Issue #3: Improving the Tk Binding Mechanism

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Overview

Problem:

• Hard to combine independently-developed bindings for widgets.

Solution:

• Allow more than one binding to trigger for widget.

• Add tag-like mechanism for specifying related groups of bindings.

• Provide control over order of execution of bindings.
Current Bindings

Three kinds of bindings:

- Widget-specific bindings: `bind .a.b.c ...`
- Class bindings: `bind Button ...`
- "All" bindings: `bind all ...`

A single binding triggers for each event:

- Widget-specific has priority over class.
- Class has priority over "all".
- Within type, "most specific" binding wins:
  - `<Escape>` beats `<KeyPress>`
  - `<Control-B1-Motion>` beats `<Motion>`

Class bindings used for default widget behavior.

Widget-specific bindings used for overriding, extending default behavior.

Problems with Current Approach

Bindings don’t compose gracefully.

Example: add additional widget-specific action to `<Enter>` for buttons.

- `bind .b <Enter> foo`
- Replaces class binding for `<Enter>`, breaks normal button behavior.
- Current solution:
  ```
  bind .b <Enter> \\
  "[bind Button <Enter>]; foo"
  ```
- But what if class binding changes to `<Any-Enter>`?

"All" bindings don’t really work very well.
Proposed Solution

(based on suggestion by Michael Halle)

Let multiple bindings trigger on a single event:
  • First find and trigger one widget-specific binding.
  • Then trigger one class binding.
  • Then trigger one "all" binding.

Add support for break command to skip remaining bindings.

Only one binding can trigger within a group.

Disadvantage: not backwards compatible.

Proposed Solution, cont’d

Provide new command to change binding tags for a widget:

  • Change widget’s class for binding purposes:
    \begin{verbatim}
    bind MyButton ... 
    bind tags .b .b MyButton all
    \end{verbatim}

  • Add a new independent set of bindings:
    \begin{verbatim}
    bind special ... 
    bind tags .b special .b Button all
    \end{verbatim}

  • Replace all bindings for widget:
    \begin{verbatim}
    bind tags .b special
    \end{verbatim}

  • Make widget-specific bindings trigger after class bindings:
    \begin{verbatim}
    bind tags .b Button .b all
    \end{verbatim}
Conclusion

- Does this solve all known problems with bindings?

- Anyother suggestions for bindings?