Impact Analysis with ib-ARM

Impact Analysis is about analyzing the impact of changes to your application. Impact Analysis involves the assessment of the layers of services, programs, classes, databases, schedulers, documentation and other components, in order to implement a given modification to an application software system. Impact analysis can involve assessing the impact of a change internally, within a component and externally, the impacts on other components. **ib-ARM** has numerous features available to assist analysts in performing Impact Analysis tasks.

Finding Components via Search

Impact Analysis begins with selecting components to be analyzed. **ib-ARM** contains a powerful search facility used to find objects in the repository. Search works across all applications, all technologies and includes documents that have been included in the repository.

- Search by component name – if the analyst knows the name of components (i.e. program, copybook, variable, method, etc.) where analysis will start, use the Name search to quickly navigate to the component.
- Search in source code – if the analyst knows other information such as a report title or screen label, then use the Source search to locate the component that creates or uses the report or screen to be changed.

Once a component has been located, there are many options for the analyst depending on the type of change that is contemplated.

Internal Impacts – within a component

Used to determine locations to be changed and the impact of the change on the component.

- Source view – source code is colorized and hyperlinked for easier viewing. The browser find facility is used to locate variables, text, etc. within the source code.
- Expanded source – included files (e.g. copybooks, procs) are embedded to make source browsing easier for analysts. Included files are shaded in green and dead code is shaded is grey so it can be clearly identified.
- Control Flow and Flowchart diagrams – these diagrams visually describe the internal structure of programs to help analysts understand how program control flows to various functions and paragraphs.

External Impacts – program dependencies

When a component is being changed, the analyst needs to understand how other components are impacted within the application or in other applications. Dependencies between programs, classes, services, databases, etc. are assessed to determine the consequences of a change. **ib-ARM** extracts these dependencies from the application source code and presents them in various textual and graphical formats to allow impacts to be assessed.

- Relationships view & diagram – provides the first level of impact on selected software components. Used to understand components that may be impacted by a change.
- Call Tree structure diagrams – provides a diagram of the extended impacts including the flow between services, programs, jobs, scripts and other components. Assists in visually understanding impacts across complex control structures, included control flows to other applications.

- Inheritance diagrams – provides a visual assessment of the inheritance impacts between classes.

External Impacts – data dependencies

When data components are is being changed, the analyst needs to understand the impacts on program components and other data components.

- Data Access (CRUD) view – provides details about program components that access database and file objects and the types of data access (C-create, R-read, U-update, D-delete).
- Extended Search – provides a concise trail from data fields and database objects to programs, scripts and other components that use the data objects. Used to understand the flow of components that will be impacted by a data change.
- Physical Data Model diagram – provides a diagram of the impacts between database tables based on foreign key / primary key relationships.

External Impacts – schedule dependencies

Jobs and scripts are impacted by the schedulers that are used to initiate them.

- Dependency diagram – displays the flow of jobs / scripts in the batch schedule. Used to determine the schedule dependencies between modified jobs or scripts. Also used to determine how much of the batch cycle must be tested based on the changes made.

Detailed Variable-level Impact Analysis

Program changes often involve changes at the field or variable level. It is very time-consuming and error-prone to trace the impact of a variable change through other variables and into other programs.

- Variable-level Impact Analysis – allows the impact of these changes to be traced and summarized. This facility provides a detailed analysis of a field level change through multiple levels of programs.

Estimation of Impacts

Once the components within the scope of the project have been identified, the size of the effort must be estimated.

- Impact Analysis - Estimation facility – the output from the detailed impact analysis can be directly fed into the Estimation facility that provides automated support for work effort estimations based on the size of the changes required and complexity of the components being changed.

About Information Balance, Inc.

Information Balance, Inc. develops software solutions to support large scale application development and maintenance practices across mainstream technology platforms. Its flagship product **ib-ARM** is a unique Application Portfolio Management (APM) solution. The company's clients include leading financial services, insurance, telecommunications and retail organizations across North America.

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