

**Join us Tuesday, November 11, 2008**

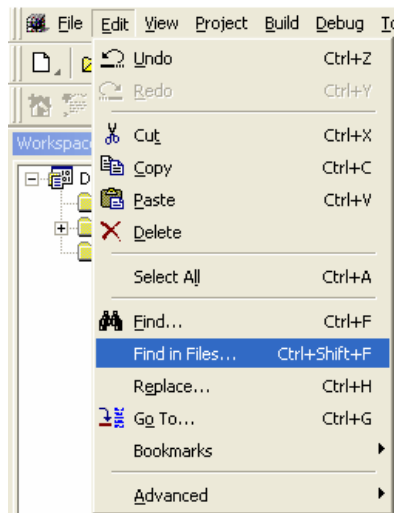
## **Caché on Steroids!** **Ensemble for the Caché Developer**

**The November 11, 2008 meeting is at 93 Worcester Street in Wellesley.**  
**The Wellesley Gateway Building** is at the northwest junction of Routes 9 and 128.  
 More information is inside this newsletter, including a map to help get you there.  
*Join us at 6pm for a small bite. The meeting begins at 7pm.*

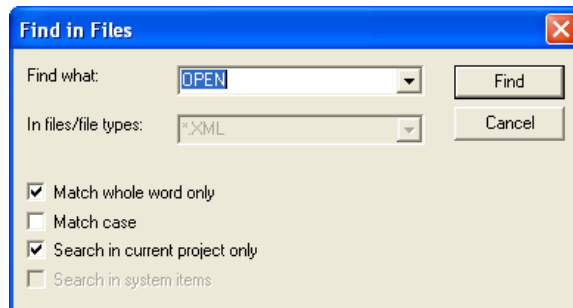
### Tips and Tricks

**Problem:** I think I used some cool code that I want to reuse, but I can't remember which one of the thousands of routines I wrote last week that has the code. Is there an easy way to search all of my routines for some text I hope I used?

**Solution:** Well, yes. Yes, there is. On the edit menu, you can do a Find in Files (Ctrl+Shift+F). This brings up a pop-up box (see below, right), that lets you search the routines in your project or in the namespace. So, even if you didn't create a project, it doesn't matter.

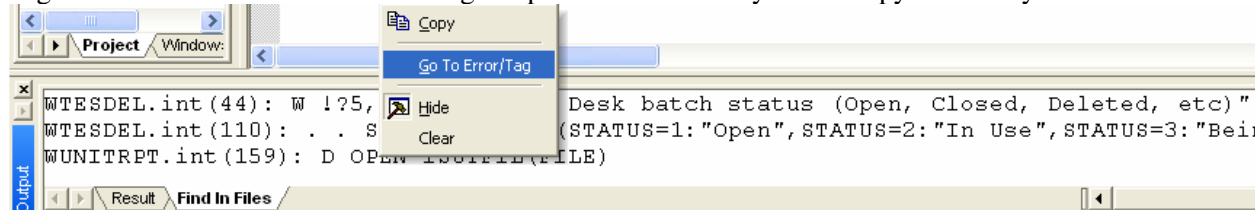


By default, all routines you write are considered to be part of your project. If you want to search all of the routines in this



namespace, and not just the ones you created, unclick the "Search in current project only" option. Depending on how many routines there are in the namespace, this search may be very slow. If you are looking for code you used, leave this option checked. If you think it is in a routine that someone else wrote, try unchecking this option.

The results of the search are shown in the Output window at the bottom of Studio. Scroll up and down in those results until you find the routine name you want (for example, WUNITRPT.int below). Use the Right Click and select Go To Error/Tag to open that routine so you can copy the code you want to reuse.



## NEMUG Officers 2008-2009

**Chair** (open position)

**Co-Vice Chairs** Heidi Pape Laird  
Partners HealthCare  
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781-416-8998

Alex Langsner  
Dartmouth-Hitchcock Medical Center

**Secretary** Larry Van Cura  
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508-791-4312

**Treasurer** Ben Bishop  
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[BenBishop61@gmail.com](mailto:BenBishop61@gmail.com)  
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### Board Members

Aviel Klausner (odd year)  
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617-225-3143

Pat Latona (even year)  
Dartmouth-Hitchcock Medical Center

Joel Solon (odd year)  
InterSystems Corporation  
[solon@intersystems.com](mailto:solon@intersystems.com)  
617-621-0600

open (even year)



## From the Co-Vice Chairs

After his Letter from the Co-Vice Chairs last issue, I want to thank Alex for joining the board and on the huge addition of making the NEMUG meetings accessible by WebEx conferencing. Not only does he drive 5 hours for our meetings but he hosts the on-line meetings. The best way for you to attend remotely is to set up a group meeting at your office. Let us know ahead of time. You can gather after work, have some pizza delivered and get ready for the meeting. Alex or a cohort sets up the meeting at Wellesley. There is video capability so you can see the speaker and others attending. Your discussions before and afterwards can be every bit as valuable as the discussions on site. We look forward to your joining us by internet.

This next Ensemble meeting grew out of our constant need to continue learning, becoming comfortable with the new technologies in Caché. In the past, NEMUG has provided valuable training that has grown into classes at the workplace. Diane Steidler has been a huge asset at Partners HealthCare and we are pleased to have her join us and for her to build a simple application using Ensemble. Diane says we can do much more and do it more simply by using Ensemble. We all know that, like the wheel, great Caché code has already been invented. We can't improve much on that. What we can do is leverage the excellent code and put it together into more efficient and more powerful applications.

A related topic is the subject of the January 13, 2009 meeting. Jill Goldberg and Sandy Waal of InterSystems will explain HL7 interfaces.

We are building meetings based on feedback we are getting about the needs, interests, and the value NEMUG offers to enhance training. We know there are other ideas out among you and we are putting together a survey from Survey Monkey to find out more about our M and Caché programming community. Once we hear from you we will present the findings at a gathering later on. Thanks again Alex, you deserve credit for that idea as well.

I also want to thank Deb Graham, our newsletter editor and general pain-in-the-B\_ task master (besides many other things) for her amazing Tips and Tricks. I'm saving the August '08 debugging tip to paste next to my terminal and run through it step by step. It's just what this old dog (young programmer) needs. Sometimes documentation gets to be too hard to find or my excuses too convoluted to actually learn something. ;)

Heidi

## September 9, 2008 Meeting Minutes – What You Missed –

### War Stories from the PHS UNIX Migration Effort

by Deborah Graham

Larry Williams, Corporate Manger at Partners Healthcare talked about the massive effort involved with the migration. He started with some Partners Healthcare history. He has been with Partners since it was formed. In 1994, Partners Healthcare merged with Brigham and Women's and Mass General. Partners Healthcare now includes an impressive array of different types of organizations, including: a physician network, 3 community hospitals, 2 rehab hospitals, 3 speciality institutions, and over 1500 employees. The "Partners Build" includes critical applications on XP machines which helps manage the 32,000 desktops, 12,000 printers, and 1450 servers which leaves 34,000 other devices that are unmanaged. Partners is currently in mixed-mode:

- Five windows database servers are running multiple instances of Cache on HP-UX database servers
- Large tier of application servers, running Cache 5.0.20 which allows breaking out of the application tier to farm out services
- Large amount of VB6 applications, wrapped in M Services, which allows for failovers and load balancing
- Rebooting the application server machines lets M Services try and find one to use until the machine is back online
- Web users are connected by Weblink to the largest collection of application servers
- Enterprise integration grew from 167 to 196 from 1004 to 1007
- There is no other database on the market today that can handle the bump in database references with little or no performance hit

#### Why Migrate?

The migration provides job security (for a lot of people!) and what used to work with the reboot or hot fixes took 7.3 hours/month is no longer good enough nowadays. That 99% uptime is not good. It takes time to reboot a machine and stop/start Cache. The current statistic is 99.9% which works out to 44 minutes/month of downtime. Business needs dictate 99.99% uptime, or 4.4 minutes/month of downtime. The migration would reduce the 5 single points of failure (the database servers) by providing more robust hardware and an operating system. Before migration, there was no automated failover. System Programming was paged, and in 45 minutes a replacement machine could be in place. There were over 75 windows servers moving to 2 R8640 passive and active instances (and since then, blade servers have come out) to maintain high performance and reliability. The over 75 instances of Cache have been reduces to 10-14 instances.

#### War Story I

Partners bought the R8640 box and moved 3 of the servers over. Then came DEVCON and over 20 Partners people were in Orlando. Monday morning, 10am, the active instance failed. In less than 1.5 minutes, the failover happened. It was all good...but...the servers are running 5.0.20, with an immature version of ECP (Enterprise Cache Protocol), and only half of the application servers of the 50 came over. The needed to restart the ECP. When they got back, they tried to recreate the failure in the Lab, but couldn't. Considering they don't plan on being on 5.0.20 too much longer, they crossed their fingers.

#### Phased Migration Approach

The Proof of Concept for the database was completed on 10/15/2007

Phase 1 – Database tier (1 database/month; competed on 4/14/2008)

Proof of Concept for the Application benchmarks completed on 8/4/2008

Phase 2 – Application tier (the big bang migration from 5.0.20 to 2008.1 is scheduled for 12/12/2008)

Phase 3 – Disaster Recovery is now part of Phase 2, and leverages the HP blade servers

It was a 2-3 month effort just to determine HOW to take 5 database servers to UNIX servers. The process involved messing with the number of servers needed (there were 5 because they were Windows based). They had to find answers to questions like “How many ECP channels per database instance? Is 2 better than 1?” They found that in Cache 5.0.20, you can’t consolidate from 5 servers to 1, there is a journal sync issue. You can only have one journal sync per Cache instance. In the 2008 version, you can have more than one. The journal served as a funnel that caused slowness. With one journal daemon, 1 ECP channel per instance was optimal.

### **Phase 1 Database Tier Migration**

This phase was to migrate from EMC DMX2 to EMC DMX3 and it allowed no impact to production. One windows database server was migrated per month for 4 months. The migration was performed during the month ISM using EMC Info Mover tool – a sunset application that EMC resurrected, updated, and is now selling again.

### **Application Tier Benchmarking**

For the benchmarking, they simulated a 3X load increase using the HP blade servers and Cache 2008.1 with up to 8 cores and 96G of memory. Now, the servers are bought in pairs, one for each of 2 data centers. With a single database on 2008.1, the performance is comparable to 5 databases on 5.0.20 with multiple journal syncs per instance.) Cache ObjectScript is the same from version to version. What fails is printing, and bad code (that is, hard coding of URLs or directories and such). Either data center (Needham or Charlestown) can handle the whole need of the system, if necessary. Parallel environments for development and quality assurance were created to mimic production.

### **Production Improvements**

References to undefined globals using \$DATA and \$GET require a network round trip, as does \$INCREMENT. Excessive use of Cache locks results in more than 1 round trip each. Long strings (those that require more than 3900 bytes) are not cached on the ECP client.

### **Lessons Learned**

Each trip to the database server results in overhead caused by the journal sync. Increasing the journal sync rate causes bottlenecks in the ECP channel which increase the risk of long transactions.

### **Changing Namespaces using ZN**

This operation used to be instantaneous, but now it takes noticeable time. There are over 100 namespaces in the Partners environment. Cache 2008.1 fixed this problem. \$ZU is still faster in Cache 5.0.20.

### **Phase 2 Parallel Migration – Issues Identified**

- RFN table (remote data set entries) when there are more than 288 data sets
- Routine load errors in Class method on execution
- %File class method (went back to \$ZU(140,))
- Class compile issues (compile all is a problem)
- Class keyword [Procedure Block] changing to [Not Procedure Block]
- Lock mode for opening files no longer works
- Differences in CIFS resources access compared to native windows
- Routine Too Big to Save issue (on compile) – increase in rbuff size from 32 to 64K

**November Meeting –  
Tuesday Nov. 11, 2008, 7-9pm**

Diane Steidler from Partners Healthcare will present ...

**Caché on Steroids!  
Ensemble for the Caché Developer**

**Come see how Ensemble can help transform your Caché applications into powerful enterprise integration solutions. Together, we will develop an Ensemble application that utilizes HL7 interfaces, SOAP web services, dashboards, data transformations, a rules engine and much more!**

6:00 pm supper is served, 7:00 pm meeting gets underway.

## Job Openings

### Full-Time MUMPS Programmer in Worcester, MA



Palladian Consulting would like to present an opportunity full time for a MUMPS Programmer in Worcester, Mass.

**Responsibilities:**

1. Develop systems, reports and processes.
2. Design, build, develop, deploy, and validate the new tests and systems on time and within the specified framework.
3. Thoroughly test and document all systems and applications.
4. Support Cache' activity to assure access to all financial systems and networks.
5. Support other department IT programming needs as requested

**Education Level:**

- 4+ years MUMPS programming in a clinical, healthcare, or regulated industry. SQL experience and programming in a clinical lab desired.
- BS or equivalent experience

**Required Skills:**

1. Proficient in writing reports, business correspondence and procedure manuals.
2. Possess analytical reasoning and creative thinking.
3. Good communication skills both oral and written.
4. Ability to program in other programming languages (visual basic, C, C++, Java, XML)

Company is offering an excellent benefits package and highly competitive salary, this is an immediate need.

Please contact:

**Robin Marsh**

Sr. Technical Recruiter

Palladian Consulting

949-681-8016, 800-750-1777

[robin@palladianconsulting.com](mailto:robin@palladianconsulting.com)

[www.palladianconsulting.com](http://www.palladianconsulting.com)

Tell Robin that NEMUG sent you.

## Job Openings (continued)

### Full-Time Cache/MUMPS Developer in Plymouth, MA



Palladian Consulting is seeking qualified candidates for Cache/MUMPS Developer position in Plymouth Massachusetts. This is a full-time position (Onsite).

Successful candidate has a solid understanding of programming for the IDX MCA, BAR and/or SCHED applications.

Principal duties and responsibilities include application and utility design and development, documentation, research and resolution of programming issues and providing efficient solutions to both clients and teammates.

Four years of IDX Mumps programming experience is required.

#### ***Responsibilities***

1. Analyze, design, code, install, test, maintain, document, and provide technical support for billing systems software.
2. Modify existing and create new systems software for specific enterprise needs.
3. Prepare functional and/or technical specifications from which programs will be written.
4. Participate in technical design, development, testing, implementation and maintenance of enhancements.
5. Assist in maintaining systems documentation.
6. Work with clients in support of projects.

#### ***Required Skills***

1. Senior level Cache and/or Mumps Developer
2. IDX Flowcast experience (Registration, AES, TES and BAR) preferred, but not required
3. Laboratory Billing procedures/practices
4. Strong problem solving skills
5. Strong written and verbal communications skills
6. Must be authorized to work in the US, i.e. Green Card, US Residency, or EAD.

To be considered please contact:

Robin Marsh  
Palladian Consulting  
949-681-8016  
[robin@palladianconsulting.com](mailto:robin@palladianconsulting.com)

Tell Robin that NEMUG sent you.

## Job Openings (continued)

### Two Contract Cache/MUMPS Programmers in Silver Spring, MD



Palladian Consulting is seeking qualified candidates for two contract Cache/MUMPS Programmers in Silver Spring, Maryland.

Two Mumps Cache Programmers are needed for a contract opportunity in Silver Spring, MD

We are currently seeking 2 Senior Programmer Analysts for our Silver Spring, MD facility. Reporting to the Manager, Health Plan Support within Regional Application Delivery, this Senior Programmer Analyst will be part of the team responsible for supporting the membership application developed in Cache and used by the Mid-Atlantic States region of our client. You will be working closely with the user community, addressing day to day problems and issues, working them to resolution. You will be called upon to assist your colleagues with their support efforts as well as asked to provide insight to various projects and initiatives. You will be expected to comply with all of our clients Information Technology policies and procedures especially around Change Management, SOX, and HIPAA. The successful candidate will be an integral part of the region's Application Delivery organization and as such will also participate in Code-Review sessions with other Developers, giving them insight into code improvement.

Need to have 7-9 years of experience programming with Cache/Mumps.

To be considered please contact:

Robin Marsh  
Palladian Consulting  
949-681-8016  
[robin@palladianconsulting.com](mailto:robin@palladianconsulting.com)

Tell Robin that NEMUG sent you.

### Two Contract Cache/MUMPS Programmers in Boston



Palladian Consulting is seeking qualified candidates for two Mumps Cache programmer analysts for a 10 month contract opportunity in Boston Mass.

Contractors will be required to be on-site 4 or 5 days out of the work week.

This project will go though August 2009.

Must have experience with Mumps and Cache.

IDX experience is a plus.

Immediate start date / no remote

To be considered please contact:

Robin Marsh  
Palladian Consulting  
949-681-8016  
[robin@palladianconsulting.com](mailto:robin@palladianconsulting.com)

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## Job Openings (continued)

### Long Term Contract in Tristate area (NY, NJ, CT)



Palladian Consulting is seeking qualified candidates for Long term contract opportunity in Tristate area. Initially 6 months followed by renewals. All work is to be done onsite.

#### 1. Business Analyst

**Requirements:**

BA, with exposure to MUMPS, CACHE, Lab Information System

**Description:**

Analyze problems and requirements.

Define recommendations and implement solutions for Cache based Clinical Laboratory Systems.

Develop and execute unit, system integration, and user acceptance test plans.

Develop Functional and Design specifications.

Analyze production support tickets and recommend/implement fixes.

Interface with customer-base around requirements and support issues

#### 2. Programmer Analyst

**Requirements:** Cache, MUMPS, J2EE

To be considered please contact:

Robin Marsh

Palladian Consulting

949-681-8016

[robin@palladianconsulting.com](mailto:robin@palladianconsulting.com)

Tell Robin that NEMUG sent you.

### Cache, CSP, COS Contract Opportunity in Englewood, CO



**Skills Required:**

Expert knowledge and 10+ years experience with Intersystems Cache 5.x/07 on both Solaris 9 and Windows Server including Cache Server Pages (CSP) and Cache Object Script (COS) development. Additionally, should possess Cache 5.x system admin, database administration, performance tuning, Solaris to Windows conversion, and shadowing/replication knowledge and experience. Will give preference to someone experienced with XML, Subversion, Rational ClearCase, ClearQuest.

Please contact Robin immediately to be considered

Robin Marsh

Palladian Consulting

949-681-8016

[robin@palladianconsulting.com](mailto:robin@palladianconsulting.com)

Tell Robin that NEMUG sent you.

## Job Openings (continued)



As a leading-edge provider of Enterprise Application Integration solutions for the healthcare industry, MDI Solutions seeks to employ application developers and integration consultants who rank amongst the best in their field. With modern offices, in the heart of downtown Toronto, steps from Union Station and the CN Tower, the MDI group offers a fun, spirited and challenging environment in which to practice your skills.

### ***Software Engineer***

MDI Solutions is looking for mid-level Software Engineer to develop software for our MD Connect integration solution which integrates with the Meditech Health Care Information System. As a member of MDI's Health Care Division, you will receive exposure to MD Connect software application written in Visual Basic, network protocols, operating and database system. In this position you will be responsible for the ongoing support of healthcare solutions utilizing Visual Basic 6/.Net interfaces with MD Connect, and possibly with MD Link-HL7 integration engine.

This position requires a self-starter who is highly organized, detail oriented and self-disciplined with the ability to work within all levels of our business (internal and external). The success of the individual in this role will be measured based on the timely and effective support of the MD Connect solution, thorough and timely communication of issues and the ability to work cohesively within the MDI Solutions team as well as with our customer base.

The candidate must possess excellent interpersonal and execution skills.

### ***Knowledge, Skills and Abilities:***

MS Visual Basic 6 or .NET - in-depth knowledge and experience in programming MS Access, SQL Server HL7 and non-HL7 Interfaces Meditech Software, MS Office 97-2006 Communication protocols (TCP/IP, Sockets, Web services, Folder deliveries) Install Shield Professional (installation of MD Connect, MD Link or Sybase HIPAA Accelerator, Sybase EDI server software with various operating systems including cluster and virtual environments) MS Windows NT 4, MS Windows 98, Server 2003, 2000, XP. If you have knowledge of Java, that is a definite Plus!

### ***Location:***

**Virtual Office** preferably located in the United States with ability to travel up to 20-25 % when needed.

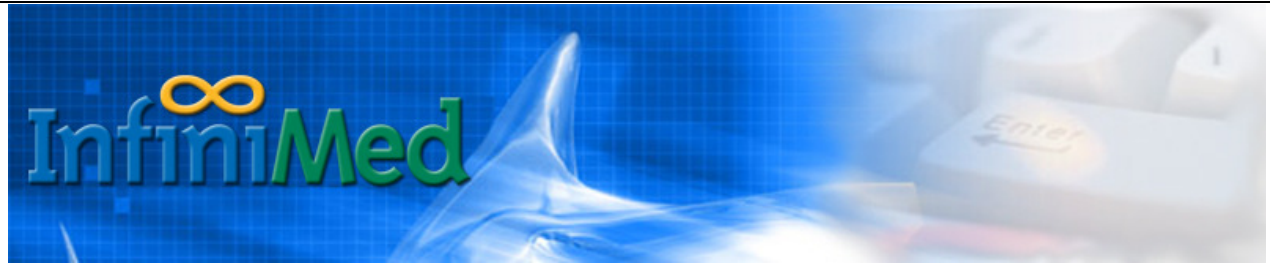
Send e-mail resumes to [wpetrone@mdisolutions.com](mailto:wpetrone@mdisolutions.com) with "RESUME" in the subject line. Please include salary requirements.

Will Petrone  
General Manager  
MDI Solutions- Corporate Headquarters  
155 University Avenue Suite 301  
Toronto, Ontario M5H 3B7

407.290.1875 US Office  
484.805.7676 (fax)

All submissions will be considered confidentially.  
MDI Solutions is an equal opportunity employer.

## Job Openings (continued)



InfiniMed has multiple contract Programmer and Analyst positions available in the Boston area. These positions require you to be on-site for the duration of the contract (full time 6 - 12 months). The expertise needed is IDX HPA, Sched, and REG/Adt.

Lots of interface work, electronic claims, and 835s.  
Lots of FDL work - TES edits, Hold Bills, ATWO's Claim Edits, etc...

Interested?

Know anyone who might be?

Neil C. Manning / CEO  
[nmanning@infinimed.com](mailto:nmanning@infinimed.com)  
InfiniMed, Inc.  
9 Bartlet St. Ste 351  
Andover, MA 01810  
(978) 646-9281 x12  
(978) 646-0062 (fax)

## ***New England M Users' Group Services***

NEMUG offers a variety of services to promote education and employment in the database/programming environment:

### **Meeting-Lectures...** Presentations every other month...

Every other month we have fascinating speakers lecture on a timely topic. Refreshments are served. You can go straight from your office to the meeting and have time to talk with other participants.

### **Email List...**

To get on the email list, just sign up at <http://mail.intersystems.com/mailman/listinfo>. The email list is free and allows an open forum for discussion of all things M/MUMPS/Cache.

### **NEMUG Mailing list For Sale...**

The NEMUG mailing list is a valuable commodity that we sell to earn revenue for the users' group. You deliver all pieces that you wish mailed to NEMUG. We affix labels to them, and then return them to you for mailing. We reserve the right to review mail pieces for approval in advance. For more details and pricing, please contact any Board member.

### **Advertising in the NEMUG Newsletter and the Website...**

You can place an ad in either the newsletter, on the website, or both. You have a choice of a classified ad or a display ad with your logo. Contact a Board member for details and pricing.

## **Corporate Sponsor Program**

NEMUG instituted a Corporate Sponsor Program so that local companies and institutions can show their support of the M community by helping underwrite NEMUG's costs. Funds from Annual Corporate Sponsors cover the cost of NEMUG's meetings. In return, NEMUG recognizes the sponsor's support by listing sponsors in the newsletter, reserving space for each on the literature table at meetings, and giving each sponsor two free display ads in the newsletter per year (and soon to be prominent placement on our website).

Remember: our sponsors keep our group going. Without their support, our activities would not exist. We ask that you thank them for their continued support.

### **Current Sponsors**

#### **J2 interactive**

([www.j2-interactive.com](http://www.j2-interactive.com))

#### **InterSystems**

([www.intersystems.com](http://www.intersystems.com))

#### **4W, Inc**

([www.cacheprogrammer.com](http://www.cacheprogrammer.com))

#### **Henry Elliott & Company**

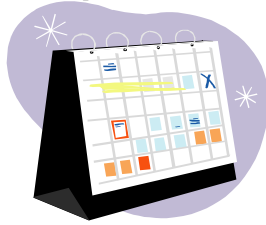
([www.henryelliot.com](http://www.henryelliot.com))

#### **Solid Applications**

([www.solidapps.com](http://www.solidapps.com))

## May Programming Contest Results

### The problem was:



With extreme thanks to the TechNet Scripting Guys and the 2008 Winter Scripting Games ([www.microsoft.com/technet/scriptcenter/default.aspx](http://www.microsoft.com/technet/scriptcenter/default.aspx) or [www.scriptingguys.com](http://www.scriptingguys.com)), our new contest asked you to create and display a calendar. Prompt the user for a month and year, and then display a nicely formatted calendar. Neatness and correctness counted. Remember the categories (shortest, easiest to understand, most unique, and best UI), and you'll see that there were many ways to approach this simple task. The judges promised to keep the dates entered in the M/MUMPS/Cache date range of 1/1/1841 to 12/30/2098.

### The Programming Contest is on Vacation

The programming contest is taking the summer and some of the fall off. Look for the contest to resume next year. If you have any ideas on how to make the contest better, please let us know. We need more routines to make it more of a contest rather than a give-away.

### From the Editor

Well, it's time to put another newsletter to bed. Which means it's time to write another article and come up with another Tips and Tricks write up. And this is proving to be much harder than it has in the past. Usually, inspiration comes to me from all directions. But not this month. Until just now. The 11<sup>th</sup> hour, as it were. You'd think that giving a programming class every week would provide me with loads of Tips and Tricks, but noooooooo. This issue's Tips and Tricks actually came from a co-worker, who is attending the *Intro to Programming Using Cache ObjectScript* class that I am giving for my department. So, even teachers can learn from the students. You just need to listen and be open to new experiences. And on that note, I am going to end this, and go publish a newsletter. Hoped you enjoy it. Please let me know, [grahamd@ummhc.org](mailto:grahamd@ummhc.org).

### Wellesley Gateway Building 93 Worcester Street (Northwest corner of Routes 9 & 128/I-95) Wellesley, Massachusetts

The main entrance is in the front of the building. Park anywhere. Please sign in at the desk. Signs will point to the meeting room. If you park in back, someone from the Board will be available between 6 and 7pm to let you in the rear entrance.

### Directions

#### ... From Downtown/Airport

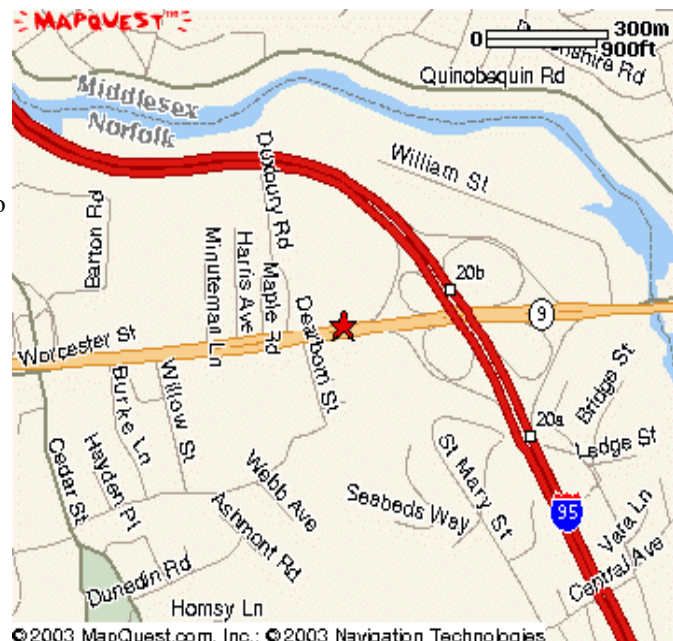
- Follow 1-93 South to 1-90 West (Mass Turnpike).
- Mass Turnpike West to **Exit 15 I-95/Rte 128 South**.
- Take Route 128/I-95 South to **Exit 20B (Route 9 West)**.
- At the first light, turn **right** into the parking lot.

#### ... From North/South

- Take Route 128/I-95 and get off at **Exit 20B (Route 9 West)**. (From the Northbound side, pass under the highway.)
- At the first light, turn **right** into the parking lot.

#### ... From the West

- Take Route 9 Eastbound.
- At the traffic light just before Route 128/I-95, take a **left** turn into the parking lot.



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