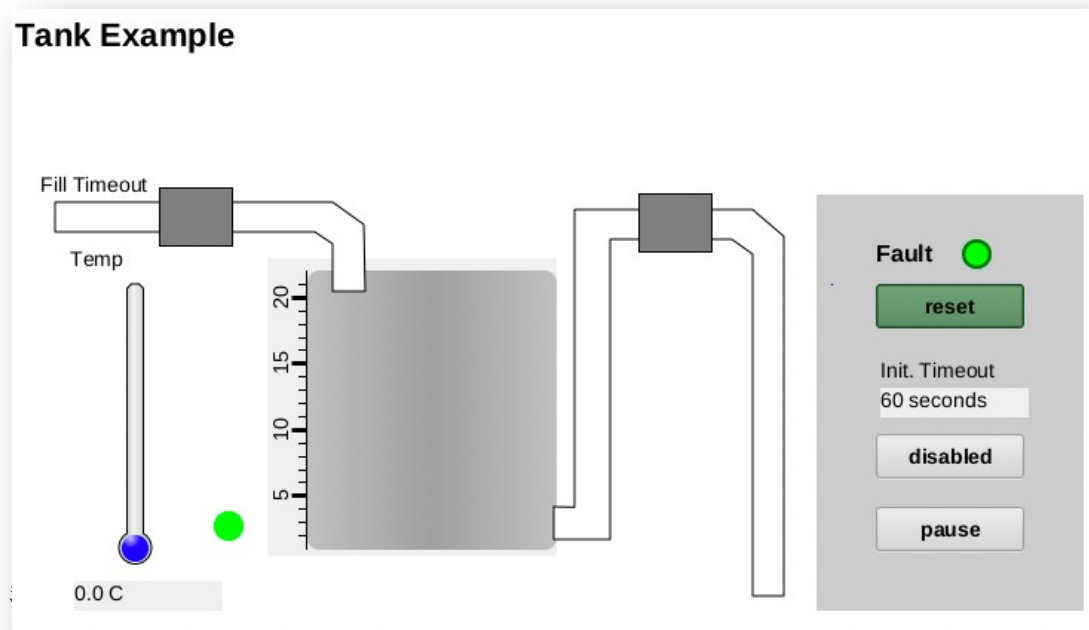
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Tank Example

- In CSS, open `/ics/examples/14_seqApp/opi/tank.bob`
- In terminal, run IOC

```
cd /ics/examples/iocBoot/ioc_seq
./st_tank.cmd
```
- Click “disabled” so it turns “enabled”. Tank should fill

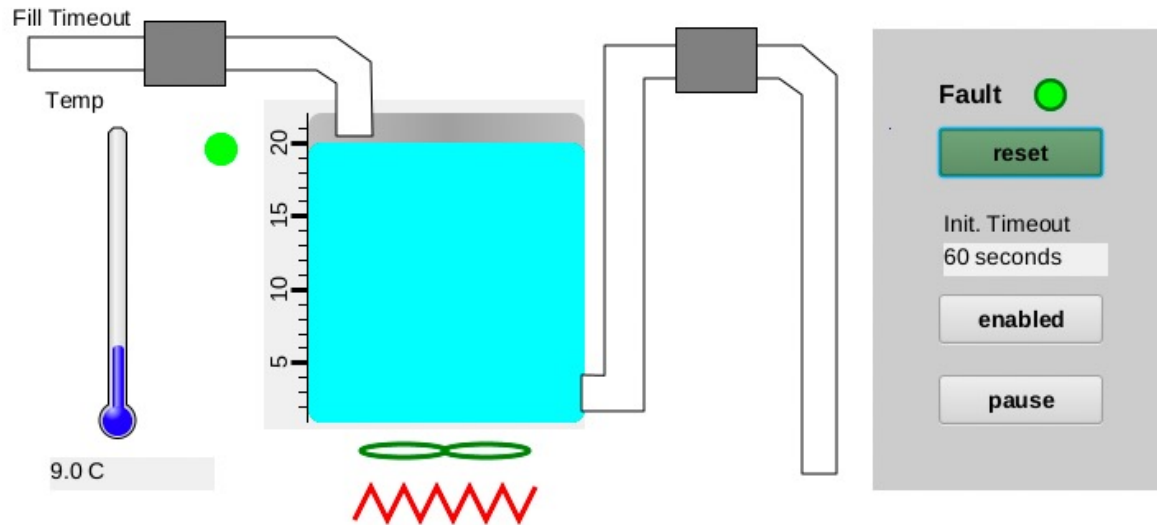


Tank Example...

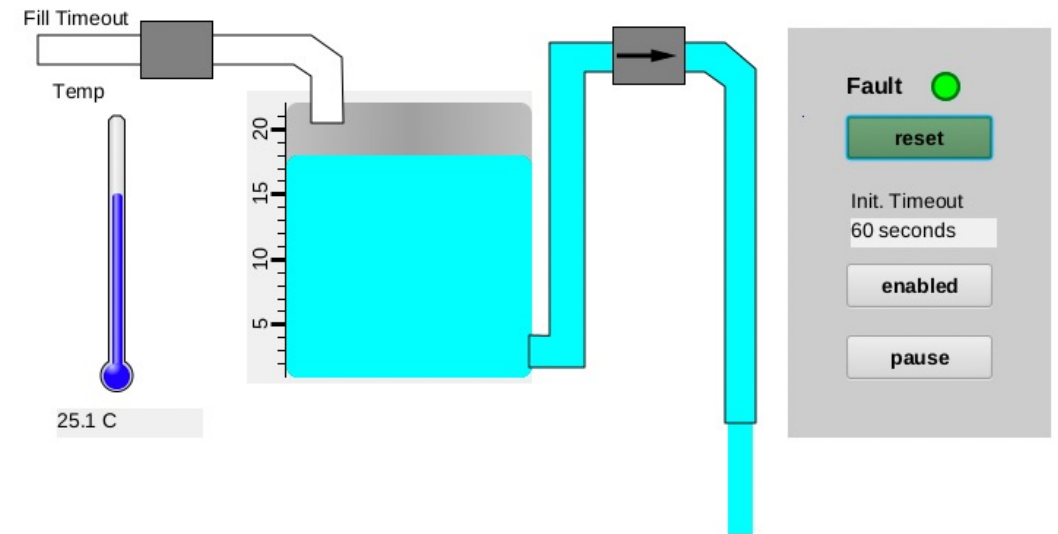
- When full, the tank should heat and stir

- When temperature reaches 25C, tank is emptied

Tank Example



Tank Example



Study Database, /ics/examples/14_seqApp/Db/tank.db

- Under what conditions will the “..:level” record simulate a “fill”?
- .. up to what level?
- What does “..:highLevel” detect?
- How could you simulate a faster tank fill/drain?
- .. a faster heatup?
- Will anything in the database start/stop the pumps, turn the heater on/off?

Study SNL, /ics/examples/14_seqApp/src/tank.st

- Why are some variables using “monitor”, others not?
- Restart the IOC. What is the initial state?
- What needs to happen to reach the “filling” state?
- How to then get to the “heating” and “transferring” states?
- Re-start the IOC. How do you get into the “faulted” state?
- How do you then get out of the “faulted” state?
- While “filling” or “heating”, what happens when you push “pause”?
- When no longer “paused”, how does the sequence know if it should return to “filling” or “heating” or ...?

Study SNL, [/ics/examples/14_seqApp/src/tank.st](#) ...

- Are the pumps, heater, impeller/stirrer turned on/off
 - a) In the code that transitions into some state?
 - b) In the `entry {..}` section of the target state?
- What's the advantage of each approach?

Update the “transferring” state to turn everything on/off as needed within its `entry {..}` section

Update the SNL code

The original code transitions from “heating” to “transferring” when the temperature reaches 25

Add two states. Best to this one at a time!

- State “holding” – hold temperature for 10 seconds
 - Transition to this state is from “heating”
 - Transition to “reheating” when complete
- State “reheating” – heat until temp ≥ 30
 - Transition to “transferring” when complete

Example End Result

Temperature pauses at 25 C, then re-heats to 30

