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)**
    - 041268656531245
    - 205436753709251
    - 189596642837470
    - 710209195303944
    - 047097790479647
    - 301680649073181
    - 297694314313836
    - 332745693430653
  - **Theory that explains what triggered the bug**
    - This bug is caused by credit card numbers that do not have a patterned prefix, but never starts with '34' or '37', have 15 digits, and valid check bits.
- **Bug 2**
  - **Triggering credit card numbers (at least 5)**
    - 4444370350046192
    - 4444489972679014
    - 4444287478424087
    - 4444650403409582
    - 4444430702054425
    - 4444812559181049
    - 4444643271930441
    - 4444274045836126
    - 4444989753128396
    - 4444656381207153
    - 4444767290882778
    - 4444125013468807

    Theory that explains what triggered the bug
    - This bug is caused by credit card numbers that begin with '4444', have 16 digits, and valid check bits.
- **Bug 3**
  - **Triggering credit card numbers (at least 5)**
    - 4258470440741045
    - 4245898342689431
    - 4500968484420307
    - 4103702194546643
    - 4231419458586141
    - 4452831773589745
    - 4354481353541341
  - **Theory that explains what triggered the bug**
    - This bug is caused by credit card numbers that start with '4', have 16 digits,

and valid check bits.

- **Bug 4**
  - **Triggering credit card numbers (at least 5)**
    - 4207385099224207
    - 5910105596575910
    - 2381739554222381
    - 0691582878450691
    - 4780975366254780
    - 8877082613168877
    - 2906193508842906
    - 2666473285302666
  - **Theory that explains what triggered the bug**
    - This bug is caused by credit card numbers that start with no patterned prefix (sometimes 4, sometimes in range 2221-2720, and sometimes neither), have 16 digits, and invalid check bits.
- **Bug 5**
  - **Triggering credit card numbers (at least 5)**
    - 4931234478783013
    - 2537736212348210
    - 4373289812345809
    - 2412349751933648
    - 5546142123433690
    - 5320123434834406
    - 5369013612349297
    - 5254107438123445
    - 2361234954779983
    - 372123409269503
    - 2431101112344149
    - 344691234899517
  - **Theory that explains what triggered the bug**
    - This bug is caused by credit card numbers that start with a few prefixes (sometimes 4, sometimes in range 51-56, sometimes 37 & 34, sometimes in range 2221-2720) have 16 or 15 digits, and valid check bits.
- **Bug 6**
  - **Triggering credit card numbers (at least 5)**
    - 5125937012168672
    - 4660247333941672
    - 4827232086437672
    - 4613049409614672
    - 2548376265357672
    - 2706646781936672
    - 5565827718751672
    - 4941406428511672
    - 4810298772408672
    - 5570816388485672
    - 4618418514729672
    - 4215590645736672

- **Theory that explains what triggered the bug**
  - This bug is caused by credit card numbers that start with 4s, 51-55, 2221-2720, have 16 digits, and valid check bit of 2 every single time.

- **Bug 7**
  - **Triggering credit card numbers (at least 5)**
    - 56789549712181220
    - 5678981086501785
    - 12345927391934244
    - 56789765485335003
    - 5678966090017758
    - 1234580262456729
    - 123459305900736
    - 0123433944931365
    - 56789185661889497
    - 12345714392773339
    - 567891530828195
    - 12345363522594953
  - **Theory that explains what triggered the bug**
    - This bug is caused by credit card numbers that start with a series of consecutive numbers (sometimes starting with 0, 1, or 5), have no fixed length, with valid & invalid check bits.

- **Bug 8**
  - **Triggering credit card numbers (at least 5)**
    - 4945006409092746
    - 4543230802626969
    - 4826860369436622
    - 4182280104050067
    - 4745266944236305
    - 4444430702054425
    - 4181050469448706
    - 4664474427040486
  - **Theory that explains what triggered the bug**
    - This bug is caused by credit card numbers that start with 4s, have 16 digits, and a valid check bit.