# Modern Application Management with X-Analysis

## Data-driven Decision Making

FRESCHE SOLUTIONS

# Presenter


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Specializes in developing tools and techniques for the automation of Application Understanding, Documentation,  Business process Mapping, Modernization and Testing

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# Agenda

- Introduction
- Building a Metadata Repository
- Use cases for the Metadata Repository
- Demo

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# Definition: Application Management

Application Management is a set of processes that cover the operation, maintenance, version control, and updates across a software application's lifecycle.

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Application Management is a set of processes that cover the operation, maintenance, version control, and updates across a software application's lifecycle.

Application Management implies that there is an Application Manager

## The BIG question

# How long will this take?

## The wrong, right answer…..

# I won’t know until I’m done.

# How a developer spends his day

- 5% - Writing New Code
- 20% - Modifying Existing Code
- 60% - Understanding the Code
- 15% - Everything Else

# What Makes Code Hard to Understand?

1. No comments or insufficient comments
2. Meaningless classes/methods/variables names
3. Large number of LOC in a class/method
4. Inconsistent coding styles
5. Navigating inheritance hierarchies
6. Query refinement
7. Query Refinement, and browsing a number of search results/links
8. Lack of documents, and ambiguous/incomplete document content
9. Searching for the relevant documents
10. Unfamiliarity with business logic

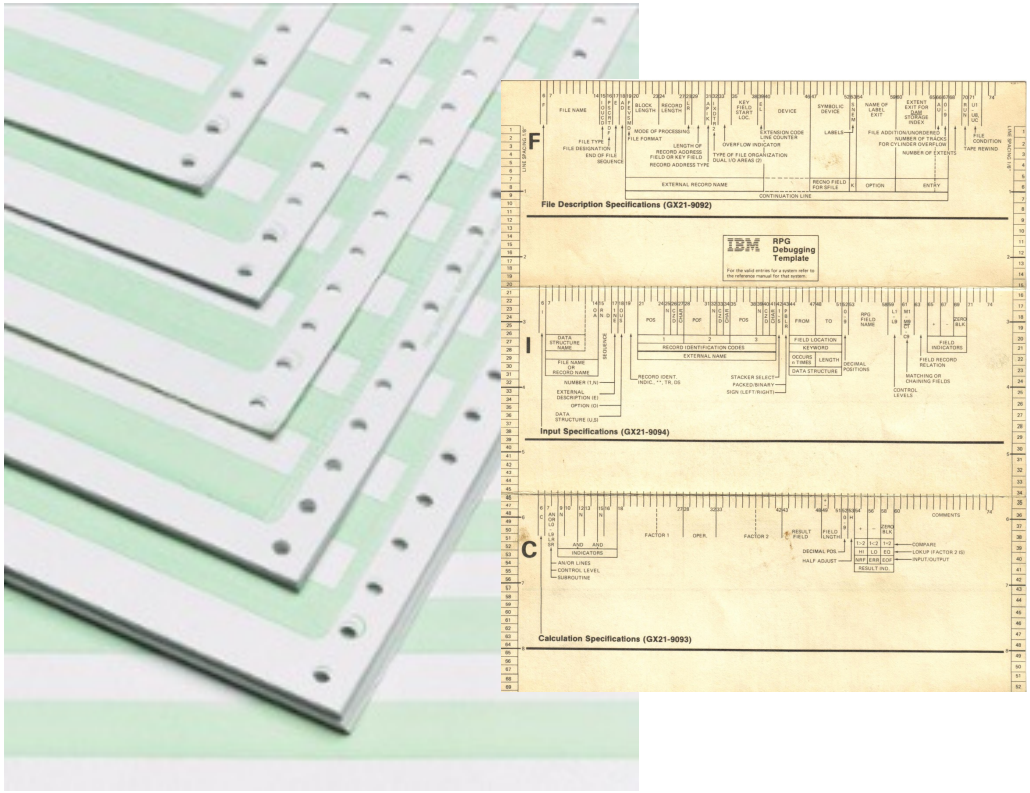
# Polling Question:

Where would you like to be able to save time?

# Application Discovery & Understanding

The process of automatically analyzing artifacts of a software application and determining metadata structures associated with the application in the form of lists of data elements and business rules. The relationships discovered between this application and a central metadata registry is then stored in the metadata registry itself.

# Original ADU tools

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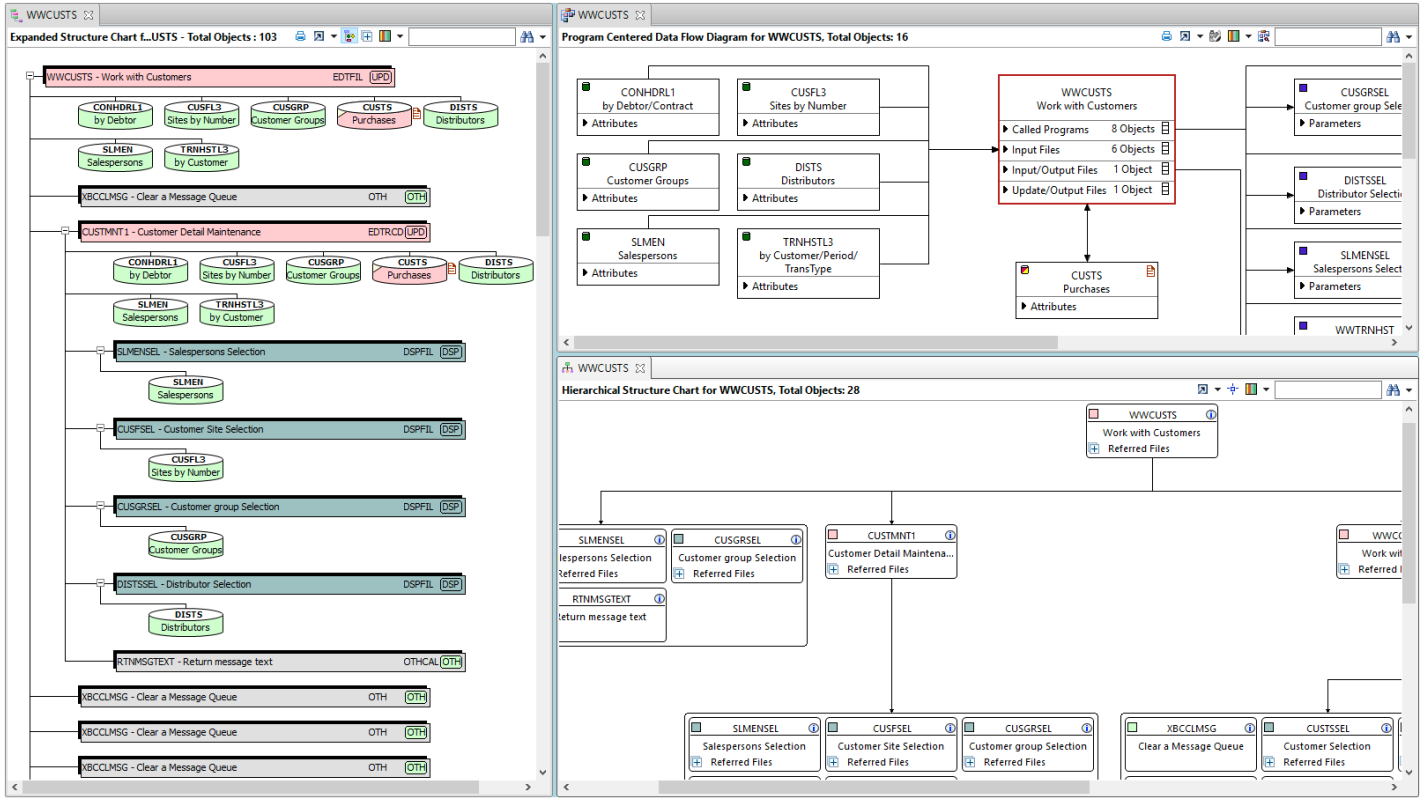
# Modern ADU tools

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# What metadata can be collected?

## System Attributes:

- Dates
  - Created
  - Changed
  - Last Used
- Description
- Object Type
- Object Attribute
- Link to Source

# What metadata can be collected?

## Dependencies:

- Database
  - Constraints
  - Access Paths
- Programs
  - Tables Used
  - Data Areas
  - Display Files
  - Printer files
  - Program Calls
  - Modules Used in a Program

# What metadata can be collected?

## User Defined Attributes:

- Business Function
- Jira Tracking
- RPG Docs
- Triage Notes

# Sources of Metadata

- “Outfile” Commands
- API’s
- SQL Views / UDTFs
- Source Code Analysis
- Open Source Tools/Utilities
- RPGDOCs
- Commercial Tools
- Manual Entry

# Metadata Collection Considerations

- Keeping the Metadata up to date
- File Overrides
- Library List
- Aliases
- Dynamically created objects
- Renamed Fields from tables
- Dynamic SQL
- Variable Program Calls

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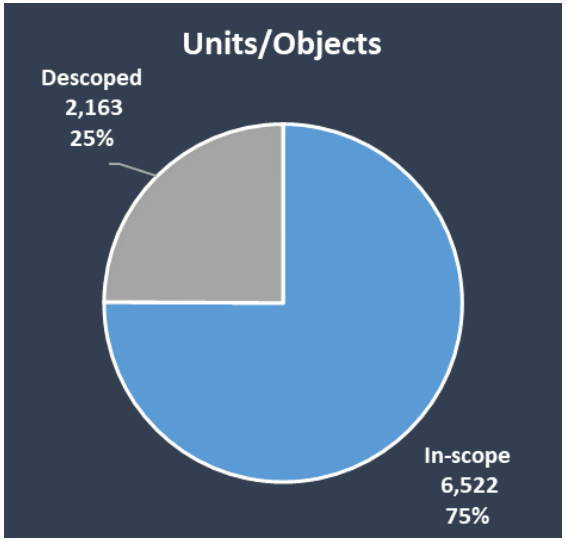
# Data-driven Decision Making

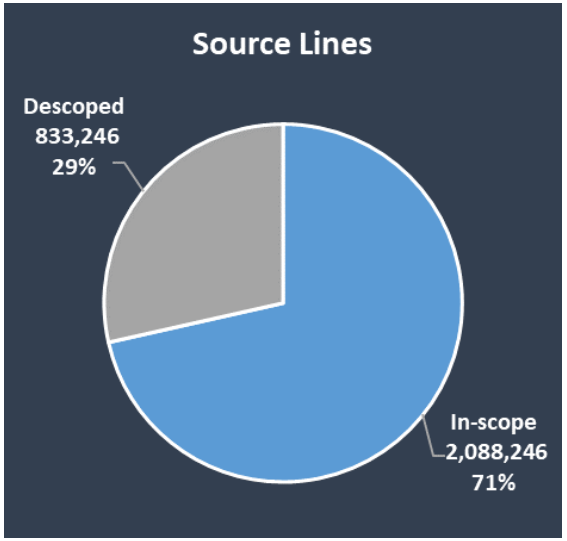
- How big is the project?
- How much effort is involved?
- What is the cost?
- What is the timeline?
- What are the risks involved?

**$$$ + Time + Risk**

# In-scope vs. Out of Scope

**Descoping unnecessary elements**




| Type | Global Units/Obj. | Global Source Lines | In-scope Units/Obj. | Inscope Source Lines | Out scope Units/Obj. | Out scope Source Lines |
|---|---|---|---|---|---|---|
| **Programs** | **8,685** | **2,921,492** | **6,522** | **2,088,246** | **2,163** | **833,246** |
| DB (Tables) | 5,866 | 223,420 | 5,618 | 213,043 | 248 | 10,377 |
| RPGs | 6,882 | 2,861,757 | 5,110 | 2,039,381 | 1,772 | 822,376 |
| CLs CMDs | 1,803 | 59,735 | 1,412 | 48,865 | 391 | 10,870 |
| Screens | 3,623 | - | 1,740 | - | 1,883 | - |
| Reports | 2,026 | - | 796 | - | 1,230 | - |

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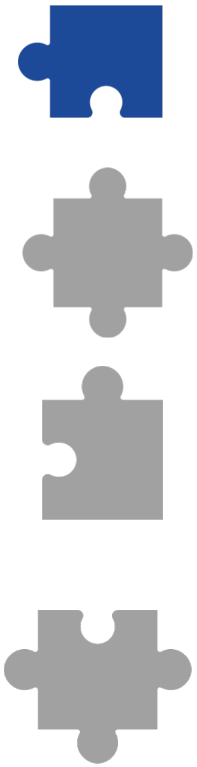
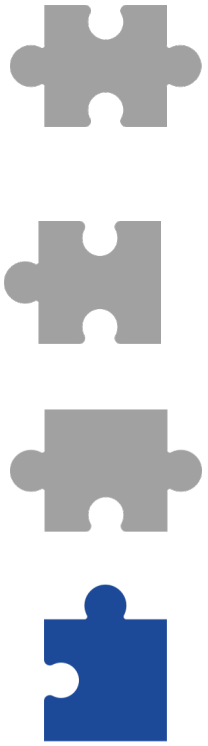
# Application Mapping



- Accounts Receivable
- Billing
- Equipment
- Gas
- General Ledger
- Inventory
- Job Costing



- Payable
- Payroll
- Purchases
- Service
- Utilities



- OBSOLETE

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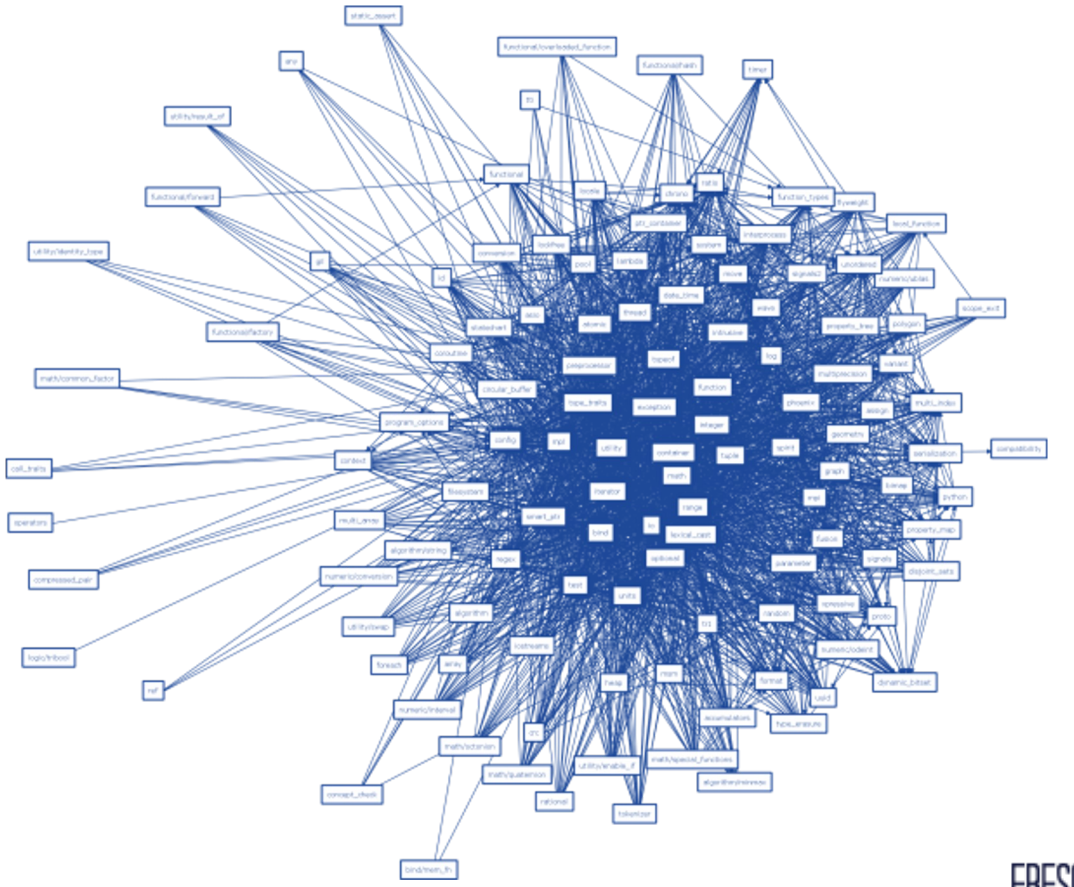
# Replacing an Application – Integration Points

- Tightly coupled
- Monolithic architecture
- No separation of concerns
- Multiple point-to-point interfaces
  - business logic
  - user interface
  - data



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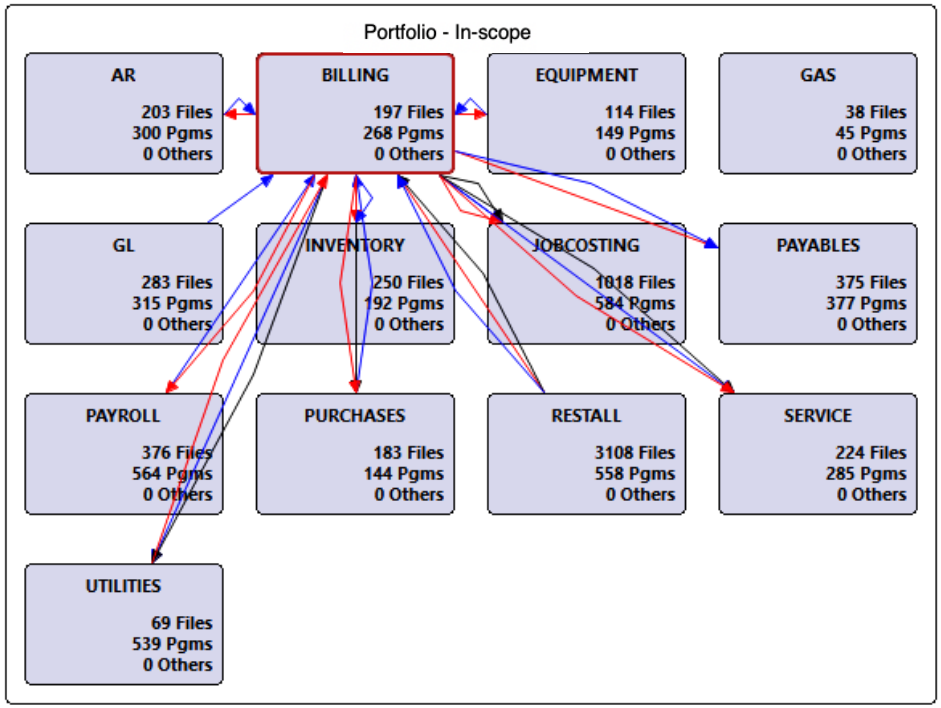
# Example: Application/Modules – Billing

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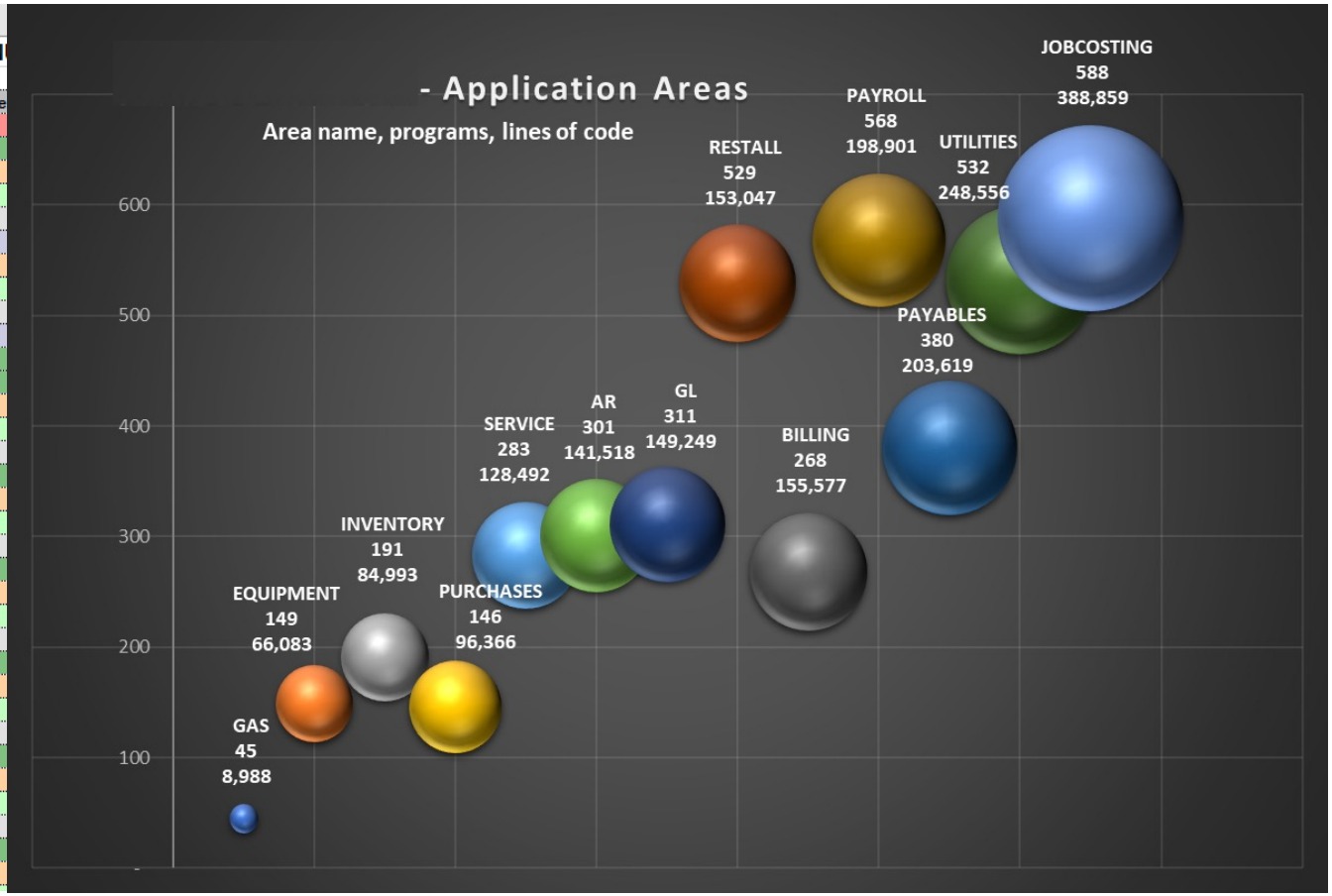
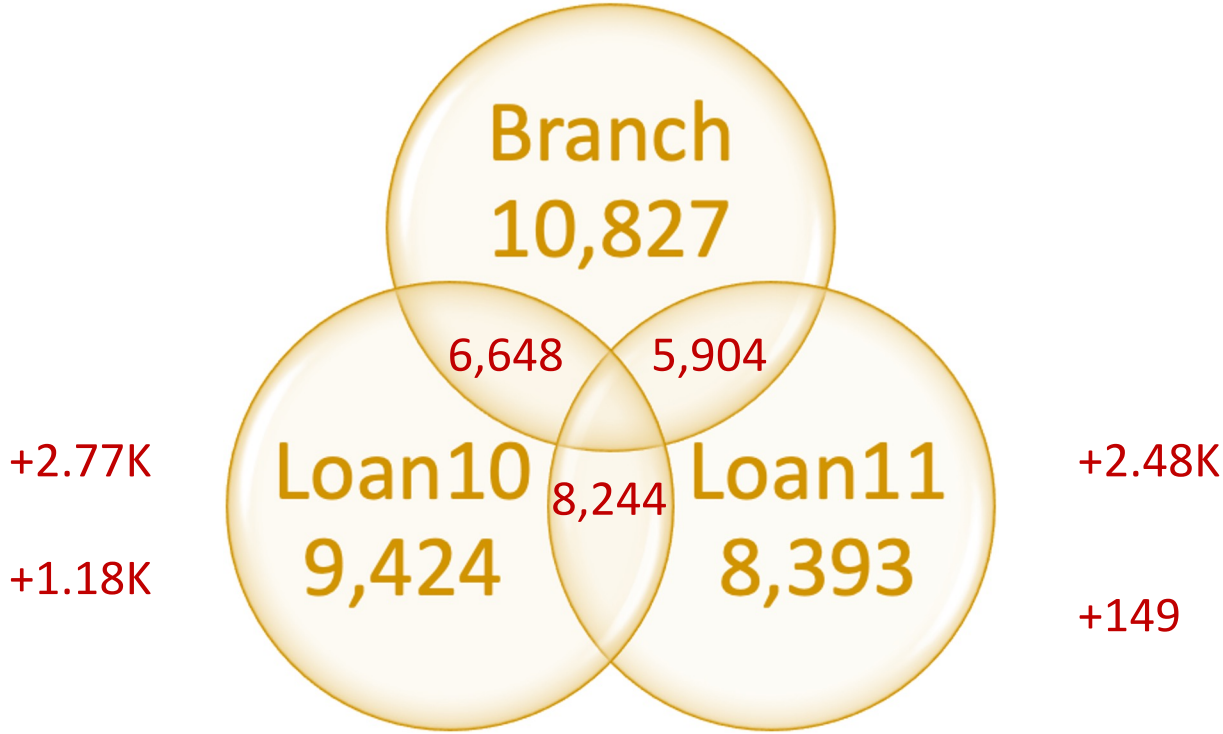
# Portfolio – Analyzing for Complexity, Size, Impact

| | A | B | G | H |
|---|---|---|---|---|
| 1 | X-Analysis - Metrics Analysis for Application area #IN | | | |
| 2 | | | | |
| 3 | Complexity Level | Units | Source Lines | Cyc. Comple |
| 4 | Grand Total | 4,225 | 1,991,418 | |
| 5 | Interactive Source Members | 1,549 | 1,551,857 | |
| 6 | High Total | 139 | 522,025 | |
| 146 | Average Total | 1,248 | 1,022,330 | |
| 1395 | Low Total | 162 | 7,502 | |
| 1558 | Batch Source Members | 2,676 | 439,561 | |
| 1559 | High Total | 16 | 21,815 | |
| 1576 | Average Total | 1,063 | 348,266 | |
| 2640 | Low Total | 1,597 | 69,480 | |
| 1241 | Application Area Breakdown | | | |
| 1243 | #INUSE (+) | 4,221 | 1,988,290 | |
| 1247 | AR | 299 | 140,746 | |
| 1248 | High Total | 8 | 28,076 | |
| 1257 | Average Total | 166 | 106,769 | |
| 1424 | Low Total | 125 | 5,901 | |
| 1550 | BILLING | 286 | 162,299 | |
| 1551 | High Total | 17 | 57,349 | |
| 1569 | Average Total | 166 | 100,173 | |
| 1736 | Low Total | 103 | 4,777 | |
| 1840 | EQUIPMENT | 144 | 63,231 | |
| 1841 | High Total | 2 | 5,581 | |
| 1844 | Average Total | 77 | 55,004 | |
| 1922 | Low Total | 65 | 2,646 | |
| 1988 | GAS | 48 | 9,067 | |
| 1989 | High Total | 1 | 554 | |
| 1991 | Average Total | 15 | 7,491 | |
| 3007 | Low Total | 32 | 1,022 | |
| 3040 | GL | 377 | 176,766 | |
| 3041 | High Total | 5 | 17,405 | |
| 3047 | Average Total | 228 | 152,777 | |
| 3276 | Low Total | 144 | 6,584 | |
| 3421 | INVENTORY | 193 | 80,278 | |
| 3422 | High Total | 11 | 23,824 | |



# Example: Branch – Loan10 – Loan11 (Objects)



# Example: Branch – Loan10 – Loan11 (Effort)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# Other Uses of Metadata

- Understanding Data Flow
- Identify Hidden Problems
- Where used
- How Used
- Maintainability
- Collect and share tribal knowledge
- Create Test Plans
- Code Cleanup
- Obsolete Object Management
- Code Quality over time
- Version Upgrade Analysis

# The Power of Application Areas

- Rule Based Approach to organizing your Application Inventory
  - Inclusion or Omission Rules Based On:
    - Object Attributes
    - Dependencies
    - Problem Analysis Categories
    - Other Application Areas
  - Contents can be Dynamic or Static
  - Configurable Refresh Order
  - Used to Focus on just one set of objects
    - Metrics
    - Problem Analysis
    - Source Scan
  - Objects than span Application Areas are Visualized
  - Affinity Analysis

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## Polling Question:

Which topic would you like to see an in-depth session on?

# Conclusion

- Facts and Data - Accurate estimates
- Aligning stakeholder expectations

Time Savings

Analysis
+
Development
+
Testing

# Next Steps...

- Estimate how much effort you spend in Application Understanding
- Identify an opportunity that will benefit from Modern Application Management
- Contact me for a free consultation

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Info@FrescheSolutions.com

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