Modernizing your COBOL application by using isCOBOL Compiler code injection

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In version 2019 R1 we introduced new compiler configuration variable to inject COBOL code in all controls of a specific type at compile time.
`iscobol.compiler.gui..defaults=...`
where can be any of the following: bar, bitmap, check_box, combo_box, date_entry, entry_field, frame, grid, java_bean, label, list_box, push_button, radio_button, ribbon, scroll_bar, slider, status_bar, tab_control, tree_view, web_browser, window, tool_bar.
This feature simplifies the modernization process for GUI applications and reduces developing efforts.

As an example, when compiling the following screen section controls:

```
    01  s1.
        03 ef1 entry-field
           line 2 col  2 size 10.
        03 ef2 entry-field
           line 2 col 14 size 10.
        03 ef3 entry-field
           line 2 col 26 size 10.
        03 pb1 push-button
           line 5 col 10 size 10
           title "Save" exception-value 1.
```

with the following compiler configuration:

```
iscobol.compiler.gui.push_button.defaults=flat, background-color -14675438
iscobol.compiler.gui.entry_field.defaults=border-color rgb x#dae1e5, &#92
                                          border-width (0 0 2 0 )
```

the compiler will treat the source code as if it were written as:

```
    01  s1.
        03 ef1 entry-field
           border-color rgb x#dae1e5,
           border-width (0 0 2 0)
           line 2 col  2 size 10.
        03 ef2 entry-field
           border-color rgb x#dae1e5,
           border-width (0 0 2 0)
           line 2 col  2 size 10.
        03 ef3 entry-field
           border-color rgb x#dae1e5,
           border-width (0 0 2 0)
           line 2 col  2 size 10.
        03 pb1 push-button
           flat, background-color -14675438
           line 5 col 10 size 10
           title "Save" exception-value 1.
```

Code injection also affects controls created with single display statement, so that:

```
    display push-button
            line 5 col 25 size 10
```

```
            title  "End" exception-value 27
            handle in h-pb.
```

becomes:

```
    display push-button flat, background-color -14675438
            line 5 col 25 size 10
            title  "End" exception-value 27
            handle in h-pb.
```

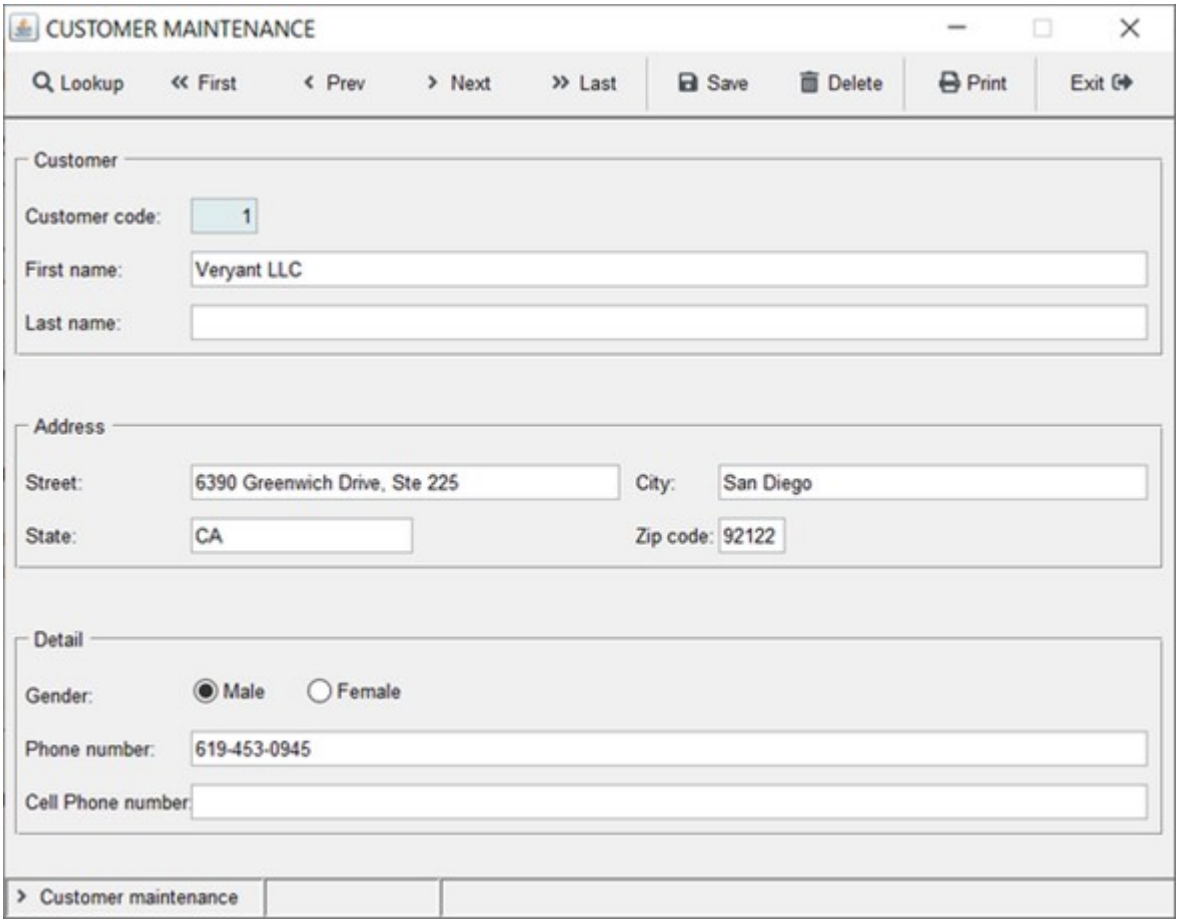
With code injection, an entire application can be recompiled without code changes.

Changing the configuration variables can result in a completely different looking application, letting you modernize your screens without altering the source code.

NOTE: Code injection works by inserting the text value of the configuration variables into the source code where controls are declared or created.

That means any syntax errors in the configuration variables will result in compilation errors.

As an example, the following screen is a standard screen with slightly dated looking controls and window:



By compiling with the following compiler configuration:

```
   # Compiler.regexp to remove the 3D and "ERASE" styles when displaying the
window
   iscobol.compiler.regexp="(?i)( 3-D,)" "" &#92
                           "(?i)( 3-D)" "" &#92
                           "(?i)( ERASE,)" "" &#92
                           "(?i)( ERASE)" ""
```

```
#### code injection for controls ####
# add the gradient color on all windows
 iscobol.compiler.gui.window.defaults= &#92
    gradient-color-1 rgb x#FFFFFF &#92
    gradient-color-2 rgb x#F2F5F9  &#92
    gradient-orientation gradient-northeast-to-southwest

# add the transparent style to all labels, check-boxes and radio-buttons
iscobol.compiler.gui.label.defaults= transparent
iscobol.compiler.gui.check_box.defaults= transparent
iscobol.compiler.gui.radio_button.defaults= transparent
iscobol.compiler.gui.frame.defaults= transparent

# set the white color for all toolbars
iscobol.compiler.gui.tool_bar.defaults= background-Color rgb x#FFFFFF &#92
                                        foreground-Color rgb x#000000

# add the flat style to all push buttons
iscobol.compiler.gui.push_button.defaults=flat

# add the underline style to all entry-fields
iscobol.compiler.gui.entry_field.defaults = border-width (0, 0, 2, 0) &#92
                                            border-color rgb x#DAE1E5
```

The screen is transformed to this more modern looking screen.