Mobile Devices in Computer Science Education

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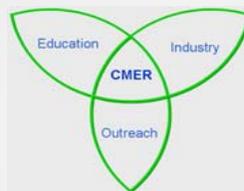qmahmoud@uoguelph.ca

Abstract

For many students, the mobile device is becoming the computer. Computer science departments have the responsibility to revitalize CS education by enhancing their curriculum with mobile devices, and teaching students about mobile application development.

We have successfully integrated BlackBerry devices into our introductory programming courses and found that it provides the students with a motivating framework that inspires them, and raises their level of excitement and satisfaction

Introduction

➢ Mobile devices outship PCs 20 to 1.

➢ More powerful than the PCs of 20 years ago.

➢ Great for conveying CS concepts.

➢ Generation "C": content: connectivity, choice, control, cash, …, etc.

➢ Students expect their instructors to integrate cutting-edge technology into their courses.

➢ Java ME: easy to learn.

➢ The BlackBerry device
 ➢Attracting a wider range of mobile consumers.
 ➢Well-engineered (consistency across handsets).
 ➢Friction-free path to market apps (no excessive certification).

Centre for Mobile Education Research (CMER)

The goal is to help universities worldwide in integrating mobile devices into the CS curriculum. To do so: we'll research, design, and develop educational material and pedagogical methods to support teaching mobile application development to students in CS & Engineering.
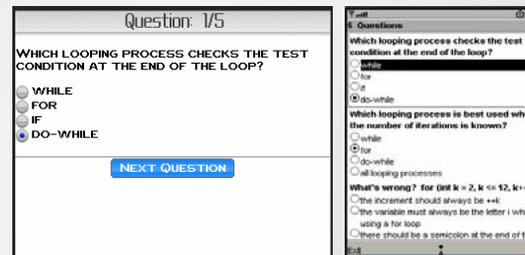
➢ More than a research centre: create tools and products, organize educational and training events, outreach activities.
➢ A forum for new ideas.
➢ Provide leadership in integrating mobile devices into the CS curriculum.
➢ Design, develop, and disseminate content for CS curriculum.
➢ Help universities in using mobile devices to revitalize CS education.
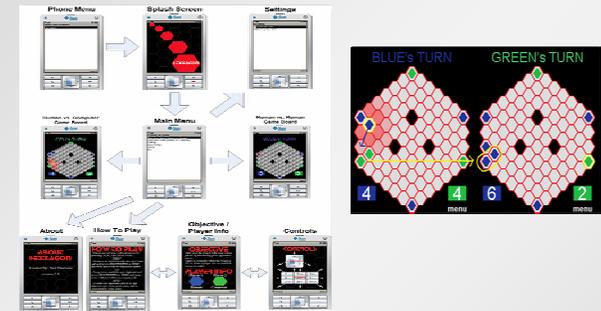➢ What happens next in mobile education / mobile learning?

Content Generation

➢ A device-independent quiz generator (demo available)

Target	Description	Action
XML	Please download XML file, then you can always have your quiz and you will be able to update or change the quize just by click on the "Update Quiz" link at the toolbar.	Download XML
CLDC-1.x MIDP-2.0	CLDC-1.x, MIDP-2.0. Please download jar and jad file. In order to upload the code into the mobile device , Please read the instruction file.	Java ME Devices-JAD Java ME Devices-JAR Download Instruction
CLDC-1.0 MIDP-1.0	CLDC-1.0, MIDP-1.0. Please download jar and jad file. In order to upload the code into the mobile device , Please read the instruction file:	Java ME Devices-JAD Java ME Devices-JAR Download Instruction
BlackBerry	Please download the code file. In order to upload the code into the mobile device , Please read the instruction file:	BlackBerry Devices
WAP 1.x	WAP 1.x . Please download WML pages in order to enable students to have online quiz.	WML file WMLScript
Desktop Browser-based Client	You can also generate Desktop Browser Client (HTML/XHTML) simply by clicking the following link.	Generate Browser Desktop Client

Puzzles2Go (BlackBerry)

➢Sudoku, Crossword, Word Search (demo available)

Games

➢ Hexxagon for Java ME devices
➢ Motto: A minute to learn, a lifetime to master
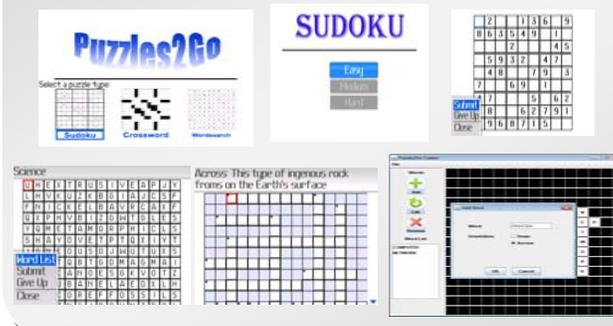

➢ Flags for BlackBerry

Conclusion

➢ Mobile devices are so pervasive; perfect for revitalizing CS education.

➢ CMER will provide an academic kit to help academic institutions to integrate mobile devices into their CS curriculum.

➢ We look forward to collaborating with the industry.

Acknowledgement