General Comparisons with X-Analysis

X-Analysis is really the only true AS400 product for reverse engineering a high level model of your code, for subsequent documentation and re-design use. However there are a number of older products that compete with different aspects of the XA functionality:

1. Mainframe Source Code analysis tools such as WSAA can do a good job on a system of just a few programs but are usually impractical for building a high level model of a normal AS400 application (which typically exists of thousands of objects, at the very least, many hundred). XA will score over these particularly in its ability to easily browse from an overview of a complete application (such as an ERD diagram (DMD) or Structure Chart) down to the detailed level through X-Analysis' graphic interface with very little effort required at all. Furthermore, in our experience only XA has been able to provide true high level model diagrams of such extensive systems - other tools simply focus on one piece of the "jigsaw" at one time.

2. "Documentation" tools which simply take an extract of AS400 information out to the PC for use in PC drawing tools such as Visio. This source of competition used to be significant but has faded now because XA has its own powerful facilities for output to Word, Visio, and other client tools.

3. Earlier AS400 "cross-referencing" tools. These have existed for almost 20 years now in some cases and have quite large user bases - and are quite successful for the green screen "cross referencing" purpose (e.g. where in a system is a field or file used). However, though these tools are sometimes called "documentation" products, their output is not really documentation in the same sense as XA's high level diagrams (DMDs, DFDs, SCDs) and also is of little use in the "application understanding" role which is often the primary purpose in purchasing a documentation product.

In general, X-Analysis scores over all comparable products in that it both:

A. Has a repository of absolutely every detail of the application, down to every line of source code and has been evolved along with the AA400 for more than 20 years

AND

B. Can present this information in the form of very high level diagrams which conform to industry-wide analysis standards (DMD.DFD,SCD etc.) and this information is presented in a truly interactive graphic interface conforming to modern GUI standards.

A Comparison with Hawkeye

Below are some interesting points with regards the comparison between X-Analysis and Hawkeye:

1. As a result of point 1. Hawkeye uses the concept of ACTION/OBJECT in its execution whereas windows based products use OBJECT/ACTION. This means that users must know exactly what action and object will be carried out before any information can be supplied. This is typical of green screen AS/400 COMMAND driven applications. This makes the product itself less intuitive than a Windows based application such as X-Analysis, that allows users to initiate actions from a point within the application, such as browsing a line of source code or looking at a DDS. X-Analysis has the advantage of having both a windows interface, AND a green screen command driven component.

This means that users can view source from within X-Analysis and then execute command such as where used, where updated, display data flow, display program structure diagram, export to MS Word, print, book mark etc. directly from the line of code that is of interest. In fact, the windows product is context sensitive to the point that it will recognize each of the factors individually on a given line of code and allow subsequent actions from each factor.

2. Hawkeye is primarily a cross-referencing tool it is not a documentation tool. Graphical representations and general documentation are not available. X-Analysis is the world leader in AS/400 documentation AND cross-referencing. Data flow diagrams, Structure charts, subroutine explosions, Data Model Diagrams, VISIO diagram generation, MS Word project documentation, RPG code automatically converted into structured English, are just some of the features offered in X-Analysis.

3. Hawkeye is not source based. It does use the source to scan for where-used instances on a field/file for example, but this is purely a FNDSTRPDM used in their application. X-Analysis actually analyses the entire source and objects of the application and details the cross-referencing down to variables AND indicators used in programs. In this way it is possible to carry out an impact analysis on not only the instances of a field/file combination, but also to all of the multi level instances of the variables and their variables and field aliases, where data is passed during the execution of a program, and subsequent program calls.

4. Hawkeye does not have any data modelling capabilities. X-Analysis automatically builds an entire data encyclopedia of the database definition. It then builds a data model that defines the exact nature of the relationship between all of the entities in the system. This is then presented in a data model diagram or ERD inside of X-Analysis. There are some very powerful add on functions pertinent to this data model such as producing DDL for migration to new RDBMS or in import into other modelling tools such as CA's All Fusion or System Architect. In addition to this, X-Analysis modules for automated test data sub setting, data archiving, referential integrity testing, automated field and file resizing use this data model.

5. Fiserv, the largest financial software company for iSeries recently upgraded from Hawkeye to X-Analysis. Their developers throughout the world are moving onto X-Analysis as a standard within the entire iSeries Division of Fiserv.

Comparisons with Abstract & Arcad

Below are some interesting points with regards the comparison between X-Analysis and ASC's Abstract Probe:

1. X-Analysis cross-references all versions of RPG/COBOL/JAVA/SQL/CL down to variables and through levels of variables within the source code.

2. X-Analysis actually cross-references JAVA and the source content down to variables, and not just calls to JAVA pgms.

3. X-Analysis has an interactive source code browser that allows users to see code at varying levels of detail, RPG as PSEUDO code(Structured English with field/file texts), Indented views, variable/indicator cross-referencing within a source member, and navigation through point and click drilling down through members referenced in the code. This will become integrated with LPEX in WDSC.

4. X-Analysis can build a data model retrospectively from the implemented application RPG/COBOL code, neither Abstract nor Arcad has data modeling facilities.

5. X-Analysis has allows users to document and application graphically with structure charts, data flow diagrams, flow charts, and data model diagrams. All diagrams can be exported to Visio, or viewed interactively with drill-down capabilities

6. X-Analysis allows users to extract, analyze and document business rule logic buried inside RPG & COBOL programs. These Business Rules can be generated into new stored procedures or converted for JAVA for modernization projects in WDSC/RDi/Eclipse. These rules can be searched, annotated, compared, exported and reused in other languages or rules engines

7. X-Analysis can be used to create logical areas of an entire system for documentation, analysis or allocation of responsibility. These areas can be embedded down to an infinite number of levels allowing for even the most complex arrangements. X-Analysis also automatically includes all relevant objects, AND

8. X-Analysis has a MS Word project documentation wizard. Individual objects, parts of the system, or even the entire system can be automatically documented with contents, index and annotation included.

9. X-Analysis not only integrates with WDSc, but is becoming a part of WDSc with co development efforts between IBM and Databorough, not just as plug-ins to IBM's product.

10. There are many additional features such as test data management, field and file and program reengineering, referential integrity validation, software change management.

11. X-Analysis is the only tool that extracts the an explicit Data Model from a legacy application by reading the database and RPG or COBOL logic itself to derive the foreign key relationships. X-Analysis automatically builds an entire data encyclopedia of the database definition. It then builds a data model that defines the exact nature of the relationship between all of the entities in the system. This is then presented in a data model diagram or ERD inside of X-Analysis. There are some very powerful add on functions pertinent to this data model such as producing DDL for migration to new RDBMS or export into other modeling tools such as CA's All Fusion or IBM's Rational Software Architect. In addition to this, X-Analysis modules for automated test data sub setting, data archiving, referential integrity testing, automated field and file resizing, database globalization and IBM DB2 Web Query meta data building useing this data model.

12. X-Analysis can extract and document legacy applications into UML diagrams such as Activity, use cases, and class diagrams. X-Analysis also provides UML extensions for screen flows, and meta data and business rules for modernization and migration of legacy systems.

13. X-Analysis can modernize a production database from DDS to SQL totally automatically without any need to recompile any RPG or COBOL PROGAMS.

Stuart Milligan,

Databorough Ltd,

September 2008.

Databorough.
producers of X-Analysis