

Automate the Testing of JSL Using Hamcrest

JMP Discovery Summit 2019

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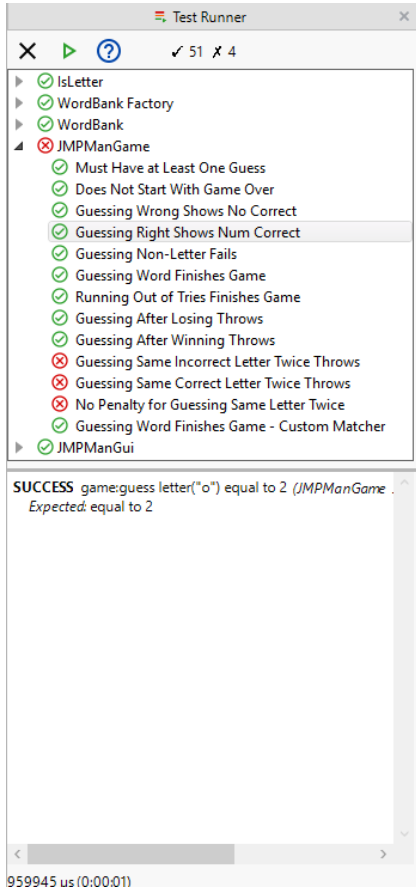
DEMO

Red to Green

Automated Testing

What did we just do?

- Determine if our script is performing as expected
- Realized it wasn't working correctly
- Fixed the bug
- Verified that it was fixed



Automated Testing

Why?

- Respond quickly when something breaks
- Aid in fix by knowing how it broke
- Reduce tedious manual testing
- Clearly define the boundaries of your application
- Testing smaller pieces

What is Hamcrest?

How did we do it?

- Using a new JSL library called JSL-Hamcrest
 - Adapted from original version for Java
- By writing tests
 - Built from assertions about the scripts behavior
- And running them
 - In an automated way
 - With clear reporting of success and failure

```
ut test("JMPManGame", "Guessing Non-Letter Fails", Expr(  
  game = new JMPManGame("food", 5);  
  ut assert that(Expr(game:guess letter("@")),  
                 ut throws("Invalid Guess!"));  
));  
  
// Success!
```

Using Hamcrest

Examples

anything

all of

not

equal to

contains

subset of

starts with

missing

close to

title is

ignoring whitespace

throws

...

Matchers – The Key to Hamcrest

✔ `assert that("hamcrest",
is(anagram of("matchers")))`

- Matchers do two things:
 - Describe their expectations
 - Determine if those expectations are satisfied by a given value

Examples

anything

all of

not

equal to

contains

subset of

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throws

...

Matchers – The Key to Hamcrest

✘ `assert that(lunch entrée(),
is(anagram of("matchers")))`

- Actual: was “ham sandwich”
- Expected: an anagram of “matchers”

Examples

anything

all of

not

equal to

contains

subset of

starts with

missing

close to

title is

ignoring whitespace

throws

...

Matchers – The Key to Hamcrest

✔ `assert that("Tucson",
 city within("Arizona"))`

- Matchers do two things:
 - Describe their expectations
 - Determine if those expectations are satisfied by a given value

Examples

anything

all of

not

equal to

contains

subset of

starts with

missing

close to

title is

ignoring whitespace

throws

...

Matchers – The Key to Hamcrest

```
✘ assert that("Los Angeles",  
              city within("Arizona"))
```

- Matchers do two things:
 - Describe their expectations
 - Determine if those expectations are satisfied by a given value

Examples

anything

all of

not

equal to

contains

subset of

starts with

missing

close to

title is

ignoring whitespace

throws

...

Matchers – The Key to Hamcrest

✔ `assert that("Los Angeles",
 not(city within("Arizona")))`

- Matchers do two things:
 - Describe their expectations
 - Determine if those expectations are satisfied by a given value



DEMO

Writing Tests

Example

Why do I want Test Cases?

- Group your tests
- Name your tests
- Isolate them from each other
 - Delete symbols
 - Close Windows
- Increase consistency
- Reduce duplication
 - Setup
 - Teardown

```
case = ut test case("GroupA")
  <<Setup(Expr(...));

ut test(case, "Test", Expr(
  ut assert that(...)
));

ut test("GroupB", "Test", Expr(
  ut assert that(...)
));
```



DEMO

Writing Test Cases

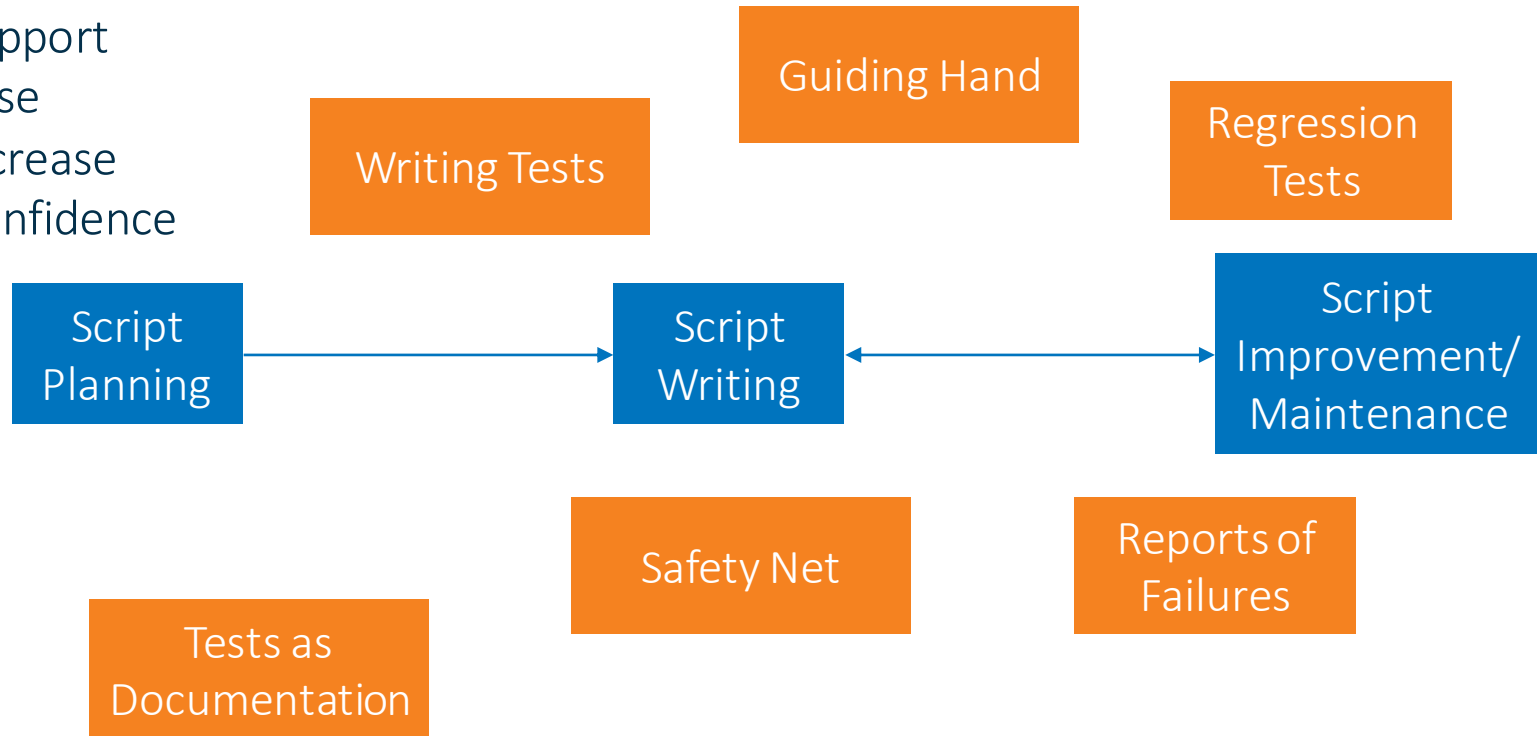
Extending JSL-Hamcrest

Writing your own Matchers and Reporters

- Matchers
 - Write matchers that are
 - Domain specific
 - Meaningful to you
 - JSL-Hamcrest has a suite of built-in Matchers
- Reporters
 - Create reporters that
 - Fit into an existing process
 - Look the way you want them to
 - JSL-Hamcrest has several built-in Reporters
 - Write failures to the Log Window
 - Write success/failures to a Test Runner GUI

How can JSL-Hamcrest help?

- Enable
- Support
- Ease
- Increase Confidence



v1.1

Available Now
for JMP 14.1+

[Get it on the
JMP User Community
and GitHub](#)

Tell us what you think
or contribute back on
GitHub!

Release of JSL-Hamcrest 1.1 Includes

- Library with
 - Test Cases
 - Suite of Matchers
 - Several Reporters
 - Documentation
- Add-In providing
 - The above library
 - Test Runner GUI
 - One-click “Run Tests”
- Used to test JMP itself

Questions?

jmp.com

