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Resources

- <http://oscarhome.org>
- <http://oscarresource.org>
- <http://oscarcitizens.org>
- The Cathedral and the Bazaar (Eric Raymond)
- Open Sources: Voices from the Open Source Revolution (O'Reilly publisher)

Presentation outline

- What is Open Source
- What is OSCAR
- A Quick Tour
- Question & Answer

What is Open Source?





What is Open Source?

- Source code versus machine code

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The screenshot shows a code editor window with PHP code. The code includes a search function that uses a database query to find records based on a search term. The code is as follows:

```

function getSearch($user) {
    $sql = "SELECT * FROM users WHERE name LIKE '%" . $user . "%'";
    $result = mysql_query($sql);
    $users = array();
    while($row = mysql_fetch_row($result)) {
        $users[] = $row;
    }
    return $users;
}

// Example usage
$search = "john";
$result = getSearch($search);
print_r($result);
    
```

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The screenshot shows a code editor window with C++ code. The code is a simple program that prints "Hello, World!". The code is as follows:

```

#include <iostream>
using namespace std;

int main() {
    cout << "Hello, World!" << endl;
    return 0;
}
    
```

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What is Open Source?

- Source code versus machine code
- Free as in "libre" not "gratis" ("freedom" not "free beer")

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- Peer review and collaboration (and the gift community)

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The Brazilian Government is putting much effort in the Family Medicine model, and we think that the Oscar approach could be helpful for Brazilian practices.

We are planning to allocate 4 people for about 4 months to the internationalization of the Oscar package, and the customization to the Brazilian reality...

Yours sincerely,
José Augusto Vasconcelos Neto.

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I'm a Norwegian computer scientist working with the Health Information Systems Programme (HISP) in South Africa. HISP is a collaborative R&D project between the University of the Western Cape (SA), Universidad Eduardo Mondlane (Mozambique), the Indian Institute of Management (Bangalore, India), and the University of Oslo (Norway) in close collaboration with the national/provincial departments of health in South Africa, Mozambique, and India (Andhra Pradesh and Karnataka states)...

OSCAR is the first project I've seen that seems to have developed largely using the same prototyping approach in a real-world environment as we do...

Would the OSCAR group be interested in exploring a possible partnership with HISP based on sharing and (extent to be determined) co-development of software? I must stress here that we are a resource, NOT a burden...

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3 Pillars Road,
7700 Rosebank, SOUTH AFRIC

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We contacted you several weeks ago to make you aware that Dyna Lync was reviewing the OSCAR application in terms of possibly using it as part of a CMS proposal. We felt then as we do now, that this software could form the basis of a cost saving solution for the government with benefits for both the doctors and their patients...

Since the time of our last contact, we have assessed the applications ability to meet the government's need for a CMS solution that could be distributed provincially... Dyna Lync decided to proceed with the creation of its own version of OSCAR which would include all the changes required to make it an enterprise ready, government accepted solution. Dyna Lync will also be pushing this solution through the ePP local CMS solution certification process with the end result being a solution that can be provided to doctors of Ontario. Dyna Lync's marketing and sales staff is gearing up to market the solution to doctors across Ontario.

Finally, please don't be misled into thinking we will be selling the product. That would be a violation of the GNU licensing. We instead are providing a complete solution that includes implementation services, training, support, transition services, enhancement services, with the actual application be provided free of charge...

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What is Open Source?

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- Copyright (or left?) and licensing (Is the GPL “viral”?)

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- Open Source Electronic Health Record (Vista, TORCH)
- OSCAR is based on Linux, Tomcat, and My SQL (GPL)

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History

- 1986 Computerized Medical Records (CMR), Chinese University presented at the RACGP, Melbourne, Australia; published *Journal of Family Practice*
- 1988 McGill University Family Folder Information Network (MUFFIN); the MUFFIN workshops: McGill, Taiwan, Hong Kong
- 8/1991 “Hello everybody out there using minix - I’m doing a (free) operating system (just a hobby, won’t be big and professional like gnu) for 386(486) AT clones... Any suggestions are welcome, but I won’t promise I’ll implement them :-)” Linus (torvalds@kruuna.helsinki.fi)
- 3/1994 Linux 1.0 is released

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History

- 1/1998 Netscape announces that they will release the source to their browser under a free software license (NPL and later Mozilla MPL were born)
- 2/1998 Eric Raymond and friends come up with the term "open source"
- 2/2000 Red Hat wins *InfoWorld's* "Product of the Year" award for the fourth time in a row
- 3/2000 The latest Netcraft survey shows Apache running on just over 60% of the Web

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History

- 6/2000 Commercial considerations help prompt the re-licensing of MySQL under the GPL
- 7/2000 Sun announces that StarOffice is to be released under the GPL
- 8/2000 HP, Intel, IBM and NEC announce the "Open Source Development Lab" (IBM later announces plans to invest \$1 billion in Linux in 2001)
- 9/2000 The RSA patent expires, allowing for secure web transactions without proprietary software

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History

- 9/2000 Trolltech releases the Qt library under the GPL (establishing KDE and GNOME GUI for Linux workstations)
- 4/2001 MUFFIN passed Conformance Testing for Ontario's Primary Care Reform (PCR) thus receiving \$927,000 to develop a third generation Electronic Patient Record system
- 10/2001 OSCAR was installed in the Hamilton Maternity Center...
- Nov 15, 2002 OSCAR released on SourceForge
- First download – South Africa!!

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What is OSCAR?

- OSCAR is a set of Clinic Applications, Clinic Resources, and electronic patient records, developed using Open Source tools (Linux, Tomcat, MySQL, Zope)
- OSCAR facilitates Clinical Decision Support and Evidence Based Medicine
- OSCAR provides tools for clinic operations (appointments, encounters, prescriptions, lab results, roster, billing, electronic patient record)
- Oscar design and features are based on a proven Clinic System, used in a number of clinics for several years
- OSCAR is web based, to provide offsite access
- This work is funded by a grant from the Ministry of Health of Ontario, to support the requirements of Primary Care Reform

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Who are the developers?

- The development team works through the Department of Family Medicine, McMaster University
- 8 to 10 team members working on:
 - Development and Deployment
 - Training & User Support
 - User Documentation
 - Promotion to clinics and providers
- Current collaborators from Brazil, Vancouver & Toronto (government & vendors)
- Laboratory: CVS on SourceForge

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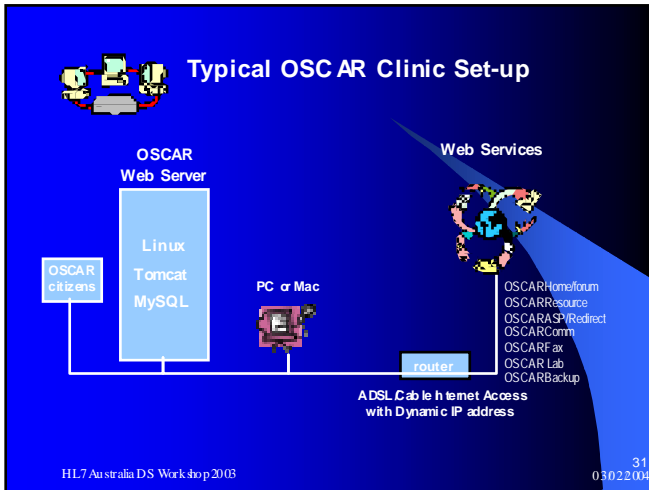
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What are the Objectives?

- The Mission: To improve the delivery and quality of healthcare to all communities
- The objective is to offer a "royalty free" set of Clinic Applications and Clinic Resources for use by health care providers and Clinics in Ontario and everywhere
- The no-cost or low-cost, open source approach is intended to enlist a critical mass of health care users and developers, to use and enhance the OSCAR system on an ongoing basis

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OSCAR Citizens

- Secure Messaging
- Make Appointments
- Access OSCAR EMR records
- Personal Health Records
- Decision Support tools

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Web Services

- Clinical Applications:
 - Application Service Provider (oscarAPS.org)
 - Dynamic IP Redirect Service (oscarTools.org)
 - Remote Data Backup Service (oscarBackup.org)
 - Secure Messaging Service (oscarComm.org)
 - Fax Service (oscarFax.org)
 - Laboratory Service (oscarLab.org)
 - Evidence Based Decision Support (Diabetic Tracker II)
 - Citizen's portal and secure messaging (oscarCitizens.org)
- Clinical Resource:
 - resource database management (oscarResource.org)
 - discussion forum (oscarHome.org)
 - Continuing Medical Education direct link

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What will it cost a clinic to install and use Oscar?

- Cover the cost to setup OSCAR for the clinic (Server PC, Customization for the clinic)
- Cover the cost to develop additional tools and provide ongoing services and support
- Any tools developed are contributed back to the pool of OSCAR resources
- There are no purchasing costs for the Oscar Software, no license fees, no upgrade fees, no usage fees
- Optional web-services can be subscribed to

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Download & Installation

- Linux compatible PC scalable to your practice size (\$200 PC will do!)
- Install Linux (tested for RedHat 7 to 9; reported to work in Open BSD & Mandrake 8.0)
- Download oscarMcMaster-v1.1 from SourceForge.org
- Tar file to /root
- Follow instructions on Install.txt

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OSCAR Users

- Maternity Center of Hamilton (10 Docs), Oct 2001
- Joint PCN On-call group (18 Docs & 35 Residents), Dec 2001
- Sob GP, Jan 2002
- Hamilton Midwives (7 midwives), Jan 2002
- Wellington Nursing Home (2 Docs) Feb 2002
- Stonehurch Family Health Centre (28 Docs & Residents), Apr 2002
- McMaster Family Practice (24 Docs & Residents), Jun 2002
- Sob O&G Specialist in Milton Jul 2002
- Neurologist, O&G practices Oct 2003
- Pemberton, BC; REACH CHC, BC and others Dec 2003
- Hamilton Stroke Prevention Clinic, Regional Spinal Cord Injury Program planned
- Known installations in Toronto, Vancouver, US cities, Australia, Columbia, Brazil, and South Africa

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Plans: Development

- Clinical Applications:
 - Phase I - Office Management
 - Phase II - EMR
 - Phase III - Citizen Interactive
 - Phase IV - Research & Evaluation
- Clinical Resource
 - resource database
 - recruitment of content experts
 - Evidence Based decision support tools
- Open Source
 - copyright & licensing
 - software release: Hollywood November 17, 2002

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Gift-wrapping OSCAR

- Tidying up the code – removing hardwired logic and making it “enterprise” ready
- Open Source Definition revisited
- GPL compliance check
- Producing the installation package
- Test-driving it in different Linux/browser environment, including Mozilla 1.4
- Registering it at SourceForge

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Risks of Open Source Software

- Local support
- Ongoing development
- What if I die!
- Moving standards
- Software “forking”

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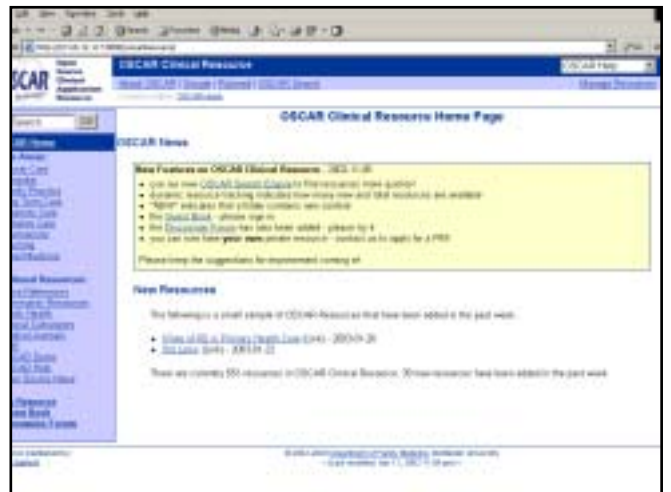
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A Quick Tour

A typical day at the paperless office....

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Presentations

- OSHCA London, UK Sep 2001
- OCFP, Toronto Nov 2001
- ACMC, Calgary, Apr 2002
- UCLA Jul 2002
- Libre Software, Bordeaux, France, Jul 2002
- PICNIC, Paris, France Sep 2002
- OSHCA, Los Angeles, Nov 2002
- OHA, Toronto, Nov 2002
- BC Clinics and Health Authority
- U. of Manitoba, Feb 2003
- ACP Annual Session, San Diego, April 2003
- eHealth 2003, Toronto, May 2003

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Grants & Other Revenue

- Ontario Ministry of Health PCR \$927,000
- McLaughlin Foundation - LTC project \$20,000
- CFPC - SLP project \$22,000
- Drug Magnet - Palm Rx \$10,000
- MCH \$45,000
- Dr. Hunter \$20,000
- EU-Canada Health Telematics Initiative 10,000 Euros
- Stroke Prevention Clinic \$23,000

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