

## ABSTRACTS-YEAR 2003

### RESEARCH

#### COMPUTER SCIENCE

##### **RSPR CS-03-01**

REPRESENTING HTTP METHODS USING KQML AND IMPLEMENTING KQML PERFORMATIVE USING HTTP METHODS

Mr. Le Vinh Chien

Prof. Phan Minh Dung

"Http" is the most well-known protocol for communication on the web. But most of us do not know what are inside that protocol and how it works. Usually when some of us get an http message, we still do not know what the meaning of each field is. Whereas Knowledge Query and Manipulation Language (KQML) is a language and a set of protocols that support computer programs in identifying, connecting with and exchanging information with others. In this research study, my aim is "Representation of http methods by using KQML" (Knowledge Query and Manipulation Language) so that even a layman can understand what exactly http methods are. In this research study, I also implement some KQML performatives by using http methods.

##### **RSPR CS-03-02**

DEVELOPING OBJECT-ORIENTED APPLICATION USING PHP

Mr. Yunzhi Chen

Dr. Dencho N. Batanov

This case study contributes comparison between Object-oriented and none Object-oriented development of applications using PHP, including their basic differences, the advantages and disadvantages of OO. In OOP, the idea is to abstract what user is trying to accomplish to more resemble real-world things, or objects. Usage of classes, heritage and functions is possible in PHP. Already, it is therefore possible to develop complex and scalable web applications. However, while most of the major elements are present, PHP still lacks some of the more advanced features (such as protected members or private variables) that a "true" OO language would have, but using its OO features is very useful for developers. OO and procedural paradigms co-exist in PHP.

##### **RSPR CS-03-03**

3D GRAPHICS FOR MOBILE APPLICATIONS

Ms. Aroonluck Thabloha

Dr. Dencho N. Batanov

3D Graphics for Mobile Applications is an optional package to be used with J2ME technology profiles such as MIDP 1.0. The session starts with an overview of the objectives and processes of the effort, and describes the relationship of this interface to other relevant MIDP APIs. This is followed by a more detailed overview of the target environment and platform constraints, and by a detailed description of the resulting API including limited memory and processing capability, fixed-point computation, and other constraints. Integration of the 3D graphics API with MIDP graphics will be presented.

Several applications have been identified for the Java Mobile 3D Graphics, including games, map visualization, user interfaces, animated messages, product visualization, and screen savers. Each of these has different needs: some require simple content creation, some require high polygon throughput, yet others require high quality still images with special effects. To meet this wide spectrum of different needs, the API supports both high-level scene graph based rendering as well as immediate mode rendering in the API.

This study will be of interest to Java MIDP content and application developers and platform designers working with mobile hand-held devices such as PDAs and cellular phones. Familiarity with the MIDP API and basics of 3D graphics is recommended.

#### INFORMATION MANAGEMENT

##### **RSPR IM-03-01**

A COMPARATIVE STUDY OF LIBRARY AUTOMATION SYSTEMS FOR CATALOGING AND PUBLIC ACCESS CATALOG WITH SPECIAL REFERENCE TO INNOPAC, VTLS, HORIZON, NAVASARN, ELIB WEB, AND MAGIC LIBRARY

Mrs. Anyada Tangduangdee

Dr. Sumanta Guha

The purpose of this research was to analyze capability and functionality of the cataloging and the public access catalog modules of six major library automation systems: INNOPAC, VTLS, HORIZON, Navasarn, ELIB WEB, and Magic Library. In addition, the satisfaction of users with those systems was evaluated together with the problems encountered by the users. The

data was collected, using the survey research method, from the feedback from the system users as well as the vendor of each system. The system users in this study were composed of the system librarians and the library users. 72 out of 168 questionnaires (3 vendors and 165 libraries) from all around Thailand, say 43%, were returned and then analyzed.

It was found that the five basic modules of the automated systems were widely used. However, two modules of cataloging and public access catalog were focused on and analyzed with RFP (Request for Proposal) model, which gives the listed features for performance assessment of the automation library system. Assessed by the vendor, Navasarn was claimed to support the most of the listed features (87%), followed by ELIB WEB 86% and Magic library 83%. In view of the system librarians, INNOPAC, VTLS and HORIZON were rated in the excellent level (>80%) for both modules, but in the good level (60-80%) for Navasarn, ELIB WEB, and Magic library. Moreover, the satisfactory scores given by the library users showed that HORIZON and INNOPAC were in the excellent level, whereas VTLS, Navasarn, ELIB WEB and Magic Library were in the good level.

#### **RSPR IM-03-02**

##### **A METHOD FOR GUESSING TEXT ENTRY ON MOBILE PHONES BASED ON SYLLABIFICATION**

**Mr. Vu Dinh Van**

**Dr. Sumanta Guha**

Research is presented on a new method to guess words using syllabification on the words and the graphotactic model of written English text. The objective of this method is to reduce the memory consumption for the implemented database as well as to reduce nearly by half the keystrokes per character required for text-entry in the conventional multi-tap method. Although there are some other novel techniques in this field such as the dictionary-based guessing T9™ and the Letter Wise™ technologies, this study hopefully avoids the problem of words not in dictionary for the T9™ technique as well as the debatable underlying

language model used in the Letter Wise™. The machine understanding of pronounceable typed in words allows the guessing mechanism can covers a broad range of words not in the initial learning dictionary like proper names.

The prototype of study is has been implemented as a word guessing game in the Java-enable Nokia phone. Some optimization techniques like the extensive use of byte array as the elementary data structure to accommodate application in a constrained platform is also applied.

#### **RSPR IM-03-03**

##### **ANTI-KEYLOGGER**

**Mr. Do Xuan Huyen**

**Prof. Phan Minh Dung**

Keylogger is a program installed stealthily in the operating system. It stores all characters the users type from the keyboard in to a file called keylogfile, after that the keylogfile is sent out to an intruder by someway. Keylogger can be used for stealing usernames, passwords, credit card information, etc. This research studies how the keylogger works, classifies them and discusses the strategies to detect Keylogger that range from the simple strategies for normal users to the complex strategies for the anti-keylogger developers. This research develops an anti-keylogger program, based on the file size checking, detecting monitoring keyboard program and keylogger dictionary strategies. In addition, the program provides the set of Viewing running processes, Viewing startup files and Getting file's version resource information tools. Owing to that, the user can detect the key loggers as well as new strange programs that are spying their system.

#### **RSPR- IM-03-04**

##### **COMPUTER CONNECTIONS MONITORING**

**Mr. Lai The Hung**

**Prof. Phan Minh Dung**

Computer network security is very important issues in building and managing computer networks today. There are many good Internet services offered to users, but besides that advantage there are many threatening risks that can damage the system or a computer at any time. That threats can comes from any outside network or even from a local computer. So that, for any safe system, it is need to consider about a good security system goes along in order to protect the local network or private computers from any outside attack.

Building a tool in order to monitor the connections between a computer and another, obtaining the information about an IP address and provide a typical packet filter is the purpose of this research.

In this document we will examine and analysis the literature that relate to our implementation works and besides that we will present the method how to implement a monitoring tool.