The New ACT-R Environment

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What is the Environment

• A GUI for ACT-R
  – Inspectors
  – debugging tools
  – Editing windows
    • should we be providing these?
• Mostly a teaching tool
  – Tutor modes that are used in the tutorial
• Could it be more?
Why a New Environment

• Old version has some problems
  – Very limited set of supported platforms
    • MCL (prior to 4.3.1?)
    • ACL v5.0.1 for Windows
  – Separate sources
    • Hard to maintain
    • Different tools provided
  – Built for use with ACT-R 4.0
    • ACT-R 5.0 needs different tools
Overview of New Environment

- The GUI is separate from Lisp (ACT-R)
- Not tied to a particular Lisp (mostly)
- Some better tools for ACT-R 5.0
- Includes an ACT-R/PM visible window on all platforms (the AGI and visible virtuals)
The New Environment Status

• Used for the Summer School
• Works on the following platforms
  – Mac OS 9 with MCL
  – Mac OS X with OpenMCL (maybe ACL)
  – Window with ACL (LispWorks soon)
  – Linux with ACL (CMUCL soon)
• Usable, but not quite ready
  – Tutor modes not operational yet
• The manual is available now
General Design

- A separate application for the GUI
  - Some issues about that
- GUI written in Tcl/Tk
  - Freely available for “all” systems
  - Simple to use (at least I found it to be)
  - Existing ACT-R user base
- Connected to Lisp (ACT-R) with a TCP/IP socket connection
Design Specifics (Lisp side)

- A loader (slightly implementation specific)
- Network and multiprocessing abstraction
  - 10 functions necessary for each new Lisp
- The handlers and hook function support
  - Machine independent
Design Specifics (Tcl/Tk side)

- (Almost) identical across platforms
- A starter script
  - Controls the communications
  - Opens the “Control Panel”
- A directory of tools that get sourced
  - Could remove those not desired
  - Add your own
    - David Peebles has already built one
The New Stepper Tool

- Steps on all module events
- Shows the chunks tried on a retrieval
- Has a fast forward mechanism
  - Until a specified Time
  - Until a particular Production selected

- (Brief Demo)
ACT-R 5 and experiments

• ACT-R 5 interacts with experiments
• ACT-R/PM supports “real” windows in ACL and MCL
• Has a virtual window abstraction for others
  – Hard to debug a model using a virtual window
Visible virtual windows

• The new mechanism makes the virtual windows visible using a Tcl/Tk window
• The same everywhere
  – No “shifting” of locations between systems
• Limited support right now
  – Enough to run the tutorial models
• The AGI (ACT-R GUI Interface) manual is available
• Does not allow ACT-R to see Tk windows
Cool Environment Features

- Does not need to be on a single machine
  - Nor do the machines need to be of the same type
- Can connect multiple Environments to a single ACT-R session
  - Possible teaching applications
  - Remote debugging
    - could debug a problem “on” the users machine
Still some Issues

• The interface needs some work
  – Multiplatform complications
• A little awkward to start right now
• Requires Tcl/Tk to be installed
• Needs some more documents for users to be able to develop their own tools
Future Plans

- Build the Tcl/Tk side into an application
  - Remove the installation requirement
- Supply an installer program
  - Scripts that could start the whole thing easily
- Build a complete Standalone version
  - Including a Lisp image with ACT-R
- Perhaps provide a tool repository for users
- More options (fonts in particular)
End

- Demo session Saturday evening
- Quick Questions now