

3 Implementation and Application of RunSpeech

A mechanism is needed to provide voice-only clients with the information necessary to properly render speech-enabled pages. Such a mechanism must provide the execution of dialog logic and maintain state of user prompting and grammar activation as specified by the application developer.

Such a mechanism is not needed for multimodal clients. In the multimodal case, the page containing speech-enabled controls is visible to the user of the client device. The user of the client device may provide speech input into any visible speech-enabled control in any desired order using the a multimodal paradigm.

The mechanism used by voice-only clients to render speech-enabled pages is the RunSpeech script or algorithm. The RunSpeech script relies upon the SpeechIndex attribute of the QA control and the SpeechGroup control discussed below.

3.1 SpeechControl

During run time, the system parses a control script or webpage having the server controls and creates a tree structure of server controls. Normally the root of the tree is the Page control. If the control script uses custom or user control, the children tree of this custom or user control is expanded. Every node in the tree has an ID and it is easy to have name conflict in the tree when it expands. To deal with possible name conflict, the system includes a concept of NamingContainer. Any node in the tree