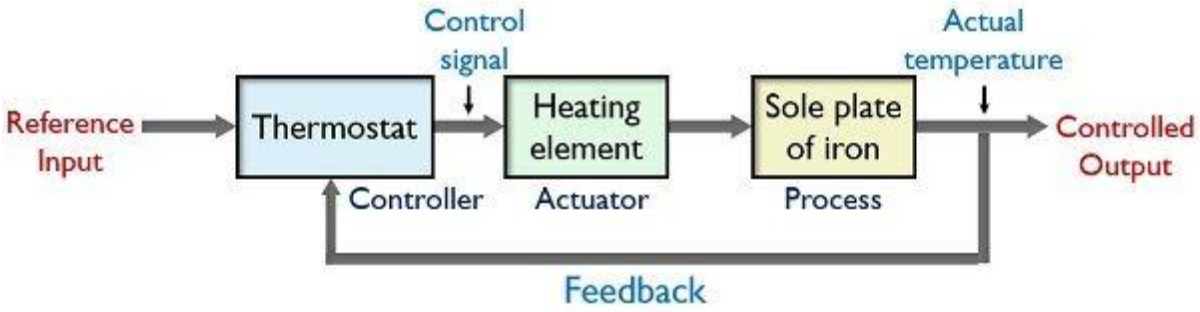
Simple embedded system: Automatic Electric Iron

An automatic electric iron consists of a thermostat that acts as a controller of the system, a resistive heating element is present that generates heat.



The basic working performed by an automatic electric iron is such that when the temperature of the sole-plate attains a predefined value then the heating action gets stopped automatically. And when the temperature falls below a certain specified value then again heating starts inside it.

Initially, in electric iron, the thermostat is provided with a certain specific value which acts as a reference input for the system.

When the input is provided to the system, then the resistive heating element generates heat inside the system. This leads to rising up the temperature of the iron sole. Through a feedback element, this output temperature is compared with the reference input of the thermostat.

If the achieved output shows lesser value than the reference input, then the difference temperature actuates the thermostat and this switches on the heating element.

This resultantly causes an increase in the temperature of the iron sole.

Once the temperature exceeds the reference value then the heating element automatically turns off. And after a certain point of time, the temperature starts to decrease.

However, the comparison still goes on and as the temperature falls below the specific value, the heating element again begins to raise the temperature of the sole.