DB2 Information Management Software

University of Rostock drives innovation with IBM software.

Overview

- **Application**
  Computer science curriculum based on DB2® information management and content management software from IBM

- **Business Benefits**
  100% of students in program placed in jobs upon graduation; ability to utilize cutting-edge technology to develop innovative applications for managing multimedia content

- **Software**
  IBM DB2 Content Manager, Version 8.1; IBM DB2 Universal Database™, Version 8.1; IBM DB2 Extenders™

- **Hardware**
  IBM @server® pSeries® 630

University of Rostock students can choose from a multitude of subject areas, including some of Europe's premier courses on content management and digital libraries.
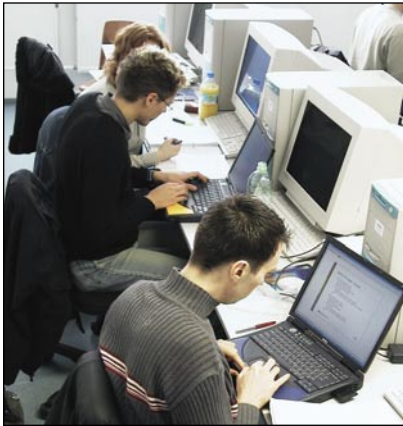
In the German seaside city of Rostock on the Baltic coast, the 10,000 students at the University of Rostock are pursuing courses of study inspired by a long tradition of educational excellence. Founded in 1419—some 30 years before the invention of movable type—the University of Rostock is one of the oldest institutions of higher learning in northern Europe.

While books were rare and lectures were the primary vehicles of instruction in the early days of the University, students today can leverage a wide

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variety of educational media, including videos and computer programs. In its Computer Sciences Department, moreover, students are learning skills which could have as much impact on the way we store and access multimedia content as the first books had on the University six centuries ago.

Students receive hands-on experience managing text and multimedia resources using DB2 Content Manager software.

The University of Rostock's two courses on content management and digital libraries are a significant part of its database and information sciences program—largely because they offer real-world instruction in two leading software products, IBM DB2 Universal Database and IBM DB2 Content Manager. About 200 students per year enroll in the fundamental DB2 lectures, while 50-80 students each year engage in a more comprehensive program based on DB2 and DB2 Content Manager which covers the last three years of the institution's five-year computer sciences curriculum. "The database program with DB2 has been a tremendous success," says Professor Andreas Heuer, chairman of the Computer Sciences Department. "The evidence is that 100 percent of our graduates find jobs in their chosen field."

The institution has been taking advantage of the latest versions of DB2 software in its curriculum through the IBM Scholars Program, which provides licenses for the products at no charge to participating academic institutions. The IBM Scholars Program is also enabling the University to be among the first institutions to teach content management. The skills that students are gaining will enable them to develop digital libraries as well as content management solutions for banks, insurance companies and other institutions that can benefit from storing content in digital form. "Content management is helping many companies and organizations cut the cost of storing content and make it more accessible," says Professor Heuer. "This is a fast-growing field, and we're preparing our students to meet the rising demand for content management systems."

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Building an educational alliance

The University of Rostock became part of the IBM Scholars Program several years ago, after it had already begun to send students to the IBM labs in Böblingen, Germany, and San Jose, California, for their requisite semester-long internships. Until that point, the Computer Sciences Department had been using the Ingres database, but Ingres was sold to a new vendor, which chose not to continue developing it. Eager to find a robust database to use as an educational tool, the University determined that DB2 Universal Database best met its needs.

"DB2 is the best database for use in the classroom because it's the closest database system to SQL standards," says Professor Heuer. "It's important that students learn how to work with industry standard products because commercial users today do not want to be locked into vendors' platforms. Secondly, you can look into the system using DB2 administrative utilities. For instance, you can observe file structures and how the optimizer works. And third, within the new SQL standards, there are standardized object relational concepts, many of which DB2 incorporates. So with DB2, we can use one system for all our database topics, including database fundamentals, database design, database languages, the use of database systems, database implementation, transaction management techniques and object relation techniques."

Focusing on the best of today's technology and fostering innovation for tomorrow, the University of Rostock offers an extraordinarily broad spectrum of cutting-edge training and research.

Eventually, the University joined the IBM Scholars Program, and this move could not have come at a more opportune time. During this period, the University and several of its German counterparts became interested in developing a digital library program using IBM DB2 Content Manager. Observing that the project would stimulate interest in content management at the academic level, IBM offered a free license for classroom and research use of DB2 Content Manager. In addition, DB2 Content Manager provides an operational foundation for the University's computer center and library. The University also receives architectural, development and educational support from the Böblingen lab.

Groundbreaking courses and research

The University of Rostock's courses in content management are among the very few university programs in content management anywhere. IBM DB2 Content Manager provides the foundation for teaching students how to manage, access and integrate multimedia information including documents, images, audio and video. In the students' final semester, they can pursue special topics in content management such as algorithms for content searches and using IBM DB2 Extenders to manage text, images, audio and XML formats.

The University is now using DB2 Content Manager, Version 8.1, and is very pleased with the enhancements that IBM has made in its new release. "The new version is very flexible," says Professor Heuer. "DB2 Content Manager, Version 8.1, enables users to design their own data structures and use DB2 Universal Database as a meta data management system. This flexibility makes it easier to develop innovative applications around the stored content."

DB2 Content Manager running on IBM @server pSeries 630 hardware also helps support the University's growing demand for a digital library. "No other content management solution offers the flexibility and detailed meta-data modeling of DB2 Content Manager, Version 8.1," says Heuer. "Now its is no problem to store high value documents such as 100 year-old yearbooks, historical music scores, and PhD theses."

Innovation unlimited

As a spur to innovation, DB2 Content Manager is working overtime at the University of Rostock. In addition to course work, students are participating in ongoing research projects leveraging DB2 Content Manager to create new applications. One project, for instance, is focused on developing a handwriting analysis program to identify the original music manuscripts of famous composers. In another project, students developed a wireless client for a digital library program which was used at an international garden show on campus. Students are also currently

developing an extended wireless client which will be combined with a global positioning system and voice generation technology to run audio commentary through hand-held devices as visitors moved freely around outdoor events and exhibitions.

If the students desire, they can also work on MyCoRe, the open source digital library project which the University of Rostock has joined along with several other German universities. The project uses DB2 Content Manager running on pSeries 630 systems to manage, store and deliver the universities' vast intellectual assets in digital form.

Judging from the results, the University of Rostock's program in databases and information systems is a success. The high demand for students with DB2 skills in banks, insurance companies and other large companies has not abated even during the economic slowdown of the past few years. "Other specializations have been suffering, but not database systems," says Professor Heuer. "And thanks to the IBM Scholars Program, our students are not only getting jobs, they're equipped to make valuable contributions to their fields."

For more information

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