

## Figure 1



Figure 1: Schematic diagram of the system architecture.

The system architecture is shown in Figure 1. The system consists of a User Interface, a Control System, an Actuator, and a Plant. The User Interface sends commands to the Control System, which in turn sends commands to the Actuator. The Actuator drives the Plant, which produces a signal that is measured by the Sensor. The Sensor sends the measured signal back to the Control System, which uses it to adjust the commands sent to the Actuator.

The Control System is implemented using a digital controller. The digital controller samples the measured signal from the Sensor and calculates the control signal based on a control algorithm. The control signal is then sent to the Actuator, which drives the Plant. The Plant is a continuous-time system, and its output is sampled by the Sensor.

The digital controller is implemented using a microcontroller. The microcontroller samples the measured signal from the Sensor and calculates the control signal based on a control algorithm. The control signal is then sent to the Actuator, which drives the Plant. The Plant is a continuous-time system, and its output is sampled by the Sensor.

Figure 1: Schematic diagram of the system architecture.