Assignment 6

Name: Erin Ledford

Email: [eledford@unomaha.edu](mailto:eledford@unomaha.edu)

Due Date: March 5th, 2021

Honor Pledge: On my honor as a student of the University of Nebraska at Omaha, I have neither given nor received unauthorized help on this programming assignment.

**Objectives**

This assignment will give you the opportunity to practice using regular expressions.

**Exercises**

Use regular expressions and grep answer the following questions. Match against entries in the file wordlist.txt2 (on Canvas in Files/Assignments/Assignment06/wordlist.txt), an eclectic collection of 224,714 words. The number in parenthesis at the end of most questions is the number of matches I found. Record the regular expression that you used to answer to each question, the matches themselves (or the first 10 if there are more than 10), and a count of the number of matches in a text file. Name this file netID\_Assign6.txt where netID is your UNO NetID. Be sure to include your name in the file.

1. The currency name franc (France) is hidden in the word efranchise and rand (South African) is hidden in grandma. In what words does the currency name dinar (Iraq) appear in? (48)
   1. Grep ‘dinar’ wordlist.txt
   2. Altitudinarian
   3. Arundinaria
   4. Atitudinarian
   5. Byordinar
   6. Byordinary
   7. Consuetudinary
   8. Dinar
   9. Dinaric
   10. Dinarzade
   11. Extraordinarily
2. What words contain the consecutive letters nacl? (28)
   1. Grep ‘nacl’ wordlist.txt
   2. Anaclasis
   3. Anaclastic
   4. Anaclastics
   5. Anaclete
   6. Anacletium
   7. Anaclinal
   8. Anaclasis
   9. Anaclitic
   10. Antanaclasis
   11. Barnacle
3. What words contain the consecutive letter combination tantan? (9)
   1. Grep ‘tantan’ wordlist.txt
   2. Coinstantaneity
   3. Coinstantaneous
   4. Coinstantaneously
   5. Coinstantaneousnes
   6. Constantan
   7. Instantaneity
   8. Instantaneous
   9. Instantaneously
   10. instantaneousnes
4. What words start and end with a vowel (a, e, i, o, u and y) and only have one or more consonants in-between? (79)
   1. Grep ‘^[aeiouy][^aeiouy ]\+[aeiouy]$’ wordlist.txt
   2. Ambho
   3. Ambsho
   4. Achre
   5. Alpha
   6. Altho
   7. Amble
   8. Ambry
   9. Ample
   10. Amply
   11. ancha
5. What words contain the vowels (a, e, i, o, u and y) in order without repeats? Note that adventitiously is not a correct match because i occurs twice before o. (2)
   1. Grep ‘a[^aeiouy]\*e[^aeiouy]\*i[^aeiouy]\*o[^aeiouy]’\*u[^aeiouy]\*y[^aeiouy]\*’ wordlist.txt
   2. The two words are: abstemiously and facetiously
6. What words begin and end with the same vowel (a, e, i, o, u, or y)? (3,180)
   1. Grep ‘^\([aeiouy]\).\*\1$’ wordlist.txt
   2. Ababua
   3. Abaca
   4. Abama
   5. Abasia
   6. Abatua
   7. Abelia
   8. Abelicia
   9. Abepithymia
   10. Aberia
   11. abhiseka
7. What words contain exactly three y’s? (97)
   1. Grep ‘.\*y.\*y.\*y.\*’ wordlist.txt
   2. Acetylphenylhydrazine
   3. Amylohydrolysis
   4. Amylohydrotic
   5. Brachydactyly
   6. Calyphyomy
   7. Chylophyly
   8. Coryphyly
   9. Cryptozygosity
   10. Crystoelytroplasty
   11. cystopyelography
8. What words contain the sequence hot or the sequence cold? (827) Do any words contain both?
   1. No words contain both, used: grep -c ‘hot.\*cold\|cold.\*hot’ wordlist.txt to search
   2. To search for hot and cold: grep ‘hot\|cold’ wordlist.txt
   3. Acold
   4. Aerophotography
   5. Amorphotae
   6. Amphoteric
   7. Anamorphote
   8. Anthotaxis
   9. Anthotaxy
   10. Anthotropic
   11. Anthotrpoism
   12. Anthropomorphotheist
9. On a standard telephone keypad, each number (except 1 and 0) is associated with at least three letters (see http://en.wikipedia.org/wiki/Telephone\_keypad). Using these associations what words can the phone number 226-3385 spell? (1)
   1. Grep ‘^[abc][abc][mno][def][def][tuv][jkl]$’
   2. Baneful is the answer
10. What is the longest word you can type on a standard QWERTY keyboard using only your left hand? (On a standard QWERTY keyboard the letters typed with the left hand are asdfgqwertzxcvb.) Hint: try different regular expressions with increasing size of the word until you can’t find a match.
    1. Grep ‘^[qwertasdfgzxcvb]\*$’ wordlist.txt > problem10.txt
    2. Awk ‘{print length(), $0 | “sort -n”}’ problem10.txt
    3. The longest words you can type are aftercataract and devertebrated
11. What is the longest word you can type on a standard QWERTY keyboard using only your right hand? (On a standard QWERTY keyboard the letters typed with the right hand are hjklyuiopnm.)
    1. Grep ‘^[hjklyuiopnm]\*$’ wordlist.txt > problem11.txt
    2. Awk ‘{print length(), $0 | “sort -n”}’ problem11.txt
    3. The longest word you can type is miminypiminy
12. What words end in the two letters mt? (3)
    1. Grep ‘mt$’ wordlist.txt
    2. Adreamt
    3. Dreamt
    4. undreamt
13. What words end in dous? (125)
    1. Grep ‘dous$’ wordlist.txt
    2. Acanthocladous
    3. Acanthopodous
    4. Acryonymdous
    5. Adenopodous
    6. Aeluropodous
    7. Alectoropodous
    8. Amblypodous
    9. Amphipodus
    10. Anarthopodus
    11. anelidous
14. What is the longest word that can be typed using only those letters on the top row of a standard QWERTY keyboard? Middle row?
    1. Grep ‘^[qwertyuiop]\*$’ wordlist.txt > problem14.txt
    2. Awk ‘{print length(), $0 | “sort -n”}’ problem14.txt
    3. The longest word of the top row is: rupturewort
    4. Grep ‘^[asdfghjkl]\*$’ wordlist.txt > problem14\_2.txt
    5. Awk ‘{print length(), $0 | “sort -n”}’ problem14\_2.txt
    6. The longest words of the middle row are: galagala, and haskalah
15. What words contain the letter q not immediately followed by the letter u? (6)
    1. Grep ‘q[^u]’ wordlist.txt
    2. The words are: Iraqi, iraqian, miqra, qasida, qintar, qoheleth
16. What words contain a sequence of three letters that is repeated elsewhere in the word? (2,554)
    1. Grep ‘\(\w\w\w\).\*\1’ wordlist.txt
    2. Abracadabra
    3. Absentment
    4. Acalycal
    5. Acatastasia
    6. Aceacenaphthene
    7. Aceraceae
    8. Aceraceous
    9. Acetacetic
    10. Acetoacetanilide
    11. Acetoacetate
17. What words contain a sequence of three letters, the first and last of which are the same, that is repeated elsewhere in the word; e.g., the ono in monotonous? (130)
    1. Grep ‘\(\w\)\(\w\)\1.\*\1\2\1.\*’ wordlist.txt
    2. Aerenterctasia
    3. Amalgamble
    4. Amalgambate
    5. Amalgamation
    6. Amalgamationist
    7. Amalgamative
    8. Amalgamatize
    9. Amalgamator
    10. Amonocarbonous
    11. Anapanapa
18. What words contain a sequence of two letters that is repeated at least three times (total) in the word? (310)
    1. Grep ‘\(\w\w\).\*\1.\*\1’ wordlist.txt
    2. Acescence
    3. Acrotrophoneurosis
    4. Actinocutitis
    5. Actinodermatitis
    6. Alkalimetrical
    7. Alkalimetricaly
    8. Alkaloidal
    9. Aminoquinoline
    10. Analantoidean
    11. Anathematization
19. For which words are the first three letters the same as the reverse of those letters at the end? (52)
    1. Grep ‘^\(\w\)\(\w\)\(\w\)\w\*\3\2\1$’ wordlist.txt
    2. Andinida
    3. Arthogastra
    4. Cinamonic
    5. Cincholoiponic
    6. Cinchomeronic
    7. Cinchonic
    8. Cinchoninic
    9. Detrited
    10. Dewclawed
    11. discoglosid
20. A palindrome is a word, phrase, number or other sequence of units that can be read the same way in either direction. What words are five-letter palindromes? What words are seven-letter palindromes? What is the longest palindrome in wordlist.txt?
    1. Grep ‘^\(\w\)\(\w)\w\2\1$’ wordlist.txt for the five-letter palindromes, there are 43
    2. Ajaja
    3. Alala
    4. Alula
    5. Anana
    6. Anona
    7. Arara
    8. Civic
    9. Deded
    10. Deged
    11. Desed
    12. Grep ‘^\(\w\)\(\w)\(\w)\w\3\2\1$’ wordlist.txt for the seven letter palindromes, there are 7
    13. Adinida
    14. Murdrum
    15. Repaper
    16. Reviver
    17. Rotator
    18. Selfles
    19. Senones
    20. The longest palindromes are senselesnes and sensuousness using grep ‘^\(\w\)\(\w)\(\w)\(\w\)\(\w\)\w\5\4\3\2\1$’ wordlist.txt

**How to Submit**

Submit your file as an attachment using Canvas