📖 **Assignment3**

Part 1

1a

```
Test Case 383              (Key = 2.2.4.2.2.2.1.)
   help            :  off
   version         :  off
   order           :  reverse
   check           :  no
   unique          :  no
   file_contents   :  sorted_numerically
   duplicates      :  yes
```

This means that you would sort a file that is sorted numerically into reverse order.

Test Case:

```
sort -r sorted-numbers-dups.txt
```

Output:

```
9
7
4
25
100
10
```

1b

```
98 test frames generated and written to sort.refined.tsl.tsl
```

sort.refined.tsl does not use any of the cases that used help or version, it just does not generate tests for that area.

help and version did not need to be lumped in with all of the other flags, because any time either one of them are called, none of the other flags matter.

Therefore, they should be tested on their own, and the other flags need to be tested independently from them.

This makes sense when you look at how many tests were generated, because there were only 98 test cases generated for the sort.refined.tsl instead of 384 for sort.tsl

2a

How many combinations are there for the above files?

`cit-sort-input.txt` : There are $4x2x2x3x2$, or 96 test cases

`cit-sort-input-3way.txt` : There are $4x2x2x3x2$, or 96 test cases

2b

`cit-sort-input.txt` :

```
 first part of exp table
  1 0.367879 0.135335 0.0497871 0.0183156 0.00673795 0.00247875 0.000911882 0.(
  kcombo
  9 11 11 10 11
 Looking for cover:
 t   k    v   TCount
 2 5 13 66

  4 2 2 3 2

    0   1   2   3
    4   5
    6   7
    8   9  10
    11  12


  upperbound = 10016
```

```
current tabsize 5707

current tabsize 2859

current tabsize 1435

current tabsize 723

current tabsize 367

current tabsize 189

current tabsize 100

current tabsize 55

current tabsize 33

current tabsize 22

current tabsize 16

current tabsize 13

current tabsize 12
```

2c

```
t   k   v  TCount
2 5 13 66

 4 2 2 3 2


  0  1  2  3
  4  5
  6  7
  8  9  10
  11  12


12
```

```
0 5 6 8 12
3 4 7 9 12
1 5 6 9 12
1 4 7 10 11
1 5 7 8 11
2 4 7 10 12
0 4 6 9 12
3 5 6 10 11
0 4 7 10 11
3 4 7 8 12
2 5 7 9 11
2 4 6 8 11
```

Order	Check	Unique	File	Duplicates
Numeric	no	yes	Alphabetic	No Duplicates
Alphabetical	yes	no	Unsorted	No Duplicates
Random	no	yes	Unsorted	No Duplicates
Random	yes	no	Numbers	Duplicates
Random	no	no	Alphabetic	Duplicates
Reverse	yes	no	Numbers	No Duplicates
Numeric	yes	yes	Unsorted	No Duplicates
Alphabetical	no	yes	Numbers	Duplicates
Numeric	yes	no	Numbers	Duplicates
Alphabetical	yes	no	Alphabetic	No Duplicates
Reverse	no	no	Unsorted	Duplicates
Reverse	yes	yes	Alphabetic	Duplicates

Part 2

1. Default Search Engine (7 options)

2. Tabs (3 on/off options)

3. Updates (2 on/off options)

3a

---

224 test frames generated and written to firefox.tsl.tsl

3b

```
#tsl for firefox
Parameters:
        search_engine:
           google.
           bing.
           amazon.
           duckduckgo.
           ebay.
           twitter.
           wikipedia.
        ctrl_tab:
           yes.
           no.
        link_new_tab:
            yes.
            no.
        switch_immediate:
           yes.
           no.
        auto_install:
           yes.
           no.
        auto_update_search_engine:
           yes.
           no.
```

First 5:

```
Test Case 1              (Key = 1.1.1.1.1.1.)
    search_engine            :   google
    ctrl_tab                 :   yes
    link_new_tab             :   yes
    switch_immediate         :   yes
    auto_install             :   yes
    auto_update_search_engine :  yes


Test Case 2              (Key = 1.1.1.1.1.2.)
    search_engine            :   google
    ctrl_tab                 :   yes
    link_new_tab             :   yes
    switch_immediate         :   yes
    auto_install             :   yes
    auto_update_search_engine :  no


Test Case 3              (Key = 1.1.1.1.2.1.)
    search_engine            :   google
    ctrl_tab                 :   yes
    link_new_tab             :   yes
    switch_immediate         :   yes
    auto_install             :   no
    auto_update_search_engine :  yes


Test Case 4              (Key = 1.1.1.1.2.2.)
    search_engine            :   google
    ctrl_tab                 :   yes
    link_new_tab             :   yes
    switch_immediate         :   yes
    auto_install             :   no
    auto_update_search_engine :  no


Test Case 5              (Key = 1.1.1.2.1.1.)
    search_engine            :   google
    ctrl_tab                 :   yes
    link_new_tab             :   yes
    switch_immediate         :   no
    auto_install             :   yes
    auto_update_search_engine :  yes
```

Last 5:

```
Test Case 220            (Key = 7.2.2.1.2.2.)
    search_engine            :  wikipedia
    ctrl_tab                 :  no
    link_new_tab             :  no
    switch_immediate         :  yes
    auto_install             :  no
    auto_update_search_engine :  no


Test Case 221            (Key = 7.2.2.2.1.1.)
    search_engine            :  wikipedia
    ctrl_tab                 :  no
    link_new_tab             :  no
    switch_immediate         :  no
    auto_install             :  yes
    auto_update_search_engine :  yes


Test Case 222            (Key = 7.2.2.2.1.2.)
    search_engine            :  wikipedia
    ctrl_tab                 :  no
    link_new_tab             :  no
    switch_immediate         :  no
    auto_install             :  yes
    auto_update_search_engine :  no


Test Case 223            (Key = 7.2.2.2.2.1.)
    search_engine            :  wikipedia
    ctrl_tab                 :  no
    link_new_tab             :  no
    switch_immediate         :  no
    auto_install             :  no
    auto_update_search_engine :  yes


Test Case 224            (Key = 7.2.2.2.2.2.)
```

```
search_engine            :  wikipedia
ctrl_tab                 :  no
link_new_tab             :  no
switch_immediate         :  no
auto_install             :  no
auto_update_search_engine :  no
```

4a

firefox.input.txt:

```
2
6
7 1
2 5
```

cit_sample.out:

```
t   k   v  TCount
2 6 17 110

 7 2 2 2 2 2

  0  1  2  3  4  5  6
  7  8
  9  10
  11  12
  13  14
  15  16

14
 1 8 9 12 14 15
 0 8 9 11 14 16
 2 8 9 12 13 15
 4 8 10 12 13 15
 4 7 9 11 14 16
 6 7 10 12 13 16
 3 8 9 11 14 15
 5 8 10 11 14 15
```

```
6 8 9 11 14 15
5 7 9 12 13 16
2 7 10 11 14 16
0 7 10 12 13 15
3 7 10 12 13 16
1 7 10 11 13 16
```

4b

Search Engine	Most Recent Cycle	Open Link New Tab	Switch Immediately	Auto Install	Update Search Engine
Bing	no	yes	no	no	yes
Google	no	yes	yes	no	no
Amazon	no	yes	no	yes	yes
Ebay	no	no	no	yes	yes
Ebay	yes	yes	yes	no	no
Wikipedia	yes	no	no	yes	no
DuckDuckGo	no	yes	yes	no	yes
Twitter	no	no	yes	no	yes
Wikipedia	no	yes	yes	no	yes
Twitter	yes	yes	no	yes	no
Amazon	yes	no	yes	no	no
Google	yes	no	no	yes	yes
DuckDuckGo	yes	no	no	yes	no
Bing	yes	no	yes	yes	no

4c

Base Choice

1. "DuckDuckGo", "automatically install updates" ,"automatically update search engines"

2. "Google", "automatically install updates" ,"automatically update search engines"

3. "Bing", "automatically install updates" ,"automatically update search engines"

4. "Amazon", "automatically install updates" ,"automatically update search engines"

5. "Ebay", "automatically install updates" ,"automatically update search engines"

6. "Twitter", "automatically install updates" ,"automatically update search engines"

7. "Wikipedia", "automatically install updates" ,"automatically update search engines"

8. "DuckDuckGo", "Ctrl-Tab cycles through tabs in most recent order", "automatically install updates" ,"automatically update search engines"

9. "DuckDuckGo", "Open links in new tabs instead of new windows", "automatically install updates" ,"automatically update search engines"

10. "DuckDuckGo", "When you open a link in new tab, switch to it immediately", "automatically install updates" ,"automatically update search engines"

11. "DuckDuckGo", "Check for updates but let you choose to install them" ,"automatically update search engines"

12. "DuckDuckGo", "automatically install updates"