An XML-based Generic Architecture
for the Construction of Interactive Web Components.

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Abstract: A generic architecture for constructing interactive web-based components or subsystems is described. Examples of component types are custom content navigation and presentation components, interactive exercise and testing components, and an electronic catalogue and ordering system component. The instances of a component type are collections of structured data which share a common syntactic and semantic model. The data model for a component type is described using an XML Document Type Declaration (DTD). The data of a component instance is stored and described by an XML document conforming to the component DTD. An interactive component combines the content data with behaviour and presentation characteristics. A generic architecture has been developed using an XML and CSS-based modelling language for describing and mapping data objects to layouts, styles and behaviours. A generic runtime engine reads, parses, loads, instantiates and renders the described model into DHTML/HTML at runtime, or statically during authoring. The runtime engine itself can be implemented on either the client-side or server-side. Simple authoring tools can be developed on top of the architecture to automate the construction process.