



MANAGEMENT OVERVIEW

**A GUIDE TO THE BENEFITS OF USING
XA-OPEN**

XA-Open Analysis & Documentation for PC Based Languages

The PC based programming has picked up in the recent times to leverage the power of the IBM i. Java, C#, PHP, Visual Basic (.Net), .Net(VB.Net) and Power Builder programmers are writing programs to access the IBM i for some time now.

The IBM's Toolbox for Java is a library of the Java classes supporting the client/server and internet programming models to a system running the OS/400 or the i5/OS. This has greatly simplified the use of the Java to access data and resources on the IBM i.

This brings up the need of analyzing a PC based application along with the IBM i application. The Databorough's XA-Open is the answer to this.

Benefits

The XA-Open offers following benefits:

- Builds cross-reference repository over Java, C#, PHP, Visual Basic, .Net and Power Builder
- Gives a choice of linking the repository to an existing IBM i repository
- SVN support for Java applications
- Supports sharing of the repository with other users on LAN
- Schedule refresh option for SVN repositories

And many more...

The XA-Open is a special module of the X-Analysis product suit. It is available as a standalone version. The XA-Open module extends to the X-Analysis. It builds cross-reference repository for a selected PC languages, in similar manner as X-Analysis does. Currently, it works on applications written in:

- Java
- C#
- PHP
- Visual Basic
- Visual Basic.Net
- Power Builder

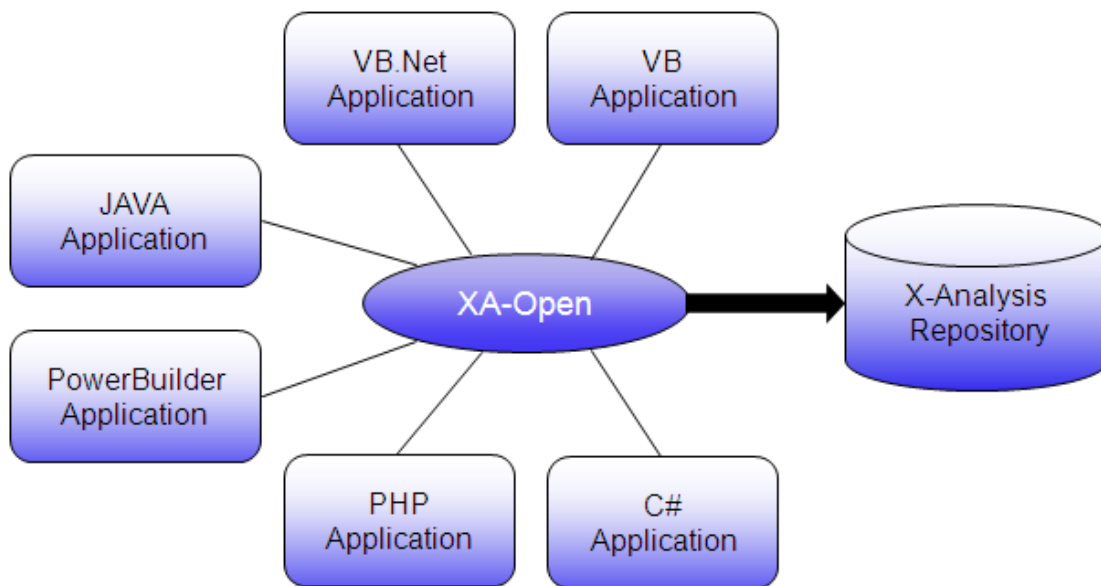


Illustration 1: XA-Open Overview

The generated cross-reference repository can be accessed using the X-Analysis. All basic features of the X-Analysis are available to the XA-Open application which includes, cross-referencing, pseudo code views, graphical program analysis, variable level impact analysis, graphical flow/structure charts, data analysis, etc.

The XA-Open provides analysts, developers, architects and operations teams with detailed analysis and interactive diagrammatic constructs that enable rich understanding of existing applications.

Simple and easy interface of the XA-Open ensures quick generation of repository. The interface gives choice of various supported languages. It also offers a choice of linking the PC repository to an existing IBM i repository, created using the X-Analysis on IBM i, for combined analysis.

Benefits of Using XA-Open for Java Repository

The following are the benefits for a Java repository, generated from XA-Open:

- Java programs are identified as objects with attribute JAVA under object list on the X-Analysis client
- IBM i Application's table / PFs, manipulated using SQL queries by Java programs, get shown on Where Used and Data Flow Diagram
- Stored Procedure Calls made from Java Programs shows the reference on the External Program on Data Flow Diagram
- Zoom Source on Java Program opens the source in Eclipse Java editor
- Java References option searches all the text references for the selected object within Java Projects in the workspace
- Creates cross-reference library directly from SVN projects
- Full name (Long Name) support for Java Classes
- Schedule refresh option automatically refresh the cross reference repository

Screen Outputs for Java repository

The Object List depicting that the Java project is initialized from a SVN location and is also using Long Names.

Library	Name	Type	Attribute	Description
svn://ziazcomputer/kishorepos/...	AASECDAO	*PGM	JAVA	AASECDAO
svn://ziazcomputer/kishorepos/...	AASECDAOHibernate	*PGM	JAVA	AASECDAOHibernate
svn://ziazcomputer/kishorepos/...	ActivityDAOHibernate	*PGM	JAVA	ActivityDAOHibernate
svn://ziazcomputer/kishorepos/...	ActivityDAO	*PGM	JAVA	ActivityDAO
svn://ziazcomputer/kishorepos/...	ActivityDetails	*PGM	JAVA	ActivityDetails
svn://ziazcomputer/kishorepos/...	ActivityEmps	*PGM	JAVA	ActivityEmps
svn://ziazcomputer/kishorepos/...	Activity	*PGM	JAVA	Activity
svn://ziazcomputer/kishorepos/...	AswPurchaseOrderHeaderKey	*PGM	JAVA	AswPurchaseOrderHeaderKey
svn://ziazcomputer/kishorepos/...	AswDAOHibernate	*PGM	JAVA	AswDAOHibernate
svn://ziazcomputer/kishorepos/...	AswDAO	*PGM	JAVA	AswDAO
svn://ziazcomputer/kishorepos/...	AswDelegate	*PGM	JAVA	AswDelegate
svn://ziazcomputer/kishorepos/...	AswName	*PGM	JAVA	AswName
svn://ziazcomputer/kishorepos/...	AswPurchaseOrderHeader	*PGM	JAVA	AswPurchaseOrderHeader
svn://ziazcomputer/kishorepos/...	AutoBuyCriteriaDAOHibernate	*PGM	JAVA	AutoBuyCriteriaDAOHibernate
svn://ziazcomputer/kishorepos/...	AutoBuyCriteriaDAO	*PGM	JAVA	AutoBuyCriteriaDAO
svn://ziazcomputer/kishorepos/...	AutoBuyCriteriaKey	*PGM	JAVA	AutoBuyCriteriaKey

Illustration 2: Object List - Java repository

The Data Flow Diagram depicts the interaction of a Java object from IBM i objects. This is possible for Java projects interacting with IBM i application databases. The XA-Open's interface provide special option for linking PC repository with IBM i repository.

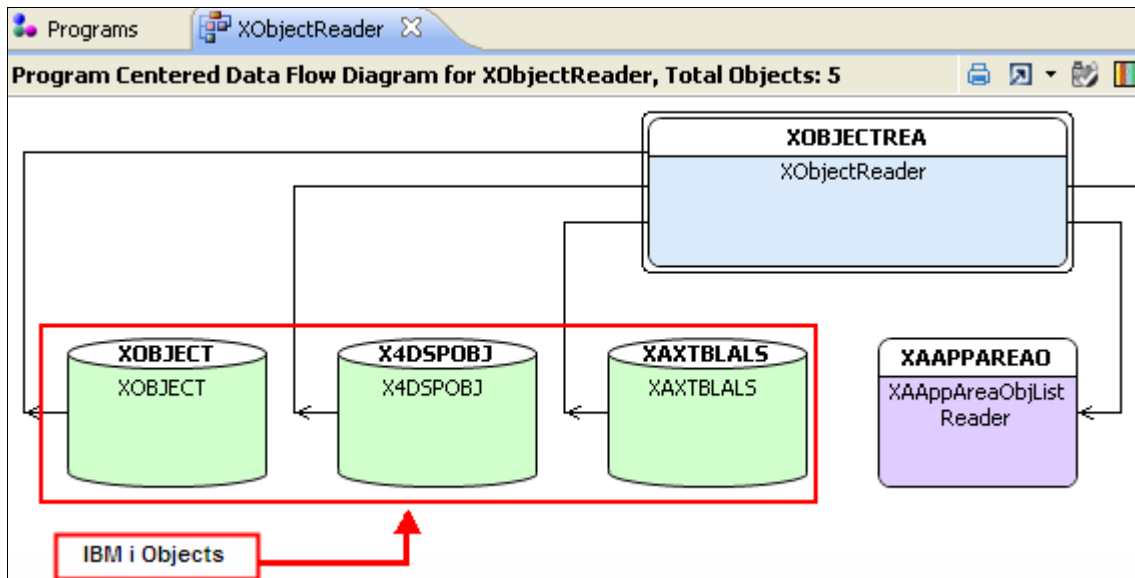


Illustration 3: Java Object referencing File Object on IBM i

The Java source member can be invoked in Java editor (which is part of eclipse). This provides better understanding and modification of Java source.

```

package com.bertrams.bertweb.dao;

import java.util.Date;

public interface ActivityDAO {
    public List<Activity> getActivitiesList(Date startDate, Date endDate, S
    public List<Activity> getActivitiesList(String startDate, String endDat

    public List<ActivityEmps> getActivityEmps(String activityType, Date sta
    public List<ActivityEmps> getActivityEmps(String activityType, String s

    public List<WarehouseProductivity> getActivityDetails(String activityTy
    public List<WarehouseProductivity> getActivityDetails(String activityTy
    public List<WarehouseProductivity> getOpenActivities(Date cutOffDate, S

    public void forceCloseRecord(long id, Date endDate);

    public ProductivityFunction getProductivityFunction(String function);
}

```

Illustration 4: Java Source in Java Editor

Schedule refresh option automatically refresh the Java cross reference repository. This is a special feature for the SVN projects. User can schedule the refresh option accordingly, which then automatically updates the Java cross reference.

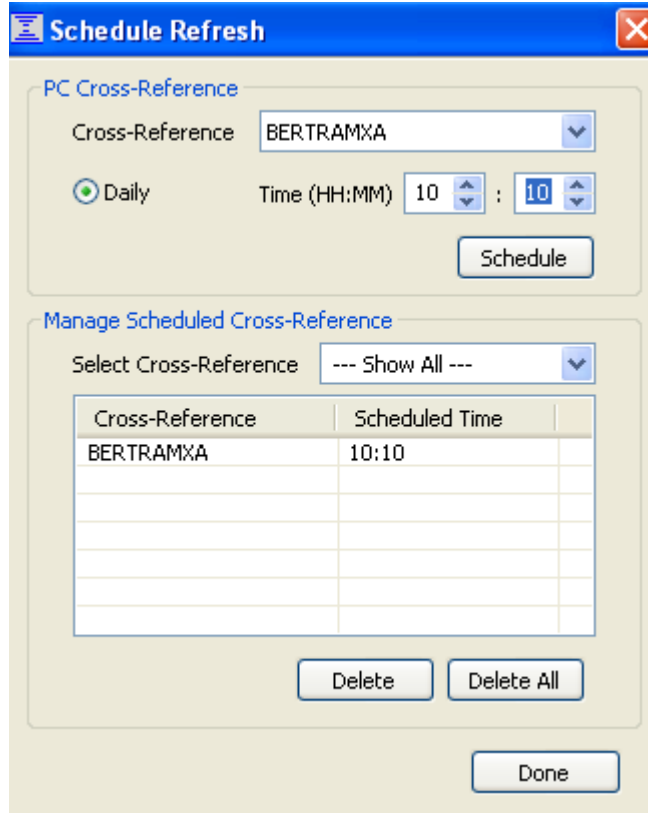


Illustration 5: Schedule Refresh for SVN Projects

Benefits of Using XA-Open for C# Repository

The following are the benefits for a C# repository, generated from XA-Open:

- C# programs are identified as objects with attribute CS under object list on the X-Analysis client
- IBM i Application's Table/PFs, manipulated using SQL queries by CS programs, get shown on Where Used and Data Flow Diagram
- Stored Procedure Calls made from CS programs shows the reference on the External Program on Data Flow Diagram
- Zoom Source on CS program opens the source in X-Analysis client

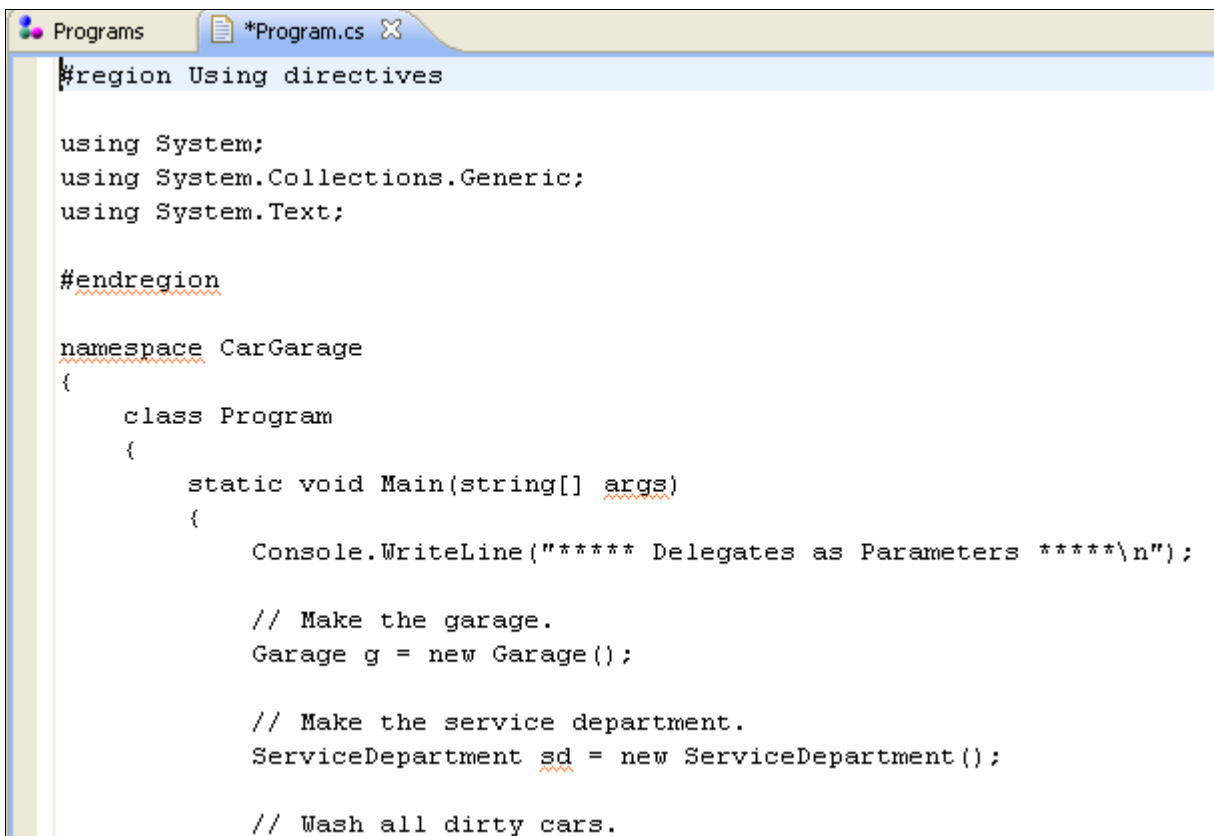
Screen Outputs for C# Repository

The Object List depicting the C# objects.

Library	Name	Type	Attribute	Description
E:\test\C#\Finex Desktop	AccountStatementDialog	*PGM	CS	AccountStatementDialog
E:\test\C#\Finex Desktop	AccountStatementDialog	*PGM	CS	AccountStatementDialog
E:\test\C#\Finex Desktop	AccountStatementScreen	*PGM	CS	AccountStatementScreen
E:\test\C#\Finex Desktop	AccountStatementScreen	*PGM	CS	AccountStatementScreen
PF E:\test\C#\Finex Desktop	ACCOUNTMAS	*FILE	PF	ACCOUNTMASTER
E:\test\C#\Finex Desktop	AccountUtils	*PGM	CS	AccountUtils
E:\test\C#\Finex Desktop	AccountStatementPrintRe...	*PGM	CS	AccountStatementPrintRep...
E:\test\C#\Finex Desktop	AccountStatementPrintRe...	*PGM	CS	AccountStatementPrintRep...
E:\test\C#\Finex Desktop	AccountStatementReport...	*PGM	CS	AccountStatementReportVi...
E:\test\C#\Finex Desktop	AccountStatementReport...	*PGM	CS	AccountStatementReportVi...
E:\test\C#\Finex Desktop	AdminFrmMain	*PGM	CS	AdminFrmMain
E:\test\C#\Finex Desktop	AdminFrmMain	*PGM	CS	AdminFrmMain
E:\test\C#\Finex Desktop	AdminLoader	*PGM	CS	AdminLoader
E:\test\C#\Finex Desktop	Application	*PGM	CS	Application
E:\test\C#\Finex Desktop	AssemblyInfo	*PGM	CS	AssemblyInfo
E:\test\C#\Finex Desktop	AssemblyInfo	*PGM	CS	AssemblyInfo
E:\test\C#\Finex Desktop	AssemblyInfo	*PGM	CS	AssemblyInfo
E:\test\C#\Finex Desktop	AssemblyInfo	*PGM	CS	AssemblyInfo
E:\test\C#\Finex Desktop	AssemblyInfo	*PGM	CS	AssemblyInfo
E:\test\C#\Finex Desktop	AssemblyInfo	*PGM	CS	AssemblyInfo
E:\test\C#\Finex Desktop	AssemblyInfo	*PGM	CS	AssemblyInfo
E:\test\C#\Finex Desktop	AssetsPrintReport	*PGM	CS	AssetsPrintReport
E:\test\C#\Finex Desktop	AssetsPrintReport	*PGM	CS	AssetsPrintReport

Illustration 6: Object List - C# repository

The CS source member can be invoked in simple text editor (which is the part of eclipse).



```
#region Using directives

using System;
using System.Collections.Generic;
using System.Text;

#endregion

namespace CarGarage
{
    class Program
    {
        static void Main(string[] args)
        {
            Console.WriteLine("***** Delegates as Parameters *****\n");

            // Make the garage.
            Garage g = new Garage();

            // Make the service department.
            ServiceDepartment sd = new ServiceDepartment();

            // Wash all dirty cars.
        }
    }
}
```

Illustration 7: CS Program in text editor

Benefits of Using XA-Open for PHP Repository

The following are the benefits for a *PHP* repository, generated from XA-Open:

- *PHP* programs are identified as objects with attribute *PHP* under object list on the X-Analysis client
- IBM i Application's Table/PFs, manipulated using SQL queries by *PHP* programs, get shown on Where Used and Data Flow Diagram
- Stored Procedure Calls made from *PHP* programs shows the reference on the External Program on Data Flow Diagram
- Zoom Source on *PHP* program opens the source in X-Analysis client

Screen Outputs for PHP Repository

The Object List depicting the *PHP* objects.

Library	Name	Type	Attribute	Description
E:\PHP projs	addrememp	*PGM	PHP	addrememp
E:\PHP projs	add team	*PGM	PHP	add team
E:\PHP projs	add user in team	*PGM	PHP	add user in team
E:\PHP projs	adjustuser	*PGM	PHP	adjustuser
E:\PHP projs	adminlinkform	*PGM	PHP	adminlinkform
E:\PHP projs	adminteamoption	*PGM	PHP	adminteamoption
E:\PHP projs	(All Teams)alakh07M...	*PGM	HTML	(All Teams)alakh07March
E:\PHP projs	(All Teams)All Employ...	*PGM	HTML	(All Teams)All Employees08Febru...
E:\PHP projs	(All Teams)All Employ...	*PGM	HTML	(All Teams)All Employees01March
E:\PHP projs	(All Teams)All Employ...	*PGM	HTML	(All Teams)All Employees03March
E:\PHP projs	(All Teams)All Employ...	*PGM	HTML	(All Teams)All Employees13Febru...
E:\PHP projs	(All Teams)All Employ...	*PGM	HTML	(All Teams)All Employees15Febru...
E:\PHP projs	(All Teams)All Employ...	*PGM	HTML	(All Teams)All Employees16Febru...
E:\PHP projs	(All Teams)All Employ...	*PGM	HTML	(All Teams)All Employees27Febru...
E:\PHP projs	(All Teams)All Employ...	*PGM	HTML	(All Teams)All Employees26March
E:\PHP projs	(All Teams)All Employ...	*PGM	HTML	(All Teams)All Employees26Febru...
E:\PHP projs	(All Teams)All Employ...	*PGM	HTML	(All Teams)All Employees09Febru...
E:\PHP projs	book	*PGM	PHP	book
E:\PHP projs	checklogin	*PGM	PHP	checklogin

Illustration 8: Object List - PHP repository

The PHP source member can be invoked in simple text editor (which is the part of eclipse).

```

<?php
header('Expires: Mon, 26 Jul 1997 05:00:00 GMT');
header('Cache-Control: no-store, no-cache, must-revalidate');
header('Cache-Control: post-check=0, pre-check=0', FALSE);
header('Pragma: no-cache');
extract($_POST);
session_start();
session_register('sessiondata');
sessioncheck();
function sessioncheck()
{
    global $username, $pass;
    $_SESSION['username'] = trim($username);

    // Open connection to the database
    $conn=odbc_connect('progrep', '', '');
    $result = odbc_exec($conn, "select * from employee where e:
    while($row = odbc_fetch_array($result))
    {

```

Illustration 9: PHP Program in text editor

Benefits of Using XA-Open for VB/VB.Net Repository

The following are the benefits for a VB/VB.Net repository, generated from XA-Open:

- VB/VB.Net programs are identified as objects with attribute FRM, BAS, CLS, CS, DSR/VB under object list on the X-Analysis client
- IBM i Application's Table/PFs, manipulated using SQL queries by VB/VB.Net programs, get shown on Where Used and Data Flow Diagram
- Stored Procedure Calls made from VB/VB.Net Programs shows the reference on the External Program on Data Flow Diagram.
- Zoom Source on VB/VB.Net Program opens the source in the X-Analysis editor

Screen Outputs for VB / VB.Net Repository

The Object List depicting VB.Net objects.

Library	Name	Type	Attribute	Description
PF STUART-VB.	CLBFPROD	*FILE	PF	CLBFPROD
PF STUART-VB.	CLFFBED	*FILE	PF	CLFFBED
PF STUART-VB.	CLFFBEH	*FILE	PF	CLFFBEH
PF STUART-VB.	CLFFCTL	*FILE	PF	CLFFCTL
PF STUART-VB.	CLFFMAS	*FILE	PF	CLFFMAS
PF STUART-VB.	CLFFMTRZ	*FILE	PF	CLFFMTRZ
PF STUART-VB.	CLFFTFR	*FILE	PF	CLFFTFR
PF STUART-VB.	CLOFORD	*FILE	PF	CLOFORD
PF STUART-VB.	MCAFMAS	*FILE	PF	MCAFMAS
PF STUART-VB.	MCAFMTR	*FILE	PF	MCAFMTR
PF STUART-VB.	MCAFQTRN	*FILE	PF	MCAFQTRN
PF STUART-VB.	MCAFTRN	*FILE	PF	MCAFTRN
PF STUART-VB.	MCAFUSR	*FILE	PF	MCAFUSR
PF STUART-VB.	MCBFBCH	*FILE	PF	MCBFBCH
PF STUART-VB.	MCBFBCM	*FILE	PF	MCBFBCM
PF STUART-VB.	MCBFCOMP	*FILE	PF	MCBFCOMP
PF STUART-VB.	MCBFUSR	*FILE	PF	MCBFUSR
PF STUART-VB.	MCCFDEL	*FILE	PF	MCCFDEL

Illustration 10: Object List - VB.Net repository

The Structure Chart diagram displaying forward call stack for a VB.Net objects.

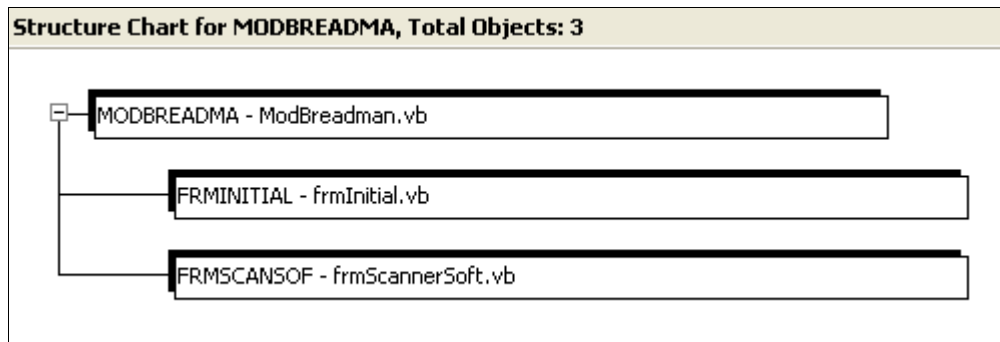


Illustration 11: Structure Chart Diagram for a VB.Net Program

Benefits of Using XA-Open for PowerBuilder Repository

The following are the benefits for a PowerBuilder repository, generated from XA-Open:

- PowerBuilder programs are identified as objects with PBL attribute under the object list on the X-Analysis client
- IBM i Application's Table/PFs, manipulated using SQL queries by PowerBuilder programs, get shown on Where Used and Data Flow Diagram
- Stored Procedure Calls made from PowerBuilder Programs shows the reference on the External Program on Data Flow Diagram
- Zoom Source on PowerBuilder Program opens the source in X-Analysis client

Screen Outputs for PowerBuilder Repository

The Object List depicting the PowerBuilder objects .

Library	Name	Type	Attribute	Description
ROOT	ACCESSTOO2	*PGM	PBL	accesstool.sra
ROOT	ACCESSTOO3	*PGM	PBL	accesstool.sra
PFROOT	AFXFILTER	*FILE	PF	AFXFILTER
PFROOT	AFXFILTERD	*FILE	PF	AFXFILTERD
PFROOT	AFXINFO	*FILE	PF	AFXINFO
PFROOT	AFXKEYGEN	*FILE	PF	AFXKEYGEN
PFROOT	AFXPTOSEIS	*FILE	PF	AFXPTOSEIS
PFROOT	AFXTABLEFI	*FILE	PF	AFXTABLEFIELDS
PFROOT	AFXTRANSLA	*FILE	PF	AFXTRANSLATE
ROOT	ALERT2	*PGM	PBL	alert.sra
ROOT	ALERT3	*PGM	PBL	alert.sra
PFROOT	ALL_CLUSTERE	*FILE	PF	~ALL_CLUSTERS~
PFROOT	ALL_CONSTR	*FILE	PF	~ALL_CONSTRAINT...
PFROOT	ALL_CONST1	*FILE	PF	ALL_CONSTRAINTS
PFROOT	ALL_DB_LIN	*FILE	PF	~ALL_DB_LINKS~
PFROOT	ALL_INDEXE	*FILE	PF	~ALL_INDEXES~
PFROOT	ALL_OBJECT	*FILE	PF	ALL_OBJECTS
PFROOT	ALL_TRIGGE	*FILE	PF	~ALL_TRIGGERS~
ROOT	APP_SYSTRA	*PGM	PBL	app_systray.sra
ROOT	APP_SYSTR1	*PGM	PBL	app_systray.sra

Illustration 12: Object List - PowerBuilder repository

The Structure Chart diagram displaying forward call stack for a PBL program.

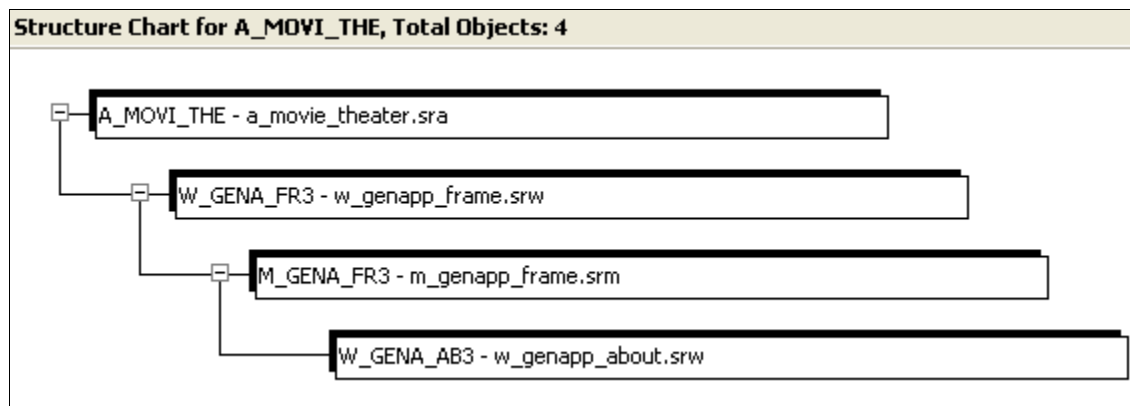


Illustration 13: Structure Chart Diagram for a PBL Program

Highlights

- Simple to use - Eclipse based plug in
- Real time documentation - Comprehensive, accurate and current documentation of an application
- Solution for multi-level impact analysis and cross-referencing of the complex PC applications
- Export to various tools viz. PDF/MSWord, MS Visio and Spreadsheet (not dependent on the MS Office)
- Forward call stack using Structure Charts
- Graphical code documentation of the entire system
- Program Flow-charting
- Links to the Java & simple text editors
- SVN support for Java applications
- Easy linkage of PC application with IBM i repository

The XA-Open provides analysts / developers / architects with detailed analysis, interactive diagrammatic constructs (that enable rich understanding of applications) and automatic system documentation of an existing PC based system along with the IBM i application.

Experience the fully loaded X-Analysis with 30 days trial copy of the software.
For any information regarding the X-Analysis please visit our web site:

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