UA-Chess: A Universally Accessible Chess Game
www.ics.forth.gr/uachess

UA-Chess is a web-based chess game that can be concurrently played by people with different abilities and preferences, including people with disabilities (e.g., low-vision, blind and hand-motor impaired).

UA-Chess is a fully-functional chess game, developed by the Centre for Universal Access & Assistive Technologies (www.ics.forth.gr/hi/cuaat.html) of ICS-FORTH. UA-Chess can be played through a standard Web browser. Its distinctive characteristic is that it is designed to be Universally Accessible, i.e., it can be concurrently played by people with different abilities and preferences, including people with disabilities (e.g., low-vision, blind and hand-motor impaired).

This is achieved by supporting alternative input and output modalities and interaction techniques that can co-exist and co-operate in the game’s user interface, combined with fully customizable player profiles. Every aspect of the game’s functionality is fully accessible through the mouse, the keyboard (or any type of switches emulating keystrokes) and speech recognition. UA-Chess has self-voicing capabilities, since it includes a built-in screen reader that offers full auditory access to every part of it.
Additionally, the game can be sized according to user preference and zoomed in and out at different levels. Finally, several alternative interaction techniques (the parameters of which can be customized) are supported for each device. For example, the keyboard can be used for direct positional input (e.g., to select the square A7 by typing ‘A7’), for ‘tabbing’ though all the alternative interaction elements, or in combination with different types of scanning. The interaction capabilities of UA-Chess allow it to provide access to people with combinations of disabilities, as for example blind hand-motor impaired persons.

UA-Chess allows for two-player games over the Internet, as well as games with two opponents sharing the same computer, where the game’s user interface (input and output) is adapted to the active player’s profile. The game follows the official Laws of Chess, as these are set by the World Chess Federation.

UA-Chess was developed using Macromedia Flash MX Professional 7. Speech recognition and synthesis is supported through the use of Speech Application Language Tags (SALT) technology.

UA-Chess constitutes a practical demonstration of the application of Design for All principles, methods and tools in the development of software applications. In the overall context of promoting Universal Access to the Information Society and raising awareness in the software development community about Design for All issues, UA-Chess can be seen as a good practice example, demonstrating that Universal Access is a challenge and not utopia. Furthermore, UA-Chess strongly caters for the need and actively supports the right of all people for social interaction and play, irrespective of their individual differences, thus providing a steppingstone towards a more inclusive (and fun!) Information Society.

UA-Chess can be found on-line at: www.ics.forth.gr/uachess

Design and Development of UA-Chess

Centre for Universal Access and Assistive Technologies

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