

**CS 1632 Software Quality Assurance**

**Exercise 1**

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1. **Introduction**
   1. **One Edge Case**

Provide the IDENTIFIER of an edge case that you tested. Explain why this is an edge case.

* 1. **One Corner Case**

Provide the IDENTIFIER of a corner case that you tested. Explain why this is a corner case.

1. **Traceability Matrix**

Write your traceability matrix here.

1. **Test Cases**

Write your test cases here.

IDENTIFIER: TEST-ARGS-NUMBER-FIVE-ARGS

TEST CASE: When five arguments are used instead of four, the usage information should be printed and the program should shut down.

PRECONDITIONS: When "java -version" is run, the system outputs "java version "1.8.0\_231"

EXECUTION STEPS:

1. Run “java -jar GoatGoatCar.jar car goat 1000 4 4”

POSTCONDITIONS: System outputs “Usage: java -jar GoatGoatCar.jar <good\_choice> <bad\_choice> <num\_times> <num\_threads>”

IDENTIFIER: TEST-ARGS-INVALID-STRING-INSTEAD-OF-THREAD-COUNT

TEST CASE: When a string is used instead of an int for number of threads, system should explain the reason that it cannot run and should shut down without displaying a Java exception or stack trace directly to the user.

PRECONDITIONS: When "java -version" is run, the system outputs "java version "1.8.0\_231"

EXECUTION STEPS:

1. Run “java -jar GoatGoatCar.jar car goat 1000 goat”

POSTCONDITIONS: System explains the reason that it cannot run and shuts down without displaying a Java exception or stack trace directly to the user.

IDENTIFIER: TEST-DISPLAY-RESULTS-BASE-CASE

TEST CASE: When given the expected inputs, the program should display the proper solution to the Monty Hall problem without error.

PRECONDITIONS: When "java -version" is run, the system outputs "java version "1.8.0\_231"

EXECUTION STEPS: Run “java -jar GoatGoatCar.jar car goat 1000 2”

POSTCONDITIONS: System outputs

“Thread 0: 500 iterations.

Thread 1: 500 iterations.” Along with the calculated percentages with up to three decimal places and then exit.

IDENTIFIER: [A unique number or string (e.g. TEST-ARGS-NUMBER-FIVE-ARGS)]

TEST CASE: [A description of the test case]

PRECONDITIONS: [State of the system before performing execution steps]

EXECUTION STEPS: [Step-by-step instructions on how to perform test]

POSTCONDITIONS: [\*EXPECTED\* state of the system after having performed execution steps]

1. **Defects**

Write your defects here.

IDENTIFIER: [A unique number or string (e.g. BUG-ARGS-NUMBER-FIVE-ARGS)]

SUMMARY: [A one sentence description of defect]

DESCRIPTION: [A detailed description of everything the tester discovered]

REPRODUCTION STEPS: [Preconditions + Steps to reproduce (similar to test case execution steps)]

EXPECTED BEHAVIOR: [What you expected according to requirements]

OBSERVED BEHAVIOR: [What you \*ACTUALLY\* saw]

IDENTIFIER: BUG-ARGS-INVALID-STRING-INSTEAD-OF-THREAD-COUNT

SUMMARY: [A one sentence description of defect]

DESCRIPTION: [A detailed description of everything the tester discovered]

REPRODUCTION STEPS:

1. When "java -version" is run, the system outputs "java version "1.8.0\_231"
2. Run “java -jar GoatGoatCar.jar car goat 1000 goat”

EXPECTED BEHAVIOR: System explains the reason that it cannot run and shuts down without displaying a Java exception or stack trace directly to the user.

OBSERVED BEHAVIOR: System outputs “Exception in thread "main" java.lang.NumberFormatException: For input string: "goat"

at java.lang.NumberFormatException.forInputString(NumberFormatException.java:65)

at java.lang.Integer.parseInt(Integer.java:580)

at java.lang.Integer.parseInt(Integer.java:615)

at GoatGoatCar.main(GoatGoatCar.java:180)”