

**CS 1632 Software Quality Assurance**

**Exercise 1**

Member 1 Name: Tyler Lendon

Member 2 Name:

1. **Traceability Matrix**

FUN-ARGS-NUMBER:

FUN-ARGS-INVALID: INVALID\_NUMBER\_OF\_THREADS\_LARGER\_THAN\_JAVA\_MAXINT, MAXIMUM\_INTEGER\_FOR\_NUM\_THREADS

FUN-DISPLAY-RESULTS:

FUN-DISPLAY-ITERATIONS: VALID\_INPUTS

FUN-SMALL-NUM: SIGKILL\_DURING\_WARNING\_FOR\_LESS\_THAN\_100\_NUM\_OF\_TIMES, SPACE\_IN\_INPUT\_DURING\_WARNING

1. **Test Cases**

IDENTIFIER: INVALID\_NUMBER\_OF\_THREADS\_LARGER\_THAN\_JAVA\_MAXINT

TEST CASE: Entering an integer larger than the maximum integer allowed for Java in the number of threads, while other inputs are valid.

PRECONDITIONS: Running on a windows computer, in the command line with java version 1.8.0\_221.

EXECUTION STEPS: Enter an integer larger than the maximum java integer for the number of threads along with valid inputs for the rest of the inputs.

POSTCONDITIONS: System should display the reason that it cannot run and shut down. No java exception or stack trace should be displayed to the user directly.

IDENTIFIER: MAXIMUM\_INTEGER\_FOR\_NUM\_THREADS

TEST CASE: Entering an integer that is the maximum integer allowed for Java in the number of threads, while other inputs are valid.

PRECONDITIONS: Running on a windows computer, in the command line with java version 1.8.0\_221.

EXECUTION STEPS: Enter an integer that is the maximum java integer for the number of threads along with valid inputs for the rest of the inputs.

POSTCONDITIONS: System should display the reason that it cannot run and shut down. No java exception or stack trace should be displayed to the user directly.

IDENTIFIER: SIGKILL\_DURING\_WARNING\_FOR\_LESS\_THAN\_100\_NUM\_OF\_TIMES

TEST CASE: Entering an integer that is the maximum integer allowed for Java in the number of threads, while other inputs are valid.

PRECONDITIONS: Running on a windows computer, in the command line with java version 1.8.0\_221.

EXECUTION STEPS: Enter an integer that is the maximum java integer for the number of threads along with valid inputs for the rest of the inputs.

POSTCONDITIONS: System should display the reason that it cannot run and shut down. No java exception or stack trace should be displayed to the user directly.

IDENTIFIER: SIGKILL\_DURING\_WARNING\_FOR\_LESS\_THAN\_100\_NUM\_OF\_TIMES

TEST CASE: Entering an integer that is the maximum integer allowed for Java in the number of threads, while other inputs are valid.

PRECONDITIONS: Running on a windows computer, in the command line with java version 1.8.0\_221.

EXECUTION STEPS: Enter an integer that is the maximum java integer for the number of threads along with valid inputs for the rest of the inputs.

POSTCONDITIONS: System should display the reason that it cannot run and shut down. No java exception or stack trace should be displayed to the user directly.

IDENTIFIER: SPACE\_IN\_INPUT\_DURING\_WARNING

TEST CASE: Entering an integer that is the maximum integer allowed for Java in the number of threads, while other inputs are valid.

PRECONDITIONS: Running on a windows computer, in the command line with java version 1.8.0\_221.

EXECUTION STEPS: Enter an integer that is the maximum java integer for the number of threads along with valid inputs for the rest of the inputs.

POSTCONDITIONS: System should display the reason that it cannot run and shut down. No java exception or stack trace should be displayed to the user directly.

IDENTIFIER: VALID\_INPUTS

TEST CASE: Entering Valid inputs should produce the correct number of iterations, and the number of iterations for each thread should not be off by more than one if it is not a multiple of the number of threads. Additionally, the results should be grammatically correct.

PRECONDITIONS: Running on a windows computer, in the command line with java version 1.8.0\_221.

EXECUTION STEPS: Enter “Goat” “Car” 200 5 as input for the program.

POSTCONDITIONS: System should display:

Thread 0: 40 iterations.

Thread 1: 40 iterations.

Thread 2: 40 iterations.

Thread 3: 40 iterations.

Thread 4: 40 iterations.

Calculating…

1. **Defects**

IDENTIFIER:

SUMMARY:

DESCRIPTION:

REPRODUCTION STEPS:

EXPECTED BEHAVIOR:

OBSERVED BEHAVIOR: