**HW2**

**PROGRAM DESCRIPTION**

* index\_version1.uncompresssed: An uncompressed index of lemmas of the tokens.
* index\_version2.uncompressed: An uncompressed index of stems of the tokens.
* index\_version1.compressed: A compressed index of lemmas of the tokens:Dictionary

compression is achieved using blocked compression (with 𝑘 = 4) and posting lists compression is achieved using gamma encoding for the gaps between document-ids.

* index\_version2.compressed: A compressed index of lemmas of the tokens: Dictionary compression is achieved using front-coding (with 𝑘 = 8) and posting lists compression is achieved using delta encoding for the gaps between document-ids.

**Time:**

Time taken to Create Index\_Version1.uncompress: 4638 milliseconds

Time taken to Create Index\_Version2.uncompress: 5030 milliseconds

Time taken to Create Index\_Version1.compress: 262 milliseconds

Time taken to Create Index\_Version2.compress: 284 milliseconds

**Size:**

Size of Index\_Version1.uncompress: 1149217 bytes

Size of Index\_Version2.uncompress: 1095927 bytes

Size of Index\_Version1.compressed: 1272604 bytes

Size of Index\_Version2.compressed: 1134030 bytes

**Search Term details with respect to index-1**

Details of reynolds

* Term Frequqency: 384
* Document Frequency: 200
* Size of inverted posting list in bytes: 1920

Details of nasa

* Term Frequqency: 148
* Document Frequency: 145
* Size of inverted posting list in bytes: 1424

Details of prandtl

* Term Frequqency: 80
* Document Frequency: 63
* Size of inverted posting list in bytes: 680

Details of flow

* Term Frequqency: 2072
* Document Frequency: 728
* Size of inverted posting list in bytes: 6672

Details of pressure

* Term Frequqency: 1354
* Document Frequency: 541
* Size of inverted posting list in bytes: 4984

Details of boundary

* Term Frequqency: 1185
* Document Frequency: 467
* Size of inverted posting list in bytes: 4320

Details of shock

* Term Frequqency: 736
* Document Frequency: 238
* Size of inverted posting list in bytes: 2256

**Search Term details with respect to index-2**

Details of reynold

* Term Frequqency: 384
* Document Frequency: 200
* Size of inverted posting list in bytes: 1920

Details of nasa

* Term Frequqency: 148
* Document Frequency: 145
* Size of inverted posting list in bytes: 1424

Details of prandtl

* Term Frequqency: 80
* Document Frequency: 63
* Size of inverted posting list in bytes: 680

Details of flow

* Term Frequqency: 2078
* Document Frequency: 730
* Size of inverted posting list in bytes: 6688

Details of pressur

* Term Frequqency: 1382
* Document Frequency: 551
* Size of inverted posting list in bytes: 5072

Details of boundari

* Term Frequqency: 1185
* Document Frequency: 467
* Size of inverted posting list in bytes: 4320

Details of shock

* Term Frequqency: 737
* Document Frequency: 239
* Size of inverted posting list in bytes: 2264

**NASA Stats from index-1**

**Posting -1**

Term frequency of NASA in 53 is : 1

DocumentLen of the posting of NASA in 53 is : 206

Maximum term frequency of the posting NASA in 53 is : 14

document frequency of NASA in 53 is : 145

**Posting -2**

Term frequency of NASA in 58 is : 1

DocumentLen of the posting of NASA in 58 is : 171

Maximum term frequency of the posting NASA in 58 is : 14

document frequency of NASA in 58 is : 145

**Posting -3**

Term frequency of NASA in 68 is : 1

DocumentLen of the posting of NASA in 68 is : 114

Maximum term frequency of the posting NASA in 68 is : 6

document frequency of NASA in 68 is : 145

**NASA Stats from index-2**

**Posting -1**

Term frequency of NASA in 53 is : 1

DocumentLen of the posting of NASA in 53 is : 206

Maximum term frequency of the posting NASA in 53 is : 14

document frequency of NASA in 53 is : 145

**Posting -2**

Term frequency of NASA in 58 is : 1

DocumentLen of the posting of NASA in 58 is : 171

Maximum term frequency of the posting NASA in 58 is : 14

document frequency of NASA in 58 is : 145

**Posting -13**

Term frequency of NASA in 68 is : 1

DocumentLen of the posting of NASA in 68 is : 114

Maximum term frequency of the posting NASA in 68 is : 6

document frequency of NASA in 68 is : 145

Doc with largest max\_tf 1201 with a max term freq of 100

Doc with largest doclen 798 with a max doc length of 665

**The terms from index-1 with the largest df:** ['to']

**The terms from index-1 with the lowest df:** ['aaaero', 'aaaeroconf', 'aasu', 'abbott', 'abbreviated', 'ability', 'ab', 'ablative', 'ablatedlength', 'abovementioned', 'absent', 'absorbing', 'abundantly', 'accelerates', 'accelerometer', 'accentuated', 'acceptability', 'acceptably', 'acceptance', 'accessible', 'accidental', 'accommodate', 'accommodated', 'accompany', 'accountable', 'accounting', 'accrue', 'accumulated', 'acetate', 'achievable', 'acoust', 'acoustically', 'acquire', 'acquired', 'acquisition', 'acr', 'acrodynamic', 'acrothermochemistry', 'acrothermoelasticity', 'actural', 'ad', 'adamsgj', 'adamsmc', 'adamsontc', 'adaptable', 'additive', 'adescs', 'adjacentequilibrium', 'adjoining', 'adjoint', 'adjusting', 'admit', 'admitted', 'admitting', 'admixture', 'adsorption', 'advent', 'aeolotropic', 'aerelastic', 'aerfoils', 'aerial', 'aeroballistics', 'aerocosmonautics', 'aerodynamicheating', 'aerodynamieist', 'aeroelastician', 'aeroengrev', 'aeronautiques', 'aerores', 'aerothermal', 'aerothermochemical', 'aerothermodynamic', 'aerothermoelastic', 'affinely', 'affinity', 'affirmative', 'afford', 'afforded', 'afftc', 'afraes', 'afresh', 'afterburner', 'afterflow', 'age', 'agency', 'agrawal', 'agreeing', 'ailcron', 'aimed', 'airborne', 'aircrafttype', 'airforce', 'airit', 'airliner', 'airload', 'airloads', 'airscrew', 'akin', 'alan', 'algrantijs', 'aligned', 'alksne', 'allcock', 'allmovable', 'allround', 'alluded', 'almen', 'almenjo', 'almroth', 'almrothbo', 'alternately', 'alternating', 'alternatively', 'altogether', 'ambrit', 'ambritire', 'amer', 'amick', 'amickjl', 'amiee', 'amo', 'amongst', 'amounted', 'ample', 'amplifier', 'amplifying', 'amply', 'analogously', 'analoguous', 'analyser', 'analysing', 'analyticially', 'analyzable', 'analyzer', 'analyzes', 'anastasiorf', 'andabrespectively', 'andersonk', 'andersonrg', 'andlanding', 'andrew', 'andrewsdr', 'angeles', 'anh', 'anhedral', 'anisotropy', 'ann', 'annex', 'anniv', 'announces', 'annual', 'annul', 'anove', 'anthony', 'anti', 'antielastic', 'antisymmetric', 'antisymmetrical', 'anyway', 'ao', 'apogee', 'apparentmass', 'appmech', 'appraisal', 'appraised', 'appraisement', 'appraoch', 'approximates', 'appscres', 'apropriate', 'aquart', 'ara', 'arbor', 'arch', 'ardc', 'arens', 'arithmetic', 'arithmetical', 'armenakasae', 'armstrong', 'arrest', 'arrived', 'arrow', 'arsj', 'arsjnl', 'ary', 'asce', 'ascertained', 'ascribed', 'ashleyh', 'ashwelldg', 'aside', 'asimplified', 'ask', 'aspectratio', 'assembly', 'asserted', 'assessing', 'assistance', 'association', 'assortment', 'assure', 'astro', 'astronautics', 'astrophys', 'astrophysics', 'atabeckbh', 'atlarge', 'atospheres', 'attach', 'attacked', 'attacking', 'attaindd', 'attaining', 'attainment', 'attened', 'attract', 'audio', 'aural', 'auspex', 'authored', 'authority', 'availability', 'avaluated', 'avove', 'avro', 'axialthrust', 'ayrers', 'backed', 'backing', 'backup', 'backward', 'bakanov', 'bakereg', 'bakerje', 'balanced', 'balsa', 'ban', 'bang', 'barber', 'bare', 'barmbyjg', 'baronjr', 'barrel', 'barryfw', 'bartleer', 'basetype', 'basing', 'batdorf', 'baughmanle', 'baume', 'baumgm', 'bc', 'beanebj', 'beasleyja', 'beat', 'becausewith', 'beckett', 'bed', 'begs', 'behaved', 'behaviorccontrol', 'believe', 'belleville', 'bellmanr', 'belltype', 'belong', 'belt', 'bendict', 'bendingtorsion', 'benjaminrj', 'bennettfd', 'bennettfv', 'benser', 'bent', 'bentoner', 'beograd', 'ber', 'bergdolt', 'bergdoltve', 'berger', 'bergles', 'bergmannhw', 'berlotrr', 'bernard', 'berndt', 'bernerf', 'bernoulli', 'berry', 'berrycj', 'berryjg', 'berthelot', 'beskin', 'bestd', 'beta', 'bethpage', 'beveled', 'beyween', 'bh', 'bifurcated', 'bifurcation', 'bijlaardpp', 'billowing', 'bimetallic', 'bimolecular', 'birchallpc', 'birdga', 'birdjd', 'birnbaum', 'bisector', 'bisplinghoffrl', 'blackiej', 'blackstockta', 'bladed', 'blandsr', 'bleich', 'blended', 'blessing', 'blocking', 'bloom', 'blown', 'blowout', 'bloxsonde', 'blue', 'bluish', 'blunttrailing', 'bo', 'board', 'boat', 'boattails', 'bobbittpj', 'bodner', 'bodnersr', 'bodt', 'bogdonoffsm', 'bohonhk', 'boiloff', 'boisonjc', 'bolshakov', 'bolzre', 'bomb', 'bondac', 'bonus', 'booming', 'boost', 'borcheref', 'bore', 'bornel', 'bounary', 'boundwell', 'boxallg', 'boydja', 'boyerd', 'bracalente', 'bracket', 'branchline', 'brandmaierhe', 'bratt', 'braunschweig', 'breaking', 'brebner', 'breguet', 'brenckmanm', 'brevoortm', 'bridge', 'bridging', 'brightness', 'bristol', 'britjappphys', 'brittonjw', 'broadbenteg', 'broadened', 'broadening', 'broadwellje', 'broke', 'brommaf', 'brother', 'browerwb', 'brownce', 'browncs', 'browneka', 'brownga', 'brownwd', 'bruchdo', 'brush', 'bryceww', 'bryerdw', 'brysonae', 'bsc', 'btulb', 'budiansky', 'builtup', 'bulent', 'bulging', 'bulkhead', 'bullenni', 'bullet', 'bump', 'buoyancy', 'burgrafor', 'buried', 'burke', 'burtonra', 'butler', 'buzz', 'bypass', 'ca', 'cabin', 'calcualted', 'calcualtions', 'caliber', 'calibrate', 'callaghanee', 'callahancj', 'camacm', 'camb', 'camera', 'campbell', 'campbellwf', 'camphil', 'canard', 'cancel', 'cancellation', 'canted', 'capillary', 'caplan', 'caplanc', 'capsule', 'caravelle', 'carbide', 'carborundum', 'carderock', 'cardmf', 'cardullo', 'caret', 'carrier', 'carrosrj', 'carter', 'carterwj', 'casaccio', 'casing', 'cast', 'castigliano', 'castilege', 'castolite', 'catalytic', 'catalytically', 'catered', 'catheralld', 'cathode', 'caution', 'cavitating', 'cellulose', 'centaur', 'centerbut', 'centerof', 'centigrade', 'centreline', 'centripetal', 'centroid', 'certainty', 'ceuler', 'cg', 'chain', 'chalres', 'changcr', 'channkk', 'chap', 'chapkis', 'chapkisrl', 'characteristies', 'characterize', 'characterizes', 'charczenko', 'charging', 'charter', 'chartsfigs', 'chase', 'chaudhurypr', 'chemisorption', 'chencf', 'chengkh', 'chengsin', 'chernyi', 'chernyigg', 'chesky', 'chester', 'chien', 'child', 'chilverah', 'chinitzw', 'chinnecka', 'choke', 'choleski', 'chouyt', 'chow', 'chrichlowwj', 'christiaensj', 'christian', 'chuck', 'chuwen', 'chuwh', 'circling', 'circuit', 'circuitry', 'circulated', 'circulating', 'circumlunar', 'city', 'cl', 'claim', 'claimed', 'clamping', 'clamshell', 'clarified', 'clarify', 'clarifying', 'clark', 'clarke', 'clarkme', 'clarkson', 'classed', 'classic', 'classically', 'classificaiton', 'classified', 'clauserfh', 'clausing', 'clay', 'claywg', 'clean', 'clearance', 'cleared', 'climinated', 'clinton', 'clippingerrf', 'closeness', 'closest', 'closing', 'closure', 'clouston', 'clutter', 'coalescence', 'coarse', 'coasting', 'coating', 'coecf', 'coefstant', 'cohend', 'cohennb', 'coherent', 'colder', 'colejd', 'colemanws', 'colesd', 'coleswd', 'collaboration', 'collaborator', 'collapsing', 'collectively', 'collocation', 'colour', 'colston', 'columnmaterial', 'combine', 'combustionheated', 'combution', 'command', 'commence', 'commercially', 'communication', 'comp', 'companion', 'compatible', 'compensated', 'compete', 'competition', 'complimentary', 'compound', 'compressibleflow', 'compressing', 'compressional', 'compressorsdash', 'comprise', 'comput', 'conceivable', 'conceivably', 'concise', 'concisely', 'concocted', 'concrete', 'concur', 'concurrently', 'concurring', 'condamped', 'condensed', 'conduct', 'conductioncontrolled', 'conductionexpansion', 'conductor', 'conecylinders', 'coned', 'conf', 'confidence', 'confine', 'confirming', 'conform', 'conformally', 'conformaltransformation', 'conformity', 'conforms', 'confused', 'confusing', 'congr', 'conicaldash', 'conically', 'conicals', 'conidtions', 'connect', 'connecting', 'connexion', 'connorrw', 'conpressibility', 'conservativeness', 'consierable', 'consolidate', 'const', 'constancy', 'constantdensity', 'constantinescuvn', 'constantino', 'constantly', 'constantsthey', 'constituted', 'constitution', 'constrained', 'consultant', 'consulting', 'consumption', 'contacting', 'contaminates', 'contaminating', 'contemplated', 'context', 'continually', 'continues', 'contirj', 'contoured', 'contract', 'contracting', 'contradiction', 'contrasting', 'contributes', 'contributing', 'controller', 'convair', 'convect', 'convected', 'convecting', 'conveniently', 'convergentdivergent', 'converse', 'convert', 'conviction', 'convolution', 'conwayd', 'cooke', 'cookejc', 'cookge', 'cookit', 'cooksey', 'cooler', 'cooperre', 'coordinator', 'cope', 'copper', 'corollary', 'corpuscular', 'corrective', 'correctness', 'correlograms', 'cortrightem', 'cosine', 'cosmonautics', 'coulomb', 'coundary', 'counteracting', 'counterclockwise', 'counting', 'couple', 'coupon', 'cps', 'crabtree', 'crack', 'cracking', 'craft', 'crandalls', 'crandals', 'cranej', 'crank', 'crankj', 'creagermo', 'creased', 'creepbuckling', 'creeping', 'crest', 'crew', 'crewepr', 'crinoline', 'criticism', 'criticized', 'croccol', 'crooked', 'crosscorrelation', 'crossing', 'crosssections', 'crushed', 'csanady', 'cubbison', 'cubics', 'culebra', 'culickfe', 'culickfec', 'cumbersome', 'cummingrw', 'cunninghambe', 'cup', 'cure', 'curling', 'curranjk', 'curriemm', 'curtain', 'curtis', 'curving', 'cusp', 'cussed', 'cutoff', 'cutting', 'cw', 'cx', 'cyclessec', 'cylinderhemisphere', 'cylinderical', 'daiberjw', 'daley', 'dalton', 'damaging', 'dampometer', 'dana', 'dand', 'danger', 'dangerous', 'dashin', 'dashn', 'dashthat', 'dashthe', 'daughaday', 'daviesde', 'davisah', 'daytime', 'dcae', 'debatable', 'dec', 'decade', 'decelerate', 'decelerated', 'decelerates', 'decide', 'decidedly', 'decision', 'decisively', 'declassified', 'declined', 'decomposed', 'decomposition', 'deducted', 'dee', 'deeper', 'deepest', 'deepra', 'defference', 'definable', 'defines', 'deflagration', 'deformable', 'deforming', 'defy', 'degraded', 'degreec', 'degreer', 'deichme', 'deionization', 'deisgn', 'delft', 'delimited', 'delineated', 'demarcation', 'demarcus', 'dence', 'denisdh', 'denmark', 'denomination', 'denser', 'dent', 'depart', 'departs', 'depended', 'dependency', 'depicting', 'depletion', 'deposited', 'depression', 'deputy', 'derivable', 'deryagin', 'describable', 'descriptively', 'designated', 'desire', 'desk', 'detect', 'detectable', 'deteriorate', 'deteriorates', 'determinable', 'determinant', 'determinantal', 'determinate', 'deutsche', 'dev', 'devel', 'developable', 'devise', 'devising', 'devreased', 'dewey', 'deweyc', 'dewpoint', 'diaconis', 'diagonal', 'diam', 'diazgb', 'dicamillojr', 'dickinsoner', 'dicsovering', 'dictated', 'diego', 'dielectric', 'differed', 'differentiate', 'differentiates', 'differentiation', 'diffuse', 'diffusely', 'diffusive', 'digit', 'dilation', 'dilleh', 'dilute', 'dimensioning', 'dimmock', 'dipole', 'dirac', 'directive', 'dirichlet', 'disappeared', 'discerned', 'discernible', 'discharging', 'discoverer', 'discretefrequency', 'discussing', 'disequilibrium', 'dislocation', 'dismissed', 'disparity', 'dispersed', 'dispersion', 'display', 'disposable', 'disregarded', 'dissertation', 'dissimilar', 'dissociate', 'dissociationrecombination', 'distant', 'distort', 'distorting', 'distributes', 'distributing', 'disturb', 'div', 'diverse', 'diversified', 'divide', 'dj', 'dl', 'doctor', 'dodecagonal', 'doggettrv', 'dome', 'dominating', 'don', 'donnellh', 'donoughep', 'donoughepl', 'doppler', 'dorefj', 'dorodnitsyn', 'dorodnitzinhowarth', 'dorodnitzyn', 'dorrancewh', 'dosanjhds', 'doubled', 'doubly', 'doubtful', 'douglas', 'dover', 'downwards', 'doylemdc', 'dragutin', 'dramatic', 'dransfielddc', 'draped', 'draperjw', 'drastic', 'driest', 'drift', 'drilled', 'drilling', 'drischlerja', 'drive', 'droop', 'dropoff', 'dropped', 'drosophila', 'drougge', 'drum', 'dubose', 'ducing', 'ducting', 'dudx', 'dufour', 'dugandw', 'dugundij', 'dugundjij', 'duncan', 'dunlap', 'dunlapr', 'dunsbyja', 'dunwoodynt', 'duplicated', 'duplicating', 'duralumin', 'dusinberregm', 'dust', 'dvl', 'dy', 'dyeri', 'ea', 'eab', 'earl', 'easier', 'easiest', 'east', 'eastra', 'ec', 'echo', 'eckerte', 'economical', 'economics', 'economos', 'economy', 'ed', 'eddyviscosity', 'edelfelt', 'edelfletih', 'edgedisplacements', 'edgesto', 'edition', 'edpm', 'educational', 'ee', 'efficacious', 'efflux', 'effusion', 'egat', 'eggingtonwj', 'egm', 'eigenvectors', 'einbinder', 'ejector', 'el', 'elapsed', 'elapsing', 'elec', 'electro', 'electrode', 'electroformed', 'electrohydrodynamic', 'electrostatically', 'elegant', 'elemental', 'elevation', 'elevator', 'elimination', 'elliott', 'elliottd', 'ellipselike', 'elliptically', 'elongated', 'em', 'embraced', 'embracing', 'embryonic', 'emerges', 'emerya', 'emeryjc', 'emmonsh', 'emphasising', 'empiricalintermediate', 'ence', 'encircling', 'encompass', 'encompassing', 'endeavour', 'ended', 'endorsed', 'endplate', 'endurance', 'engesser', 'enhance', 'enhanced', 'eniac', 'enjoy', 'enjoys', 'enlarge', 'enlarges', 'enlightening', 'enormously', 'enquiry', 'enskog', 'ensuing', 'enthalpics', 'enthalpyused', 'entirety', 'entitled', 'entrained', 'entrant', 'envisaged', 'epoxy', 'equate', 'equatorial', 'equicohesive', 'equilateral', 'equilibrate', 'equivalently', 'er', 'erature', 'erdmann', 'erfc', 'erickson', 'erosive', 'erratic', 'errorssdof', 'eschenroederaw', 'etal', 'eter', 'etr', 'eucken', 'eulerian', 'ev', 'evaluates', 'evaporate', 'evaporates', 'eventual', 'everett', 'evolve', 'evolved', 'evvard', 'ew', 'exaggeration', 'examinable', 'examines', 'excessively', 'exchanger', 'excites', 'excused', 'exerts', 'exhaustive', 'exiting', 'exotic', 'exp', 'expand', 'expands', 'expectation', 'expects', 'expended', 'experimenter', 'explaining', 'explains', 'exploit', 'exploited', 'exploration', 'explore', 'explored', 'exploring', 'explosive', 'exponentiallyficients', 'expose', 'expounded', 'extendible', 'extensible', 'extinction', 'extra', 'extremal', 'eye', 'facet', 'facilitates', 'facilitating', 'fage', 'fagetma', 'falangan', 'fales', 'falknervm', 'fano', 'farmingdale', 'fastened', 'faulderscr', 'fayja', 'fb', 'fd', 'featuring', 'feb', 'feldman', 'fettermande', 'fewer', 'fibrous', 'fictitious', 'fictitiously', 'fieldfa', 'filter', 'filtering', 'financial', 'fine', 'finely', 'finest', 'finish', 'finitedifference', 'fire', 'firm', 'firmer', 'firstorder', 'fisherlr', 'fission', 'fix', 'fixedpitch', 'fk', 'fl', 'flagg', 'flanged', 'flapped', 'flash', 'flatness', 'flatplate', 'flaxah', 'flex', 'fllayer', 'flocculent', 'florida', 'flowin', 'flowmeter', 'flowmeters', 'fluctuates', 'fluiddynamic', 'fluidized', 'fluttered', 'fn', 'focus', 'focused', 'focusing', 'foelschk', 'fog', 'fohrmanmj', 'folsonrg', 'forbes', 'forcible', 'forebodies', 'forecast', 'forecasting', 'forefront', 'foreknowledge', 'formulate', 'formulating', 'formulism', 'forraym', 'forst', 'fort', 'forty', 'forwardacceleration', 'forwardflight', 'foughnerjt', 'foundation', 'fourcomponent', 'fourthorder', 'fourwave', 'foxh', 'fpre', 'fraenkel', 'fraenkelle', 'fraiserhr', 'fralich', 'fralichrw', 'framed', 'france', 'francis', 'frankel', 'frankwl', 'fredholm', 'freedmansi', 'freeing', 'freemannc', 'freudenthalam', 'frictionless', 'friedman', 'friedrichhr', 'frontal', 'frozenflow', 'fruit', 'frustration', 'fujihiko', 'fullerfb', 'fund', 'fur', 'furnace', 'furnishes', 'furnishing', 'fused', 'fuselagesection', 'fx', 'fz', 'ga', 'gallagherjj', 'galletly', 'galletlydd', 'galletlygd', 'garabedian', 'gardless', 'garner', 'garrickie', 'gascous', 'gasdynamical', 'gathered', 'gauged', 'gaydon', 'geckelers', 'geec', 'gehring', 'genuine', 'geoffrey', 'geometrics', 'geophys', 'geophysical', 'george', 'georgembt', 'georgia', 'gerard', 'germany', 'gerrard', 'gershuni', 'gershunigz', 'gerstenk', 'getting', 'gg', 'gh', 'gibbs', 'gibson', 'gibsonwe', 'giese', 'giesejh', 'gilbertac', 'gill', 'ginzeli', 'giraudjp', 'gk', 'gkbatchelor', 'glancing', 'glassy', 'glennye', 'glickhs', 'globule', 'glycerin', 'gm', 'gn', 'goal', 'goddardfe', 'goebeltp', 'goetzrc', 'goldsteinaw', 'golian', 'gollnickaf', 'gooderumpn', 'goodier', 'goodman', 'goodmantr', 'goodwing', 'gorcum', 'gordon', 'gordonhd', 'goreews', 'gortler', 'gortlerh', 'gothic', 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'hartnettjp', 'hartunianra', 'hash', 'hasimotoz', 'haskellrn', 'haslet', 'hassehr', 'hastening', 'hastingsrc', 'hauserch', 'haveg', 'havelock', 'havelockth', 'hay', 'haydaya', 'hayerwd', 'hayeswd', 'hayman', 'hazard', 'headed', 'heaslet', 'heaslett', 'heavier', 'heaving', 'heightto', 'heimel', 'heimenz', 'heislermp', 'heldenfelsrs', 'heledg', 'helgerl', 'helical', 'heliocentric', 'hemi', 'hemispheroidal', 'hencky', 'henderson', 'hendersona', 'hennessy', 'herberlejw', 'hero', 'herr', 'herringtr', 'herriotjg', 'herrmann', 'herrmanng', 'herrnsteinwh', 'herrrw', 'hessjl', 'hessnw', 'hessrw', 'hesste', 'heumanc', 'heywoodrb', 'hf', 'hick', 'hickmanrs', 'hidalgo', 'highenergy', 'higherorder', 'highfrequency', 'highvelocity', 'hillfk', 'hillj', 'hilsenrath', 'himself', 'hindered', 'hingeaxis', 'hinsonwf', 'hirschfelder', 'hirshfelder', 'hise', 'hisev', 'hislopgs', 'historically', 'historics', 'hit', 'hitherto', 'hitting', 'hj', 'hja', 'hl', 'hm', 'hodgepg', 'hodographic', 'hoffman', 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**The terms from index-2 with the largest df:** ['to']

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'silica', 'silver', 'simpsonrw', 'sinchtelcd', 'sinclair', 'singleand', 'singlepass', 'singlestag', 'singletyp', 'singli', 'sinnott', 'sinottc', 'sir', 'sizeabl', 'skansw', 'skenewt', 'sketchi', 'skewedparabol', 'skill', 'skramstadhk', 'slatteryr', 'slew', 'slide', 'slider', 'slighlti', 'slosh', 'slower', 'slr', 'slug', 'slyer', 'smallless', 'smell', 'smithamo', 'smithanc', 'smithg', 'smithj', 'smithjhb', 'smithjw', 'smithmw', 'snow', 'soak', 'sobson', 'socaesc', 'socal', 'societi', 'sol', 'solidconstruct', 'solidif', 'solomon', 'solomonjm', 'som', 'sommerfeld', 'sommersc', 'sonderg', 'sophist', 'soret', 'soundsourc', 'southwellrv', 'southwest', 'sp', 'spacewis', 'spahrjr', 'spaidfw', 'spald', 'spaldingdb', 'spark', 'sparkschlieren', 'spaulding', 'specialis', 'spectacular', 'spectrograph', 'speedsthre', 'spencerb', 'sperada', 'speric', 'sphericalatmospher', 'spiegler', 'spillag', 'spillmanjj', 'spindl', 'spinner', 'spirit', 'spite', 'splitter', 'spoken', 'spontan', 'spot', 'spray', 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'vtolstol', 'vy', 'vz', 'wah', 'waist', 'wakelik', 'waldmangd', 'walkdenf', 'walkerhj', 'walkerr', 'wallac', 'wallacej', 'walleskfa', 'walsh', 'waltont', 'wancc', 'wangtk', 'wanlass', 'wanlassk', 'wardjf', 'warhead', 'warmer', 'warn', 'warner', 'warnerwh', 'warp', 'wash', 'washington', 'washingtonm', 'wassermanb', 'wassermann', 'watsonbc', 'watsonej', 'watsonj', 'wavefront', 'waveveloc', 'wax', 'weaker', 'weakli', 'wedgetyp', 'weertmanj', 'wegsteinjh', 'wehrend', 'wehrendwr', 'weierstrass', 'weigh', 'weilha', 'weingarten', 'weinsteina', 'weissd', 'weissdc', 'weitbrecht', 'weitznerh', 'wellestablish', 'wellswr', 'wen', 'wendt', 'wenk', 'wg', 'wh', 'whalen', 'whalenrj', 'wheel', 'wherev', 'whichev', 'whisker', 'whitcombcf', 'whitegn', 'whitehead', 'whitfieldjd', 'whithamgb', 'wich', 'wickbh', 'widen', 'widespread', 'wightkc', 'wilbi', 'wilbypg', 'willettj', 'willi', 'williamsj', 'williamsjc', 'willmarthww', 'wilsonr', 'wimbrowwr', 'windenburgdf', 'windstream', 'wingpropel', 'wingtail', 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