I Didn't Know you could to THAT with AB Suite

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Hood Software Solutions

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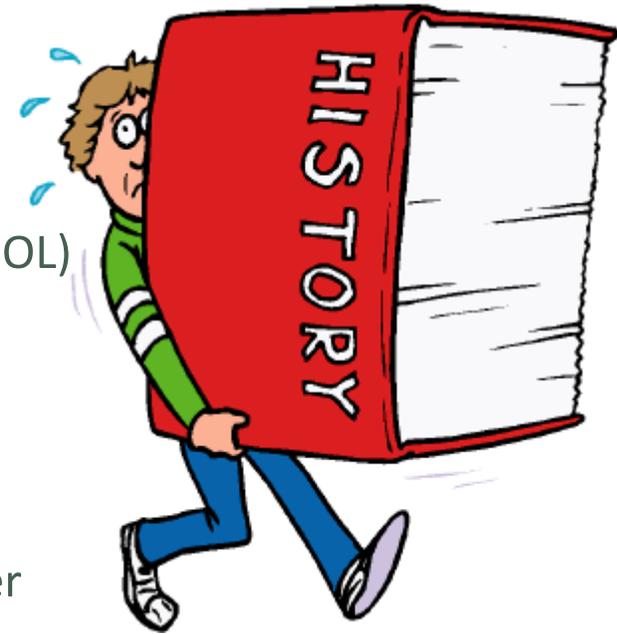
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View this presentation online at
http://www.HoodSoftwareSolutions.com/UNITE

Background

- Mid-Late 1980's LINC introduced
  - Logic and Information Network Compiler
  - Originally batch oriented, 4GL for reducing the effort in writing (COBOL) applications for Burroughs large and medium computer systems
- LINC II introduced "Interactive" (c. 1986)
  - LINC programmers can now interactively write, compile and deploy their applications
  - After the merger that formed Unisys, LINC became available on other platforms (A Series, V Series, OS 2200, System 80, Unix, Windows)
- LDA provided workstation-based design and development
  - LINC Design Assistant, later LINC Developer's Assistant
  - "One source" development for multiple deployment platforms

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Background

- ~2000 LINC rebadged as Enterprise Application Environment
  - Development Environment shifts from host-based Interactive to workstation-based EAE Developer
- Developer uses custom tooling (object repository, GUI and character-based painter, logic editor, graphs, system configurations) to produce a model based development experience
- One Developer supports Direct Generate for all EAE Runtime platforms

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Background

- ~2004 Agile Business Suite Introduced
  - ▫ Follow on product to EAE
  - ▫ Object Oriented
  - ▫ Model Driven
- Developer uses Microsoft and de facto standard tooling
- Defined as a "plug in" (package) for Visual Studio
- Uses SQL Server as repository for object model
- AB Suite is now in use by all (formerly EAE) Windows Runtime users, and approximately 50% ClearPath Runtime users

- But many still treat AB Suite as "EAE in Visual Studio", not taking full advantage of the model driven, object oriented, or other more modern capabilities in the product.
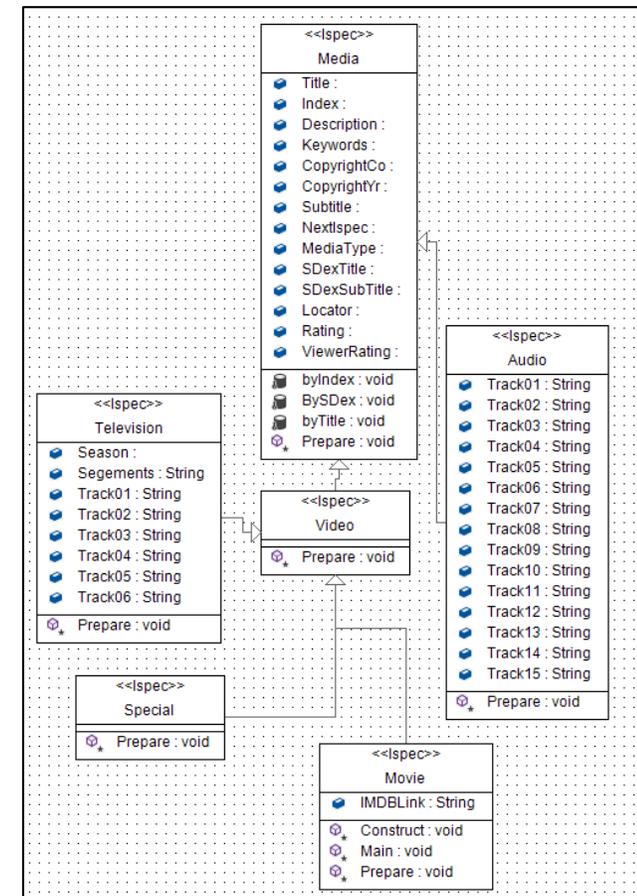
Is that true for you as well?

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UML Diagrams

- "Programming with Pictures"
  - Automatically produce UML diagram by dragging objects onto the diagram palette
  - Design or modify your model in the diagram
    - Changes you make with automatically sync with the model
  - Can be used to document your application design
  - Help with model analysis and build understanding

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Documentation Built In

- ## Every object in AB Suite System Modeler has Documentation.
  - This is a free form rich text editor that can be used to document the design, describe usage of the object, or provide test case and user documentation, etc...

- The documentation can be exported as an HTML document using the Build Comment Pages menu option. Is it possible to export only the documentation and diagrams, which can then be printed or archived for later use.

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Object Oriented Features

- Vanilla classes
  - AB Suite provides stereotypes for predefined behavior of common business functions (Ispecs, Reports, Segments...) but you can create own classes without a predefined stereotype
    - Classes can have presentation, persistent data, methods, ...
    - Can be used to create group type definitions, and inherited by attributes in other classes
      - An Address class may contain all address fields and be inherited by Delivery_Address and Mailing_Address in the same Ispec or Report frame

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Model

- Stereotypes not needed (examples of vanilla classes):
  - 'Usage output' ispec => don't need 'Ispec' stereotype to define a table.
  - Frame to define layout of extract file => don't need 'Frame' stereotype to define the layout of a file.
  - Painted Insertable classes => don't need 'Insertable' stereotype to paint portion of a screen (aggregation/composition??).
- Reusing frame definitions (excellent How To by Russell Pederick on the Support website) Reuse Frame Definitions
- Manipulating extract files in **Ispec logic**
  - open, close, read, write, create, delete, purge

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Object Oriented Features

- Encapsulation and scoping.
  - Many developers still define all attributes as Public, because everything was public in EAE.
  - Using Private and Protected allows you to hide data from logic outside of the owner class to avoid side effects, and also allows reuse of common names internal to classes or methods
  - You can also define Variables and Parameters – two types that were not (really) available in EAE. These are similar to SDs, but they behave more like you would expect in a modern programming language.
    - Includes using variables in Main(), Prepare(), and Construct() methods, as opposed to declaring more attributes (SDs) in the Ispec or report itself.

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Object Oriented Features

- ## Polymorphism (with persistent data).
  - ### Multiple Event Sets
    - Many users went away from using Events in EAE because the one Event dataset became too large, or contained too many unrelated records types (and became hard to manage)
    - AB Suite allows multiple event storage containers, so event data can be grouped into different storage areas when the event classes are dissimilar
  - ### Inheritance and polymorphism allows "Ispecs" to be treated like Events in EAE.
    - A parent class can define all common attributes and behavior, and subclasses can specialize
      - ForEach with polymorphic modifier allows a Profile to span multiple objects (much like an Event).

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ALM Features

- ALM features –

  - Use TFS Test Manager with ATT to define and manage automatic or semiautomatic testing

  - TFS Build allows scripted build, test, release processes

  - White Paper: AB Suite in the Application Lifecycle

    - http://www.unisys.com/offerings/high-end-servers/clearpath-forward-systems/cross-platform-software/agile-business-suite/whitepaper/ab-suite-in-the-application-lifecycle-id-2605

- *More DevOps capability coming in AB Suite 6.1*

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External Interfaces

- External Class (class with IsExternal set) allows tighter integration with external code and data.
  - AB Suite supports multiple parameters and parameter data types, as well as a typed methods (I.e. methods with a return value) – and string parameters can be much, much larger than GLB.PARAM.
  - This also opens up the opportunity to directly call some OS functions
- Call Public Segment Methods from external programs as well as CE
  - Genuine reuse of business rules (write once, use everywhere)
- Client Framework. New feature in AB Suite 5.0 for Windows
- ePortal and EOM also work with EAE. ePortal is now available on Windows with AB Suite

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Model

- TFS Shelving – automatically park current changes to do some alternate work, then easily reintegrate previous work at the click of a button. (AB Suite 5.0)
- Read() & Write() – an easier way to work with files
- Ctrl + . reverse auto completion
- InOut parameters in CLR are pass by ref, very fast for passing large objects

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Use of Local Variables

- Systems migrated from EAE tend to have many global attributes.
- Typically used to implement 'database buffers'
  - e.g. the CUST ispec with Multiplicity=1 in SAMPLE
  - And all of the GSDs.
  - Large EAE systems tend to have many thousands of these.
- A consequence is that segment objects tend to become very 'bloated' in terms of memory usage
  - All of these 'global attributes' need to be instantiated whenever the system needs to create a new instance of the segment object e.g. when the system starts up and when a report runs.
- This has two consequences
  - High memory usage
  - Slow start-up times for the system and reports.
- One reason for the heavy use of GSDs is that in EAE you need to use them to pass data in and out of Global Logics.
- You can use parameters and return variables to pass data in and out of methods to eliminate many GSDs.

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Use of Local Variables

Some alternative designs:

- Database buffers.
  - Define persistent Ispecs and classes with Multiplicity=0 (so that they are pure classes)
  - Where you want to use an instance of that ispec/class create a local variable.
  - Instances will be created/destroyed dynamically as they are needed, rather than having the burden of creating them all up front and carrying them around at all times.

- The latest version of the Sample model uses this technique.
  - CUST Ispec has Multiplicity=0 and variables are used wherever needed.
  - Another benefit is that you can define multiple variables in one method if you need multiple instances, for example reading and comparing two records from a table.
    ** Of course there are pros and cons to everything – if you need to call a method very frequently the overhead of creating new instances every time might have performance consequences.

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Probably not recommended for high transaction volume applications on MCP due to the proliferation of database buffers/class instances and their subsequent management.

Now you tell us

- What is your favorite "undiscovered" feature in AB Suite?

- What would you like to see in AB Suite?

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About Hood Software Solutions

- I have been associated with AB Suite and its predecessors for many (many, many, many) years, as an engineer, architect, program manager, and technical consultant.
- Last year I formed Hood Software Solutions to help people solve their business problems with the aid of software solutions.
- I do not represent Unisys, but I do work closely with them.
- My expertise includes EAE and AB Suite, but also much more.

How can I help you?
- Application Design and modernization
  - Restructuring
  - Web, GUI, Mobile modernization
  - Requirements gathering, prioritization, planning
- System Architecture and Planning
- AB Suite or EAE training and mentoring
- AB Suite migration
- Agile development processes
- AB Suite or EAE application design audits
- Application development, coding and mentoring

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