Carson Barber, Blaine Billings, Chase Myers,
Alex Skiff, Justin Willis

Table of Contents

1. Introduction
2. Installation
3. Existing Tests
4. Automated Testing Framework
5. Testing and Demonstration
6. Fault Injection and Demonstration
7. Conclusion

Sugarlabs

“Sugar Labs® is a volunteer-driven member project of Software Freedom Conservancy, a nonprofit corporation. Originally part of the One Laptop Per Child project, Sugar Labs coordinates volunteers around the world who are passionate about providing educational opportunities to children through the Sugar Learning Platform. Sugar Labs® is supported by donations and is seeking funding to accelerate development..”
--Sugarlabs mission statement

Sugarizer

Installation

- Sugar repository from the SugarLabs team on GitHub
    - git clone sugarlabs/sugar
- Using the README.md to guide the process of building the project on Ubuntu

```
sudo apt-get install sugar-* -y
aclocal
sudo apt-get install intltool libglib2.0-dev gtk+-3.0 -y
./autogen.sh
make
make install
```

Existing Tests

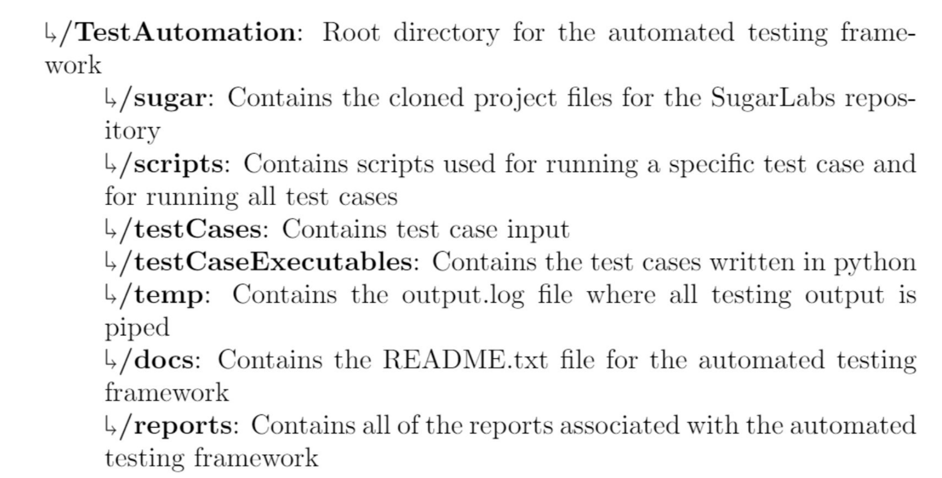
- SugarLabs’ tests with Python’s unittest

```
python
>> import unittest
>> import FILENAME
>> x = unittest.TestLoader().loadTestsFromTestCase(FILENAME)
>> unittest.TextRunner(verbosity=2).run(x)
```

- Test results
- Encountered issue

Automated Testing Framework

- Test case executable files are saved in the /testing-framework/testCaseExecutables/ folder.
- Test case descriptions containing a short description of the test as well as inputs for the respective executable file are saved in the /testing-framework/testCases/ folder.
- Test cases may be run independently or all at once using the runAllTests executable



↳/**TestAutomation**: Root directory for the automated testing framework

↳/**sugar**: Contains the cloned project files for the SugarLabs repository

↳/**scripts**: Contains scripts used for running a specific test case and for running all test cases

↳/**testCases**: Contains test case input

↳/**testCaseExecutables**: Contains the test cases written in python

↳/**temp**: Contains the output.log file where all testing output is piped

↳/**docs**: Contains the README.txt file for the automated testing framework

↳/**reports**: Contains all of the reports associated with the automated testing framework

Testing: Part 1

We split our introductory test cases into three subsystems: Profile, Journal and Activity.

- The Profile subsystem contained all files needed for profile creation, such as age and gender of a user.
- The Journal subsystem contained all files needed to log a user’s journal
- The Activity subsystem contained all files needed to track a user’s activity. This essentially served as a assessment list for the user.

Testing: Part 2

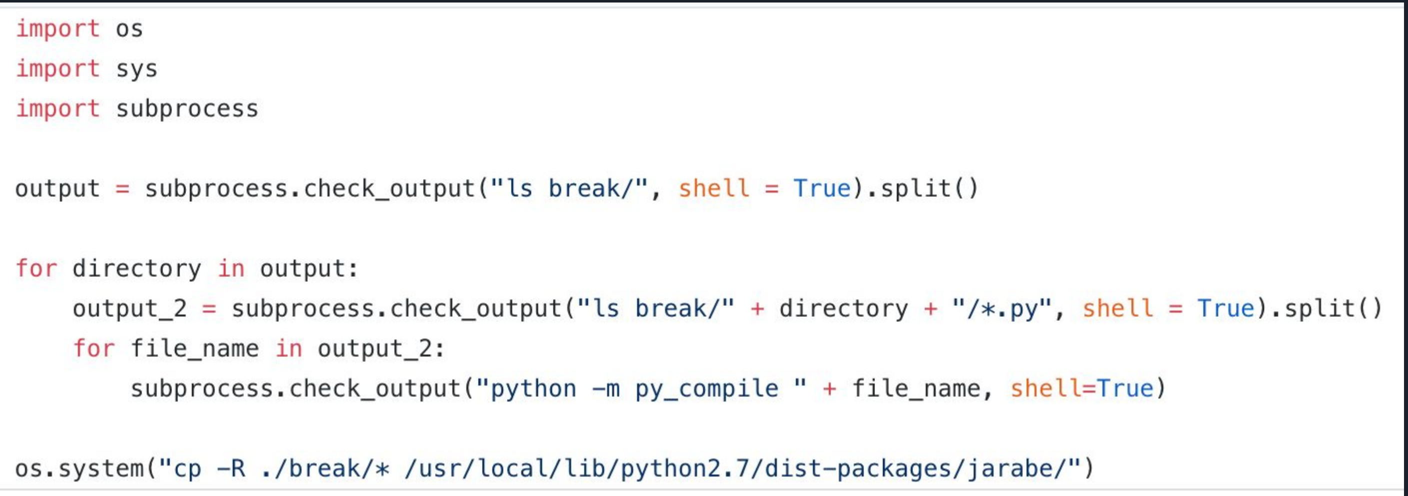
- Activity Chooser
- Add Friend
- Age Calculator
- Age Calculator Invalid
- Buddy Color
- Buddy Key
- Buddy Nickname
- Change Brightness
- CMD Help
- CMD Restart
- Friends Model
- Get System Session
- Has Friend
- Help Website
- HTTP Open
- HTTP Size
- Journal Comment
- Mute Volume
- Serial Number Generation
- Set Volume
- Speech Manager
- String Hex Converter
- String isAscii
- String isHex
- String Normalization
- System Session Support

[Demonstration]

Fault Injection

For the fault injection part of the project, we wrote two scripts. One of the scripts is used to break the code, and the other one is used to restore the working code

- /testing-framework/scripts/fixSugar.py:
  - Script to restore the original sugar labs code
- /testing-framework/scripts/breakSugar.py:
  - Script to replace the sugar labs code with broken code



```
import os
import sys
import subprocess

output = subprocess.check_output("ls break/", shell = True).split()

for directory in output:
    output_2 = subprocess.check_output("ls break/" + directory + "/*.py", shell = True).split()
    for file_name in output_2:
        subprocess.check_output("python -m py_compile " + file_name, shell=True)

os.system("cp -R ./break/* /usr/local/lib/python2.7/dist-packages/jarabe/")
```

[Demonstration]

Conclusion

https://github.com/csci-362-fall-2018-01/The-Chocolate-LEclairs