COMPUTER GRAPHIK

topics

Reports on Computer Graphics

SOFTCIÊNCIAS –
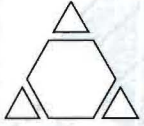## Technologies for teaching

Groupware assíncrono
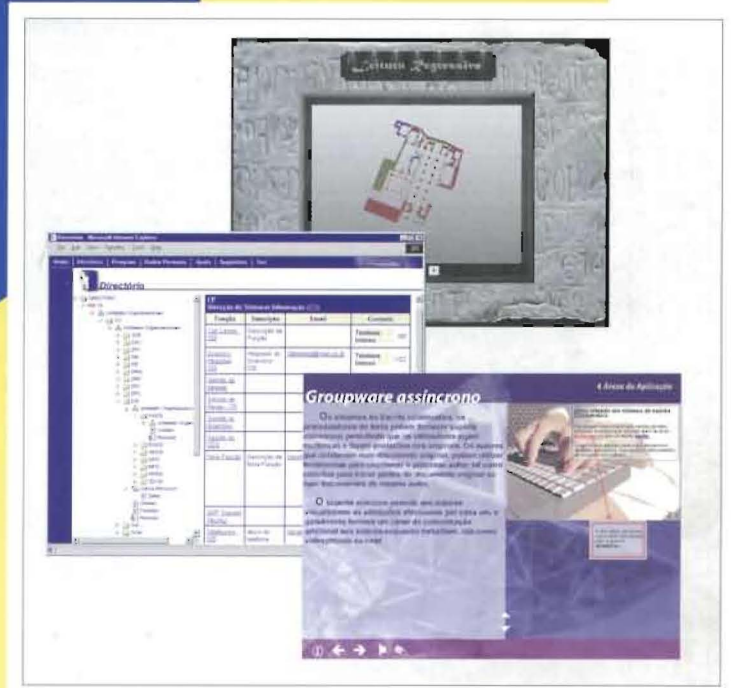
Courseware for Telework Training

Contents

INI-GraphicsNet

Main Core Competencies
- Animation
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- Data Exchange
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- Telematics
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- T.V. Stations
- Tourism
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Computer Graphics is the **technology with wich pictures – in the general sense (synthetic graphics as well as grayscale and color images) – are generated or acquired, managed, displayed, and processed in an application-oriented manner by means of computers, and with which pictures are also correlated with non-graphical application data**. The term »computer graphics« also implies the computer-aided intergration and handling of these pictures synchronized with other data types; e.g., audio, text and video **(multimedia systems)**, the advanced **dialogue techniques** associated with these data types and their communication and transfer over networks.

Multimedia Kiosks and the Ancient Times: an Archaeological Reconstruction and History of Braga's Cathedral

Paulo Bernardes, Luis Fontes, Dr. Adérito Marcos

German abstract

Ein vom CCG, in Kooperation mit der Unidade de Arqueologia da Universidade do Minho – UAUM (Portugal), entwickelter Multimedia Kiosk präsentiert auf mehreren thematischen Ebenen die Kathedrale und die mit ihr verbundenen archäologischen Ausgrabungen. Zu jeder Ausgrabungsstätte ist der Fortgang der archäologischen Arbeiten durch kurze Textbeschreibungen, Fotografien und Zeichnungen dokumentiert. Ein Modell der Kathedrale lädt zu einem virtuellen Rundgang ein. Ziel der Präsentation ist es, nicht nur Finanzmittel für die Fortführung der archäologischen Arbeiten einzuwerben bzw. das Interesse potentieller Sponsoren zu wecken, aber auch den Besuchern der Kathedrale eine bessere und interessantere Übersicht der Geschichte des Gebäudes zu geben.

Introduction

Between 1996 and 1998, over more than two years, the Archaeological Unit of the University of Minho (UAUM) carried out archaeological rescue work in the interior of Braga's Cathedral in collaboration with the Office of Archaeology of Braga's Town Council and the Regional Museum of Archaeology D. Diogo de Sousa.

This project was sponsored by the Portuguese Institute for Architectonic Heritage (IPPAR-Instituto Português do Património Arquitectónico).

The archaeological richness of Braga's sub-soil is very well known and although good results were expected from the very beginning, the discoveries exceeded all expectations.

Effectively, the archaeological rescue permitted an identification of important remains related both to the roman town of Bracara Augusta and the history of the Cathedral's architecture and its previous buildings, from the upper Middle Age to our days.

Multimedia Kiosks and the Past

The Multimedia Lab. of the UAUM, the CCG/ZGDV, and the Dept. of Information Systems of the University of Minho at Guimarães, joined forces to develop the prototype of a Multimedia Kiosk that operates as an information pool concerning the history of the Cathedral based on the data of the archaeological excavation. This demonstrator presents the main evolution stages of the Cathedral of Braga and its preceding buildings in a regressive reading and by an animation of three-dimensional models showing the architectonic evolution.

This unique Multimedia Kiosk has been designed along three main levels of information:
– Excavated Places;
– Regressive Reading;
– Visit to the Contemporary Monument.

Excavated Places

At this level of information, the visitor is able to explore the three main areas (cf. Figure 1) where the excavations took place. For

Figure 1:
Excavated Places

Figure 2: Regressive Reading

About Kiosk-Systems

One of the application branches of the Kiosk-Systems is the establishment of a Point-Of-Information (POS), as the prominent goal is to keep some specific information available and accessible through highly expressive multimedia means.

An intuitive, customer-oriented design of user interfaces is the key to success of any kiosk system. In addition to familiar multimedia systems, specific WWW-based interfaces are used, which integrate the communication requirements in an ideal manner. If necessary, these systems can be multilingual.

The Multimedia Kiosk for the Cathedral of Braga integrates most of these requirements. It was developed as an autonomous multimedia system, able to recover from crashes and providing a high level of interactivity. The multimedia environment integrates text, graphics and video and specific sequences of music that try to recreate the auditory environment of the different epochs. The system aims to be comprehensive for the ordinary citizen. It presents the archaeological information not only for the specialists (archaeologists, historians and architects), but also for the daily visitors of the Monument. It can be seen as a way of democratizing the general access to the archaeological and historical information of this unique building.

each excavation point there is a short text describing the work that was carried out, together with photographs and drawings. Especially in the drawings, different layers of information that represent the different stages of evolution, are visible. Both the photographs and the drawings can be zoomed in for better analyses and understanding.

Regressive Reading

The interpretation of the findings performed by the archaeologists enables a regressive reading at each excavation area. As we can see in figure 2, each stage also has text and some photographs explaining the main transformations that occurred over the centuries.

Furthermore, it is possible to visualize an animation sketch at those points where the evolution of the marks succeed in a regressive way over the time: the building is decomposed successively into the original structure back to the 1st century AD. Different colors represent different evolution stages, and the three-dimensional model was generated in very strict obedience to the color-code for a better understanding of the building's evolution (cf. Figure 3).

Visit to the contemporary Monument

At this level, the visitor can make a tour through today's Cathedral. More than merely giving information on the archaeological finds, the main idea behind this is to drive public interest to the current architectonic and historic richness of the Braga's Cathedral.

Project Partners

– Unidade de Arqueologia da Universidade do Minho – UAUM, Braga, Portugal
– Dep. de Sistemas de Informação da Universidade do Minho, Guimarães, Portugal

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Figure 3: 3D Model