



USER MANUAL

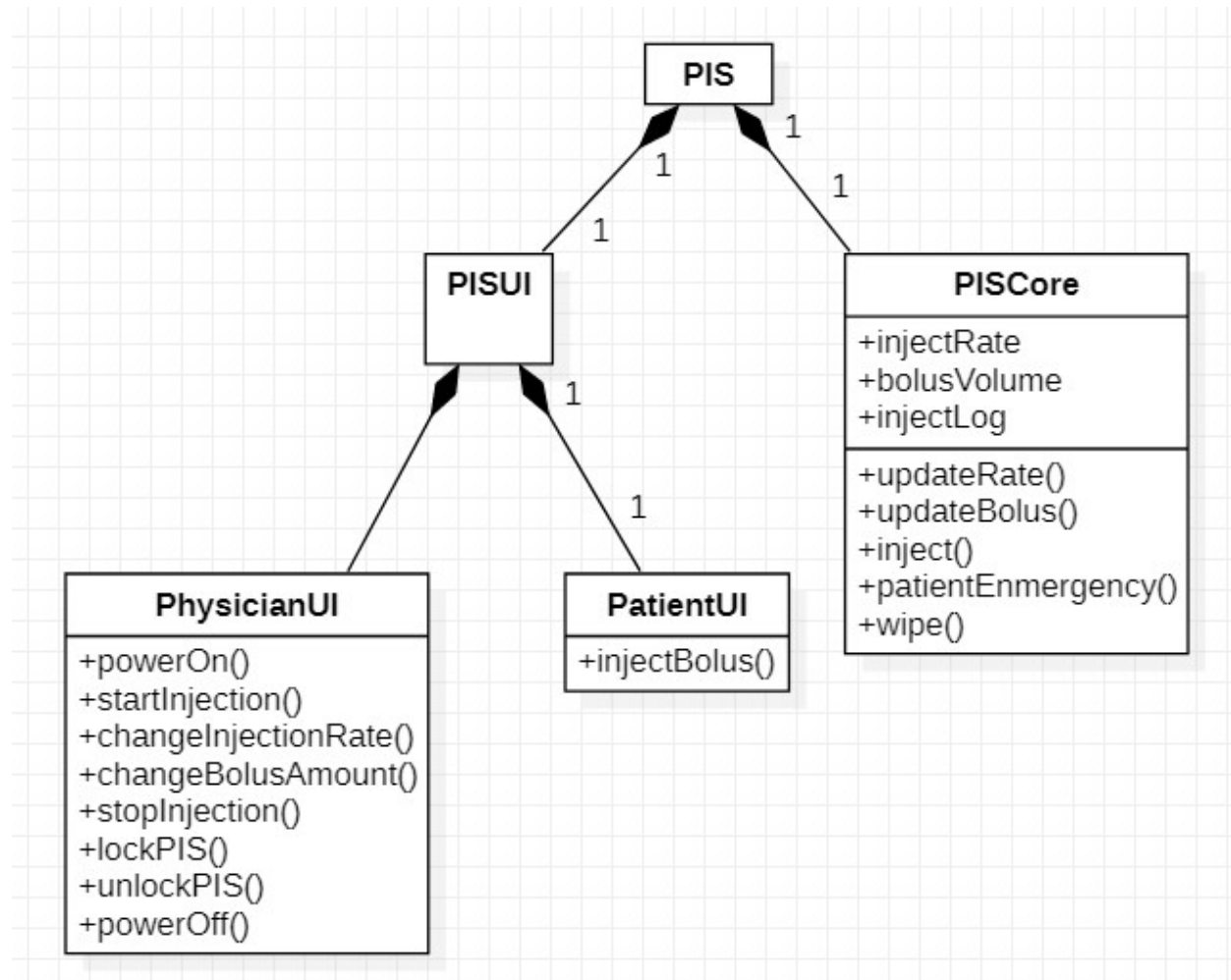
Painkiller Injection System

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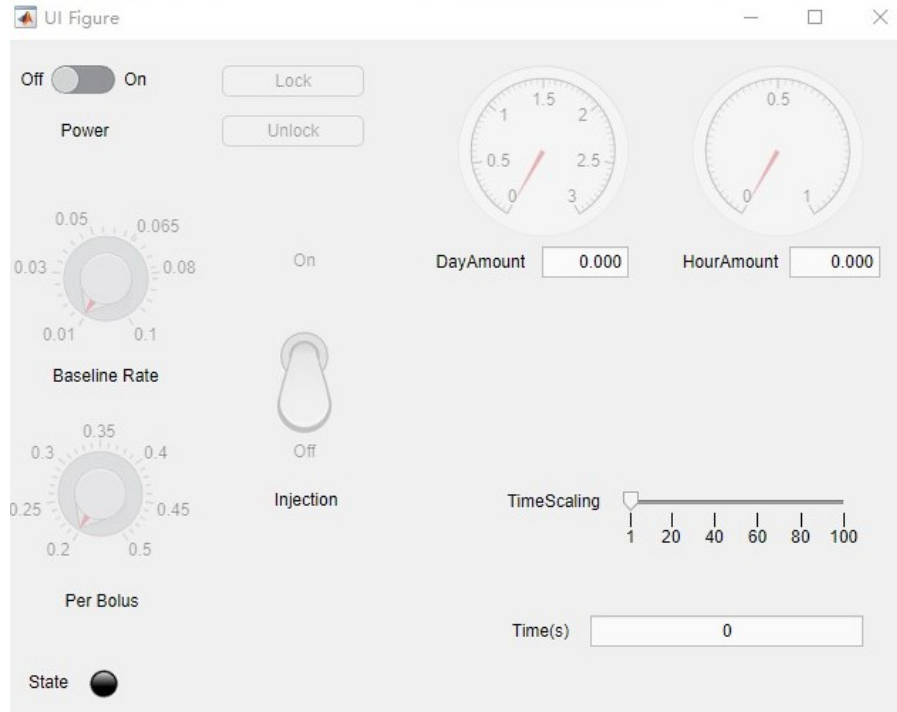
System Architecture

The system architecture is shown below:



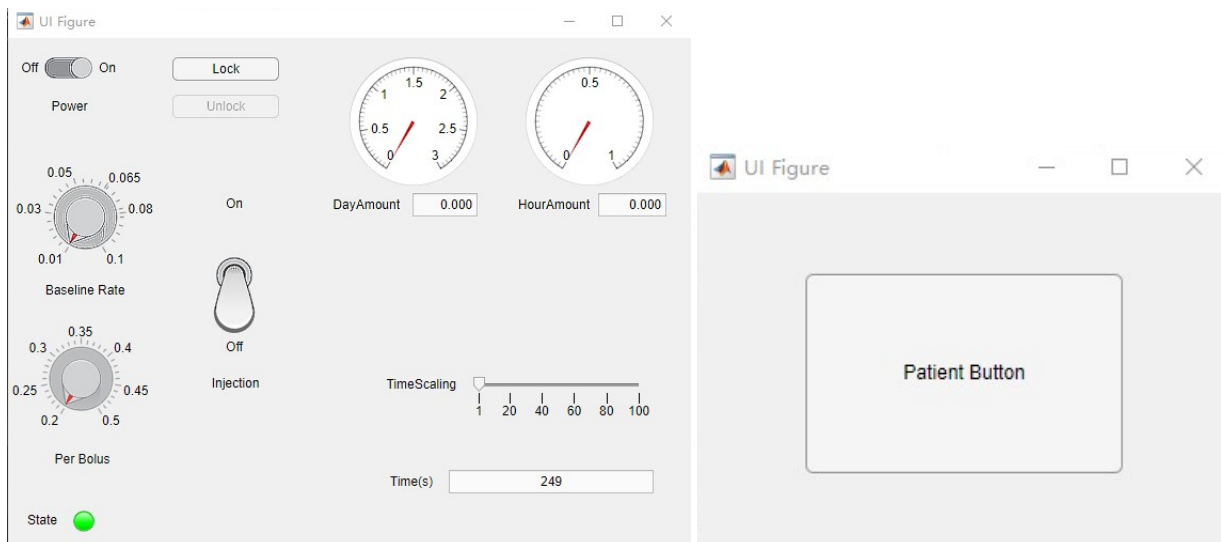
PISUI

This is how the interface when the PIS is activated



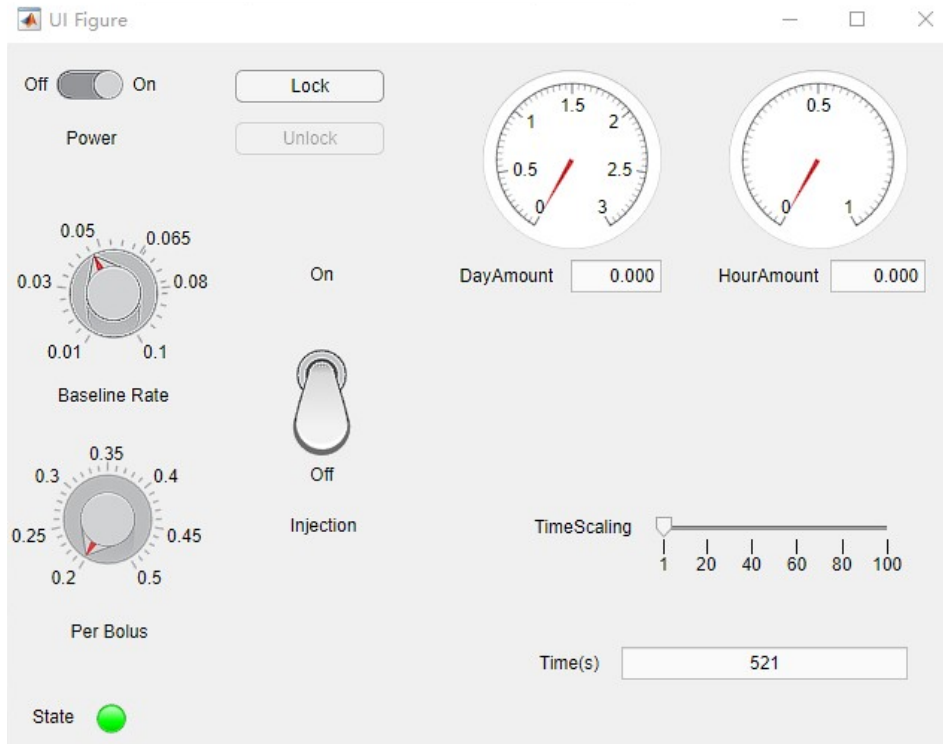
Power on PIS

Users can power on the injection by switching on the “Power” switch. After switching on, all button in the PISUI will be enabled, and State lamp will turn green. After power on users must power off to close the UI. Users can acquire the amount of painkiller injected of one day and one hour from “DayAmount” Gauge and “HourAmount” Gauge separately.



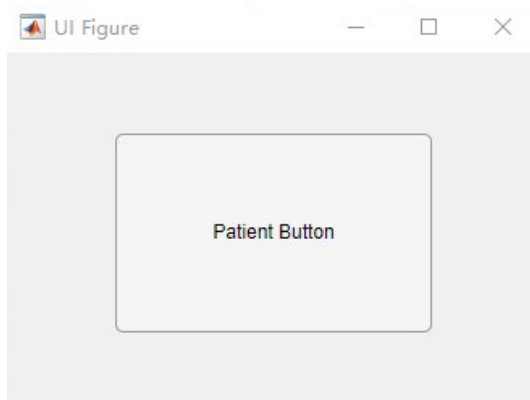
Change Baseline Rate and Bolus Amount

Users can change baseline Rate with “baseline rate” Knob. Physician can change bolus amount with “Per Bolus” Knob.



Inject Bolus

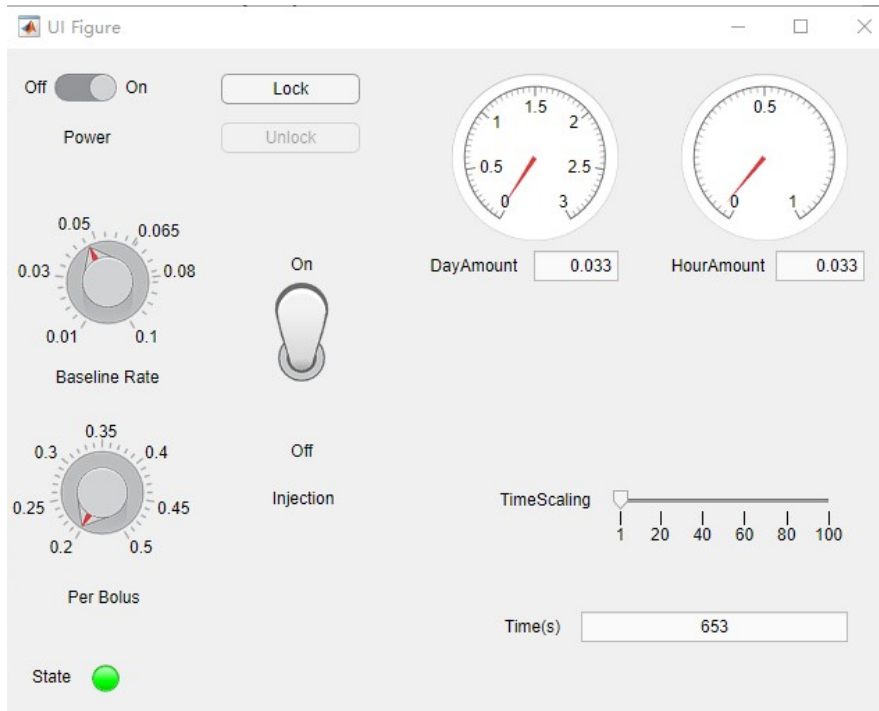
After the PIS is powered on, Users can inject bolus by pressing “Patient Button”. Bolus will be injected if amount limit is not reached after that injection, else it will do nothing.



Baseline injection

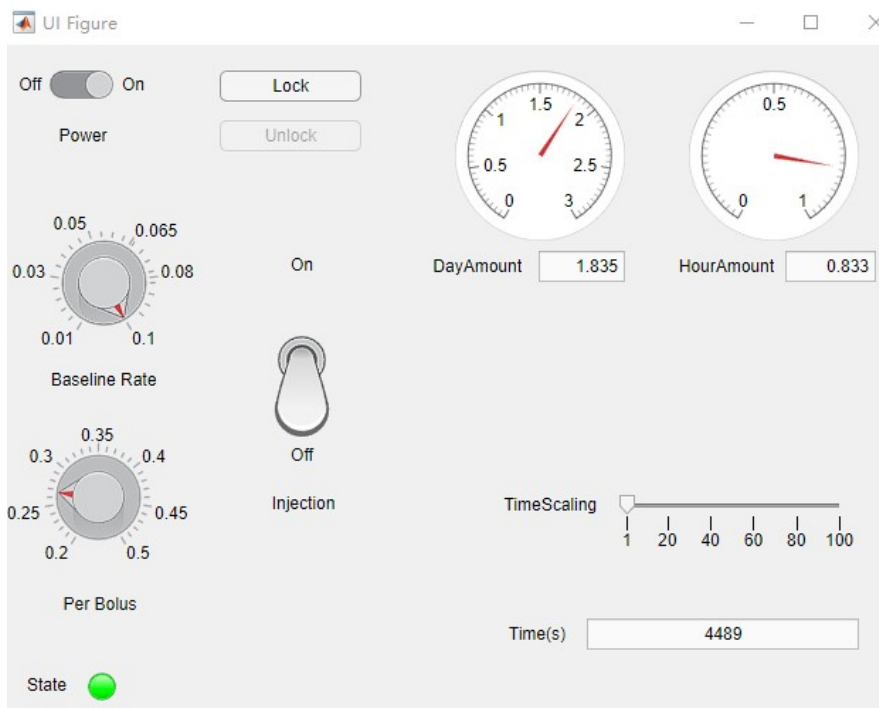
Start injection

Physician can start baseline injection by switching on “Injection” switch, then the PIS will begin to inject painkiller. The PIS will keep injection painkiller in the set baseline rate until at least one of DayAmount and HourAmount reach limit.



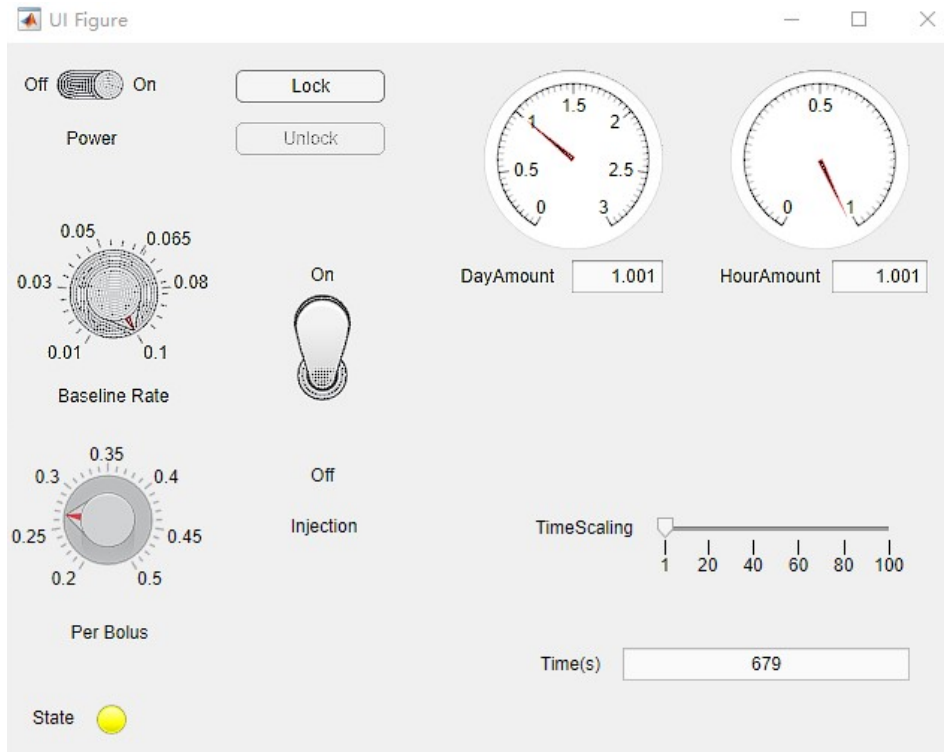
Stop injection

Physician can stop baseline injection by switching off "Injection" switch, after which the PIS will stop injecting painkiller.



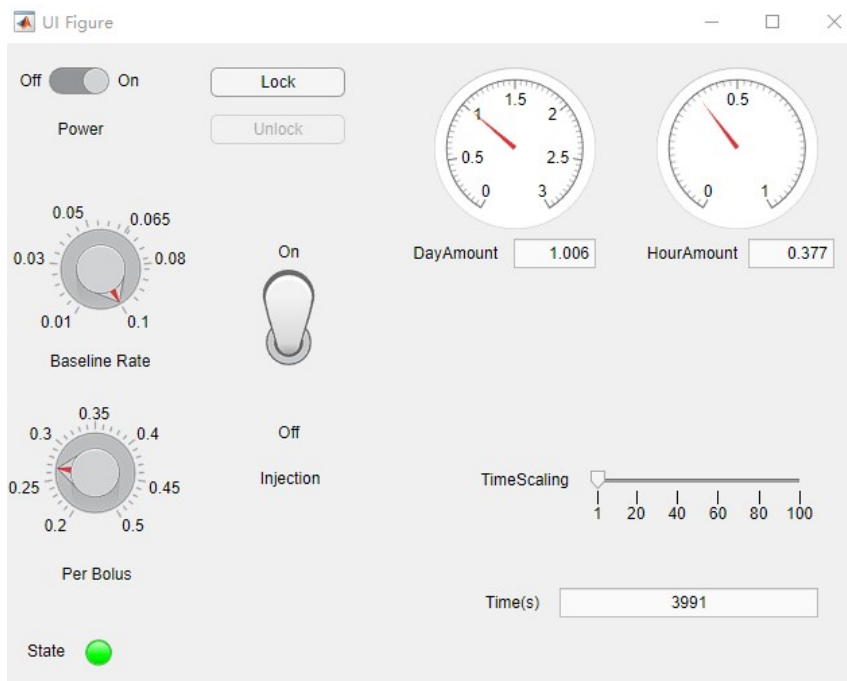
Auto-stop when meet the limitation.

If at least one of DayAmount or HourAmount reaches limit, then the baseline injection will stop to make sure the safety. The State lamp will turn yellow to show the information.



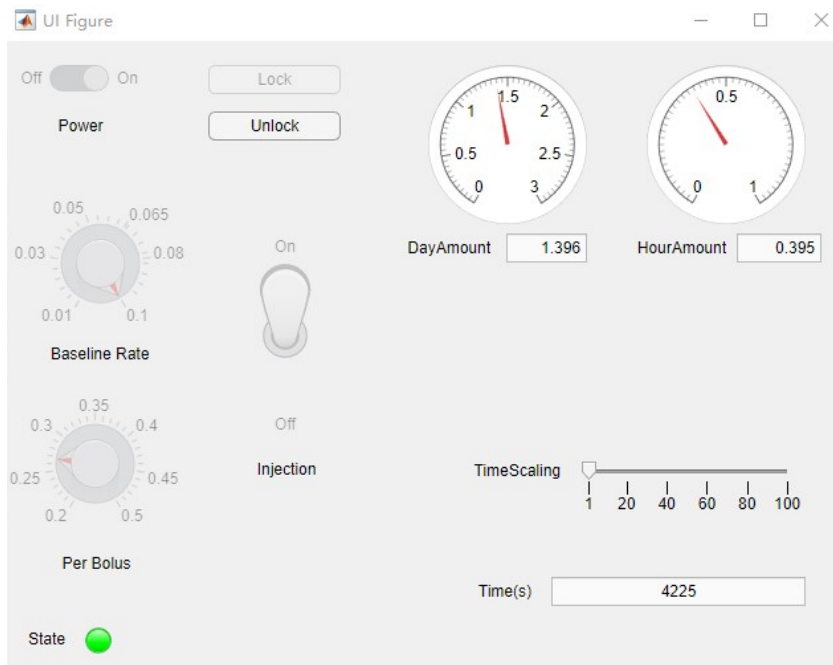
Restart injection when under the limitation

The injection will restart when both DayAmount and HourAmount are under limit while the PIS injection is still on. And the State lamp will turn green.



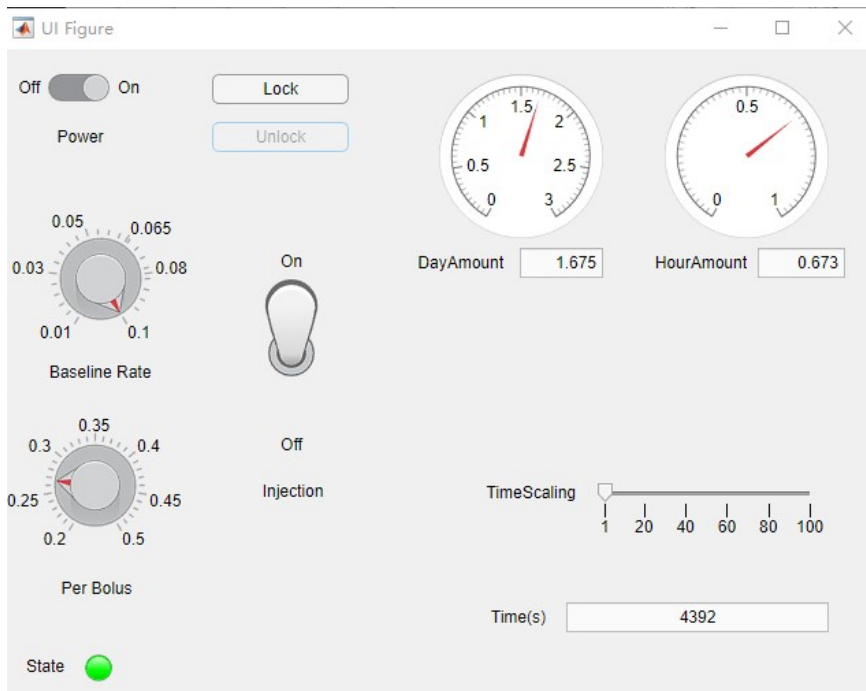
Lock

When the “Lock” button is pressed, all buttons and switches will be disabled except the unlock button to keep security. Other functions will run as usual.



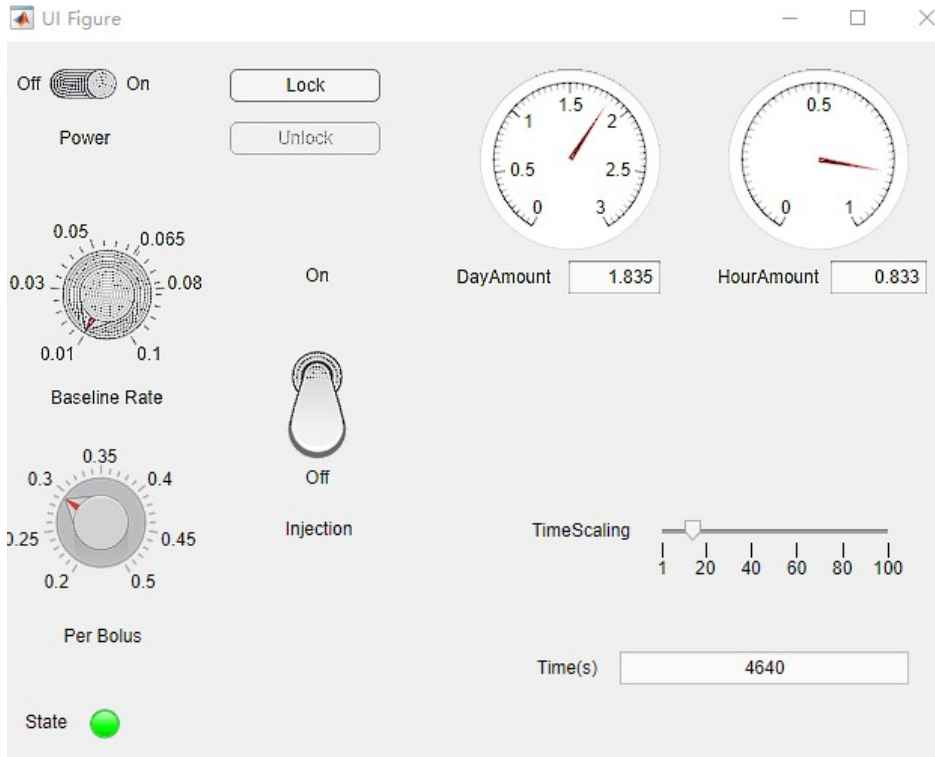
Unlock

When the “Unlock” button is pressed, all of buttons and switches will be enabled and “Unlock” button will be disabled. Other functions will run as usual.



TimeScaling

For a convenient demo display, a “timescaling” slider is added to control the speed of time, we can speed up to most 100 times of the origin to show the effect. And “Time” edit field shows current time after powering on.



Power off

Users can power off the injection by switching off the “Power” switch. After switching off the PIS, State lamp will turn black, the patient button will disappear, and the UI Figure will be able to be closed.