COMPILER DESIGN :
WIG Project Milestone

Gregory Pekofsky, Eric Fong,
Maxime Chambreuil.

September 19, 2003

Comp 520   McGill University   2003 - 2004

Contents

1   The group

The group is :

- Gregory Pekofsky : gpekof@cs.mcgill.ca

- Eric Fong : eric.fong@polyu.edu.hk

- Maxime Chambreuil : maxime.chambreuil@mail.mcgill.ca

2   Our choices

2.1   Language

We have chosen to use Java for the WIG project, because it is an object-oriented language and it will be easier for us to work on independent part. Furthermore, Eclipse is a good IDE to apply the object paradigm.

2.2   Source Control System

We have chosen to use CVS, because it is a good source control system, that can be attacked by the Eclipse's plug-in. Moreover, some of us have never use one, and can be helped by the others.

3   Organisation

We have planned to have a meeting every week. During the first of them, we will design the compiler and divide the work into 3. Each member will implement his part, make his test independently and then we will get the different part together and debug.

4   Description

4.1   Gregory Pekofsky

Some of my current Work experience:

- Programmer Analyst, Daslweb Inc., Montreal, Quebec, Canada. June 1998 - Today. Researched, developed, consulted and maintained web based applications, such as catalogs and credit card payment systems, utilizing multiple platforms and programming languages. As well, maintained web servers.

- Researcher, McGill University, CIM Department, Montreal, Quebec, Canada. September 2001 - January 2002. Researched and developed a virtual classroom called, the Reactive Room that incorporated the use of streaming mp3, streaming video, and chat, allowing lecturers to teach their students in the comfort of their living room.

- Junior Programmer, Summit Technologies, Montreal, Quebec, Canada. Summer 1997, full time. Participated in a team of programmer engineers and computer engineers that created a framework to administer global communications via SMS and web based engines, called the Tachyon System. For more information go to www.thetachyon.com.

- Web Programmer, Executive Solutions Info Inc., Montreal, Quebec, Canada. January 2002 - January 2003. Developed a phonebook directory engine to be used as a means of business-to-business communication.

- Database/Web Programmer, Kuru.tv Studios, Montreal, Quebec, Canada, Summer 2002. Developed a database replication tool and a web front for an auction house, called www.ritchies.com. As well, developed a Flash based catalog and credit card system for www.kuru.tv.

Some of my computer skills:

- Languages: Java, C/C++, 68000 Family Assembler, Cold Fusion, ASP, SQL, XML, Javascript, HTML, PHP, Scheme, Matlab, UML, Visual Basic, CSS, CGI, PERL, Python.

- Operating Systems: DOS, Windows 3.1X, Windows 9X, Windows 2000/XP, Linux (Redhat, Mandrake), Unix (FreeBSD, Debian).

- Software: Dreamweaver, Homesite, FilePro, Cold Fusion Studio, IDLE Python, Dr. Scheme, MS Word, MS Access, MS Excel, Microsoft PowerPoint, DIA, Renegade BBS, GCC, Kawa, Apache with PHP Module, MySQL, PostgreSQL, MS Visual Studio, Shoutcast Server, Icecast Server.

All the courses that I took at McGill:

- MATH&STAT 189 - 235A 01 Basic Algebra

- MATH&STAT 189 - 242A 01 Analysis i

- MATH&STAT 189 - 323A 01 Probability Theory

- COMP SC 308 - 202A 01 Intro to Computing I

- MATH&STAT 189 - 324B 01 Statistics

- COMP SC 308 - 250B 01 Intro to Computer Science

- COMP SC 308 - 273B 01 Intro to Computer Systems

- MATH&STAT 189 - 240A 01 Discrete Structures&Computing

- COMP SC 308 - 206A 01 Intro to Software Systems

- COMP SC 308 - 302A 01 Programming Lang&Paradigms

- COMP SC 308 - 424A 01 Top:Artificial Intelligence I

- MATH&STAT 189 - 223B 02 Linear Algebra

- MATH&STAT 189 - 340B 01 Abstract Algebra and Computing

- COMP SC 308 - 251B 01 Data Structures and Algorithms

- COMP SC 308 - 310B 01 Computer Systems&Organization

- COMP SC 308 - 350A 01 Numerical Computing

- COMP SC 308 - 360A 01 Algorithm Design Techniques

- COMP SC 308 - 400A 01 Technical Project & Report

- COMP SC 308 - 423A 01 Data Compression

- GEOL SC 186 - 200B 02 The Terrestrial Planets

- COMP SC 308 - 303B 01 Programming Techniques

- COMP SC 308 - 304B 01 Object-Oriented Design

- COMP SC 308 - 335B 01 Software Engineering MethodS

- CHEM 150 761 World of Chem: Food

- COMP 535 001 Computer Networks 1

- PHYS 200 001 Space, Time & Matter

- CHEM 160 761 World of Chem: Technology

- COMP 575 001 Fund of Distributed Algorithms

- EPSC 201 001 Understanding Planet Earth

- PHYS 204 001 Planets,Stars & Galaxies

- COMP 520 001 Compiler Design

- COMP 766 001 Distributed Simulations

You also might want to checkout a 2D gaming engine that my teamates and I created in CS303 at: http://www.unleashedsoftware.com/smb/html/

4.2   Eric Fong

4.2.1   Personal Details

Name : Eric, Fong Chung Fung
Student ID : 260101419
Tel : 514 806 2866
Email : Eric.Fong@polyu.edu.hk
Year of Study : Year3 (Exchange)

4.2.2   Education

2002 The Hong Kong Polytechnic University (BscIT)
2001 City University of Hong Kong (ADCS)
1994-2001 The Immanuel Lutheran College F.1-F.7

4.2.3   Taken Courses

Semester B 2001/02 Poly U BscIT
AMA217 INTRO TO PROBABILITY AND STATISTICS
COMP207 DISCRETE STRUCTURES AND DATA MODELS
COMP305 DATA STRUCTURES AND ALGORITHMS
EIE218 ANALOG AND DIGITAL COMMUNICATIONS
EIE219 INTRODUCTION TO MICROCOMPUTER SYSTEMS
IC273 COMPUTER TRAINING

Semester A 2001/02 Poly U BscIT
AMA216 Introduction to Calculus and Linear Algebra
COMP201 Principles of Programming
EIE217 Digital System Design
EIE239 Communication Fundamentals

Semester B 2001/02 City U ADCS
DCO10103 Object-Oriented Programming & Design
DCO10104 User-Centered Design & Testing
DCO10301 Networking Fundamentals

Semester A 2001/02 City U ADCS
CM10111 Maths & Stats for Comp Studies
CM20152 Fundamental Elctr'c Commerce
DCO10101 Introduction to Info Systems
DCO10102 Introduction to Comp Systems

Other Information
2002: Represent DCO of City U as an exchange student to Queensland University

Computing Skills: JAVA, PHP, VB, C++, Linux admin

4.2.4 Projects

- **BscIT Homepage:** Technical Issues: PHP, MySQL
  Description: write a web client for 40 students to share file, photo and timetable. It maintains one session for each user who have login. All the users?? info are put in MySQL databases. All files and photo are uploaded to a Linux server which also maintained by me.

- **Auto Gallery Generation Homepage:** Technical Issues: PHP, MySQL
  Description: It is a PHP script that will dynamically input the JPEG files and generate HTML code. User only need to store the JPEG files to a folder in server and the program can read the JPEG files in that folder and its sub-folders. Thus, it can build up thumbnails (read in the JPEG thumbnail field) and HTML pages. It also contains a simple guestbook.

- **8051 Clock:** Technical Issues: 8051 hardware, 8051 and 8086 assembly
  Description: implements an 8051 hardware clocks by building up some chips like 8031, 8255A, 16v8 ?Ketc. The chips need to connect to PC via COM port and turn on 6 7-segment LEDs and several other LEDs. In the software part, an assembly PC program is written to connect the PC to the 8051 chips. An 8051 assembly language program is written to load into the memory in the 8051 broad and communicate with the PC program. Users are able to synchronize, reset and change the 8051 hardware clock by the PC program.

- **Research in Modern Streaming Media:** Technical Issues: Streaming Media File Formats
  Description: The research is done in Queensland University under Dr. Xue Li. It is also all the modern Streaming Technology. My focus is the file formats of the streaming file format and their players or clients.

4.3 Maxime Chambreuil

This year at McGill University as an exchange student is my last year of study. My home university, located in France, is a school of engineering, named National Institute of Applied Sciences of Rouen, Normandy (http://www.insa-rouen.fr). I have been admitted to Information System Engineering Department in 2001 (http://asi.insa-rouen.fr).

4.3.1 Projects

During the last 2 years, I had the opportunity to take in part in different project, different by : size, number of person, allocated time, language, etc... To only quote the most interesting projects for compiler design, I participated in :

- **Algorithm project**: My promotion has to realize a calculator with accuracy chosen by the user. My group was in charge of the compilation part. We have used Lex & Yacc. This project lasted one semester and I have finished it.

- **Database project**: My promotion has to design a new query language. I took part in writing the grammar.

- **EADS project** : I took part in this project as a project leader from February to June 2003. As this project is for a company, I can only say that we have used UML, Java and J2EE (Jboss), a CVS server, LaTeXand Tutos. We were 9 students, and currently 6 of them are continuing the project until January 2004.

4.3.2 Courses

- 1st Semester : Algorithmics, Computer Architecture and Operating System, Numerical Analysis, Signal Processing, Electronics, Economy, English, Spanish, free subject : Dept website.

- 2nd Semester : Database, Web Technology, Software Engineering, Sensors, Statistics, Quality, English, Spanish, free subjects : Calculator with Flex & Bison, Student Union Mandrake Linux server installation and administration.

- 3rd Semester : Operations Research, Information Theory, Network, Statistical Processing of Signal, Project Management, English, Spanish, free subject : Student Union accounting software in XML/Cocoon.

- 4th Semester : Neurals & Bayes Networks, Data-Mining, EADS Project, Group Communication, English, Spanish.

- At McGill : Compiler Design (Comp-520), Cryptography & Data Security (Comp-547), Discrete Optimization 1 (Comp-566), Artificial Intelligence (Comp-424).

5   Small exercise

We have chosen to architect our JOOS benchmark application for WIG. We communicated as a group rather well and do not foresee any potential group problems in the development of future application.