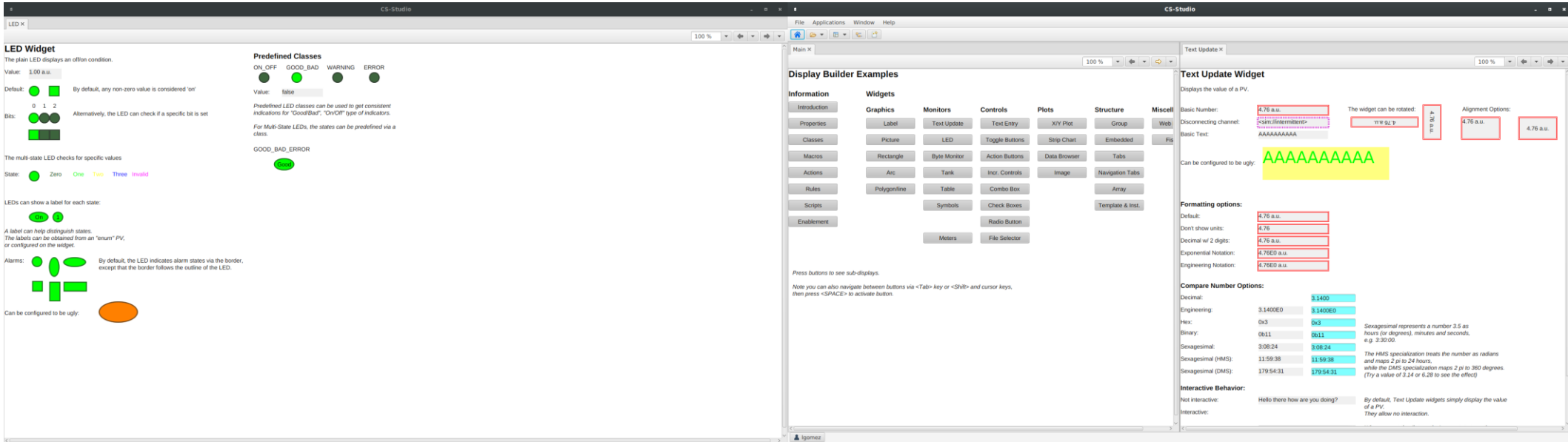


Quick Intro To (Automated) GUI Testing With TestFX



Reasons Why (GUI) Tests Matter

- Find bugs early
- Keep evolving GUIs(such as Phoebus) robust
- Keep the quality of software high

Real World Examples of Bugs

- As I came up with this talk, my GUI unit tests found real bugs in Phoebus (we missed null-checking a global).

<https://github.com/ControlSystemStudio/phoebus/issues/2377>



Is it Possible(Practical)? Yes!

```
@Test
public void TestNumberOfDockItems()
{
    Set<Node> menu = (Set<Node>) from(rootNode(Stage.getWindows().get(0))).queryAllAs(Node.class);

    Node rootPane = menu.iterator().next();

    Assertions.assertThat(rootPane instanceof BorderPane).isTrue();

    BorderPane pane = (BorderPane) rootPane;

    Assertions.assertThat(pane.centerProperty().get() instanceof DockPane).isTrue();

    DockPane dockPane = (DockPane) pane.centerProperty().get();

    Assertions.assertThat(dockPane.getDockItems().size() == 2).isTrue();

    Assertions.assertThat(dockPane.getTabs().get(0) instanceof DockItem).isTrue();
    Assertions.assertThat(dockPane.getTabs().get(1) instanceof DockItem).isTrue();

    closePane();
    Assertions.assertThat((Stage.getWindows().size() == 0)).isTrue();
}
```

JavaFX and TestFX

- Phoebus uses JavaFX
- TestFX can be used to test JavaFX GUIs(it has headless support too*)
- Can easily integrate with maven and execute with a command like
- “mvn Dtest=DockPaneTestUI test”
- Can Integrate into automated workflows via the headless mode

References and Links

- JavaFX:<https://openjfx.io/>
- TestFX:<https://github.com/TestFX/TestFX>
- Phoebus:<https://github.com/ControlSystemStudio/phoebus>