Testing framework for Nightscout

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Introduction

Objective: To develop a unit testing framework for the nightscout repository.
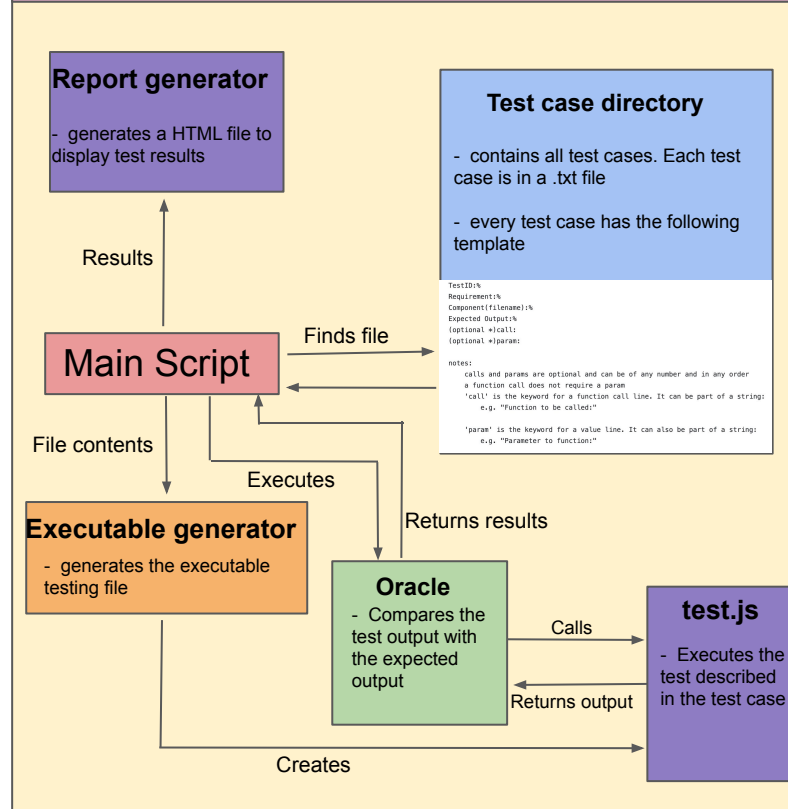
Tools used: Javascript, python

The 2-2 Testing Framework is designed utilizing `python` as the main scripting language, with `javascript` as the actual execution language

No. of test cases: 25

Tested components: language.js, levels.js, units.js, and times.js

The unit test framework is able to test any imported JavaScript file based on test cases written by the tester, and exporting a formatted html file tabulating the results. Our framework allows tests which may involve chained imports, object based calls, and an arbitrary number of arguments passed to the function. This makes for a robust and modular framework, making it more functional in a greater range of use cases.

Testing Framework

Report generator
- generates a HTML file to display test results

Test case directory
- contains all test cases. Each test case is in a .txt file
- every test case has the following template

```
TestID:%
Requirement:%
Component(filename):%
Expected Output:%
(optional +)call:
(optional +)param:

notes:
    calls and params are optional and can be of any number and in any order
    a function call does not require a param
    'call' is the keyword for a function call line. It can be part of a string:
        e.g. "Function to be called:"

    'param' is the keyword for a value line. It can also be part of a string:
        e.g. "Parameter to function:"
```

Results

Finds file

Main Script

File contents

Executes

Returns results

Executable generator
- generates the executable testing file

Oracle
- Compares the test output with the expected output

Calls

Returns output

test.js
- Executes the test described in the test case

Creates

Notable problems that we tackled

Conclusion