SAMPLE DOCUMENT

The simplest type of an automatic [control loop](https://en.wikipedia.org/wiki/Control_loop), a controller compares a measured value of a process with a desired set value and processes the resulting error signal to change some input to the process, in such a way that the process stays at its set point despite disturbances. This closed-loop control is an application of negative feedback to a system. The mathematical basis of [control theory](https://en.wikipedia.org/wiki/Control_theory) was begun in the 18th century and advanced rapidly in the 20th.

Automation has been achieved by various means including [mechanical](https://en.wikipedia.org/wiki/Mechanical_system), [hydraulic](https://en.wikipedia.org/wiki/Hydraulics), [pneumatic](https://en.wikipedia.org/wiki/Pneumatics), [electrical](https://en.wikipedia.org/wiki/Electrical), [electronic devices](https://en.wikipedia.org/wiki/Electronics), and [computers](https://en.wikipedia.org/wiki/Computer), usually in combination. Complicated systems, such as modern factories, [airplanes](https://en.wikipedia.org/wiki/Airplane), and [ships](https://en.wikipedia.org/wiki/Ship) typically use all these combined techniques. The benefit of automation includes labor savings, reducing waste, savings in [electricity costs](https://en.wikipedia.org/wiki/Electricity), savings in material costs, and improvements to quality, accuracy, and precision.

The [World Bank](https://en.wikipedia.org/wiki/World_Bank)'s [World Development Report](https://en.wikipedia.org/wiki/World_Development_Report) 2019 shows evidence that the new industries and jobs in the technology sector outweigh the economic effects of workers being displaced by automation.