Multiplatform GUI testing with fMBT and Python

Antti Kervinen

Intel

antti.kervinen@intel.com

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What would you do to switch on the Bluetooth on your mobile? You’d probably…

- pick up your device.
- take a look at the screen.
- act on recognised items
  - tap the Settings icon
- wait for the response
  - wait for the “Bluetooth” text to appear.
- …

This is a common usage pattern for pretty much every touch UI.

fMBT’s GUI Test Interface is a Python API for testing many platforms in this way.
Python examples

Android

```python
import fmbtandroid
d = fmbtandroid.Device()
d.refreshScreenshot()
d.tapBitmap("settings.png")
d.waitOcrText("Bluetooth")
```

Tizen mobile

```python
import fmbttizen
d = fmbttizen.Device()  # pick up a device
d.refreshScreenshot()  # take a look at it
d.tapBitmap("settings.png")
d.waitOcrText("Bluetooth")
```

Chromium OS

```python
import chromiumos
d = chromiumos.Device("ssh -p 9222 chronos@localhost")
d.refreshScreenshot()
...
```

Windows tablet/laptop/desktop

```python
import fmbtwindows
d = fmbtwindows.Device("10.123.123.123", password="xxx")
d.refreshScreenshot()
...
```
GUI Test Interface overview

- Fetching screen contents
  - refreshScreenshot
  - refreshView (Android)

- Convenience methods for taking action on recognised elements
  - tap
  - swipe
  - verify
  - wait
  - waitAny

- Recognising elements – count, coordinates, bounding boxes...
  - screenshot().findItemsByBitmap
  - screenshot().findItemsByOcrText
  - view().findItemsByText (Android)
  - view().findItemsById (Android)

- Executing shell commands
  - shellSOE

- Visual logging
  - enableVisualLog
Visual log contains

- GUI Test Interface calls, parameters, return values, exceptions.
- reference bitmaps, screenshots with recognised items highlighted.

```
15:55:25.520040 2_switch_on_bluetooth
15:55:25.520082 tapBitmap('settings.png')
15:55:25.520242 findItemsByBitmap('settings.png', limit=1)
```

```
15:55:25.625896 == ['GUIItem("bitmap",bbox=(146, 661, 217, 758), bitmap="/home/ask/testautomationday/settings.png",
  screenshot="/home/ask/testautomationday/screenshots/20140530-155525-166738-emulator-5554.png")']
```
fmbt-scripter is a tool for

- Writing, editing and recording GUI Test Interface scripts.
- Selecting and updating reference bitmaps on screenshots.
- Executing and debugging scripts.
- fMBT homepage
  https://01.org/fmbt/
- fMBT GUI Test Interface wiki
  https://github.com/01org/fMBT/wiki/GUI-testing
- fMBT is open source, distributed under LGPL.