WebLan-Designer Demonstration

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1. INTRODUCTION

It is often difficult to motivate students to learn local area network (LAN) design because many find the subject rather dry and technical, and so quite boring. A web-based system (named WebLan-Designer) has been developed at the Auckland University of Technology (AUT) that gives students a hands-on, flexible learning experience in both wired and wireless LAN design (Sarkar & Petrova, 2005). WebLan-Designer is suitable for classroom use in computer networking courses at introductory level. This presentation demonstrates the usefulness of WebLan-Designer in teaching and learning LAN design.

2. THE WEBLAN-DESIGNER

We strongly believe that students learn more effectively from courses that offer active involvement in interactive learning activities. WebLan-Designer facilitates an interactive and flexible learning experience in both wired and wireless LAN design. Both teacher and students can benefit for the use of WebLan-Designer, in different teaching and learning contexts. A teacher is able to use it in the classroom as a demonstration, to liven-up the traditional lecture; students, on the other hand, can use the system in achieving the following learning objectives: (1) complete tutorials on both wired and wireless LAN design; (2) test prior knowledge on networking through interactive quizzes; (3) verify the results of in-class tasks and exercises through LAN modelling; (4) learn more about scenario based LAN design. In addition to enhancing face-to-face teaching by including an element of online learning in the classroom, WebLan-Designer provides online support for off-campus students and facilitates learning through flexible course delivery.

#.WEBLAN-DESIGNER DEMONSTRATION

At the conference the authors will demonstrate various features of WebLan-Designer and its usefulness in teaching and learning LAN design. To make lessons more interesting and to encourage class participation, we use WebLan-Designer as an integral part of two two-hour sessions. The first session is based on wired LAN design whereas the second session is on wireless LAN design. In the classroom, students are asked to design a server-based LAN on paper. After a prescribed period of time (e.g. 15 minutes), we introduce WebLan-Designer to the students and do a walk-through with them to verify (visually and interactively) their solutions of the LAN design exercises. The learning resources built into the system (interactive quizzes and tutorials for wired and wireless LAN design) are particularly important as they can be used to enable the teaching of some aspects of LAN design in more detail.

4. DISCUSSION AND CONCLUSION

In this poster presentation we have discussed how WebLan-Designer can be used in the classroom as an aid to enhance the teaching and learning various aspects of LAN design. The software was trialled for the first time in Semester 1 of 2005 in the eBusiness IT Infrastructure undergraduate course. Student responses to WebLan-Designer were favourable. The students indicated that they had found WebLan-Designer easy to use and helpful in developing a better understanding of LAN design. More information about WebLan-Designer can be obtained by contacting the first author.

5. REFERENCES

Sarkar, N. I., & Petrova, K. (2005, July 9-11). WebLan-Designer: A web-based System for Interactive Teaching and Learning LAN Design. *Proceedings of the 3rd IEEE International Conference on Information Technology Research and Education*, Hsinchu, Taiwan (in press).