

Week 5 – Random Testing

For this document, you will need to fill out the information below. Ensure you have 5 triggering numbers for each bug or you will receive zero points for the bug. Your theory must fit the 5 provided numbers to receive any points. To receive full points, your theory must match the actual coded error, so you may need more than 5 data points for each bug to successfully determine the causes.

- **Bug 1**
 - **Triggering credit card numbers (at least 5)**
 - 3928538583288818
 - 5046496063192855
 - 2220423262321882
 - 5669904275662678
 - 2755768624995044
 - 6718861373424204
 - 1354407108089951
 - **Theory that explains what triggered the bug**
 - I believe any 16-digit number that is not in the valid prefix range for Visa or MasterCard will trigger the bug. (So, any invalid 16-digit number) I took all the data I gathered for bug 1 and put it in Excel. After sorting the card numbers, the gaps in the data were found at the valid Visa and MasterCard prefix ranges.
- **Bug 2**
 - **Triggering credit card numbers (at least 5)**
 - 4052202383196566
 - 4052214216396982
 - 4052132306270166
 - 4052026007919446
 - 4052461113115987
 - 4052772240416514
 - **Theory that explains what triggered the bug**
 - I think that any Visa card number that begins with the prefix 4052 triggers this bug. My tests covered 15-digit card lengths, so I believe the card number that triggers this bug must be a 16-digit visa card number with the prefix 4052.
- **Bug 3**
 - **Triggering credit card numbers (at least 5)**
 - 348052875028807
 - 345647908576913
 - 348793443715231
 - 379531618035999
 - 372631352713137
 - 376677564833623
 - **Theory that explains what triggered the bug**
 - I think that any American Express number that is odd will trigger this bug. All the numbers that were generated by my tests and triggered this bug had an odd number for the farthest right number, making the credit card number odd.

- **Bug 4**

- **Triggering credit card numbers (at least 5)**

- 2512243975272512
 - 4013920574094013
 - 5460546773505460
 - 1798533610501798
 - 4741768391924741
 - 3942474684703942
 - 5637037926165637

- **Theory that explains what triggered the bug**

- I think this bug is triggered when a card number has the first four numbers and the last four numbers in the same exact order. Basically, the last four numbers are repeats of the first four numbers. The card numbers do not have to be valid card numbers, and I only had 16-digit card numbers trigger this bug.

- **Bug 5**

- **Triggering credit card numbers (at least 5)**

- 340997311111658
 - 4900111177359823
 - 5111160349968443
 - 2511119328439787
 - 378673971911118
 - 4012711119261634

- **Theory that explains what triggered the bug**

- I think this bug is triggered anytime a valid credit card number is entered and it has at least 4 consecutive 1's. I ran the test many, many times, and I never had an invalid card number trigger this bug.