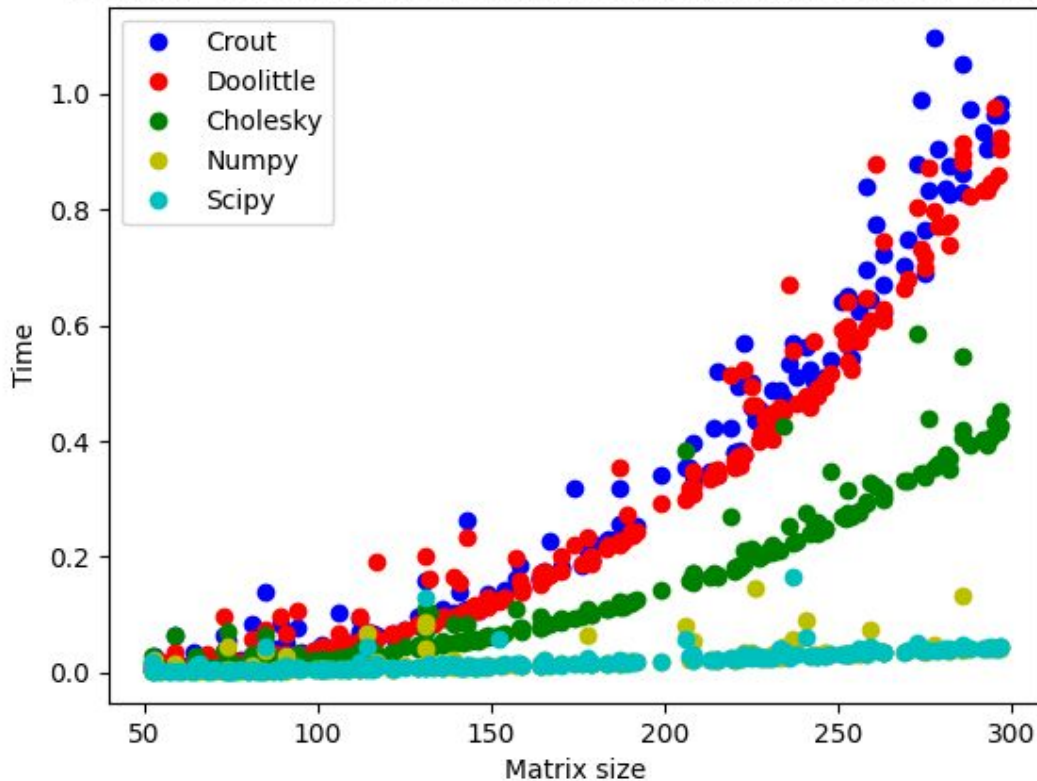


Pomiary czasu przeprowadzania rozwiązywania układów równań



Matrix size: 91	crout: 0.05298638343811035	doolittle: 0.06926465034484863	cholesky: 0.01822948455810547
numpy: 0.028821229934692383	scipy: 0.012791633605957031		
Matrix size: 149	crout: 0.13637948036193848	doolittle: 0.12821125984191895	cholesky: 0.0647730827331543
numpy: 0.011260271072387695	scipy: 0.012394905090332031		
Matrix size: 55	crout: 0.01521611213684082	doolittle: 0.018338680267333984	cholesky: 0.004546642303466797
numpy: 0.0016551017761230469	scipy: 0.0016002655029296875		
Matrix size: 154	crout: 0.14272260665893555	doolittle: 0.12996149063110352	cholesky: 0.06633138656616211
numpy: 0.011254549026489258	scipy: 0.014163017272949219		
Matrix size: 220	crout: 0.38085269927978516	doolittle: 0.35395288467407227	cholesky: 0.17626476287841797
numpy: 0.02306842803955078	scipy: 0.023102998733520508		
Matrix size: 146	crout: 0.10845422744750977	doolittle: 0.10746502876281738	cholesky: 0.05635714530944824
numpy: 0.010155677795410156	scipy: 0.010170221328735352		
Matrix size: 85	crout: 0.02448105812072754	doolittle: 0.023818016052246094	cholesky: 0.01349020004272461
numpy: 0.0042591094970703125	scipy: 0.0035851001739501953		
Matrix size: 223	crout: 0.3771095275878906	doolittle: 0.3782055377960205	cholesky: 0.18896913528442383
numpy: 0.027510404586791992	scipy: 0.02423548698425293		
Matrix size: 188	crout: 0.23518013954162598	doolittle: 0.22614073753356934	cholesky: 0.11376786231994629
numpy: 0.016941547393798828	scipy: 0.017348289489746094		
Matrix size: 75	crout: 0.0169064998626709	doolittle: 0.017846345901489258	cholesky: 0.010185718536376953
numpy: 0.002740621566772461	scipy: 0.0028269290924072266		
Matrix size: 63	crout: 0.010596275329589844	doolittle: 0.010560989379882812	cholesky: 0.00648045539855957
numpy: 0.0019392967224121094	scipy: 0.002440214157104492		
Matrix size: 52	crout: 0.006397724151611328	doolittle: 0.006427764892578125	cholesky: 0.003996849060058594
numpy: 0.0013477802276611328	scipy: 0.001558065414428711		
Matrix size: 263	crout: 0.6223883628845215	doolittle: 0.6095950603485107	cholesky: 0.2976341247558594
numpy: 0.03398847579956055	scipy: 0.03497767448425293		
Matrix size: 159	crout: 0.14292573928833008	doolittle: 0.13832640647888184	cholesky: 0.07110595703125
numpy: 0.011898994445800781	scipy: 0.012047529220581055		
Matrix size: 80	crout: 0.020586729049682617	doolittle: 0.019774436950683594	cholesky: 0.011849164962768555
numpy: 0.003075838088989258	scipy: 0.0034275054931640625		
Matrix size: 275	crout: 0.6884562969207764	doolittle: 0.701117753982544	cholesky: 0.3397486209869385

numpy: 0.0367891788482666 scipy: 0.03934025764465332
Matrix size: 215 crout: 0.34243273735046387 doolittle: 0.34204936027526855 cholesky: 0.16519570350646973
numpy: 0.022199153900146484 scipy: 0.02221989631652832
Matrix size: 282 crout: 0.8279485702514648 doolittle: 0.7382738590240479 cholesky: 0.3526949882507324
numpy: 0.03796052932739258 scipy: 0.03822445869445801
Matrix size: 293 crout: 0.9034104347229004 doolittle: 0.8317253589630127 cholesky: 0.3931427001953125
numpy: 0.04093456268310547 scipy: 0.04140782356262207
Matrix size: 100 crout: 0.036992549896240234 doolittle: 0.036499738693237305 cholesky: 0.02058267593383789
numpy: 0.004831790924072266 scipy: 0.005212306976318359
Matrix size: 246 crout: 0.5092723369598389 doolittle: 0.5049874782562256 cholesky: 0.2509806156158447
numpy: 0.033150672912597656 scipy: 0.029506206512451172
Matrix size: 74 crout: 0.019768238067626953 doolittle: 0.01692032814025879 cholesky: 0.009511947631835938
numpy: 0.002646923065185547 scipy: 0.002737760543823242
Matrix size: 254 crout: 0.5435009002685547 doolittle: 0.5227935314178467 cholesky: 0.2684330940246582
numpy: 0.03109288215637207 scipy: 0.03131866455078125
Matrix size: 112 crout: 0.05317330360412598 doolittle: 0.051761627197265625 cholesky: 0.03501629829406738
numpy: 0.007019758224487305 scipy: 0.006067514419555664
Matrix size: 149 crout: 0.11555838584899902 doolittle: 0.11270809173583984 cholesky: 0.060044050216674805
numpy: 0.011644840240478516 scipy: 0.010716438293457031
Matrix size: 246 crout: 0.5081322193145752 doolittle: 0.49526524543762207 cholesky: 0.24611973762512207
numpy: 0.03432488441467285 scipy: 0.029430866241455078
Matrix size: 244 crout: 0.4939742088317871 doolittle: 0.4771311283111572 cholesky: 0.2593653202056885
numpy: 0.028507232666015625 scipy: 0.028740406036376953
Matrix size: 296 crout: 0.91019606590271 doolittle: 0.8591322898864746 cholesky: 0.4164588451385498
numpy: 0.04274868965148926 scipy: 0.043361663818359375
Matrix size: 244 crout: 0.5040338039398193 doolittle: 0.4898195266723633 cholesky: 0.24045348167419434
numpy: 0.028362035751342773 scipy: 0.028646230697631836
Matrix size: 231 crout: 0.4451026916503906 doolittle: 0.4029815196990967 cholesky: 0.20911645889282227
numpy: 0.0286099910736084 scipy: 0.026484966278076172
Matrix size: 109 crout: 0.050241708755493164 doolittle: 0.04771590232849121 cholesky: 0.028834104537963867
numpy: 0.005678892135620117 scipy: 0.005944252014160156
Matrix size: 253 crout: 0.5842654705047607 doolittle: 0.5355865955352783 cholesky: 0.269666433343506
numpy: 0.03230857849121094 scipy: 0.03328514099121094
Matrix size: 187 crout: 0.23358535766601562 doolittle: 0.22220873832702637 cholesky: 0.11329483985900879
numpy: 0.01662135124206543 scipy: 0.016747713088989258
Matrix size: 238 crout: 0.5108869075775146 doolittle: 0.46640872955322266 cholesky: 0.2277510166168213
numpy: 0.036374568939208984 scipy: 0.03246879577636719
Matrix size: 256 crout: 0.6243352890014648 doolittle: 0.5718252658843994 cholesky: 0.2772977352142334
numpy: 0.03152155876159668 scipy: 0.034809112548828125
Matrix size: 136 crout: 0.09634733200073242 doolittle: 0.09438443183898926 cholesky: 0.04947948455810547
numpy: 0.015438556671142578 scipy: 0.014707803726196289
Matrix size: 165 crout: 0.16715264320373535 doolittle: 0.1633317470550537 cholesky: 0.08006834983825684
numpy: 0.02344679832458496 scipy: 0.02339482307434082
Matrix size: 88 crout: 0.04124331474304199 doolittle: 0.032270193099975586 cholesky: 0.024265289306640625
numpy: 0.0048980712890625 scipy: 0.004776716232299805
Matrix size: 57 crout: 0.009801149368286133 doolittle: 0.012866020202636719 cholesky: 0.006712198257446289
numpy: 0.0017142295837402344 scipy: 0.0020089149475097656
Matrix size: 270 crout: 0.7497856616973877 doolittle: 0.6791632175445557 cholesky: 0.33203768730163574
numpy: 0.038700103759765625 scipy: 0.03923201560974121
Matrix size: 102 crout: 0.04145526885986328 doolittle: 0.044302940368652344 cholesky: 0.02246546745300293
numpy: 0.005066871643066406 scipy: 0.005014181137084961
Matrix size: 133 crout: 0.08552813529968262 doolittle: 0.08399510383605957 cholesky: 0.0453338623046875
numpy: 0.009234905242919922 scipy: 0.008673906326293945
Matrix size: 288 crout: 0.9740207195281982 doolittle: 0.8224759101867676 cholesky: 0.3932666778564453
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Matrix size: 229 crout: 0.4336059093475342 doolittle: 0.43836355209350586 cholesky: 0.20574092864990234
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Matrix size: 61 crout: 0.012505054473876953 doolittle: 0.009711980819702148 cholesky: 0.00634002685546875
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Matrix size: 89 crout: 0.08527374267578125 doolittle: 0.09717893600463867 cholesky: 0.017436981201171875
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Matrix size: 213 crout: 0.3484992980957031 doolittle: 0.335982084274292 cholesky: 0.16618680953979492

numpy: 0.022214651107788086 scipy: 0.02240133285522461
Matrix size: 263 crout: 0.6706316471099854 doolittle: 0.628779411315918 cholesky: 0.3044564723968506
numpy: 0.03543496131896973 scipy: 0.03522324562072754
Matrix size: 159 crout: 0.14508724212646484 doolittle: 0.14458513259887695 cholesky: 0.07613229751586914
numpy: 0.012535810470581055 scipy: 0.013034582138061523
Matrix size: 65 crout: 0.012053728103637695 doolittle: 0.012569904327392578 cholesky: 0.028012514114379883
numpy: 0.0022001266479492188 scipy: 0.013399600982666016
Matrix size: 131 crout: 0.08415937423706055 doolittle: 0.08356213569641113 cholesky: 0.04437446594238281
numpy: 0.08579611778259277 scipy: 0.008876323699951172
Matrix size: 263 crout: 0.7213013172149658 doolittle: 0.7447841167449951 cholesky: 0.31273627281188965
numpy: 0.03643608093261719 scipy: 0.034622907638549805
Matrix size: 236 crout: 0.5326220989227295 doolittle: 0.6691133975982666 cholesky: 0.2529630661010742
numpy: 0.02769756317138672 scipy: 0.026978015899658203
Matrix size: 221 crout: 0.4943687915802002 doolittle: 0.3726613521575928 cholesky: 0.18413376808166504
numpy: 0.023711204528808594 scipy: 0.02649378776550293
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numpy: 0.003177165985107422 scipy: 0.0031900405883789062
Matrix size: 253 crout: 0.6517634391784668 doolittle: 0.6404669284820557 cholesky: 0.3138425350189209
numpy: 0.030818700790405273 scipy: 0.03119182586669922
Matrix size: 297 crout: 0.963416576385498 doolittle: 0.9232285022735596 cholesky: 0.4277365207672119
numpy: 0.04267430305480957 scipy: 0.04561257362365723
Matrix size: 256 crout: 0.6372284889221191 doolittle: 0.5798869132995605 cholesky: 0.2793118953704834
numpy: 0.03201603889465332 scipy: 0.0428471565246582
Matrix size: 206 crout: 0.353435754776001 doolittle: 0.2997884750366211 cholesky: 0.38413429260253906
numpy: 0.07990002632141113 scipy: 0.05782294273376465
Matrix size: 143 crout: 0.26459360122680664 doolittle: 0.23281502723693848 cholesky: 0.0831146240234375
numpy: 0.012254953384399414 scipy: 0.012701749801635742
Matrix size: 60 crout: 0.010215044021606445 doolittle: 0.011594057083129883 cholesky: 0.007415294647216797
numpy: 0.0018088817596435547 scipy: 0.002056598663330078
Matrix size: 227 crout: 0.4540252685546875 doolittle: 0.4005279541015625 cholesky: 0.19707822799682617
numpy: 0.024993419647216797 scipy: 0.02812981605529785
Matrix size: 261 crout: 0.7737529277801514 doolittle: 0.8798985481262207 cholesky: 0.32342529296875
numpy: 0.03716874122619629 scipy: 0.03704833984375
Matrix size: 84 crout: 0.023301124572753906 doolittle: 0.02308511734008789 cholesky: 0.014144182205200195
numpy: 0.003415346145629883 scipy: 0.0034646987915039062
Matrix size: 68 crout: 0.01677989959716797 doolittle: 0.03293108940124512 cholesky: 0.007780551910400391
numpy: 0.0037212371826171875 scipy: 0.003072023391723633
Matrix size: 174 crout: 0.3196594715118408 doolittle: 0.2197253704071045 cholesky: 0.0926821231842041
numpy: 0.016646146774291992 scipy: 0.014622688293457031
Matrix size: 131 crout: 0.08748555183410645 doolittle: 0.19996428489685059 cholesky: 0.10892271995544434
numpy: 0.042221784591674805 scipy: 0.009593963623046875
Matrix size: 114 crout: 0.0634009838104248 doolittle: 0.07146239280700684 cholesky: 0.03206682205200195
numpy: 0.006740093231201172 scipy: 0.006338596343994141
Matrix size: 220 crout: 0.38094210624694824 doolittle: 0.36666297912597656 cholesky: 0.18215608596801758
numpy: 0.023397445678710938 scipy: 0.024128198623657227
Matrix size: 101 crout: 0.03904581069946289 doolittle: 0.03863239288330078 cholesky: 0.021815061569213867
numpy: 0.004904985427856445 scipy: 0.00496220588684082
Matrix size: 145 crout: 0.11126160621643066 doolittle: 0.10697460174560547 cholesky: 0.0574183464050293
numpy: 0.010057449340820312 scipy: 0.010034561157226562
Matrix size: 234 crout: 0.47377753257751465 doolittle: 0.45209312438964844 cholesky: 0.4272196292877197
numpy: 0.04630851745605469 scipy: 0.03797602653503418
Matrix size: 157 crout: 0.1619422435760498 doolittle: 0.19662141799926758 cholesky: 0.10887718200683594
numpy: 0.013110637664794922 scipy: 0.01708984375
Matrix size: 219 crout: 0.4224874973297119 doolittle: 0.5127568244934082 cholesky: 0.27104997634887695
numpy: 0.025769472122192383 scipy: 0.025115013122558594
Matrix size: 116 crout: 0.06866812705993652 doolittle: 0.05900168418884277 cholesky: 0.03139185905456543
numpy: 0.009805440902709961 scipy: 0.0068511962890625
Matrix size: 102 crout: 0.04157376289367676 doolittle: 0.04076528549194336 cholesky: 0.022793292999267578
numpy: 0.005225419998168945 scipy: 0.005052089691162109
Matrix size: 101 crout: 0.04857778549194336 doolittle: 0.041823387145996094 cholesky: 0.022203922271728516
numpy: 0.005208253860473633 scipy: 0.005283832550048828
Matrix size: 136 crout: 0.1090855598449707 doolittle: 0.09499192237854004 cholesky: 0.05483055114746094

numpy: 0.009340286254882812 scipy: 0.009662389755249023
Matrix size: 179 crout: 0.22367644309997559 doolittle: 0.2023015022277832 cholesky: 0.10123205184936523
numpy: 0.015889883041381836 scipy: 0.016102075576782227
Matrix size: 243 crout: 0.5033133029937744 doolittle: 0.572728157043457 cholesky: 0.25991177558898926
numpy: 0.03183937072753906 scipy: 0.029283761978149414
Matrix size: 242 crout: 0.5243148803710938 doolittle: 0.45786499977111816 cholesky: 0.23893070220947266
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Matrix size: 104 crout: 0.04167437553405762 doolittle: 0.041817665100097656 cholesky: 0.023297786712646484
numpy: 0.005259990692138672 scipy: 0.005236625671386719
Matrix size: 176 crout: 0.1858046054840088 doolittle: 0.18886995315551758 cholesky: 0.09867596626281738
numpy: 0.014972448348999023 scipy: 0.014729738235473633
Matrix size: 142 crout: 0.1018822193145752 doolittle: 0.10463809967041016 cholesky: 0.05310177803039551
numpy: 0.009976863861083984 scipy: 0.009894371032714844
Matrix size: 286 crout: 0.861285924911499 doolittle: 0.9151568412780762 cholesky: 0.5458366870880127
numpy: 0.13132333755493164 scipy: 0.04157876968383789
Matrix size: 94 crout: 0.03193974494934082 doolittle: 0.03273963928222656 cholesky: 0.01789402961730957
numpy: 0.010051250457763672 scipy: 0.00443267822265625
Matrix size: 222 crout: 0.3832578659057617 doolittle: 0.3588275909423828 cholesky: 0.18082594871520996
numpy: 0.024021148681640625 scipy: 0.02410745620727539
Matrix size: 164 crout: 0.16272258758544922 doolittle: 0.15928006172180176 cholesky: 0.07857680320739746
numpy: 0.012836217880249023 scipy: 0.01276540756225586
Matrix size: 253 crout: 0.5666089057922363 doolittle: 0.600316047668457 cholesky: 0.27597975730895996
numpy: 0.03083324432373047 scipy: 0.030884265899658203
Matrix size: 179 crout: 0.19498562812805176 doolittle: 0.19304323196411133 cholesky: 0.09896731376647949
numpy: 0.015209436416625977 scipy: 0.015146017074584961
Matrix size: 179 crout: 0.19414043426513672 doolittle: 0.18926525115966797 cholesky: 0.10347533226013184
numpy: 0.0157468318939209 scipy: 0.016976594924926758
Matrix size: 237 crout: 0.5704760551452637 doolittle: 0.5553281307220459 cholesky: 0.22537922859191895
numpy: 0.05864596366882324 scipy: 0.16590118408203125
Matrix size: 59 crout: 0.0630495548248291 doolittle: 0.03610658645629883 cholesky: 0.06331706047058105
numpy: 0.015443563461303711 scipy: 0.0026679039001464844
Matrix size: 225 crout: 0.5026388168334961 doolittle: 0.4956939220428467 cholesky: 0.20370268821716309
numpy: 0.03028130531311035 scipy: 0.02579045295715332
Matrix size: 208 crout: 0.32880091667175293 doolittle: 0.3101308345794678 cholesky: 0.15486717224121094
numpy: 0.021785497665405273 scipy: 0.021732330322265625
Matrix size: 279 crout: 0.9045650959014893 doolittle: 0.7700660228729248 cholesky: 0.36238908767700195
numpy: 0.03969407081604004 scipy: 0.03810834884643555
Matrix size: 225 crout: 0.4601607322692871 doolittle: 0.46051955223083496 cholesky: 0.213270902633667
numpy: 0.03590726852416992 scipy: 0.03083491325378418
Matrix size: 131 crout: 0.1579575538635254 doolittle: 0.09119105339050293 cholesky: 0.07077407836914062
numpy: 0.08003926277160645 scipy: 0.12857818603515625
Matrix size: 112 crout: 0.09438276290893555 doolittle: 0.05372881889343262 cholesky: 0.028258323669433594
numpy: 0.006214141845703125 scipy: 0.009536504745483398
Matrix size: 81 crout: 0.08490753173828125 doolittle: 0.059465885162353516 cholesky: 0.033086299896240234
numpy: 0.013340234756469727 scipy: 0.005769491195678711
Matrix size: 114 crout: 0.0672445297241211 doolittle: 0.06793713569641113 cholesky: 0.05172848701477051
numpy: 0.06674909591674805 scipy: 0.044052839279174805
Matrix size: 85 crout: 0.1384720802307129 doolittle: 0.07385468482971191 cholesky: 0.0652472972869873
numpy: 0.03853297233581543 scipy: 0.04573249816894531
Matrix size: 278 crout: 1.0958337783813477 doolittle: 0.7979865074157715 cholesky: 0.3545410633087158
numpy: 0.04663896560668945 scipy: 0.03786468505859375
Matrix size: 117 crout: 0.06003594398498535 doolittle: 0.058725833892822266 cholesky: 0.031821250915527344
numpy: 0.008930206298828125 scipy: 0.008792877197265625
Matrix size: 275 crout: 0.764136552810669 doolittle: 0.7182941436767578 cholesky: 0.34393835067749023
numpy: 0.04178810119628906 scipy: 0.037152767181396484
Matrix size: 252 crout: 0.5873160362243652 doolittle: 0.568220853805542 cholesky: 0.2657620906829834
numpy: 0.030630111694335938 scipy: 0.03179144859313965
Matrix size: 191 crout: 0.2474040985107422 doolittle: 0.2387714385986328 cholesky: 0.12217164039611816
numpy: 0.01772761344909668 scipy: 0.020196914672851562
Matrix size: 187 crout: 0.2572453022003174 doolittle: 0.22637033462524414 cholesky: 0.11654114723205566
numpy: 0.017270326614379883 scipy: 0.019266843795776367
Matrix size: 192 crout: 0.2523162364959717 doolittle: 0.24322867393493652 cholesky: 0.12494182586669922

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Matrix size: 258 crout: 0.8393774032592773 doolittle: 0.6491363048553467 cholesky: 0.29425668716430664
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