

The Official Newsletter of the Greater Boston Chapter of the



# The Real Times

Vol. 46 No. 3

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March 2007

# GBC/ACM and IEEE CS Meeting Thursday, April 19th, 2007

Debugging Backwards in Time

\*\* RESCHEDULED \*\*

Speaker: Bil Lewis, Tufts University & Lambda Computer

Science

**Time:** 7:00 - 9:00 pm

**Location:** MIT Room E51-315

77 Massachusetts Avenue Cambridge, MA 02142

**Directions:** 

http://whereis.mit.edu/bin/map?locate=bldg e51

Details:

http://www.gbcacm.org/website/semInfo.php?id=1125

What if a debugger could allow you to simply step BACKWARDS? Instead of all that hassle with guessing where to put breakpoints and the fear of typing "continue" one too many times... What if you could simply go backwards to see what went wrong? This is the essence of the "Omniscient Debugger" -- it remembers everything that happened during the run of a program, and allows the programmer to "step backwards in time" to see what happened at any point of the program. All variable values, all objects, all method calls, all exceptions are recorded and the programmer can now look at anything that happened at any time. In this talk, I will describe the design of the "ODB" -- an implementation of Omniscient Debugging for Java programs -- and discuss the various costs and trade-offs.

The last half of the talk will be a demonstration of the ODB, showing how the various pieces of data are displayed and how the programmer can "navigate" through time to see what the program was doing, where values were set, when various threads ran, etc. At the conclusion of the talk, the audience will be invited to use the ODB to find some actual bugs. Anyone having a laptop with Java on it can download the ODB (beforehand!) and try using it to find the bugs themselves.

The ODB is an experimental program under development. It is written in 100% pure Java and has been tested under Solaris, MacOS, and Windows. It is freely available at Bil's web site.

# GBC/ACM and IEEE CS Meeting Thursday, April 26th, 2007

One laptop per child: a software design

Speaker: Jim Gettys, MIT Media Lab

**Time:** 7:00 - 9:00 pm

Location: MIT Room E51-315 77 Massachusetts Avenue Cambridge, MA 02142

Directions:

http://whereis.mit.edu/bin/map?locate=bldg e51

**Details:** 

http://www.gbcacm.org/website/semInfo.php?id=1131

Software and hardware are very different. Software is malleable and has no cost to reproduce; hardware is a very different experience. Hardware systems design is like sausage making:

- You can only make as much sausage as you can get \*all\* the ingredients for
- Some parts of the recipe can be substituted, but not others
- There are only a finite number of ingredients you can use in a recipe
- If you know the right ingredient suppliers, you may be able to get custom ingredients made for you, so long as you are making a \*lot\* of sausage
- Some of the major ingredients take years to grow, rather than a season. You can at best let the farmers (custom chip designers) know what kinds of ingredients you'd like the next time, and have to live with those commodity ingredients that are available in the quantity you need
- It isn't a pretty process.
- You don't know exactly how it is going to taste until you've cooked it. I will explore the sausage making that is the first One Laptop Per Child System, a novel, very low cost and low power laptop for kids education in the developing world, that runs Linux. The realities of life for many or most of the world's children present novel challenges to our hardware and software design, particularly due to lack of power, infrastructure, and

Continued on page 4

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Boston Chapter of the IEEE Computer Society Peter Mager, ieee@gbcacm.org

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Timely notices of events, meetings, and other activities of interest to the Chapter's Membership should be submitted by the 10th of the month Before the intended issue and emailed to:

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Please check the privacy policy at:

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Annual subscription cost is included in the Chapter Membership dues of \$10.00. See top line on mailing label for membership expiration date. Library subscriptions are free. Please send orders for copies to the Chapter mailing address:

GBC/ACM Membership, P.O. Box 465, Lexington, MA 02420

# March/April Meetings

#### **Software Quality Group of New England (SQGNE)**

**Topic:** Why Use Case Modelers Are Your Friends **Speaker:** Norman Daoust, Daoust Associates

Date/Time: Wednesday, March 14th, 2007, 6:00 - 8:00 pm

6:00 - 6:30 Networking

6:30 - 8:00 Business and Presentation

Location: Sun Microsystems, Burlington, MA

Directions: http://www.swqual.com/SQGNE/directions.html

Topic: Software Test Cases: Who, What, Where, When, and Why

Speaker: Derek Kozikowski, SAP

Date/Time: Wednesday, April 14th, 2007, 6:00 - 8:00 pm

6:00 - 6:30 Networking

6:30 - 8:00 Business and Presentation

Location: Sun Microsystems, Burlington, MA

**Directions:** http://www.swqual.com/SQGNE/directions.html

#### **Boston SPIN / ASQ Boston**

**Topic:** Tales of Whoa and the Psychology of Customer Satisfaction

Speaker: Naomi Karten

**Date/Time:** Tuesday, March 20th, 2007, 6:00 - 8:30 pm

6:00 - 6:45 Networking and Roundtables 7:00 - 7:10 Announcements

7:10 - 8:10 Presentation

8:10 - 8:30 Questions and Answers

Location: Hilton Garden Inn Boston, Waltham, MA

**Details and directions:** 

http://www.asqboston.org/Section Information/meeting.htm

Continued on page 8

GBC-ACM Professional Development Seminar
Deep Agile
April 28-29th, 2007
Jeff Sutherland, Ron Jeffries

#### IMPORTANT NOTICE - PLEASE READ

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Starting with January 2007 - we have switched from a hard to soft copy of the Real Times. In order to send you notification of the Newsletter posting, we need your email address. We are asking members to send their email address to membership@gbcacm.org.

Please include your first and last name, if you would like to receive email copy/notification of the Real Times soft copy.

The GBC/ACM will not disclose your email address outside the chapter without your permission. Please check our privacy policy at:

http://www.gbcacm.org/website/privacy.php

#### **GBC-ACM**

# Professional Development Seminar Deep Agile Seminar Save this date: April 28 & 29

The last Saturday and Sunday in April 2007 is the date for our next Professional Development Seminar.

#### **TOPICS:**

- "The Plan is the Problem!"
- "A Fallacious Professionalism Standard"
- "Show me the software" Running, tested and documented
- Scrum Basics
- XP Basics
- How New Teams Fail
- User Stories Used Right
- Roots of Scrum Toyota & Lean; the story and lessons
- Test Driven Development (TDD) demo
- Testing Safety-Net
- Putting Scrum and XP successfully together
- Panel Wrap-up Q&A

#### SPEAKERS:

Our speakers are original signers of the Agile Manifesto: http://www.agilemanifesto.org/ - Jeff Sutherland and Ron Jeffries.

**Jeff Sutherland** – http://www.jeffsutherland.com/ Jeff is the CTO of PatientKeeper in Newton, MA and is the co-inventor of Scrum in 1993 with Ken Schwaber.

From Jeff's website: "Developing Agile object systems: 1983-87 banks and ATM networks 1988-95 object database products 1988-90 aerospace 1987-96 internet news 1996-now healthcare web/PDA 2000-now secure mobile/wireless platforms Co-Creator of Scrum and Certified Scrum Trainer."

Ron Jeffries – http://www.xprogramming.com/ Ron is a consultant, trainer and author. He is one of the most prolific writers on Extreme Programming (XP) which is now considered a dimension of Agile software development.

From Ron's website: "Ron Jeffries is author of Extreme Programming Adventures in C#, the senior author of Extreme Programming Installed, and was the on-site XP coach for the original Extreme Programming project. Ron has been involved with Extreme Programming for over five years, presenting numerous talks and publishing papers on the topic. He is the proprietor of www.XProgramming.com, a well-known source of XP information. Ron was one of the creators, and a featured instructor in Object Mentor's popular XP Immersion course. He is a well-known independent consultant in XP and Agile methods."

# Principles behind the Agile Manifesto

- Customer satisfaction by rapid, continuous delivery of useful software
- Working software is delivered frequently (weeks rather than months)
- Working software is the principal measure of progress.
- Even late changes in requirements are welcomed.
- Close, daily, cooperation between business people and developers
- Face-to-face conversation is the best form of communication.
- Projects are built around motivated individuals, who should be trusted
- Continuous attention to technical excellence and good design.
- Simplicity
- Self-organizing teams
- Regular adaptation to changing circumstances

## **Key success factors for Agile methods**

- The culture of the organization must be supportive of negotiation
- People must be trusted
- Fewer but more competent people
- Organizations must live with the decisions developers make
- Organizations need to have an environment that facilitates rapid communication between team members

#### What is Scrum?

In the words of its co-inventor, Ken Schwaber:

Scrum is an iterative, incremental process for developing any product or managing any work. It produces a potentially shippable set of functionality at the end of every iteration. It's attributes are:

- Scrum is an agile process to manage and control development work.
- Scrum is a wrapper for existing engineering practices.
- Scrum is a team-based approach to iteratively, incrementally develop systems and products when requirements are rapidly changing
- Scrum is a process that controls the chaos of conflicting interests and needs.
- Scrum is a way to improve communications and maximize co-operation.
- Scrum is a way to detect and cause the removal of anything that gets in the way of developing and delivering products.
- Scrum is a way to maximize productivity.
- Scrum is scalable from single projects to entire organizations. Scrum has controlled and organized development and implementation for multiple interrelated products and projects with over a thousand developers and implementers.
- Scrum is a way for everyone to feel good about their job, their contributions, and that they have done the very best they possibly could.

# Jim Gettys: One laptop per child: a software design

Continued from page 1 available expertise in the field.

Its recipe, while made out of standard or at most semicustom ingredients, makes it a novel system: Our display has higher resolution than 95% of the laptop displays on the market today; approximately 1/7th the power consumption; 1/3rd the price; sunlight readability; and room-light readability with the backlight off, mesh networking, a novel dual mode touchpad that can function both as a standard touchpad and be used with a stylus, and novel power conservation capabilities. These include the ability to leave the screen and wireless mesh network fully on while the machine is suspended to RAM.

These also presents challenges to our software: the power conservation techniques needed are very new. Conventional GUI's are intended for adult office workers: our audience are young children learning to read or getting a basic education, since most children only receive 5-6 years of education in many parts of the world. I'll touch on some of these aspects as well.

These capabilities present novel challenges to Linux, and are possible for us to implement precisely because Linux is open source. The ability to design hardware knowing that the software can be modified as needed is liberating.

#### **SIGCHI - Boston Chapter**

Topic: Towards Experience-Focused HCI

**Speaker:** Joseph 'Jofish' Kaye, Cornell University **Date/Time:** Tuesday, March 13th, 2007, 6:30 pm **Location:** The Stata Center at MIT, Room 32-141

**Details:** http://www.bostonchi.org/

#### **Abstract:**

We can trace the history of HCI from early experiments in interactive computing to current work on blogging, instant messaging, affective computing and more. Over this period, the ways in which we create and validate knowledge have changed to reflect the problems facing the field at the time. In this talk, I'll discuss the development of HCI's notion of evaluation, starting from its pre-history in electrical engineering and computer science, incorporating methods and metrics from experimental psychology and cognitive science, and debate around expertise that accompanied the rise of in prominence of usability as an approach to HCI. I conclude by discussing what appears to be a growing emphasis on experience-focused, not task-focused, HCI, and how we can evaluate technologies to support such uses.

#### Bio:

Joseph 'Jofish' Kaye is a Ph.D Candidate in Information Science at Cornell University. He recently spent six months as a Visiting Researcher at Microsoft Research Cambridge, and has also worked with the Domestic Design & Technology Research Group at Intel. His work includes ethnographic, cultural, critical and technological studies of academics' archiving practices, couples in long distance relationships, ubiquitous computing, social networking, and smart homes and

kitchens. He has a B.S. in Cognitive Science from MIT, and Masters degrees in Media Arts & Sciences from MIT and Information Science from Cornell.

#### **Directions:**

The Stata Center at MIT, Room 32-141 32 Vassar Street, Cambridge, MA

#### **Map & Directions:**

http://whereis.mit.edu/map-jpg?mapterms=32&mapse arch=go

Room 32-141 is on the ground floor at the center of the building.

Refreshments at 6:30 pm. Meeting at 7:00 pm. Meetings are free and open to the public. Please RSVP when possible to BostonCHI@sun.com (Those who have not RSVP'd are always welcome.) A photo ID is required to gain admittance to Sun. Wheel chair accessible.

#### Call for Volunteers

There are many opportunities to help in the GBC-ACM. If you are interested in volunteering your time, please review the current volunteer opportunities listed below. If anything appeals to you or if you have a skill you would like to share, please contact Volunteer Coordinator, Jay Conne, M:(617) 470-5038, volunteer@gbcacm.org

Co-Editor Secretary Membership Chair

"Never doubt that a small group of thoughtful committed citizens can change the world; indeed, it is the only thing that ever has." - Margaret Mead

#### **NEJUG - The New England Java Users Group**

Topics: Space-Based Architecture and the End of Tier-Based Computing

Date/Time: Thursday, March 8th, 2007, 6:00 - 8:00 pm

Speaker(s): Owen Taylor

**Location:** Bentley College Campus, Waltham, MA **Directions:** http://nejug.org/directions bentley.jsp

#### Overview:

Most business applications are architected using a tier-based approach (presentation, business logic, data tier). The emergence of powerful and new commodity HW and the introduction of SOA/Grid architectures touts the promise of achieving true linearly-scalable systems at a lower cost. However, as we shall see in this presentation, these new platforms and architectures are not aligned with the existing tier-based approach, which is by definition centralized and static.

During the presentation, a new approach will be introduced - Space Based Architecture (SBA). It is basically a combination of Distributed Caching, SOA and Grid concepts combined into a single coherent architecture optimized for high-performance data-intensive applications, which transforms existing tier-based applications into linearly and dynamically scalable services. Towards the end we will also discuss a real-life example of a financial application that was built using the SBA. We will explore the patterns used to achieve this goal and explore how it can be applied to other applications with similar requirements.

#### About the speaker:

As Sr. Director, Worldwide Technical Communications with GigaSpaces Technologies Inc, Owen Taylor translates the new architectural concepts and technical capabilities of space-based solutions into accessible formats so that technologists can adapt them rapidly into their environments and gain their maximum benefit. Owens' areas of expertise include J2EE design patterns and performance tuning of J2EE applications. Prior to GigaSpaces, Owen worked as Principal J2EE Product Specialist with

Identify Software.

Before that Owen acted as Senior Enterprise Architect with The Middleware Company where he specialized in B2B, EJB and J2EE training and consulting with a special emphasis on webMethods B2B server and, BEA.s WebLogic Servers. Owen has over the years delivered architecture consulting, mentoring and training to dozens of companies and advised them on how to best architect new applications ranging from e-commerce to stock-trading. Many of his engagements involved developing application prototypes on-site.

#### **Publications**

- Textual Articulations: active blog located here: http:// jroller.com/page/owentaylor
- Iterative Development: The Use of J2EE Best Practices: prepared for Precise Software later to become Symantec
- Benefits and Market Placement of the Lutris Application Server -- Co-authored with Salil Deshpande

#### **Speaking Engagements**

- December 5, 2006 Washington DC "Taking a Fresh Look at Scalable, Ultra-Fast Computing" (Panel discussion)
- June 2006 IASA Seattle (The End Of Tier-Based Architecture)
- May 2006 Triangle NC JUG (Jini and JavaSpaces -Not just for toasters)
- April 2006 Anne Arbor, Denver, Boulder, and Austin JUGs (Jini and JavaSpaces -Not just for toasters)
- March 2006 San Diego JUG (The End Of Tier-Based Architecture)
- June 2003 NYC JUG (Advanced J2EE Patterns)
- June 2003 Boston JUG (Performance Success with J2EE)
- April/May 2002 Precise Software and The Serverside present: "Performance Success with J2EE".. Boston, NYC, Washington, Dallas, Chicago, Minneapolis, Denver, Santa Clara
- February 4th 2002 Moderator: Java on Wall Street "Performance tuning J2EE Applications"

### **BostonPHP User Group**

**Topic:** April User Group:: ODF what's in it for you? **Date/Time:** Wednesday, April 4th, 2007, 6:30pm **RSVP:** http://www.bostonphp.org/content/view/65/2/

Location: IBM/Lotus
1 Rogers Street
Cambridge, MA 02142

Map: http://maps.google.com/maps?q=1+Rogers+Street+Cambridge+M

A+02142+USA&hl=en

#### Overview:

BostonPHP is the unofficial, highly biased and overly ambitious PHP Users Group for Boston and its surrounding communities. Our membership ranges from newbie-to-techie. We discourage RTFM attitudes and encourage you to come see what PHP is all about.

The ODF standard has been developed by a variety of organizations and is publicly accessible. This means it can be implemented into any system, be it open source or a closed proprietary product, without royalties. The ODF is intended to provide an open alternative to proprietary document formats so organizations and individuals can avoid being locked in to a single vendor. Join BostonPHP along with representatives from:

OASIS - http://www.oasis-open.org/home/index.php: OASIS (Organization for the Advancement of Structured Information Standards) is a not-for-profit, international consortium that drives the development, convergence, and adoption of e-business standards.

The ODF Alliance - http://www.odfalliance.org/: The alliance works globally to educate policymakers, IT administrators and the public on the benefits and opportunities of the Open Document Format, to help ensure that government information, records and documents are fully and natively accessible across platforms and applications, even as technologies change.

The Commonwealth of MA IT Division (ITD) - http://www.mass.gov/ITD plans to implement ODF using translator technology plugged in to Microsoft Office, in a group of early adopter agencies, including the Massachusetts Office on Disability, by January 1, 2007. Thereafter, ITD plans to migrate all Executive Department agencies to compliance with the standard, in phases, by June of 2007. These target dates are not set in stone; they are dependent on a number of factors, including the adoption by the OASIS standard setting organization of ODF Version 1.1 (which will address minor accessibility issues related to the format itself), the timely delivery of completed translators by one or more of the multiple vendors that are currently developing this technology, and the validated accessibility of the translators themselves.

As we explore:

- 1. what is ODF?
- 2. where is it going?
- 3. what vendors support it?
- 4. how does it impact the enterprise and why should I care?

# **New England Software Symposium**

#### Sheraton Ferncroft March 09 - 11, 2007

#### http://www.nofluffjuststuff.com/sh/2007-03-boston

The No Fluff Just Stuff Java Symposium Series is proud to announce the return of the New England Software Symposium on March 09 - 11, 2007. NESS 2007 will be held at the Sheraton Ferncroft. Since 2002, the No Fluff Just Stuff Java Symposium has been regarded as the premier Java/Agility event series anywhere serving over 16,000 attendees with some 100 events. The popularity of the NFJS symposium series can be traced to the following:

- 1). Exceptional Speakers
- 2). Limited Attendance capped at 250 people
- 3). No Vendors, No Sales Pitches, No Marketecture
- 4). Excellent networking opportunity with speakers and fellow attendees because of small size.
- 5). The Best Value in the Java conferencing space period.

The New England Software Symposium 2007 will offer 5 concurrent tracks with a total of 55 sessions to choose from with some of the topics including:

- 1). Groovy
- 2). Grails
- 3). OSGI
- 4). Domain Driven Design
- 5). Annotations
- 6). Java 6.0
- 7). REST
- 8). JRuby
- 9). Enterprise Ajax
- 10). JPA and many more!!

#### REGISTRATION:

The registration fee includes a three day all access pass to NESS 2007, all meals and snacks during the show, custom laptop NFJS bag, binder for handouts and CD with all presentation content.

# **Boston SPIN** (Software Process Improvement Network)

Satisfaction

Speaker: Naomi Karten

**Date/Time:** Tuesday, March 21th 2007, 6:00-8:30pm

Registration/social/networking 6:00

6:30 Dinner 7:30 Speaker

**Location:** Hilton Garden Inn Boston/Waltham

420 Totten Pond Road Waltham, MA 02451 (781) 890-0100

#### **Directions:**

http://www.asqboston.org/Section Information/meeting.htm

#### **Details:**

Online registration available or cash and check payments at the door. The deadline for reservations is midnight March 13th, 2007; otherwise you will be billed for the dinner. Fees include buffet dinner and cash bar.

\$22.00 ASQ and SPIN members

\$27.00 Non-members

\$15.00 Retired/unemployed/students

For more information, please see the ASQ Boston website at the following URL:

http://www.asqboston.org/Section Information/ meeting.htm

#### **Abstract:**

What is it customers really want?

Obviously, they want software that meets their specs and is delivered on time and within budget. But "just" doing that is no guarantee you'll have happy customers. That's because how customers perceive they've been treated affects whether their satisfaction level is at the top of the chart - or slithering towards the bottom.

**Topic:** Tales of Whoa and the Psychology of Customer Happily, the smallest measures - those that cost little or nothing in time and dollars - can have a huge positive impact.

> In this presentation, Naomi will offer insight into the customer perspective, drawn from her psychology and IT background, research, customer feedback, and extensive experience with numerous organizations.

> The principles, tools and recommendations she presents will help you achieve a high level of customer satisfaction.

#### **About the Speaker:**

As a highly experienced consultant with a psychology, technical and management background, Naomi Karten (www.nkarten.com) helps organizations customer satisfaction, manage change, and strengthen teamwork.

Naomi has delivered seminars and presentations to more than 100,000 people internationally.

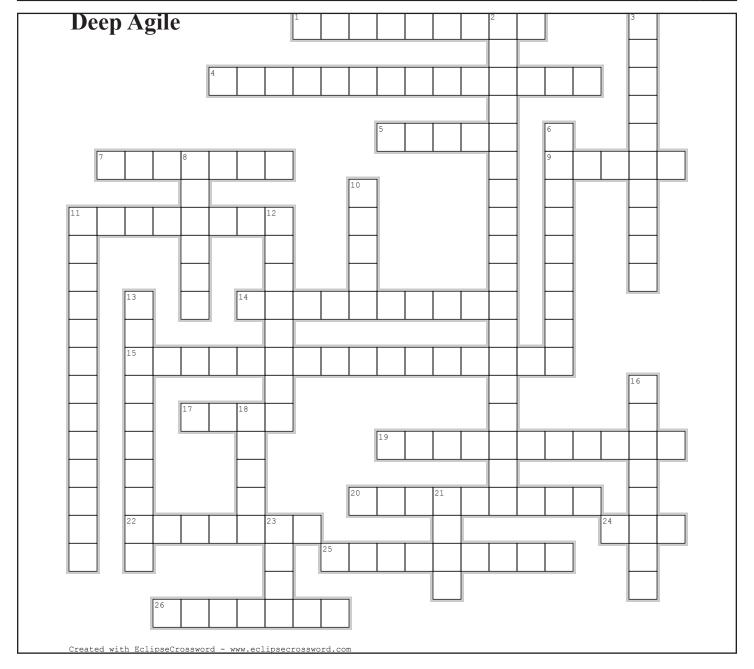
She has published numerous books, including Communication Gaps and How to Close Them and Managing Expectations: Working with People Who lWant More, Better, Faster, Sooner, NOW!

These books provide proven strategies for carrying projects, implementing change, delivering superior service - and preventing the everyday miscommunications that drive us crazy.

Readers have described her newsletter, Perceptions & Realities, as a breath of fresh air.

In both her writing and speaking, Naomi is known for presenting serious material with a light touch.

Contact her at naomi@nkarten.com.

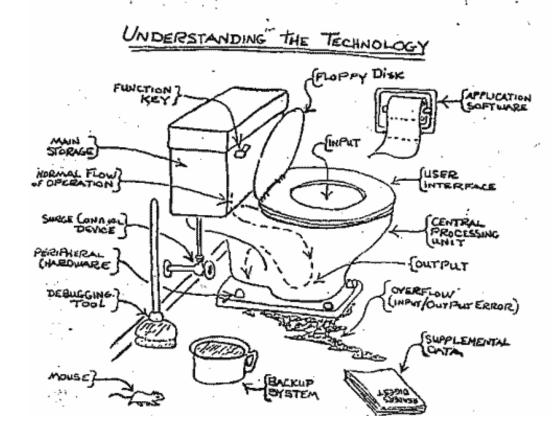


#### Across

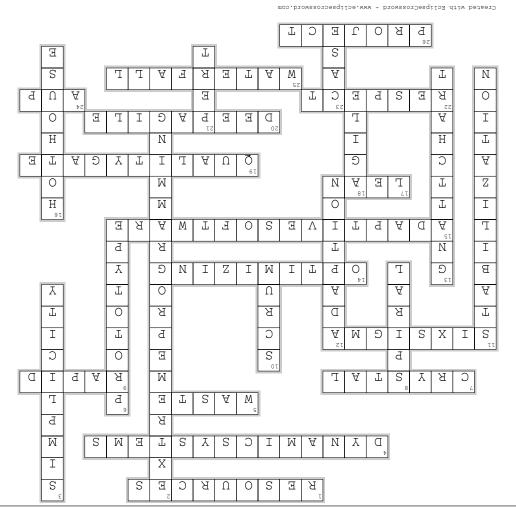
- 1. Three elements of Project Management Tasks, Time &
- 4. Framework for development in tight time constraints using prototyping
- 5. Main goal of Lean is to eliminate
- 7. Practices drawn from agile + plan driven
- 9. Iterative development method involving of prototypes
- 11. Practices to systematically improve processes by eliminating defects
- 14. LEVEL 5 of CMM
- 15. Iterative development, Feature based planning, Customer focus group reviews
- 17. Generic streamlining approach for all production systems (TPS)
- 19. Process of Approval on Requirements and Design documents in AGILE
- 20. GBC-ACM next professional development seminar on Apr 28-29
- One of the latest values that was added to XP
- Simplified version of the Rational Unified Process RUP
- 25. Plan driven software development model
- 26. Temporary endeavor undertaken to create a unique product or service

#### Down

- 2. Agile methodology that primarily places a higher value on adaptability than on predictability
- 3. The art of maximizing the amount of work not done as defined in the principles of Agile
- 6. Some thing serving as a typical example
- 8. Development process that combines advantages of top-down and bottom-up concepts
- 10. Rapid development method where product requirements could easily be translated into working code
- 11. This is the last sprint of the release in AGILE
- 12. Estimation in Agile is through \_\_\_\_
- 13. Type of bar chart that illustrates a project schedule
- 16. First iteration in an AGILE environment is called
- 18. Iterative and incremental approach to software development
- 21. Method used for identifying the minimum time needed to complete the total project
- 23. Use of software tools to assist in the development and maintenance of software



#### **Solution:**



# **BNUG - The Greater Boston Network Users Group**

Topic: Online Backup Technologies and DR Recovery

Options Presented by Amerivault http://www.amerivault.com/

**Date/Time:** March 6th, 2007, 6:30 - 9:00 pm

**Details:** Refreshments served at 6:30 pm

Location: Microsoft

201 Jones Road Waltham, MA 02451

**Directions:** Click Here

# New England SQL Server User Group

Venue: Microsoft offices in Waltham, MA

**Directions:** Click Here

Date: March 8th, 2007

**Time:** 6:30 pm

Title: In-depth AS/SSIS

Speaker: Raheel Retiwalla - Microsoft

Analysis Services and SQL Server Integration Services are key components of Microsoft's BI stack. Find out from BI expert, Raheel Retiwalla, how best to leverage

them for your firm's BI needs.

Date: April 12th, 2007

**Time:** 6:30 pm

Title: In-depth AS/SSIS

Speaker: Sunil Kadimdiwan - Infotrove

Sunil will take a look at the changes to Reporting Services in version 2005, especially the Report Builder. He will also show how to use RS for both relational and

OLAP data sources.

Are you a member?	s your membershi	expired? *
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Name:

Join! The \$10 annual membership fee offers many opportunities for development through regular and engaging interaction with local contemporaries, in addition to access to our popular PDS seminars. Paying for multiple years can save effort for you and us. Please mail in your membership form today!

(\*Check your address label for expiration date.)

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Lexington, MA 02420

# \*\*\* March/April 2007 Events Calendar \*\*\*

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March 9-11th	New England Software Symposium	Sheraton Ferncroft, Danvers, MA	Page 7
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March 14th	SQGNE	Sun Microsystems, Burlington, MA	Page 2
March 20th	Boston SPIN / ASQ Boston	Hilton Garden Inn Boston, Waltham, MA	Page 2
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April 19th	GBC/ACM IEEE Computer Society	MIT E51-315, Cambridge, MA	Page 1
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If your membership has expired, please consider renewing it for one or more years. Currently the membership fee is only \$10/year. Your support helps make possible the wide array of GBC/ACM activities.

Address Service Requested

First Class: Dated Materials

GBC/ACM is a non-profit educational and scientific society. (781) 862-1181 - www.8bcacm.org

