

Development and Design of Multi-media Teaching Courseware –The Internet

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Abstract. Most programmers would prefer Authorware to design and make multi-media courseware. It is the Authorware7.0 that the writer choose to complete the multi-media courseware of Internet. And FLASH MX and IBM are also utilized to complete the icon and some cartoon of the courseware.

Forword

With the popularity of computers, the application of internet is increasingly wide. On July 19th, 2012, the China National Network Information Center issued the 30th Survey Report on the Development of China's Internet in Beijing, which shows that by the end of June, 2012, the population of Chinese netizens has reached 538, 000,000 and the popularity rate of internet come to 39.9%. From this report, we can find that the internet has become one of the most influential and potential industries in China. On this basis, the multi-media courseware of The Internet is designed. Through the CAI mode, our teaching can be efficient and interactive, and the learners' initiative can be aroused.

The current text-teaching mode ignores information communication with students who need more vivid, clear and direct teaching. Thus the Computer-assisted Instruction(CAI) is adopted to solve this problem. The multi-media course ware, a teaching method through CAI, is able to reveal the once blunt and complicated reasoning process to the students in a vivid way.

The Development Plan

The task of the system

With the arrival of the information era, the social informatization and information socialization will be inevitable. It is necessary for us, including students, to search out the knowledge we need. In spite of the high popularity of computers in college, there is little use of the computers' multi-media function in daily teaching activities. One reason is that we don't have enough understanding about the multi-media courseware, and the other is our lack of practical CAI software. Therefore, we should integrate the CAI with the past people-to-people teaching mode and set up a dimensional mode to arouse the students' initiative and use the multi-media technology in classroom for making new breakthrough of teaching through CAI.

The design concept

For the multi-media teaching software: The picture manufacture is fine. In the absence of advanced function of image processing, the Authorware 6 requires the other application software. The dubbing effect is perfect. The multi-media interactive software, such as the Welcome screen, needs relaxed and melodious background music. The interactivity is strong. The multi-media interactive software with strong interactivity can satisfy demands of various users. The collocation is good. The collocation of multi-media is closely connected with its success, especially the precedence or coordination relationship between different contents.

An Introduction to the Softwares

the Computer-assisted Instruction (CAI)

The Computer-assisted Instruction is a brand new teaching method. Courseware – the computer software designed by the teaching target under certain learning theory. It is the organic integration between teaching content and strategy. Specifically, the courseware contains: To show the teaching information to the students; To evaluate and direct the learning process; To arouse the learning initiative; To refresh the learning data.

The courseware development is a process that the designer describes his thoughts about the teaching, including target, content, strategy, and so on, through computer programme and enter them into the computer to be adjusted to practical programme. In spite of its many advantages, the implementation of CAI is influenced by teachers, hardware and software, and their good relationship brings about good teaching effects.

On the multi-media

With the development of science and technology, the limited information from the traditional teaching media, like the blackboard and textbook, can not meet the requirements of modern teaching. Meanwhile, the electronic technology has brought about new media, such as slide show, projection and video, which are able to transmit much more information. In spite of their widespread use in teaching, these media have their own shortcomings, so the multi-media computer, drawing upon others' strong points, stands the development trend of teaching media.

The educational psychology shows that 83% of the information obtained from the external world is visual while 11% audio, 3.5% olfactory, 1.5% tactile and 1% gustatory. Obviously, the most advisable approach is to increase the visual and audio information, and the multi-media is characterised by its unique advantages. As a result, the multi-media teaching is of great advantage.

In 21st century, the world is challenged by technological revolution, and the education is the first to be affected. With the continuous development of computer technology and wider popularity of computer education, the application of computer technology has attracted more and more attention.

On Authorware

The most important feature of Authorware is its icon creation. By the drag-and-drop of its 13 icons, we can complete the courseware making and there is no programming any more. There are more than 40 transition effects, and 5 basic motion models in Authorware, which are able to complete all animation and directly invoke text, picture, voice and image of any format. The soul of Authorware lies on its interactivity and function library which allow easy implementation of arbitrary interactive effect.

The Frame Design and Crucial Technology

The frame design

The multi-media teaching software discussed in this article can be illustrated through Figure 1:

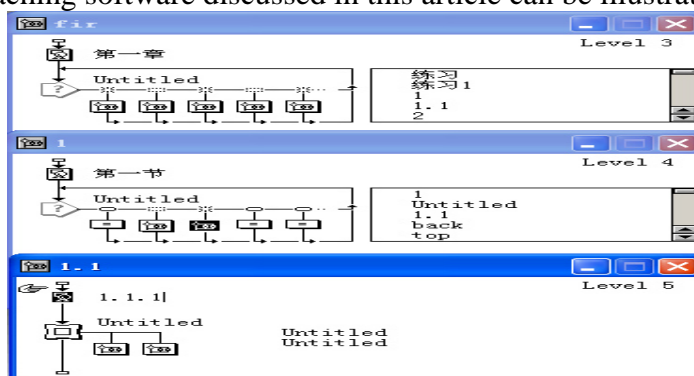


Figure 1 The chapter frame of multi-media teaching software

The “fir” window works as the frame of the first chapter, the “1” window works as the frame of the first section of chapter 1 and the “1.1” window as the first point of the first section of chapter 1. In this frame, the map icon has utilized for storing the next frame, the navigate icon for execution control and the framework icon for structure and layout.

The control of background sound

Most multi-media softwares include the opening, the body and the ending. In order to attract more attention, we often add relevant background sound in order to attract more attention.

The crucial steps of voice control include:

To introduce a “digital Movie” icon and name it opening, double click the mouse to open this icon and add a video file as the opening;

To introduce a display icon and name it jsiwangluo, open it and add the main interface in this icon;

To introduce a sound icon and name it back.mp3, open it and bring in a background sound file through the “Import” button. Then, we set the “Concurrency” domain as “Concurrent” in the “Timing” tab control, set the “Play” domain as “Until True”, and input the “control” expression in the textbox under the “Play” domain, that is, the sound will stop when the value of the “control” expression is true. And click the “ok” button;

To introduce a calculation icon and name it value, double click and open it, and input:
weiz:=baGetVolume("wave")

EraseIcon(IconID@" volume slider ")

DisplayIcon(IconID@" volume slider ")

wei:=INT(PathPosition@" volume slider ")

To introduce another calculation icon on the left of the “volume set” icon, double click and open it, and input: volume set

wei:=INT(PathPosition@"volume slider")

baSetVolume("wave",wei)"

The Authorware UCD

Authorware supports Plugs-in development, and the Macromedia Company calls it User Code Document. By providing a development document to the third-party programmer, Macromedia has realized the extended function of Authorware, that is, the UCD. The Macromedia company supports interfaces, including C++ and Borland C++. The UCD documents by the multi-media software discussed in this article control the sound documents(MP3、MIDI、WAV) and video documents(AVI、MPEG、RM) through the principles mentioned above.

To embed the ActiveX control of the ActiveMovie in Authorware

The ActiveMovie control supports more video files than the spread function of Authorware, especially the VCD file(.dat). With its strong capability of control and play, the ActiveMovie support is of great importance among the multi-media application softwares. The embedding method is to place the copy of the Microsoft ActiveMovie Control(Amovie . ocx) under the system directory, register Amovie.ocx through Regsvr32.exe and then the visual ActiveMovie control can be used in Authorware 6.0.

How to produce exercises

Since the release of Authorware 5, the Macromedia company has added the Knowledge Object which facilitates many multi-media programmers as it has replaced the model of the old Authorware and assimilated some frequently-used functional features of other softwares.

The exercise design adopts Quiz of the knowledge object base. The most important step for exercise making is to set the Add Questions: put the exercise name in Enter or modify question title, set the content of one-choice question, click the Run Wizard and enter the content wizard. The next step is to input questions in Some Question, input optional answers, including the right one, in distractor、hint、feedback, and click the plus sign(“+”) before the right answer.

About the System Function

In the early beginning of the courseware development, we have collected some teaching information of the Internet. Thus, the design of the Internet courseware, assimilating the teaching characteristics and the students’ learning reality, has adopted the prototyping ideas to analyse the whole system which has brought us a convenient courseware.

An introduction to the multi-media courseware

The overall mission is to realize the multi-media teaching of the Internet, enrich the teaching method and improve students' learning efficiency. To be exact, the functions of our multi-media include:

- teachers conduct teaching through this multi-media courseware;
- students learn through this multi-media courseware;
- beginners can learn the Computer Internet by themselves;
- fit for support material.

The main interface

There is always a sense of freshness and cheerfulness in the programme window of a good multi-media courseware, so we carefully designed a background picture for it. According to the reality of the Internet teaching, the theoretical knowledge of the Internet is divided into eight chapters in this courseware: chapter1 –Introduction, chapter 2 –the Physical Layer, chapter 3 – the Data Link Layer, chapter 4 –the Media Access Control, chapter 5 –the Transport Layer, chapter 6 – the Wide Area Network, chapter 7 – the Network Security, and chapter 8 – the Application Layer.

The interface design of chapters

Click the chapter button on the main interface to enter all chapters of this multi-media courseware, and their titles(pink) will appear.

There is an exercise library with 10 exercises in the end of each chapter for students' self testing.

Click the TOP button for going back to the main interface, and the EXIT button for quitting this courseware.

The design of browsing interfaces

A user can make his own choice and click to enter the knowledge point he wants. The BACK button is for returning and EXIT for quitting. When he is in the browsing interface, the NEXT button is for the next page while the BEFORE button for the previous one.

The red font of the courseware means that it is illustrated by animation or pictures which can be clicked for entering the multi-media teaching.

The System Release and Running

The release of system

When the design is completed, the system will be packaged and published to bring us an executable system, which can be fulfilled with the Publishing Wizard of Authorware 6. After the release, there will be an executable file(the computer internet) , two folders(xtras and UCD) , and two chained files(AWIML32.DLL and VCT32161.dll) under the default path. The package will contain 12 folders and 257 files.

The system running

When a user needs to run The Internet multi-media courseware, he just double-clicks the executable file – the internet.exe. Of course, all release files must be found under the installation directory, or the normal use of the multi-media will be affected.

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