SE495 Software and Systems Integration

Projects

Project 1: Evaluation of Open Source Enterprise Resource Planning (ERP) Systems

The goal of this project is to teach students an important set of skills - how to install, learn, and evaluate new technologies. This goal is achieved through a set of assignments wherein students will critique the effectiveness open source Enterprise Resource Planning (ERP) Systems. This project is divided into a set of four assignments:

First Assignment

- Install the selected ERP system and get the software to work
- Describe the ERP system, its source, supported modules & sub-functionalities, target audience, cost, unique features, etc.

This is not intended to be a reproduction of the feature list or product brochure. Instead, you should identify the most relevant, distinguishing or otherwise important features.

Second assignment

- Analyze the ERP system's effectiveness using demo example provided by the ERP system producers.
- Complete evaluation report using criteria provided by the Instructor

Third assignment

- Analyze the ERP system's effectiveness by implementing a complex business process provided by the Instructor.
- Complete evaluation report using criteria provided by the Instructor

Fourth assignment

- Write a report documenting your experiences with installing and using the ERP system (including demo and complex business process).
- Present features the ERP system
- Provide a recommendation on whether the software should or should not be used in educational setting as means to teach ERP systems. Substantiate your recommendation.
- Provide a recommendation on whether the software should or should not be used in organizational setting as means to run business. Substantiate your recommendation.

Select one of the following Open Source ERP systems for project 1:

If you choose to evaluate any other ERP system, please talk to Instructor.

1. ADempiere
http://www.adempiere.com/ADempiere_ERP
Download the latest release:
http://sourceforge.net/projects/adempiere/files/ADempiere%20Official%20Release/
Installation instructions (Manually):
http://www.adempiere.com/Installing_ADempiere_Manually
Reproduce the Libero Manufacturing example:
http://www.adempiere.com/A_Step_by_Step_Guide_to_Libero_Manufacturing

2. BlueERP
http://open.mitija.com/blueerp/home
Download the latest release:
http://open.mitija.com/blueerp/download
Installation instructions:
http://open.mitija.com/blueerp/install
Reproduce the demo example:
http://dev.mitija.com/blueerp/index.php?menuaction=addressbook.addressbook_ui.index

3. Compiere ERP
http://www.compiere.com/products/open-source/index.php
Download the latest release:
http://www.compiere.com/products/download/index.php
Installation instructions:
http://www.compiere.com/support/installation.php
Reproduce Compiere Manufacturing and MRP demos:
www.compiere.com/resources/product-demos/index.php

4. Dolibarr ERP
http://wiki.dolibarr.org/index.php/Main_Page
Download the latest release:
http://sourceforge.net/projects/dolibarr/files/
Installation instructions:
http://wiki.dolibarr.org/index.php/Installation_-_Upgrade
Reproduce the Module Customers Invoices demo example:
http://wiki.dolibarr.org/index.php/Module_Customers_Invoices

5. ERP5
http://www.erp5.org/
Download the latest release:
http://svn.erp5.org/erp5/
Installation instructions:
http://www.erp5.com/download
Reproduce the ERP5 CRM (Customer Relationship Management) example:
http://www.erp5.com/documentation/user

6. FrontAccounting
http://frontaccounting.com/wb3/
Download the latest release:
http://sourceforge.net/projects/frontaccounting/
Installation instructions:
http://frontaccounting.com/wb3/pages/download/installation-guide.php
Reproduce the Sales demo example:
http://frontaccounting.com/fawiki/index.php?n=Help.Sales

7. webERP
http://www.weberp.org/HomePage
Download the latest release:
http://sourceforge.net/projects/web-erp/
Installation instructions:
http://web-erp.svn.sourceforge.net/viewvc/web-erp/trunk/doc/INSTALL.txt?revision=4516
http://www.weberp.org/weberp/doc/Manual/ManualContents.php?ViewTopic=GettingStarted
Reproduce the demo example:
http://www.weberp.org/weberp/doc/Manual/ManualContents.php?ViewTopic=CreatingNewSystem

8. JFire
http://www.jfire.net/home
Download the latest release:
http://www.jfire.net/download
Installation instructions:
https://www.jfire.org/modules/phpwiki/index.php/Installation
Reproduce the Invoice booking process example:
https://www.jfire.org/modules/phpwiki/index.php/Invoice%20booking%20process

9. Apache OFBiz
http://ofbiz.apache.org/
Download the latest release:
http://ofbiz.apache.org/download.html
Installation instructions:
https://cwiki.apache.org/OFBADMIN/demo-and-test-setup-guide.html
Reproduce the demo example:
https://cwiki.apache.org/OFBIZ/ofbiz-tutorial-a-beginners-development-guide.html

10. Openbravo
http://www.openbravo.com/
Download the latest release:
http://www.openbravo.com/downloads/files/
Installation instructions:
http://wiki.openbravo.com/wiki/Installation
Reproduce the demo example:
http://wiki.openbravo.com/wiki/Quick_Guide

11. OpenERP
http://www.openerp.com/
Download the latest release:
http://www.openerp.com/downloads
Installation instructions:
http://doc.openerp.com/v6.0/install/index.html#installation-link
Reproduce the demo example:
http://doc.openerp.com/v6.0/book/1/1_3_Real_Case/1_3_Real_Case_use_case.html

12. Opentabs
http://www.opentaps.org/
Download the latest release:
http://sourceforge.net/projects/opentaps/
Installation instructions:
http://www.opentaps.org/docs/index.php/Opentaps_Installation_Manual
Reproduce the Customer Management Processing Power example:
http://www.opentaps.org/docs/index.php/Opentaps_Users_Manual#Using_Customer_Management_Processing_Power

13. xTuple PostBooks
http://www.xtuple.com/postbooks
Download the latest release:
http://sourceforge.net/projects/postbooks/
Installation instructions:
http://www.xtuple.org/docs/admin-and-setup
Reproduce the Quote-to-Cash and Project Tracking example:
http://www.xtuple.org/sites/default/files/prodguide/Service-HTML/index.html

14. LedgerSMB
http://ledgersmb.org/
Download the latest release:
http://ledgersmb.org/download
Installation instructions:
http://ledgersmb.org/help/install
Reproduce the Quotations and Order Management example (see section 11):
http://ledger-smb.svn.sourceforge.net/viewvc/ledger-smb/trunk/doc/LedgerSMB-manual.pdf

15. SQL-Ledger

http://www.sql-ledger.com/

Download the latest release:

http://www.sql-ledger.com/cgi-bin/nav.pl?page=source/index.html&title=Download

Installation instructions:

http://www.sql-ledger.com/cgi-bin/nav.pl?page=source/windows/sql-ledger-windows-howto.html

Reproduce the demo example:

http://www.sql-ledger.com/misc/samplechapter.pdf

Project 2: Service-oriented Systems Integration Design Solutions

For this project, students are required to identify a particular systems integration problem and design a service-oriented solution to address the problem. This project is divided into a set of three assignments:

First Assignment

Provide detailed description of systems integration problem for a specific organization. Integration problem and organization can be real or fictitious. The integration problem should be complex enough to warrant utilization of advanced service integration technologies. The problem must involve more than three applications and five interactions among them. Here are some integration problem examples from Enterprise Integration Patterns book:

http://eaipatterns.com/SystemManagementExample.html

http://eaipatterns.com/BondTradingCaseStudy.html

http://eaipatterns.com/Chapter1.html (see Widget-Gadget Corp example)

Second assignment

Provide preliminary analysis and design for the identified systems integration problem. This preliminary solution should contain a conceptual service-oriented architecture design, depicting different service components along with existing applications/systems and interactions among these components. Provide detailed description for each component and interaction. For example, provide details on the application modules involved within a service component and existing application/system; whether a service component is atomic service or composed services; details of messages and documents exchanged between components; application programing interface details; data exchange format details; user interface details; service client interface details; and utilization of protocols and standards. Provide example scenarios and use cases to demonstrate the actual usage of your solution.

Third assignment

Provide detailed design solution and implementation plan for the identified systems integration problem. Discuss assumptions made to analyze the problem and design the solution. Justify your assumptions, design decisions, and solutions adopted. Justify why you made such decisions and why they make sense. Provide detailed plan to implement designed solution along with details of service-oriented frameworks, platforms, servers, orchestration engines, etc. Discuss the feasibility of the implementation plan. Provide recommended products that will be used for the implementation. Provide comparative feature set evaluation of similar products to justify your selection. Discuss shortcomings of the solution developed and how it could be improved.