**Test Cases: cal**

Files:

* input1.txt, input2.txt, input3.txt, input4.txt input5.txt, input6.txt
* output2.txt, output3.txt, output4.txt output5.txt, output6.txt

Files Description:

* input files contains the input command
* output files contains the expected output
* There is no output1.txt as the results may varies

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| Input | Expected Output |
| cal | February 2017  Su Mo Tu We Th Fr Sa  1 2 3 4  5 6 7 8 9 10 11  12 13 14 15 16 17 18  19 20 21 22 23 24 25  26 27 28  (Note: Output may vary. Prints current month) |
| cal 2017 | **Refer to Output1.txt** |
| cal abc | cal: Invalid argument |
| cal 2 2017 | February 2017  Su Mo Tu We Th Fr Sa  1 2 3 4  5 6 7 8 9 10 11  12 13 14 15 16 17 18  19 20 21 22 23 24 25  26 27 28 |
| cal 2 2 2 | cal: Invalid argument |
| cal –m 2 2017 | February 2017  Mo Tu We Th Fr Sa Su  1 2 3 4 5  6 7 8 9 10 11 12  13 14 15 16 17 18 19  20 21 22 23 24 25 26  27 28 |

**Test Cases: grep**

Files:

* grep.txt
* input1.txt, input2.txt, input3.txt, input4.txt input5.txt
* output1.txt, output2.txt, output3.txt, output4.txt output5.txt

Files Description:

* grep.txt contains the content for grep
* input files contains the input command
* output files contains the expected output

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| Input | Expected Output |
| grep |  |
| grep pattern | grep: InputStream not provided |
| grep this grep.txt | this is a file "grep.txt" |
| grep | shell: Invalid syntax encountered. |
| grep this < grep.txt | this is a file "grep.txt" |

**Test Cases: sort**

Files:

* invalid command.txt
* sort1.txt, sort2.txt, sort3.txt, sort4.txt sort5.txt
* input1.txt, input2.txt, input3.txt, input4.txt input5.txt, input6.txt, input7.txt input8.txt
* output1.txt, output2.txt, output3.txt, output4.txt output5.txt, output6.txt, output7.txt output8.txt

Files Description:

* sort.txt contains files to be sorted
* invalid command contains a list of invalid command
* input files contains the input command
* output files contains the expected output

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| Input | Expected Output | Explanation |
| sort sort1.txt | $1000  %10$  010  1000 years of sorrow  18 days later  22  25 minutes ago  25jump street  Saving private ryan  kitten mitten  my world  my world  random world | sort in the order special chars, number, capital & simple letters |
| sort -n sort2.txt | "344"  //??  /n  \n  \n\r\  1  32 - 45  235235 sdfsdf  2"  23034-32  32-45  Chasing street food  Singing luluaby  kangoroo work  kk hospital  kkk  star wars | sort in the order special chars, number, capital & simple letters. Numbers are sorted in numerical order instead of ascii value  “input2.txt” contains empty new line in the file. These empty newlines are ignore by sort |
| sort sort3.txt | tab in front  tab1 in front  n space in front  space in front  123  2aa  f@llowing  f0llowing  following  words | sort in the order special chars, number, capital & simple letters. “input3.txt” contains empty new line in the file. These empty newlines are ignore by sort “tab” and “spaces” of each line is treated as a special char |
| sort –n sort4.txt | 132  234  315  324  1321  4523  324324  1535235 | sort numbers in numerical order |
| sort sort5.txt | #k#k  #kkk  $00  $999  ()  []  10 o'clock  100  123  20  20 dollars  33  A Star  Apple  Hello Panda  Hello world  Sleepy woods  addiTion  addition  g0od  gOOd  go0d  sad  sleeping beauty | sort in the order special chars, number, capital & simple letters. |
| sort –n sort3.txt sort4.txt | tab in front  tab1 in front  n space in front  space in front  123  132  234  315  324  1321  4523  324324  1535235  2aa  f@llowing  f0llowing  following  words | Combined the lines of sort3.txt & sort4.txt and sort them in order. Numbers are sorted in numerical order |
| sort sort1.txt sort999.txt | $1000  %10$  010  1000 years of sorrow  18 days later  22  25 minutes ago  25jump street  Saving private ryan  kitten mitten  my world  my world  random world | Sorted results of sort1.txt is displayed as there is no sort999.txt |
| sort sort999.txt sort1.txt | $1000  %10$  010  1000 years of sorrow  18 days later  22  25 minutes ago  25jump street  Saving private ryan  kitten mitten  my world  my world  random world | Sorted results of sort1.txt is displayed as there is no sort999.txt |

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| --- | --- |
| Invalid command | Explanation |
| sort | No argument return error message |
| sort sort999.txt | No such file exist |