Deployment 3

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Successful test build with screenshot

In the jenkins I created a new multibranch pipeline connecting the branch source to my repo, https://github.com/KennethT404/DEPLOY03_TEST, where I have my stored jenkins script.

In my jenkins script, I run a bash script to run test_calc.py in a python virtual environment. It then generates a report based on the tests.

```
pipeline {
  agent any
  stages {
        stage ('test') {
                steps {
                        sh '"#!/bin/bash
                        python3 -m venv test3
                        source test3/bin/activate
                        pip install pip --upgrade
                        pip install pytest
                        py.test --verbose --junit-xml test-reports/results.xml sources/test_calc.py
                        '"
                }
        }
  }
        post {
                always {
                        junit 'test-reports/results.xml'
                }
         }
}
```

Additional Feature: Subtraction

The additional feature I decided to include into the app was a subtraction function named *sub2*. The goal of this function was to find the difference between two numeric inputs. I added this function into calc.py.

```python
def sub2(var1,var2):
    # Convert 'arg1' and 'arg2' to their appropriate types
    arg1conv = conv(var1)
    arg2conv = conv(var2)
    # If either 'arg1' or 'arg2' is a string, ensure they're both strings.
    if isinstance(arg1conv, str) or isinstance(arg2conv, str):
        return 'cannot subtract non-numeric values'
    return arg1conv - arg2conv
```

In order to test my new function, I had to create new tests for it in the test_calc.py. I had used the same test cases that were used to test add2 but I adjusted the expected result to match the functionality of sub2.

```python
"""
Testing the new feature
"""
def test_sub_integers(self):

    result = calc.sub2(1, 3)
    self.assertEqual(result, -2)

def test_sub_floats(self):

    result = calc.sub2('10.5', 2)
    self.assertEqual(result, 8.5)

def test_sub_strings(self):

    result = calc.sub2('abc', 'def')
    self.assertEqual(result, 'cannot subtract non-numeric values')

def test_sub_string_and_integer(self):

    result = calc.sub2('abc', 3)
    self.assertEqual(result, 'cannot subtract non-numeric values')

def test_sub_string_and_number(self):

    result = calc.sub2('abc', '5.5')
    self.assertEqual(result, 'cannot subtract non-numeric values')
```

Testing new the feature

When I initially included the subtraction feature to the app, I did not take into account the error in logic that would arise from attempting to perform subtraction on non-numeric values. You cannot subtract “Orange” from “Apple”, nor can you subtract 5 from “Cheese”. To work around this, I realized that add2 has a function that checks inputs for their datatypes before performing operations on them.

In the case with sub2, I would need to check to see if the inputs are numeric or strings. If they were numeric, I can proceed to return the difference, otherwise I will return a message letting the user know their inputs are wrong for this function.

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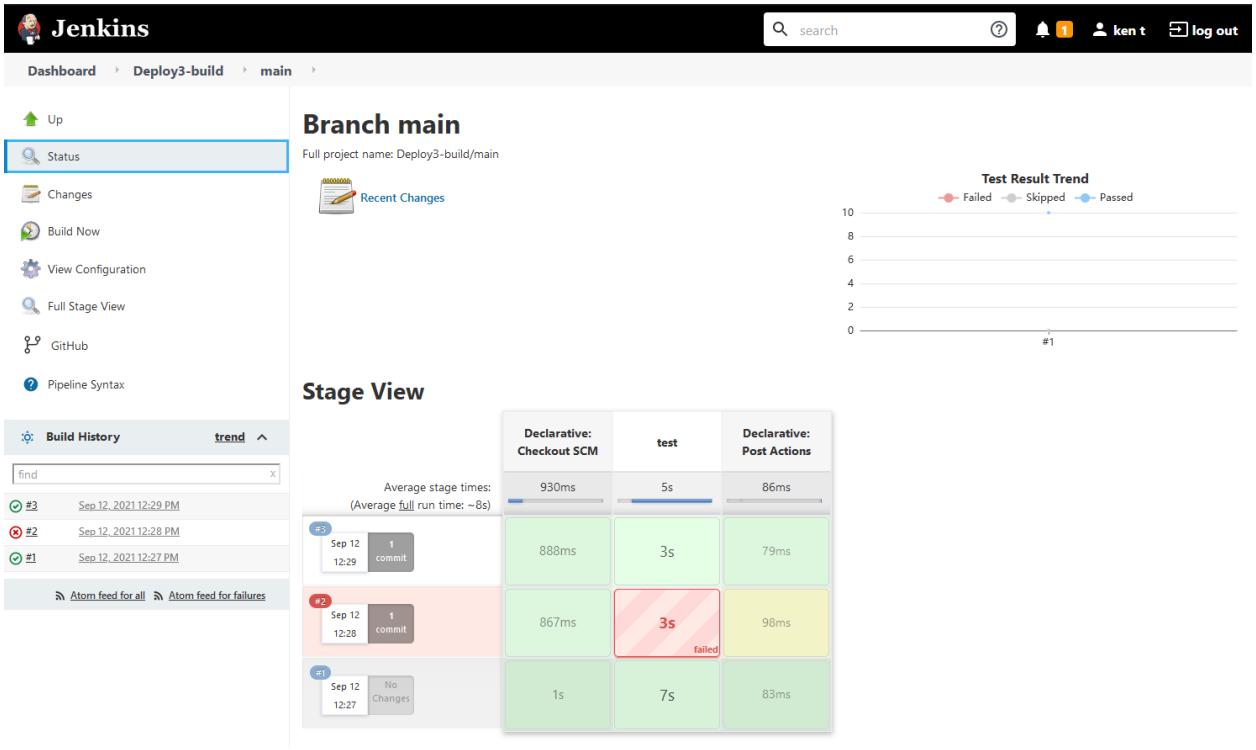
Below is the build with the addition of the new feature and its corresponding tests.



Build 1 = Initial build that connected this pipeline to the repo and had the test pass for all cases
Build 2 = My initial implementation of the new feature. It had failed due to the logic in the function attempting to subtract strings
Build 3 = Revised function that addresses the issue that came up in Build 2.

*Note: I had done a lot of testing in the IDE so I recreated the scenarios to show my process. This is also why the commits in my repo are few.