Controls − The Building Blocks to Automation

By Thomas Yoon

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As man learns to make machines that no longer rely on animal or human power, he finds that he has to develop some means to manage and control them. Powerful machines let loosed by themselves will create havoc and destruction.

Control systems have been developed for machines or processes so as to reduce the chances of failure and to provide the required results.

Basically, there are open loop control systems and close loop control systems.

Open loop systems are those where the controller action is not related to the final result. This means that there is no feedback to the controller to adjust the control action. A simple example is when you fill up a tank using a garden hose. As long as the tap is opened, the water will flow. The height of the water in the tank will not make the tap close.

However, when you see the tank becoming full and decide to close the tap, you are adding the element of feedback to the loop. It then becomes a closed loop. But it is a human controlled closed loop.

Closed loop systems use feedback from the final result to adjust the control action accordingly.

But how would you like to stand in one position, watch the process going on and operate valves, or switches according to

the conditions you want? This is very tiring, isn't it?

Moreover, human beings are prone to fatigue, boredom, and misjudgment. Manual control works very well only if the speed of the response is very slow, and the result is not very critical or important. Human controlled systems can become very unreliable.

Machines are made to replace humans in most control systems today.

The basic feature of any control system consists of 4 elements.

These are the measuring element, the controlling element, the set value, and the correcting element.

The measuring element provides a means of detection/measurement of the conditions required. This is the "eyes" or "ears" (or other senses) of the system.

The controlling element is the place where all the decisions on what actions to take are being made. It can be considered the "brains" of the system. It must make decisions based on certain guidelines or values required. The set values are inputted into the system by humans.

The correcting element is where the correction to the process is done. It can be considered like the "hands" or "feet" of the system. It must take certain physical actions to bring the processes back to the set value.

Well folks, be in control!

and

Understanding Custom Server Controls in ASP.NET

By Balaji

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ASP.NET offers many server controls for the developers to create web applications. However, at some point of development time when the developer does not get the control they want, they can create a new server control. This new server control can be called ASP.NET Custom Server Controls or user control. The basic difference between a ASP.NET Custom Server Controls and a user control is that unlike a user control that does not appear in the Toolbox, you can view a ASP.NET Custom Server Controls in the Toolbox. ASP.NET Custom Server Controls have their own events such as Enter, Onclick, and Onmouseover.

ASP.NET Custom Server Controls are very handy tool to use in your web forms. User controls prove inefficient in advanced scenarios. ASP.NET Custom Server Controls are the compiled code that makes them user friendly. You should write the ASP.NET Custom Server Controls in code, thereby view it in the visual designer with full properties and design−time features. You can create a ASP.NET Custom Server Controls by inheriting one of the base control classes. These classes have all the functionality that is needed for a server control. Therefore, you just have to modify some of the programming aspects to suit your requirements.

Just as you have created a ASP.NET Custom Server Controls you can customize it too to create a unique identity. You can even consume a single ASP.NET Custom Server Controls for multiple web forms. For ASP.NET Custom Server Controls only one copy of the control is needed in the Global Assembly Cache (GAC). Moreover, ASP.NET Custom Server Controls are very helpful if you want a dynamic layout for your web application.

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