Laboratorium 10

Pomiary czasu dla algorytmów

Jan Gargas

Zadanie 1

Wykresy:

Time of evaluation for LU decompositions
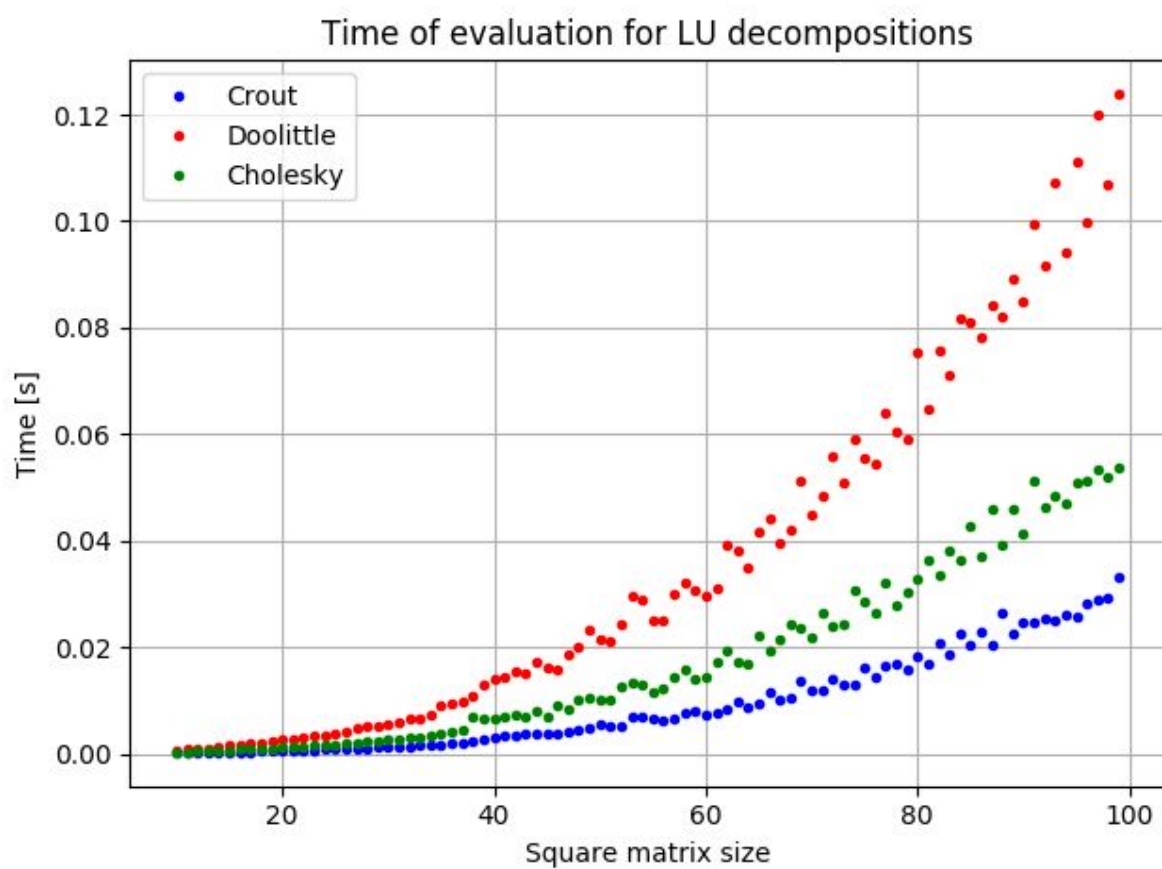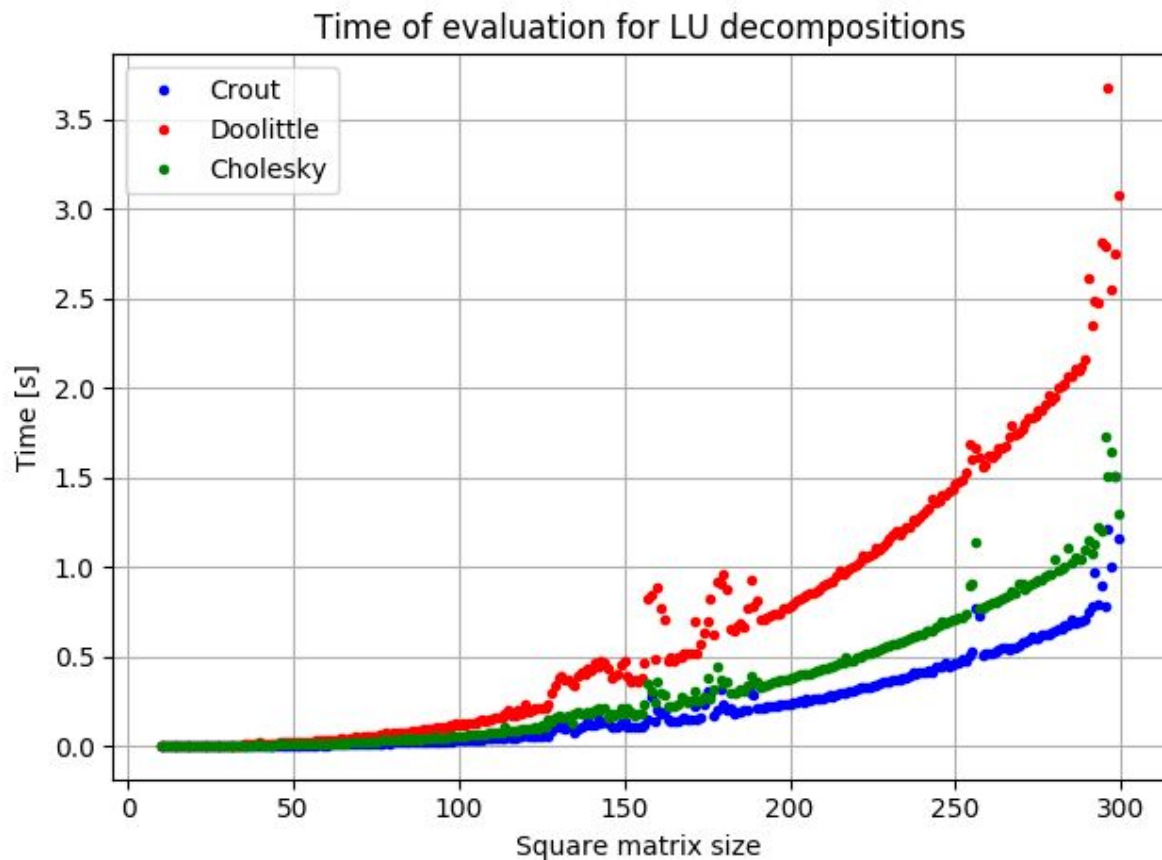
Pomiary:

Matrix 10x10:
    Crout:
0.00011634826660015625s
    Doolittle:
0.0006153583526611328s
    Cholesky:
0.0002894401550292969s

Matrix 11x11:
    Crout:
0.00013518333435058594s
    Doolittle:
0.0007343292236328125s
    Cholesky:
0.00035500526428222656s

Matrix 12x12:
    Crout:
0.0001761913299560547s
    Doolittle:
0.0008516311645507812s
    Cholesky:
0.0004012584686279297s

Matrix 13x13:
    Crout:
0.00018835067749023438s
    Doolittle:
0.0010230541229248047s
    Cholesky:
0.0004782676696777344s

Matrix 14x14:
    Crout:
0.00022411346435546875s
    Doolittle:
0.0012030601501464844s
    Cholesky:
0.000553131103515625s

Matrix 15x15:
    Crout:
0.0002639293670654297s
    Doolittle:
0.0014107227325439453s
    Cholesky:
0.0006487369537353516s

Matrix 16x16:
    Crout:
0.00030350685119628906s
    Doolittle:
0.0016176700592041016s
    Cholesky:
0.0007627010345458984s

Matrix 17x17:
    Crout:
0.0003371238708496094s
    Doolittle:
0.0017476081848144531s
    Cholesky:
0.0007975101470947266s

Matrix 18x18:
    Crout:
0.0003750324249267578s
    Doolittle:
0.0019996166229248047s
    Cholesky:
0.0009257793426513672s

Matrix 19x19:
    Crout:
0.0004401206970214844s
    Doolittle:
0.0022907257080078125s
    Cholesky:
0.0010454654693603516s

Matrix 20x20:
    Crout:
0.0005106925964355469s
    Doolittle:
0.0024700164794921875s
    Cholesky:
0.0010783672332763672s

Matrix 21x21:
    Crout:
0.000514984130859375s
    Doolittle:
0.0026290416717529297s
    Cholesky:
0.0011782646179199219s

Matrix 22x22:
    Crout:
0.0005750656127929688s
    Doolittle:
0.002908468246459961s
    Cholesky:
0.0013132095336914062s

Matrix 23x23:
    Crout:
0.0006382465362548828s
    Doolittle:
0.0031626224517822266s
    Cholesky:
0.0014197826385498047s

Matrix 24x24:
    Crout:
0.0006875991821289062s
    Doolittle:
0.003386974334716797s
    Cholesky:
0.0015077590942382812s

Matrix 25x25:
    Crout:
0.0007388591766357422s
    Doolittle:
0.0036818981170654297s
    Cholesky:
0.001657247543334961s

Matrix 26x26:
    Crout:
0.0008132457733154297s
    Doolittle:
0.0041081905364990234s
    Cholesky:
0.0018322467803955078s

Matrix 27x27:
    Crout:
0.0008983612060546875s
    Doolittle:
0.004480600357055664s
    Cholesky:
0.0020627975463867188s

Matrix 28x28:
    Crout:
0.0010256767272949219s
    Doolittle:
0.004920244216918945s
    Cholesky:
0.002228260040283203s

Matrix 29x29:
    Crout:
0.001088857650756836s
    Doolittle:
0.005339860916137695s
    Cholesky:
0.002379179000854492s

Matrix 30x30:
    Crout:
0.0011990070343017578s
    Doolittle:
0.005756378173828125s
    Cholesky:
0.0026102066040039062s

Matrix 31x31:
    Crout:
0.0013127326965332031s
    Doolittle:
0.006167411804199219s
    Cholesky:
0.0034437179565429688s

Matrix 32x32:
    Crout:
0.0014233589172363281s
    Doolittle:
0.006966829299926758s
    Cholesky:
0.0032372474670410156s

Matrix 33x33:
    Crout:
0.0015273094177246094s
    Doolittle:
0.007261514663696289s
    Cholesky:
0.0032799243927001953s

Matrix 34x34:
    Crout:
0.0016565322875976562s
    Doolittle:
0.0079803466796875s
    Cholesky:
0.003556966781616211s

Matrix 35x35:
    Crout:
0.0017940980773392578s
    Doolittle:
0.00847625732421875s
    Cholesky:
0.003729104995727539s

Matrix 36x36:
    Crout:
0.001840353012084961s
    Doolittle:
0.0087635517120361336133s
    Cholesky:
0.0041792392730712289s

Matrix 37x37:
    Crout:
0.0025017261505126953s
    Doolittle:
0.011408805847167969s
    Cholesky:
0.004522562026977539s

Matrix 38x38:
    Crout:
0.0023150444030761172s
    Doolittle:
0.011571168899536133s
    Cholesky:
0.005284786224365234s

Matrix 39x39:
    Crout:
0.0029239654541015625s
    Doolittle:
0.012879371643066406s
    Cholesky:
0.01173710823059082s

Matrix 40x40:
    Crout:
0.0057561397552490234s
    Doolittle:
0.02721881866455078s
    Cholesky:
0.012125730514526367s

Matrix 41x41:
    Crout:
0.006333351135253906s
    Doolittle:
0.01588153839111328s
    Cholesky:
0.00663304328918457s

Matrix 42x42:
    Crout:
0.0034947395324707031s
    Doolittle:
0.014954805374145508s
    Cholesky:
0.0065457820892333984s

Matrix 43x43:
    Crout:
0.003429889678955078s
    Doolittle:
0.0142059326171875s
    Cholesky:
0.0061492919921875s

Matrix 44x44:
    Crout:
0.003387451171875s
    Doolittle:
0.01557159423828125s
    Cholesky:
0.007600069046020508s

Matrix 45x45:
    Crout:
0.0038712024688720703s
    Doolittle:
0.0175173282623291s
    Cholesky:
0.008966445922851562s

Matrix 46x46:
    Crout:
0.004416227340698242s
    Doolittle:
0.020135879516601562s
    Cholesky:
0.009588479995727539s

Matrix 47x47:
    Crout:
0.004774332046508789s
    Doolittle:
0.021337032318115234s
    Cholesky:
0.010782718658447266s

Matrix 48x48:
    Crout:
0.005087375640869141s
    Doolittle:
0.022041559921936035s
    Cholesky:
0.009818553924560547s

Matrix 49x49:
    Crout:
0.005061149597167969s
    Doolittle:
0.021784543991088867s
    Cholesky:
0.009964942932128906s

Matrix 50x50:
    Crout:
0.005049467086791992s
    Doolittle:
0.020440816879272246s
    Cholesky:
0.009112358093261719s

Matrix 51x51:
    Crout:
0.005222320556640625s
    Doolittle:
0.02188706398010254s
    Cholesky:
0.011182546615600586s

Matrix 52x52:
    Crout:
0.0057566165924072266s
    Doolittle:
0.025903224945068836s
    Cholesky:
0.012394905090332031s

Matrix 53x53:
    Crout:
0.006285190582275391s
    Doolittle:
0.026667356491088867s
    Cholesky:
0.011618375778198242s

Matrix 54x54:
    Crout:
0.006385087966918945s
    Doolittle:
0.024980783462524414s
    Cholesky:
0.010959863662719727s

Matrix 55x55:
    Crout:
0.005875587463378906s
    Doolittle:
0.02443528175354004s
    Cholesky:
0.011168479919433594s

Matrix 56x56:
    Crout:
0.00616002082824707s
    Doolittle:
0.025100231170654297s
    Cholesky:
0.013447046279907227s

Matrix 57x57:
    Crout:
0.0066819190097900391s
    Doolittle:
0.030605554580688477s
    Cholesky:
0.0142314434051513675s

Matrix 58x58:
    Crout:
0.008042097091674805s
    Doolittle:
0.03305697441101074s
    Cholesky:
0.01486968994140625s

Matrix 59x59:
    Crout:
0.0076062679290771484s
    Doolittle:
0.030027057647705078s
    Cholesky:
0.013690471649169922s

Matrix 60x60:
    Crout:
0.007291555404663086s
    Doolittle:
0.02985072135925293s
    Cholesky:
0.016506671905517578s

Matrix 61x61:
    Crout:
0.009089946746826172s
    Doolittle:
0.03861546516418457s
    Cholesky:
0.017962694168090820s

Matrix 62x62:
    Crout:
0.010085582733154297s
    Doolittle:
0.0371401309967041s
    Cholesky:
0.015923976898193360s

Matrix 63x63:
    Crout:
0.008732795715332031s
    Doolittle:
0.035242557525634766s
    Cholesky:
0.016796350479125977s

Matrix 64x64:
    Crout:
0.008952379226684570s
    Doolittle:
0.04178118705749512s
    Cholesky:
0.019708155585693360s

Matrix 65x65:
    Crout:
0.011047840118408203s
    Doolittle:
0.042737722396850586s
    Cholesky:
0.018274307250976562s

Matrix 66x66:
    Crout:
0.010088443756103516s
    Doolittle:
0.03857851028442383s
    Cholesky:
0.017833232879638672s

Matrix 67x67:
    Crout:
0.010226488113403320s
    Doolittle:
0.03984880447387695s
    Cholesky:
0.019708155585693360s

Matrix 68x68:
    Crout:
0.011486291885375977s
    Doolittle:
0.04738616943359375s
    Cholesky:
0.024641513824462890s

Matrix 69x69:
    Crout:
0.013392210006713867s
    Doolittle:
0.05030465126037598s
    Cholesky:
0.020810842514038086s

Matrix 70x70:
    Crout:
0.011283397674560547s
    Doolittle:
0.049161434173583984s
    Cholesky:
0.026381731033325195s

Matrix 71x71:
    Crout:
0.014001607894897461s
    Doolittle:
0.05430936813354492s
    Cholesky:
0.023411273956298828s

Matrix 72x72:
    Crout:
0.013079881668090820s
    Doolittle:
0.05215048789978027s
    Cholesky:
0.02431511878967285s

Matrix 73x73:
    Crout:
0.013154745101928711s
    Doolittle:
0.05933570861816406s
    Cholesky:
0.028242111206054688s

Matrix 74x74:
    Crout:
0.01656365394592285s
    Doolittle:
0.059143781661987305s
    Cholesky:
0.02569293975830078s

Matrix 75x75:
    Crout:
0.014329195022583008s
    Doolittle:
0.05757474899291992s

Cholesky:
0.02745962142944336s

Matrix 76x76:
    Crout:
0.018192291259765625s
    Doolittle:
0.07018518447875977s
    Cholesky:
0.03129220008850098s

Matrix 77x77:
    Crout:
0.016060113906860350s
    Doolittle:
0.05886125564575195s
    Cholesky:
0.030929088592529297s

Matrix 78x78:
    Crout:
0.018989324569702150s
    Doolittle:
0.0730292797088623s
    Cholesky:
0.029128551483154297s

Matrix 79x79:
    Crout:
0.0181581974029541s
    Doolittle:
0.06331133842468262s
    Cholesky:
0.035425424575805664s

Matrix 80x80:
    Crout:
0.02004098892211914s
    Doolittle:
0.07288980484008789s
    Cholesky:
0.030334949493408203s

Matrix 81x81:
    Crout:
0.018938541412353516s
    Doolittle:
0.07042193412780762s
    Cholesky:
0.03551888465881348s

Matrix 82x82:
    Crout:
0.02131032943725586s
    Doolittle:
0.07393407821655273s
    Cholesky:
0.03309297561645508s

Matrix 83x83:
    Crout:
0.01858234405517578s
    Doolittle:
0.0750114917755127s
    Cholesky:
0.04213905334472656s

Matrix 84x84:
    Crout:
0.023148298263549805s
    Doolittle:
0.07682514190673828s
    Cholesky:
0.033835411071777344s

Matrix 85x85:
    Crout:
0.019821882247924805s
    Doolittle:
0.080888326454162598s
    Cholesky:
0.0414273738861084s

Matrix 86x86:
    Crout:
0.024559736251831055s
    Doolittle:
0.08829498291015625s
    Cholesky:
0.0386660099029541s

Matrix 87x87:
    Crout:
0.021671772003173828s
    Doolittle:
0.08806824684143066s
    Cholesky:
0.044367313385009766s

Matrix 88x88:
    Crout:
0.02281665802001953s
    Doolittle:
0.08450126647949219s
    Cholesky:
0.039282798767089844s

Matrix 89x89:
    Crout:
0.02250218391418457s
    Doolittle:
0.09574413299560547s
    Cholesky:
0.04495096206665039s

Matrix 90x90:
    Crout:
0.02389073371887207s
    Doolittle:
0.08625936508178711s

Cholesky:
0.04030728340148926s

Matrix 91x91:
    Crout:
0.02388167381286621s
    Doolittle:
0.098671167472839355s
    Cholesky:
0.04700970649719238s

Matrix 92x92:
    Crout:
0.025592803955078125s
    Doolittle:
0.09332132339477539s
    Cholesky:
0.045281171798706055s

Matrix 93x93:
    Crout:
0.025321483612060547s
    Doolittle:
0.11156916618347168s
    Cholesky:
0.05105471611022949s

Matrix 94x94:
    Crout:
0.026244640350341797s
    Doolittle:
0.09822463989257812s
    Cholesky:
0.0454103946685791s

Matrix 95x95:
    Crout:
0.026227235794067383s
    Doolittle:
0.11205697059631348s
    Cholesky:
0.048729896545410156s

Matrix 96x96:
    Crout:
0.027558326721191406s
    Doolittle:
0.10114622116088867s
    Cholesky:
0.049486160027832031s

Matrix 97x97:
    Crout:
0.029288530349731445s
    Doolittle:
0.119771718978888184s
    Cholesky:
0.051590919494628906s

Matrix 98x98:
    Crout:
0.029059648513793945s
    Doolittle:
0.11141562461853027s
    Cholesky:
0.05165433883666992s

Matrix 99x99:
    Crout:
0.034355401199279785s
    Doolittle:
0.12504339218139648s
    Cholesky:
0.05416226387023926s

Matrix 100x100:
    Crout:
0.030914783477783203s
    Doolittle:
0.1158599853515625s
    Cholesky:
0.05435967445373535s

Matrix 101x101:
    Crout:
0.03615999221801758s
    Doolittle:
0.1278083324432373s
    Cholesky:
0.0548944447326660156s

Matrix 102x102:
    Crout:
0.032721757888793945s
    Doolittle:
0.12028980255126953s
    Cholesky:
0.05539679527282715s

Matrix 103x103:
    Crout:
0.03607988357543945s
    Doolittle:
0.1277475357055664s
    Cholesky:
0.06130337715148926s

Matrix 104x104:
    Crout:
0.036621809005737305s
    Doolittle:
0.12908363342285156s
    Cholesky:
0.06244087219238281s

Matrix 105x105:
    Crout:
0.0361025333404541s

Doolittle:
0.13263392448425293s
Cholesky:
0.06404685974121094s

Matrix 106x106:
Crout:
0.037377357482910156s
Doolittle:
0.13709592819213867s
Cholesky:
0.06671428680419922s

Matrix 107x107:
Crout:
0.039470672607421875s
Doolittle:
0.14493894577026367s
Cholesky:
0.06733369827270508s

Matrix 108x108:
Crout:
0.03967785835266113s
Doolittle:
0.14162206649780273s
Cholesky:
0.069278240203857425s

Matrix 109x109:
Crout:
0.04151344299316406s
Doolittle:
0.14660000801086426s
Cholesky:
0.07130813598632812s

Matrix 110x110:
Crout:
0.042383432388305664s
Doolittle:
0.15043854713439941s
Cholesky:
0.08002805709838867s

Matrix 111x111:
Crout:
0.04658365249633789s
Doolittle:
0.1606757640838623s
Cholesky:
0.07865476608276367s

Matrix 112x112:
Crout:
0.04711556434631348s
Doolittle:
0.15731287002563477s

Cholesky:
0.07942461967468262s

Matrix 113x113:
Crout:
0.04578208923339844s
Doolittle:
0.16400408744812012s
Cholesky:
0.08090662956237793s

Matrix 114x114:
Crout:
0.04874777793884277s
Doolittle:
0.18111109733581543s
Cholesky:
0.10881710052490234s

Matrix 115x115:
Crout:
0.06833767890930176s
Doolittle:
0.2004373378692627s
Cholesky:
0.0827183723449707s

Matrix 116x116:
Crout:
0.046486854553222656s
Doolittle:
0.17415976524353027s
Cholesky:
0.08727335929870605s

Matrix 117x117:
Crout:
0.048761844635009766s
Doolittle:
0.17436933517456055s
Cholesky:
0.08802056312561035s

Matrix 118x118:
Crout:
0.05070948600769043s
Doolittle:
0.20340967178344727s
Cholesky:
0.09074735641479492s

Matrix 119x119:
Crout:
0.05145597457885742s
Doolittle:
0.18582797050476074s
Cholesky:
0.09486937522888184s

Matrix 120x120:
Crout:
0.06313800811767578s

Doolittle:
0.23443603515625s
Cholesky:
0.098419189453125s

Matrix 121x121:
Crout:
0.05932903289794922s
Doolittle:
0.19591307640075684s
Cholesky:
0.09956264495584961s

Matrix 122x122:
Crout:
0.05568575859069824s
Doolittle:
0.205477952957153325s
Cholesky:
0.09875965118408203s

Matrix 123x123:
Crout:
0.05579519271850586s
Doolittle:
0.21157622337341309s
Cholesky:
0.109132766723363281s

Matrix 124x124:
Crout:
0.059169769287109375s
Doolittle:
0.21353745460510254s
Cholesky:
0.098881401062011719s

Matrix 125x125:
Crout:
0.057112693786621094s
Doolittle:
0.20830345153808594s
Cholesky:
0.11630558967590332s

Matrix 126x126:
Crout:
0.06183600425720215s
Doolittle:
0.21603941917419434s
Cholesky:
0.1039571762084961s

Matrix 127x127:
Crout:
0.059847354888916016s
Doolittle:
0.23155951499938965s
Cholesky:
0.1451258659362793s

Matrix 128x128:

Crout:
0.08623671531677246s
Doolittle:
0.29858970642089844s
Cholesky:
0.142633199969177246s

Matrix 129x129:
Crout:
0.12403178215026855s
Doolittle:
0.34095311164855957s
Cholesky:
0.16179704666137695s

Matrix 130x130:
Crout:
0.10395145416259766s
Doolittle:
0.377225399017334s
Cholesky:
0.17127776145935059s

Matrix 131x131:
Crout:
0.10712027549743652s
Doolittle:
0.39208173751831055s
Cholesky:
0.15758681297302246s

Matrix 132x132:
Crout:
0.09669756889343262s
Doolittle:
0.37380480766296387s
Cholesky:
0.16538548469543457s

Matrix 133x133:
Crout:
0.11943268775939941s
Doolittle:
0.36981987953186035s
Cholesky:
0.17132067680358887s

Matrix 134x134:
Crout:
0.10227060317993164s
Doolittle:
0.352402925491333s
Cholesky:
0.13364720344543457s

Matrix 135x135:
Crout:
0.08138656616210938s
Doolittle:
0.3399176597595215s
Cholesky:
0.1809537410736084s

Matrix 136x136:
Crout:
0.1022791862487793s
Doolittle:
0.3909454345703125s
Cholesky:
0.190932035446167s

Matrix 137x137:
Crout:
0.112992763551928711s
Doolittle:
0.412298747062683105s
Cholesky:
0.1841881275177002s

Matrix 138x138:
Crout:
0.11166985034942627s
Doolittle:
0.4026072025299072s
Cholesky:
0.1818840503692627s

Matrix 139x139:
Crout:
0.1350116729736328s
Doolittle:
0.4350719451904297s
Cholesky:
0.19329071044921875s

Matrix 140x140:
Crout:
0.12088990211486816s
Doolittle:
0.42635297775268555s
Cholesky:
0.1868882179260254s

Matrix 141x141:
Crout:
0.11826586723327637s
Doolittle:
0.4627208709716797s
Cholesky:
0.20360517501831055s

Matrix 142x142:
Crout:
0.1475238800048828s
Doolittle:
0.44759345054626465s
Cholesky:
0.2147388458251953s

Matrix 143x143:
Crout:
0.13260698318481445s

Doolittle:
0.4770321846008301s
Cholesky:
0.2029263973236084s

Matrix 144x144:
Crout:
0.139092683792111426s
Doolittle:
0.4642009735107422s
Cholesky:
0.210638523310180664s

Matrix 145x145:
Crout:
0.1329188346862793s
Doolittle:
0.4353623390197754s
Cholesky:
0.164285182952888086s

Matrix 146x146:
Crout:
0.105105400008544922s
Doolittle:
0.382425546664611816s
Cholesky:
0.17882728576660156s

Matrix 147x147:
Crout:
0.11195850372314453s
Doolittle:
0.3935422897338867s
Cholesky:
0.1695549488067627s

Matrix 148x148:
Crout:
0.104055230522155762s
Doolittle:
0.39984631538391113s
Cholesky:
0.18610501289367676s

Matrix 149x149:
Crout:
0.126870393375305176s
Doolittle:
0.4590585231781006s
Cholesky:
0.21495413780212402s

Matrix 150x150:
Crout:
0.13608694076538086s
Doolittle:
0.4785792827606201s
Cholesky:
0.18053841590881348s

Matrix 151x151:
    Crout:
0.1051015853881836s
    Doolittle:
0.3935081958770752s
    Cholesky:
0.2171800136566162s

Matrix 152x152:
    Crout:
0.1072845458984375s
    Doolittle:
0.363180160522246094s
    Cholesky:
0.18953442573547363s

Matrix 153x153:
    Crout:
0.110131263773291016s
    Doolittle:
0.3695871829986572s
    Cholesky:
0.17423766653747559s

Matrix 154x154:
    Crout:
0.10342240333557129s
    Doolittle:
0.3605372905731201s
    Cholesky:
0.178181409983581543s

Matrix 155x155:
    Crout:
0.113170146694213867s
    Doolittle:
0.3846285343170166s
    Cholesky:
0.18320870399475098s

Matrix 156x156:
    Crout:
0.1235194206237793s
    Doolittle:
0.46791911125183105s
    Cholesky:
0.23331475257873535s

Matrix 157x157:
    Crout:
0.15143346786499023s
    Doolittle:
0.8220548629760742s
    Cholesky:
0.3496699333190918s

Matrix 158x158:
    Crout:
0.2782759666442871s
    Doolittle:
0.84984755551605225s

Cholesky:
0.3032717704772949s

Matrix 159x159:
    Crout:
0.14469647407531738s
    Doolittle:
0.48873257637023926s
    Cholesky:
0.24074745178222656s

Matrix 160x160:
    Crout:
0.20555925369262695s
    Doolittle:
0.891690731048584s
    Cholesky:
0.3649275302886963s

Matrix 161x161:
    Crout:
0.18106343361999512s
    Doolittle:
0.7702562808990479s
    Cholesky:
0.3024260997772217s

Matrix 162x162:
    Crout:
0.18841910362243652s
    Doolittle:
0.7128140926361084s
    Cholesky:
0.28519201278686523s

Matrix 163x163:
    Crout:
0.14542317390441895s
    Doolittle:
0.47954726219177246s
    Cholesky:
0.2282707691192627s

Matrix 164x164:
    Crout:
0.14007496683380127s
    Doolittle:
0.494665384229260254s
    Cholesky:
0.22404003143310547s

Matrix 165x165:
    Crout:
0.13501572608947754s
    Doolittle:
0.47936224937438965s
    Cholesky:
0.2274472713470459s

Matrix 166x166:

Crout:
0.14112019538879395s
    Doolittle:
0.49265122413635254s
    Cholesky:
0.2310926914215088s

Matrix 167x167:
    Crout:
0.14747381210327148s
    Doolittle:
0.4969751834869385s
    Cholesky:
0.2806389331817627s

Matrix 168x168:
    Crout:
0.16051864624023438s
    Doolittle:
0.5233051776885986s
    Cholesky:
0.26365017890930176s

Matrix 169x169:
    Crout:
0.14787745475769043s
    Doolittle:
0.521465539932251s
    Cholesky:
0.2443234920501709s

Matrix 170x170:
    Crout:
0.15131187438964844s
    Doolittle:
0.5189332962036133s
    Cholesky:
0.25941491127701416s

Matrix 171x171:
    Crout:
0.22803616523742676s
    Doolittle:
0.6925125122070312s
    Cholesky:
0.304445361377390137s

Matrix 172x172:
    Crout:
0.15450799860534668s
    Doolittle:
0.5221915245056152s
    Cholesky:
0.2605628967285156s

Matrix 173x173:
    Crout:
0.1601696014404297s
    Doolittle:
0.567941427230835s

Cholesky:
0.2571704387664795s

Matrix 174x174:
Crout:
0.23084187507629395s
Doolittle:
0.6312675476074219s
Cholesky:
0.2763350009918213s

Matrix 175x175:
Crout:
0.3126988410949707s
Doolittle:
0.6984443664550781s
Cholesky:
0.38550758361816406s

Matrix 176x176:
Crout:
0.28723835945129395s
Doolittle:
0.8188817501068115s
Cholesky:
0.26567721366882324s

Matrix 177x177:
Crout:
0.16731691360473633s
Doolittle:
0.6222929954528809s
Cholesky:
0.3187696933746338s

Matrix 178x178:
Crout:
0.19932174682617188s
Doolittle:
0.9132246971130371s
Cholesky:
0.44339442253112793s

Matrix 179x179:
Crout:
0.32161784172058105s
Doolittle:
0.9074769020080566s
Cholesky:
0.36626386642456055s

Matrix 180x180:
Crout:
0.2300128936767578s
Doolittle:
0.9577372074127197s
Cholesky:
0.35149264335632324s

Matrix 181x181:

Crout:
0.2007741928100586s
Doolittle:
0.8748147487640381s
Cholesky:
0.3558635711669922s

Matrix 182x182:
Crout:
0.2112407684326172s
Doolittle:
0.65394020008056641s
Cholesky:
0.2948341369628906s

Matrix 183x183:
Crout:
0.1843888759613037s
Doolittle:
0.6395614147186279s
Cholesky:
0.29815196990966797s

Matrix 184x184:
Crout:
0.19658780097961426s
Doolittle:
0.6638305187225342s
Cholesky:
0.3011469841003418s

Matrix 185x185:
Crout:
0.19701647758483887s
Doolittle:
0.6823127269744873s
Cholesky:
0.3133664311164551s

Matrix 186x186:
Crout:
0.198847770669091797s
Doolittle:
0.666489839553833s
Cholesky:
0.31119823455810547s

Matrix 187x187:
Crout:
0.20393967628479004s
Doolittle: 0.76953125s
Cholesky:
0.34437060356140137s

Matrix 188x188:
Crout:
0.29332852363586426s
Doolittle:
0.931523323059082s
Cholesky:
0.39317846298217773s

Matrix 189x189:
Crout:
0.28436994552612305s
Doolittle:
0.7784781455993652s
Cholesky:
0.34864044189453125s

Matrix 190x190:
Crout:
0.213534116674499512s
Doolittle:
0.80891871145233154s
Cholesky:
0.35888998181915283s

Matrix 191x191:
Crout:
0.216668744087219238s
Doolittle:
0.7035458087921143s
Cholesky:
0.33079624176002539s

Matrix 192x192:
Crout:
0.21688079833984375s
Doolittle:
0.7116000652313232s
Cholesky:
0.3378336429595947s

Matrix 193x193:
Crout:
0.221506834003015137s
Doolittle:
0.7138173580169678s
Cholesky:
0.33971142768859863s

Matrix 194x194:
Crout:
0.21902871131896973s
Doolittle:
0.7329299449920654s
Cholesky:
0.352259532928466797s

Matrix 195x195:
Crout:
0.219522237777770996s
Doolittle:
0.7379894256591797s
Cholesky:
0.3575611114501953s

Matrix 196x196:
Crout:
0.223286390304456543s

Doolittle:
0.7407376766204834s
    Cholesky:
0.3605074882507324s

Matrix 197x197:
    Crout:
0.23710918426513672s
    Doolittle:
0.7438123226165771s
    Cholesky:
0.3673741817474365s

Matrix 198x198:
    Crout:
0.23231768608093262s
    Doolittle:
0.7693614959716797s
    Cholesky:
0.37034010887145996s

Matrix 199x199:
    Crout:
0.23759198188781738s
    Doolittle:
0.7672529220581055s
    Cholesky:
0.3701972961425781s

Matrix 200x200:
    Crout:
0.23637652391155762s
    Doolittle:
0.7764866352081299s
    Cholesky:
0.3765137195587158s

Matrix 201x201:
    Crout:
0.2412266731262207s
    Doolittle:
0.7927858829498291s
    Cholesky:
0.38555097579956055s

Matrix 202x202:
    Crout:
0.24537348747253418s
    Doolittle:
0.8084144592285156s
    Cholesky:
0.396282434463501s

Matrix 203x203:
    Crout:
0.25104856491088867s
    Doolittle:
0.8243277072906494s

    Cholesky:
0.3984346389770508s

Matrix 204x204:
    Crout:
0.24741864204406738s
    Doolittle:
0.833320140838623s
    Cholesky:
0.39844298362731934s

Matrix 205x205:
    Crout:
0.26169514560066895s
    Doolittle:
0.8459212779998779s
    Cholesky:
0.40662097930908203s

Matrix 206x206:
    Crout:
0.26003551483154297s
    Doolittle:
0.8521745204925537s
    Cholesky:
0.4078960418701172s

Matrix 207x207:
    Crout:
0.2655301094055176s
    Doolittle:
0.85178542137146s
    Cholesky:
0.41131043434143066s

Matrix 208x208:
    Crout:
0.267453670501709s
    Doolittle:
0.8708643913269043s
    Cholesky:
0.4247736930847168s

Matrix 209x209:
    Crout:
0.26981544494628906s
    Doolittle:
0.8771390914916992s
    Cholesky:
0.4254581928253174s

Matrix 210x210:
    Crout:
0.2707252502441406s
    Doolittle:
0.892350435256958s
    Cholesky:
0.43170166015625s

Matrix 211x211:
    Crout:
0.2812669277191162s
    Doolittle:
0.9036865234375s
    Cholesky:
0.4367694854736328s

Matrix 212x212:
    Crout:
0.28493618965148926s
    Doolittle:
0.9207384586334229s
    Cholesky:
0.44666886329650088s

Matrix 213x213:
    Crout:
0.2808253765106201s
    Doolittle:
0.9228534698486328s
    Cholesky:
0.44571948051452637s

Matrix 214x214:
    Crout:
0.291087150057373047s
    Doolittle:
0.9480528831481934s
    Cholesky:
0.460504055502319336s

Matrix 215x215:
    Crout:
0.2949645519256592s
    Doolittle:
0.985659122467041s
    Cholesky:
0.463432550043029785s

Matrix 216x216:
    Crout:
0.30214571952819824s
    Doolittle:
0.9597544670010498s
    Cholesky:
0.4659156799316406s

Matrix 217x217:
    Crout:
0.30138683319091797s
    Doolittle:
0.975225518157959s
    Cholesky:
0.5006568431854248s

Matrix 218x218:
    Crout:
0.3120579719543457s
    Doolittle:
0.9907259941101074s

Cholesky:
0.47386932373046875s

Matrix 219x219:
  Crout:
0.30972766876220703s
  Doolittle:
1.00373578071159424s
  Cholesky:
0.47917099925537111s

Matrix 220x220:
  Crout:
0.31681156158447266s
  Doolittle:
1.0130712985992432s
  Cholesky:
0.4959235191345215s

Matrix 221x221:
  Crout:
0.3246042728424072s
  Doolittle:
1.0358498096466064s
  Cholesky:
0.499787761138916s

Matrix 222x222:
  Crout:
0.329218626002233887s
  Doolittle:
1.0614776611328125s
  Cholesky:
0.5118563175201416s

Matrix 223x223:
  Crout:
0.33180618286113281s
  Doolittle:
1.0572850704193115s
  Cholesky:
0.5147643089294434s

Matrix 224x224:
  Crout:
0.33303308486938477s
  Doolittle:
1.0637810230255127s
  Cholesky:
0.521003007888794s

Matrix 225x225:
  Crout:
0.334336519241333s
  Doolittle:
1.0779273509979248s
  Cholesky:
0.531679630279541s

Matrix 226x226:
  Crout:
0.344130277633667s
  Doolittle:
1.106902837753296s
  Cholesky:
0.529442548751831s

Matrix 227x227:
  Crout:
0.346335172653198824s
  Doolittle:
1.1024484634399414s
  Cholesky:
0.5413501262664795s

Matrix 228x228:
  Crout:
0.363303899765011465s
  Doolittle:
1.1223738193511963s
  Cholesky:
0.5508627891540527s

Matrix 229x229:
  Crout:
0.3564889430999756s
  Doolittle:
1.13466807479858398s
  Cholesky:
0.5567889213562012s

Matrix 230x230:
  Crout:
0.3639109134674072s
  Doolittle:
1.1594510078430176s
  Cholesky:
0.5635600090026855s

Matrix 231x231:
  Crout:
0.36900854110717773s
  Doolittle:
1.1765873432159424s
  Cholesky:
0.5679898262023926s

Matrix 232x232:
  Crout:
0.3734264373779297s
  Doolittle:
1.1979031562805176s
  Cholesky:
0.5739386081695557s

Matrix 233x233:
  Crout:
0.37354564666748047s
  Doolittle:
1.1810643672943115s

Cholesky:
0.5790252685546875s

Matrix 234x234:
  Crout:
0.3845522403717041s
  Doolittle:
1.2042884826660156s
  Cholesky:
0.5809793472290039s

Matrix 235x235:
  Crout:
0.3851022720336914s
  Doolittle:
1.2237625122070312s
  Cholesky:
0.5971932411193848s

Matrix 236x236:
  Crout:
0.3903656005859375s
  Doolittle:
1.2251067161560059s
  Cholesky:
0.6023316383361816s

Matrix 237x237:
  Crout:
0.41576528549194336s
  Doolittle:
1.2685606479644775s
  Cholesky:
0.61063551902771s

Matrix 238x238:
  Crout:
0.4006519317626953s
  Doolittle:
1.2586355209350586s
  Cholesky:
0.6127457618713379s

Matrix 239x239:
  Crout:
0.41059350967407227s
  Doolittle:
1.2712578773498535s
  Cholesky:
0.6186058521270752s

Matrix 240x240:
  Crout:
0.40837740898132324s
  Doolittle:
1.3011775016784668s
  Cholesky:
0.6250555515289307s

Matrix 241x241:
    Crout:
0.4184236526489258s
    Doolittle:
1.3178181648254395s
    Cholesky:
0.6479494571685791s

Matrix 242x242:
    Crout:
0.42072200775146484s
    Doolittle:
1.32642102224151611s
    Cholesky:
0.6471641063690186s

Matrix 243x243:
    Crout:
0.4179868698120117s
    Doolittle:
1.3773043155670166s
    Cholesky:
0.6489086151123047s

Matrix 244x244:
    Crout:
0.4471461772918701s
    Doolittle:
1.3633687496185303s
    Cholesky:
0.6629421710968018s

Matrix 245x245:
    Crout:
0.4403409957885742s
    Doolittle:
1.3719186782836914s
    Cholesky:
0.6757948398590088s

Matrix 246x246:
    Crout:
0.44610047340393066s
    Doolittle:
1.4066548347473145s
    Cholesky:
0.7010281085968018s

Matrix 247x247:
    Crout:
0.46269702911376953s
    Doolittle:
1.403996467590332s
    Cholesky:
0.6869385242462158s

Matrix 248x248:
    Crout:
0.449784517288208s
    Doolittle:
1.4190523624420166s

Cholesky:
0.6922192573547363s

Matrix 249x249:
    Crout:
0.4601716995239258s
    Doolittle:
1.4323654174804688s
    Cholesky:
0.7042737007141113s

Matrix 250x250:
    Crout:
0.46515822410583496s
    Doolittle:
1.4680135250091553s
    Cholesky:
0.711101770401001s

Matrix 251x251:
    Crout:
0.46930956840515137s
    Doolittle:
1.474207878112793s
    Cholesky:
0.7213048934936523s

Matrix 252x252:
    Crout:
0.48463892936706543s
    Doolittle:
1.48235249951934814s
    Cholesky:
0.723106861114502s

Matrix 253x253:
    Crout:
0.4758577346801758s
    Doolittle:
1.526260098022461s
    Cholesky:
0.7347269058227539s

Matrix 254x254:
    Crout:
0.5029349327087402s
    Doolittle:
1.6911176176071167s
    Cholesky:
0.893543004989624s

Matrix 255x255:
    Crout:
0.5293431282043457s
    Doolittle:
1.6060125827789307s
    Cholesky:
0.9121274948120117s

Matrix 256x256:

    Crout:
0.7727327346801758s
    Doolittle:
1.668004035949707s
    Cholesky:
1.1442656517028809s

Matrix 257x257:
    Crout:
0.7255673408508301s
    Doolittle:
1.610457181930542s
    Cholesky:
0.7679450511932373s

Matrix 258x258:
    Crout:
0.5081217288970947s
    Doolittle:
1.5611348152160645s
    Cholesky:
0.7715442180633545s

Matrix 259x259:
    Crout:
0.5212182998657227s
    Doolittle:
1.574657678604126s
    Cholesky:
0.7830636501312256s

Matrix 260x260:
    Crout:
0.5153806209564209s
    Doolittle:
1.627713918685913s
    Cholesky:
0.7931172847747803s

Matrix 261x261:
    Crout:
0.52122473716673584s
    Doolittle:
1.6124217510223389s
    Cholesky:
0.8020570278167725s

Matrix 262x262:
    Crout:
0.5333683490753174s
    Doolittle:
1.6331443786621094s
    Cholesky:
0.8059670925140381s

Matrix 263x263:
    Crout:
0.535163402557373s
    Doolittle:
1.6693108081817627s
    Cholesky:
0.8161323070526123s

Matrix 264x264:
    Crout:
0.5538780689239502s
    Doolittle:
1.67700750092163086s
    Cholesky:
0.8258895874023438s

Matrix 265x265:
    Crout:
0.5465469360351562s
    Doolittle:
1.67750740005126953s
    Cholesky:
0.8320679664611816s

Matrix 266x266:
    Crout:
0.5371623039245605s
    Doolittle:
1.7254176139831543s
    Cholesky:
0.8456640243530273s

Matrix 267x267:
    Crout:
0.55215954780057861s
    Doolittle:
1.7924449443817139s
    Cholesky:
0.8699619770050049s

Matrix 268x268:
    Crout:
0.5518054962158203s
    Doolittle:
1.734527587890625s
    Cholesky:
0.8566915988922119s

Matrix 269x269:
    Crout:
0.5652799606323242s
    Doolittle:
1.7544002532958984s
    Cholesky:
0.9046392440795898s

Matrix 270x270:
    Crout:
0.5814549922943115s
    Doolittle:
1.7743990421295166s
    Cholesky:
0.9084463119506836s

Matrix 271x271:
    Crout:
0.5857024192810059s

    Doolittle:
1.8002545833587646s
    Cholesky:
0.8802022933959961s

Matrix 272x272:
    Crout:
0.5900053977966309s
    Doolittle:
1.8357503414154053s
    Cholesky:
0.9007339477539062s

Matrix 273x273:
    Crout:
0.6083076000213623s
    Doolittle:
1.8291904926300049s
    Cholesky:
0.9033889770507812s

Matrix 274x274:
    Crout:
0.6076467037200928s
    Doolittle:
1.8414161205291748s
    Cholesky:
0.9191501140594482s

Matrix 275x275:
    Crout:
0.6035017967224121s
    Doolittle:
1.8739526271820068s
    Cholesky:
0.9238185882568359s

Matrix 276x276:
    Crout:
0.6241326332092285s
    Doolittle:
1.879073143005371s
    Cholesky:
0.9326589107513428s

Matrix 277x277:
    Crout:
0.6259067058563232s
    Doolittle:
1.9088985919952393s
    Cholesky:
0.9453375339508057s

Matrix 278x278:
    Crout:
0.6282236576080322s
    Doolittle:
1.965334415435791s
    Cholesky:
0.9622981548309326s

Matrix 279x279:

    Crout:
0.636904239654541s
    Doolittle:
1.9268524646759033s
    Cholesky:
0.9582786560058594s

Matrix 280x280:
    Crout:
0.6472768783569336s
    Doolittle:
1.953962802886963s
    Cholesky:
1.049231767654419s

Matrix 281x281:
    Crout:
0.6580872535705566s
    Doolittle:
2.003319501876831s
    Cholesky:
0.9803597927093506s

Matrix 282x282:
    Crout:
0.6602394580841064s
    Doolittle:
2.0158791542053223s
    Cholesky:
0.9951729774475098s

Matrix 283x283:
    Crout:
0.6792314052581787s
    Doolittle:
2.0237910747528076s
    Cholesky:
1.002187728881836s

Matrix 284x284:
    Crout:
0.6727960109710693s
    Doolittle:
2.060647487640381s
    Cholesky:
1.113020658493042s

Matrix 285x285:
    Crout:
0.7110941410064697s
    Doolittle:
2.0637784004211426s
    Cholesky:
1.0214343070983887s

Matrix 286x286:
    Crout:
0.6854629516601562s

Doolittle:
2.109348773956299s
    Cholesky:
1.0521163940429688s

Matrix 287x287:
    Crout:
0.7024152278900146s
    Doolittle:
2.1022562980651855s
    Cholesky:
1.0460641384124756s

Matrix 288x288:
    Crout:
0.6980748176574707s
    Doolittle:
2.122685194015503s
    Cholesky:
1.0450406074523926s

Matrix 289x289:
    Crout:
0.7043764591217041s
    Doolittle:
2.163400650024414s
    Cholesky:
1.1001064777374268s

Matrix 290x290:
    Crout:
0.7523410320281982s
    Doolittle:
2.6117584705352783s
    Cholesky:
1.15203714370072754s

Matrix 291x291:
    Crout:
0.7813272476196289s
    Doolittle:
2.3467214107513428s
    Cholesky:
1.080824851989746s

Matrix 292x292:
    Crout:
0.9709019660949707s
    Doolittle:
2.4882402420043945s
    Cholesky:
1.1288466453552246s

Matrix 293x293:
    Crout:
0.7881464958190918s
    Doolittle:
2.475106954574585s
    Cholesky:
1.22499823570025146s

Matrix 294x294:
    Crout:
0.8954381942749023s
    Doolittle:
2.815281629562378s
    Cholesky:
1.2008228302001953s

Matrix 295x295:
    Crout:
0.7817907333374023s

    Doolittle:
2.791980504989624s
    Cholesky:
1.7242145538330078s

Matrix 296x296:
    Crout:
1.2166979312896729s
    Doolittle:
3.678006649017334s
    Cholesky:
1.504213809967041s

Matrix 297x297:
    Crout:
0.99766826662963867s
    Doolittle:
2.54736447334328955s
    Cholesky:
1.64654278755518799s

Matrix 298x298:
    Crout:
1.5123119354248047s
    Doolittle:
2.7501213550567627s
    Cholesky:
1.5112032890319824s

Matrix 299x299:
    Crout:
1.160841941833496s
    Doolittle:
3.076201915740967s
    Cholesky:
1.2960500717163086s

Zadanie 3

Wykresy:

Time of evaluation for LU decompositions
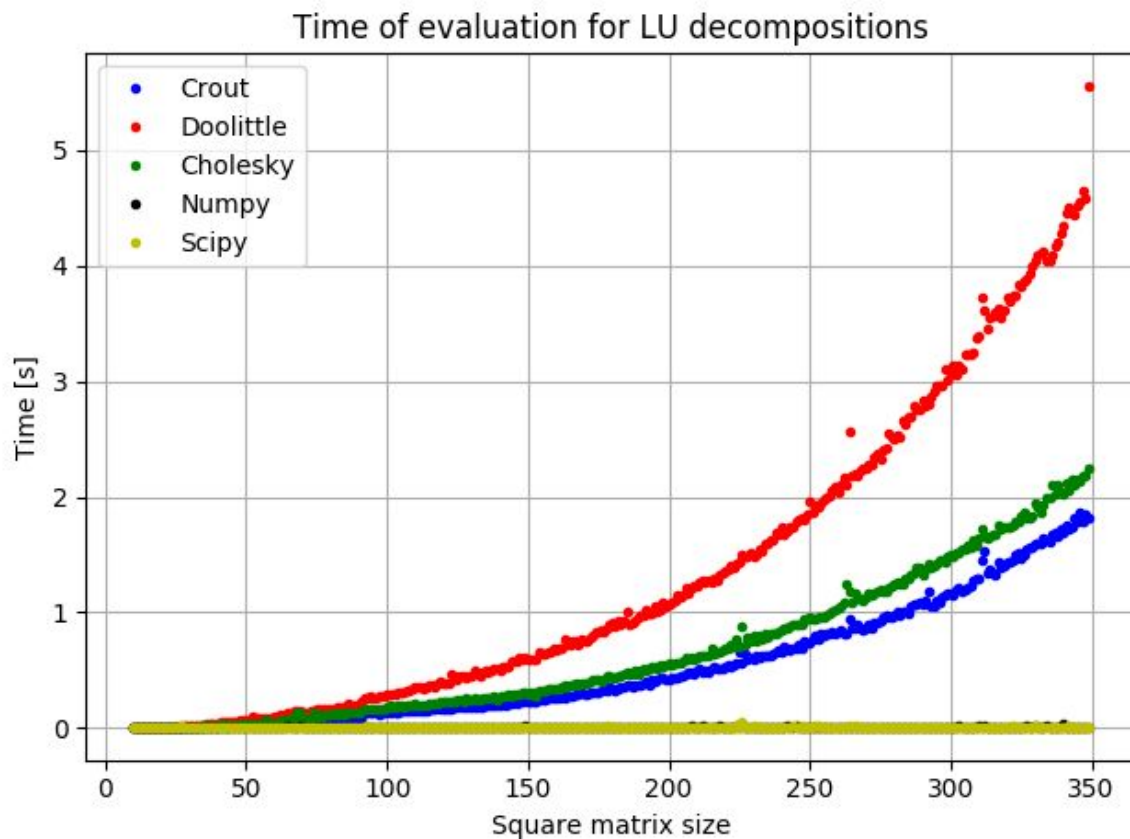
Pomiary:

Matrix 10x10:
    Crout:
0.007263898849487305s
    Doolittle:
0.0014617443084716797s
    Cholesky:
0.0008919239044189453s
    Numpy:
0.00015020370483398438s
    Scipy:
0.001054253375366211s

Matrix 11x11:
    Crout:
0.0008008480072021484s
    Doolittle:
0.002642393112182617s
    Cholesky:
0.0011196136474609375s
    Numpy:
7.963180541992188e-05s
    Scipy:
9.942054748535156e-05s

Matrix 12x12:
    Crout:
0.0005795955657958984s
    Doolittle:
0.00252532958984375s
    Cholesky:
0.0012705326080322266s
    Numpy:
6.246566772460938e-05s
    Scipy:
0.0001232624053955078s

Matrix 13x13:
    Crout:
0.0005555152893066406s
    Doolittle:
0.002485990524291992s
    Cholesky:
0.001462697982788086s
    Numpy:
0.00010704994201660156s
    Scipy:
0.00014710426330566406s

Matrix 14x14:
    Crout:
0.0006687641143798828s
    Doolittle:
0.003562450408935547s
    Cholesky:
0.00151824951171875s
    Numpy:
7.176399230957031e-05s
    Scipy:
0.00010752677917480469s

Matrix 15x15:
    Crout:
0.0007169246673583984s
    Doolittle:
0.003337860107421875s
    Cholesky:
0.0016033649444580078s
    Numpy:
6.461143493652344e-05s
    Scipy:
8.7738037109375e-05s

Matrix 16x16:
    Crout:
0.0007963180541992188s
    Doolittle:
0.0020711421966552734s
    Cholesky:
0.0011265277862548828s
    Numpy:
4.5299530029296875e-05s
    Scipy:
6.175041198730469e-05s

Matrix 17x17:
    Crout:
0.0004611015319824219s
    Doolittle:
0.0029144287109375s
    Cholesky:
0.0012691020965576172s
    Numpy:
5.14984130859375e-05s
    Scipy:
5.340576171875e-05s

Matrix 18x18:
    Crout:
0.0005681514739990234s
    Doolittle:
0.0026264190673828125s
    Cholesky:
0.0011076927185058594s
    Numpy:
0.0033674241112304688s
    Scipy:
0.0001571178436279297s

Matrix 19x19:
    Crout:
0.0014851093292236328s
    Doolittle:
0.006361427730712891s
    Cholesky:
0.0029716491699921875s
    Numpy:
0.00011134147644042969s
    Scipy:
0.00012636184692382812s

Matrix 20x20:
    Crout:
0.0016021728515625s
    Doolittle:
0.0075566768646240234s
    Cholesky:
0.0036199092864990234s
    Numpy:
0.0035178661346435547s
    Scipy:
0.009429693222045898s

Matrix 21x21:

    Crout:
0.0018401145935058594s
    Doolittle:
0.009634733200073242s
    Cholesky:
0.003648519515991211s
    Numpy:
0.0010485649108886719s
    Scipy:
0.0004742145538330078s

Matrix 22x22:
    Crout:
0.0023641586303710938s
    Doolittle:
0.008779764175415039s
    Cholesky:
0.003645181655883789s
    Numpy:
0.00372314453125s
    Scipy:
0.00017642974853515625s

Matrix 23x23:
    Crout:
0.0020029544830322266s
    Doolittle:
0.008782148361206055s
    Cholesky:
0.0038270950317382812s
    Numpy:
0.0009796619415283203s
    Scipy:
0.00019931793212890625s

Matrix 24x24:
    Crout:
0.002331256866455078s
    Doolittle:
0.009254932403564453s
    Cholesky:
0.004722118377685547s
    Numpy:
0.0012810230255126953s
    Scipy:
0.00022792816162109375s

Matrix 25x25:
    Crout:
0.002374887466430664s
    Doolittle:
0.010307788848876953s
    Cholesky:
0.005128383636474609s
    Numpy:
0.0014293193817138672s
    Scipy:
0.00015020370483398438s

Matrix 26x26:
    Crout:
0.0025026798248291016s

    Doolittle:
0.011919498443603516s
    Cholesky:
0.005621194839477539s
    Numpy:
0.006677037239074707s
    Scipy:
0.00413060188293457s

Matrix 27x27:
    Crout:
0.003777742385864258s
    Doolittle:
0.014255762100219727s
    Cholesky:
0.006802320480034668s
    Numpy:
0.0007560253143310547s
    Scipy:
0.015612602233886719s

Matrix 28x28:
    Crout:
0.003416776657104492s
    Doolittle:
0.017887592315673828s
    Cholesky:
0.008804082870483398s
    Numpy:
0.000278472900390625s
    Scipy:
0.00025844573974609375s

Matrix 29x29:
    Crout:
0.003604888916015625s
    Doolittle:
0.016237258911132812s
    Cholesky:
0.007676362991333008s
    Numpy:
0.0002715587615966797s
    Scipy:
0.00021648406982421875s

Matrix 30x30:
    Crout:
0.004112958908081055s
    Doolittle:
0.020038097381591797s
    Cholesky:
0.009776353835605957s
    Numpy:
0.00019288063049316406s
    Scipy:
0.00018835067749023438s

Matrix 31x31:
    Crout:
0.00440216064453125s
    Doolittle:
0.020557403564453125s

Cholesky:
0.009057760238647461s
    Numpy:
0.00021958351135253906s
    Scipy:
0.00027441978454589844s

Matrix 32x32:
    Crout:
0.004747867584228516s
    Doolittle:
0.02140069007873535s
    Cholesky:
0.010170981165893555s
    Numpy:
0.0011012554168701172s
    Scipy:
0.00031709671020050781s

Matrix 33x33:
    Crout:
0.00762629508972168s
    Doolittle:
0.024489879608154297s
    Cholesky:
0.01062464714050293s
    Numpy:
0.0035386085510253906s
    Scipy:
0.0003993511199951172s

Matrix 34x34:
    Crout:
0.012798309326171875s
    Doolittle:
0.025574684143066406s
    Cholesky:
0.011187553405761719s
    Numpy:
0.0002048015594482422s
    Scipy:
0.0002200603485107422s

Matrix 35x35:
    Crout:
0.006089257765991211s
    Doolittle:
0.026926517486572266s
    Cholesky:
0.012407064437866211s
    Numpy:
0.00018286705017089844s
    Scipy:
0.00019359588623046875s

Matrix 36x36:
    Crout:
0.006379365921020508s
    Doolittle:
0.027896642684936523s
    Cholesky:
0.012539148330688477s

    Numpy:
0.00035881996154785156s
    Scipy:
0.000240325277734375s

Matrix 37x37:
    Crout:
0.00663757324218750s
    Doolittle:
0.029401063919067383s
    Cholesky:
0.014102697372436523s
    Numpy:
0.00037503242492675578s
    Scipy:
0.0034253597259521484s

Matrix 38x38:
    Crout:
0.013528585433959961s
    Doolittle:
0.035548925399780027s
    Cholesky:
0.015545129776000977s
    Numpy:
0.0002553462982177344s
    Scipy:
0.00025963783264160156s

Matrix 39x39:
    Crout:
0.008179187774658203s
    Doolittle:
0.03824615478515625s
    Cholesky:
0.017214298248291016s
    Numpy:
0.0002562999725341797s
    Scipy:
0.00029516220092773344s

Matrix 40x40:
    Crout:
0.00822758674621582s
    Doolittle:
0.041634559631347656s
    Cholesky:
0.016593933105468875s
    Numpy:
0.0002222061157226562s
    Scipy:
0.0002682209014892578s

Matrix 41x41:
    Crout:
0.014082193374633789s
    Doolittle:
0.05106544494628906s
    Cholesky:
0.019570589065551758s
    Numpy:
0.0005400180816650391s

    Scipy:
0.00044655799865722656s

Matrix 42x42:
    Crout:
0.012327432632446289s
    Doolittle:
0.044047355565185547s
    Cholesky:
0.0282084941864013671s
    Numpy:
0.0038418769836425778s
    Scipy:
0.00294968536376953125s

Matrix 43x43:
    Crout:
0.010189056396484375s
    Doolittle:
0.04544401168823242s
    Cholesky:
0.0214915275573730470s
    Numpy:
0.0002324581146240234s
    Scipy:
0.00029996921539306406s

Matrix 44x44:
    Crout:
0.012151479721069336s
    Doolittle:
0.05057191848754883s
    Cholesky:
0.023417949676513672s
    Numpy:
0.0006237030029296875s
    Scipy:
0.0070803165435791016s

Matrix 45x45:
    Crout:
0.024765968322753906s
    Doolittle:
0.052455663368103027s
    Cholesky:
0.023809194564819336s
    Numpy:
0.00027728080749511172s
    Scipy:
0.0003268718719482422s

Matrix 46x46:
    Crout:
0.014021873474121094s
    Doolittle:
0.051631450653076172s
    Cholesky:
0.02386641502380371s
    Numpy:
0.0003340244293212890s
    Scipy:
0.000438690185546875s

Matrix 47x47:
    Crout:
0.019905083656311035s
    Doolittle:
0.05624413490029541s
    Cholesky:
0.028387069702148438s
    Numpy:
0.0004045963287353515 6s
    Scipy:
0.0004129409790039062 5s

Matrix 48x48:
    Crout:
0.015064239501953125s
    Doolittle:
0.06019902229309082s
    Cholesky:
0.027646303176879883s
    Numpy:
0.0003645420074462890 6s
    Scipy:
0.0003800392150878906s

Matrix 49x49:
    Crout:
0.033516883850097656s
    Doolittle:
0.05984926223754883s
    Cholesky:
0.034821271896362305s
    Numpy:
0.006036996841430664s
    Scipy:
0.0006666183471679688s

Matrix 50x50:
    Crout:
0.01659083366394043s
    Doolittle:
0.0719454288482666s
    Cholesky:
0.0299074449810791s
    Numpy:
0.0005052089691162109s
    Scipy:
0.0004568099755585937 5s

Matrix 51x51:
    Crout:
0.017589807510375977s
    Doolittle:
0.06797313690185547s
    Cholesky:
0.032534837722778320s
    Numpy:
0.0023107528686523438s
    Scipy:
0.0071244239807128910s

Matrix 52x52:

    Crout:
0.019776582717895508s
    Doolittle:
0.10035848617553711s
    Cholesky:
0.035213232040440527s
    Numpy:
0.0022423267364501953s
    Scipy:
0.0008413791656494141s

Matrix 53x53:
    Crout:
0.020146131515502930s
    Doolittle:
0.08022809028625488s
    Cholesky:
0.0359959602355957s
    Numpy:
0.002504587173461914s
    Scipy:
0.001443624496459961s

Matrix 54x54:
    Crout:
0.019926071166992188s
    Doolittle:
0.07977080345153809s
    Cholesky:
0.03855133056640625s
    Numpy:
0.011326313018798828s
    Scipy:
0.0004677772521972656s

Matrix 55x55:
    Crout:
0.020180702209472656s
    Doolittle:
0.075992258422851562s
    Cholesky:
0.039522647857666016s
    Numpy:
0.0006947517395019531s
    Scipy:
0.0006296634674072266s

Matrix 56x56:
    Crout:
0.021135807037353516s
    Doolittle:
0.0846247673034668s
    Cholesky:
0.03550910949707031s
    Numpy:
0.0008127689361572266s
    Scipy:
0.001260995864868164s

Matrix 57x57:
    Crout:
0.021248340606689453s

    Doolittle:
0.08796262741088867s
    Cholesky:
0.067734275817871094s
    Numpy:
0.006494998931884766s
    Scipy:
0.0025548934936523438s

Matrix 58x58:
    Crout:
0.020762681961059570s
    Doolittle:
0.08235692977905273s
    Cholesky:
0.041062593460008301s
    Numpy:
0.0007350444793701172s
    Scipy:
0.0027856826782226562s

Matrix 59x59:
    Crout:
0.0256960339199829 1s
    Doolittle:
0.08442187309265137s
    Cholesky:
0.042930126190185550s
    Numpy:
0.0010347336633300781 2s
    Scipy:
0.0006818771362304688s

Matrix 60x60:
    Crout:
0.0230557918548584s
    Doolittle:
0.098649740219116210s
    Cholesky:
0.045914649963378906s
    Numpy:
0.00049614906311035156s
    Scipy:
0.0009214878082275391s

Matrix 61x61:
    Crout:
0.02486586570739746s
    Doolittle:
0.08582496643066406s
    Cholesky:
0.04035043716430664s
    Numpy:
0.0008611679077148438s
    Scipy:
0.0005674362182617188s

Matrix 62x62:
    Crout:
0.028417110443115234s
    Doolittle:
0.11195635795593262s

Cholesky:
0.04929065704345703s
Numpy:
0.0006341934204101562s
Scipy:
0.0005562305450439453s

Matrix 63x63:
Crout:
0.02769947052001953s
Doolittle:
0.1055908203125s
Cholesky:
0.063150644430236816s
Numpy:
0.006621360778808594s
Scipy:
0.004727840423583984s

Matrix 64x64:
Crout:
0.030792236328125s
Doolittle:
0.11862707138061523s
Cholesky:
0.059970358848571777s
Numpy:
0.005275249481201172s
Scipy:
0.001615762710571289s

Matrix 65x65:
Crout:
0.028911828994750977s
Doolittle:
0.13614225387573242s
Cholesky:
0.0705716609954834s
Numpy:
0.021646976470947266s
Scipy:
0.0013303756713867188s

Matrix 66x66:
Crout:
0.034012556076049805s
Doolittle:
0.13545250892263916s
Cholesky:
0.07781720161437988s
Numpy:
0.006901264190673828s
Scipy:
0.00086212158203125s

Matrix 67x67:
Crout:
0.036589860916137695s
Doolittle:
0.14556479454040527s
Cholesky:
0.09478092193603516s

Numpy:
0.001531362533569336s
Scipy:
0.0010325908660888672s

Matrix 68x68:
Crout:
0.05022072792053223s
Doolittle:
0.143179665507324s
Cholesky:
0.12718749046325684s
Numpy:
0.0006854534149169922s
Scipy:
0.0005710124969482422s

Matrix 69x69:
Crout:
0.04127240180969238s
Doolittle:
0.139934778213500098s
Cholesky:
0.1375291347503662s
Numpy:
0.012315511703491211s
Scipy:
0.0014262199401855469s

Matrix 70x70:
Crout:
0.040815591812133379s
Doolittle:
0.138571262359961914s
Cholesky:
0.061595916748046875s
Numpy:
0.0007529258728027344s
Scipy:
0.0006906986236572266s

Matrix 71x71:
Crout:
0.024480819702148438s
Doolittle:
0.1336064338684082s
Cholesky:
0.06553053855895996s
Numpy:
0.0012335777282714844s
Scipy:
0.0011243820190429688s

Matrix 72x72:
Crout:
0.029498577117919922s
Doolittle:
0.13795685768127441s
Cholesky:
0.06340980529785156s
Numpy:
0.0017409324645996094s

Scipy:
0.001325368881225586s

Matrix 73x73:
Crout:
0.0412447452545166s
Doolittle:
0.14361333847045898s
Cholesky:
0.069268703346069336s
Numpy:
0.0023458003997802734s
Scipy:
0.0009315013885498047s

Matrix 74x74:
Crout:
0.040450096130371094s
Doolittle:
0.148953199938659668s
Cholesky:
0.13326311111450195s
Numpy:
0.0005557537078857422s
Scipy:
0.0006105899810791016s

Matrix 75x75:
Crout:
0.05481576919555664s
Doolittle:
0.16139507293701172s
Cholesky:
0.09847688674926758s
Numpy:
0.0006978511810302734s
Scipy:
0.0007693767547607422s

Matrix 76x76:
Crout:
0.06716060638427734s
Doolittle:
0.1601254940032959s
Cholesky:
0.1110803307006836s
Numpy:
0.0010247230529785156s
Scipy:
0.0007688999176025391s

Matrix 77x77:
Crout:
0.05614423751831055s
Doolittle:
0.164104938850708008s
Cholesky:
0.1060493376586914s
Numpy:
0.006140232086181641s
Scipy:
0.001497030258178711s

Matrix 78x78:
    Crout:
0.068872892379760742s
    Doolittle:
0.16214799880981445s
    Cholesky:
0.1188962459564209s
    Numpy:
0.005827903747558594s
    Scipy:
0.0008089542388916016s

Matrix 79x79:
    Crout:
0.056634903907775879s
    Doolittle:
0.165423870086666992s
    Cholesky:
0.109825372269592285s
    Numpy:
0.0008816719055175781s
    Scipy:
0.0007736682891845703s

Matrix 80x80:
    Crout:
0.065052509307786133s
    Doolittle:
0.168098688125661035s
    Cholesky:
0.12205934524536133s
    Numpy:
0.0032455921173095703s
    Scipy:
0.001809835433959961s

Matrix 81x81:
    Crout:
0.037115573883056664s
    Doolittle:
0.164591550827026637s
    Cholesky:
0.112288070678710938s
    Numpy:
0.0021333694458007812s
    Scipy:
0.006608247756958008s

Matrix 82x82:
    Crout:
0.066850662231144531s
    Doolittle:
0.17325568199157715s
    Cholesky:
0.126600670280456543s
    Numpy:
0.0038590431213378906s
    Scipy:
0.0009043216705322266s

Matrix 83x83:

    Crout:
0.07137060165405273s
    Doolittle:
0.172568082280944824s
    Cholesky:
0.119030955245361328s
    Numpy:
0.0028512477874755586s
    Scipy:
0.00096893310546875s

Matrix 84x84:
    Crout:
0.06769871711730957s
    Doolittle:
0.176616119186401367s
    Cholesky:
0.128000240516662598s
    Numpy:
0.0007288455963134766s
    Scipy:
0.0011780261993408203s

Matrix 85x85:
    Crout:
0.07312488555908203s
    Doolittle:
0.18175768852233887s
    Cholesky:
0.119388341903668652s
    Numpy:
0.001390695571899414s
    Scipy:
0.0007221698760986328s

Matrix 86x86:
    Crout:
0.068817138671875s
    Doolittle:
0.2065730094909668s
    Cholesky:
0.13755202293395996s
    Numpy:
0.0010561943054199219s
    Scipy:
0.0012772083282470703s

Matrix 87x87:
    Crout:
0.066983938217716309s
    Doolittle:
0.19635653495788574s
    Cholesky:
0.136356353759976562s
    Numpy:
0.000720977783203125s
    Scipy:
0.0009992122650146484s

Matrix 88x88:
    Crout:
0.07634925842285156s

    Doolittle:
0.18938136100769043s
    Cholesky:
0.134546995516296387s
    Numpy:
0.0006580352783203125s
    Scipy:
0.0007171630859375s

Matrix 89x89:
    Crout:
0.07399898681640625s
    Doolittle:
0.201971054077714844s
    Cholesky:
0.1353931427001953s
    Numpy:
0.0009119510650634766s
    Scipy:
0.0010325908660888672s

Matrix 90x90:
    Crout:
0.08221149444580078s
    Doolittle:
0.199985032081604004s
    Cholesky:
0.135356664465759277s
    Numpy:
0.009728670120239258s
    Scipy:
0.0008192062377929688s

Matrix 91x91:
    Crout:
0.083902120590209996s
    Doolittle:
0.222066164401672363s
    Cholesky:
0.1529848575592041s
    Numpy:
0.0019006729125976562s
    Scipy:
0.0050029754386671875s

Matrix 92x92:
    Crout:
0.14629840850830078s
    Doolittle:
0.25371241569519043s
    Cholesky:
0.158221960006774902s
    Numpy:
0.0010015964508805664s
    Scipy:
0.0111086368556079102s

Matrix 93x93:
    Crout:
0.12380695343017578s
    Doolittle:
0.253706693649292s

Cholesky:
0.161213159561115723s
Numpy:
0.005571603775024414s
Scipy:
0.024895906448364258s

Matrix 94x94:
Crout:
0.12453603744506836s
Doolittle:
0.266500473022246094s
Cholesky:
0.170099973367858887s
Numpy:
0.0019025802612304688s
Scipy:
0.001277923583984375s

Matrix 95x95:
Crout:
0.1313021183013916s
Doolittle:
0.26193928718566895s
Cholesky:
0.17075467109680176s
Numpy:
0.0041870070086181641s
Scipy:
0.00331878662109375s

Matrix 96x96:
Crout:
0.13387179374694824s
Doolittle:
0.262701034545589844s
Cholesky:
0.16653418540954459s
Numpy:
0.00723576545715332s
Scipy:
0.0017411708831178711s

Matrix 97x97:
Crout:
0.1202690601348877s
Doolittle:
0.2753703351409912s
Cholesky:
0.166766166687701172s
Numpy:
0.0010001659393310547s
Scipy:
0.0016705989837646484s

Matrix 98x98:
Crout:
0.13049793243408203s
Doolittle:
0.2727642059326172s
Cholesky:
0.1668705940246582s

Numpy:
0.0009522438049316406s
Scipy:
0.0012257099151611328s

Matrix 99x99:
Crout:
0.13273143768310547s
Doolittle:
0.2763984203338623s
Cholesky:
0.167553390167236328s
Numpy:
0.0009775161743164062s
Scipy:
0.001157999038696289s

Matrix 100x100:
Crout:
0.15638017654418945s
Doolittle:
0.28259110045074463s
Cholesky:
0.1771252155303955s
Numpy:
0.00121164321899941406s
Scipy:
0.004130363464355469s

Matrix 101x101:
Crout:
0.13556122779846191s
Doolittle:
0.2835500240325928s
Cholesky:
0.187716696090698242s
Numpy:
0.003307819366455078s
Scipy:
0.0016908645629882812s

Matrix 102x102:
Crout:
0.14086222648620605s
Doolittle:
0.2952752113342285s
Cholesky:
0.1754140853881836s
Numpy:
0.0009744167327880859s
Scipy:
0.0030853748321533203s

Matrix 103x103:
Crout:
0.13604640960693336s
Doolittle:
0.2939281463623047s
Cholesky:
0.17557430267333984s
Numpy:
0.00113391876220170312s

Scipy:
0.0024650096893310547s

Matrix 104x104:
Crout:
0.13908958435058594s
Doolittle:
0.3073689937591553s
Cholesky:
0.1887674331665039s
Numpy:
0.0080220699310330273s
Scipy:
0.002768993377685547s

Matrix 105x105:
Crout:
0.14519691467285156s
Doolittle:
0.312200546226464844s
Cholesky:
0.1888580322265625s
Numpy:
0.0016994476318359375s
Scipy:
0.00123071670053222656s

Matrix 106x106:
Crout:
0.1432805061340332s
Doolittle:
0.308676719666552734s
Cholesky:
0.1858518123626709s
Numpy:
0.0015552043914794922s
Scipy:
0.0033416748046875s

Matrix 107x107:
Crout:
0.1446690559387207s
Doolittle:
0.32624173164367676s
Cholesky:
0.1930253505706787s
Numpy:
0.005678653771704016s
Scipy:
0.0022940635681152344s

Matrix 108x108:
Crout:
0.145092010449804688s
Doolittle:
0.3191957473754883s
Cholesky:
0.18817758560180664s
Numpy:
0.0016314983367919922s
Scipy:
0.0012791156768798828s

Matrix 109x109:
    Crout:
0.14321374993188477s
    Doolittle:
0.33551907539367676s
    Cholesky:
0.191136149935302734s
    Numpy:
0.0011110305786132812s
    Scipy:
0.0013401508331298828s

Matrix 110x110:
    Crout:
0.14903259277343755s
    Doolittle:
0.3531494140625s
    Cholesky:
0.217877145881909185s
    Numpy:
0.0040819644927978516s
    Scipy:
0.002201080322265625s

Matrix 111x111:
    Crout:
0.15239882469177246s
    Doolittle:
0.3489651679992676s
    Cholesky:
0.198613405222766113s
    Numpy:
0.0013501644134521484s
    Scipy:
0.002578258514404297s

Matrix 112x112:
    Crout:
0.1506030559539795s
    Doolittle:
0.346871137619901855s
    Cholesky:
0.1942455768585205s
    Numpy:
0.0011429786682128906s
    Scipy:
0.0012154579162597656s

Matrix 113x113:
    Crout:
0.1537468433380127s
    Doolittle:
0.3457143306732178s
    Cholesky:
0.20079731941223145s
    Numpy:
0.0011384487715209961s
    Scipy:
0.001865386962890625s

Matrix 114x114:

    Crout:
0.1520099639892578s
    Doolittle:
0.3549201488494873s
    Cholesky:
0.199259281158447275s
    Numpy:
0.0011131296157836914s
    Scipy:
0.001300811767578125s

Matrix 115x115:
    Crout:
0.15615797042846668s
    Doolittle:
0.3729865550994873s
    Cholesky:
0.215554952621459965s
    Numpy:
0.0013263225555419922s
    Scipy:
0.001758575439453125s

Matrix 116x116:
    Crout:
0.160605192184448245s
    Doolittle:
0.3724324703216553s
    Cholesky:
0.20337176322937012s
    Numpy:
0.0013587474822998047s
    Scipy:
0.0068774223327763672s

Matrix 117x117:
    Crout:
0.15841364860534668s
    Doolittle:
0.3573625087738037s
    Cholesky:
0.20600676536560059s
    Numpy:
0.0042569637298583984s
    Scipy:
0.003051280975341797s

Matrix 118x118:
    Crout:
0.17138099670410156s
    Doolittle:
0.38654279708862305s
    Cholesky:
0.2136375904083252s
    Numpy:
0.002512216567993164s
    Scipy:
0.0019237995147705078s

Matrix 119x119:
    Crout:
0.16633987426757812s

    Doolittle:
0.3989849090576172s
    Cholesky:
0.224476099901428223s
    Numpy:
0.0015146732330322266s
    Scipy:
0.0026891231536865234s

Matrix 120x120:
    Crout:
0.16678094863891602s
    Doolittle:
0.391978263854980475s
    Cholesky:
0.221134709358215332s
    Numpy:
0.0012257099151611328s
    Scipy:
0.001514434381445312s5

Matrix 121x121:
    Crout:
0.16246771881243896s5
    Doolittle:
0.392791748046875s
    Cholesky:
0.221244096975598145s
    Numpy:
0.001349687576293945s3
    Scipy:
0.001434803009033203s1

Matrix 122x122:
    Crout:
0.16180181503295898s
    Doolittle:
0.3901386260986328s
    Cholesky:
0.224472834587097168s
    Numpy:
0.0018887321472167968s8
    Scipy:
0.0029873847961425778s

Matrix 123x123:
    Crout:
0.16734862327575684s
    Doolittle:
0.47060036665924072s
    Cholesky:
0.227061510086059575s
    Numpy:
0.0093121528862548828s
    Scipy:
0.0025360584259033203s

Matrix 124x124:
    Crout:
0.1757183074951172s
    Doolittle:
0.4459569454193115s

Cholesky:
0.230022031784057617s
    Numpy:
0.005352497100830078s
    Scipy:
0.002218008041381836s

Matrix 125x125:
    Crout:
0.176945447921175293s
    Doolittle:
0.42075490951538086s
    Cholesky:
0.244267463684082203s
    Numpy:
0.0019044876098632812s
    Scipy:
0.0024476051330566406s

Matrix 126x126:
    Crout:
0.1823406219482422s
    Doolittle:
0.45663738250073242s
    Cholesky:
0.2347548007965088s
    Numpy:
0.005566596984863281s
    Scipy:
0.001978357787963867s

Matrix 127x127:
    Crout:
0.17261338233947754s
    Doolittle:
0.445587114473083496s
    Cholesky:
0.23351716995239258s
    Numpy:
0.00142550468444482422s
    Scipy:
0.0015451908111572266s

Matrix 128x128:
    Crout:
0.17431139945983887s
    Doolittle:
0.43246889114379883s
    Cholesky:
0.2529730796813965s
    Numpy:
0.001688241958618164s
    Scipy:
0.0016269683837890625s

Matrix 129x129:
    Crout:
0.18198251724243164s
    Doolittle:
0.44218921661376953s
    Cholesky:
0.24674415588378906s

    Numpy:
0.0016834735870361328s
    Scipy:
0.001552581787109375s

Matrix 130x130:
    Crout:
0.179356813343078613s
    Doolittle:
0.44643378257751465s
    Cholesky:
0.23900961875915527s
    Numpy:
0.0017619132995605469s
    Scipy:
0.0014061927795410156s

Matrix 131x131:
    Crout:
0.1811966896057129s
    Doolittle:
0.502976655960083s
    Cholesky:
0.251322507858277637s
    Numpy:
0.004752397537231445s
    Scipy:
0.0017037391662597656s

Matrix 132x132:
    Crout:
0.18628382682800293s
    Doolittle:
0.46277761459350586s
    Cholesky:
0.247271537780076172s
    Numpy:
0.001249551773071289s
    Scipy:
0.0020742416381835938s

Matrix 133x133:
    Crout:
0.18430328369140625s
    Doolittle:
0.45722007751464844s
    Cholesky:
0.2474503517150879s
    Numpy:
0.0017852778203125s
    Scipy:
0.0022087097167968755s

Matrix 134x134:
    Crout:
0.18318510055541992s
    Doolittle:
0.48441457748413086s
    Cholesky:
0.2532801628112793s
    Numpy:
0.0012862682342529297s

    Scipy:
0.006174325942993164s

Matrix 135x135:
    Crout:
0.18712854385375977s
    Doolittle:
0.49001955598602295s
    Cholesky:
0.2555985450744629s
    Numpy:
0.0012938976287841797s
    Scipy:
0.0014500617980957031s

Matrix 136x136:
    Crout:
0.19598960876464844s
    Doolittle:
0.4776477813720703s
    Cholesky:
0.2577600083770752s
    Numpy:
0.0013601779937744414s
    Scipy:
0.001875162124633789s

Matrix 137x137:
    Crout:
0.19107389450073242s
    Doolittle:
0.504713773727417s
    Cholesky:
0.261147031784057617s
    Numpy:
0.0013260841369628906s
    Scipy:
0.0015614032745361328s

Matrix 138x138:
    Crout:
0.1954643726348877s
    Doolittle:
0.5184371471405029s
    Cholesky:
0.269586563110355156s
    Numpy:
0.009234428405761719s
    Scipy:
0.002683401107788086s

Matrix 139x139:
    Crout:
0.194948911666687012s
    Doolittle:
0.507655143737793s
    Cholesky:
0.23602318763373291s
    Numpy:
0.003875255584716797s
    Scipy:
0.0027489662170410156s

Matrix 140x140:
   Crout:
0.19809699058532715s
   Doolittle:
0.5011179447174072s
   Cholesky:
0.266587495803833s
   Numpy:
0.0012946128845214844s
   Scipy:
0.005306243896484375s

Matrix 141x141:
   Crout:
0.205281972885513184s
   Doolittle:
0.5275728702545166s
   Cholesky:
0.279971839904785156s
   Numpy:
0.003039836883544922s
   Scipy:
0.0029838085174560547s

Matrix 142x142:
   Crout:
0.20153260231018066s
   Doolittle:
0.5364816188812256s
   Cholesky:
0.2749979496002197s
   Numpy:
0.0014467239379882812s
   Scipy:
0.0016503334045410156s

Matrix 143x143:
   Crout:
0.20784997940063477s
   Doolittle:
0.53440594673315674s
   Cholesky:
0.2846701145172119s
   Numpy:
0.0015292167663574219s
   Scipy:
0.0016701221466064453s

Matrix 144x144:
   Crout:
0.21361207962036133s
   Doolittle:
0.576805591583252s
   Cholesky:
0.2793295383453369s
   Numpy:
0.001556396484375s
   Scipy:
0.0017061233520507812s

Matrix 145x145:

   Crout:
0.2259058952331543s
   Doolittle:
0.5758631229400635s
   Cholesky:
0.287896156531103516s
   Numpy:
0.003538370132446289s
   Scipy:
0.0018148422241210938s

Matrix 146x146:
   Crout:
0.209953774452209473s
   Doolittle:
0.574542760848999s
   Cholesky:
0.28672122955322266s
   Numpy:
0.0015795230865478516s
   Scipy:
0.0038518905639648438s

Matrix 147x147:
   Crout:
0.23444867134094238s
   Doolittle:
0.6040260791778564s
   Cholesky:
0.28470849990844727s
   Numpy:
0.0015482902526855469s
   Scipy:
0.0019228458404541016s

Matrix 148x148:
   Crout:
0.22110199928283691s
   Doolittle:
0.5924437046051025s
   Cholesky:
0.30537843704223633s
   Numpy:
0.002087831497192383s
   Scipy:
0.0019211769104003906s

Matrix 149x149:
   Crout:
0.24228358268737793s
   Doolittle:
0.6149460037750244s
   Cholesky:
0.300742626190018555s
   Numpy:
0.014096260070800781s
   Scipy:
0.0025398731231689453s

Matrix 150x150:
   Crout:
0.22955799102783203s

   Doolittle:
0.5948905944824219s
   Cholesky:
0.2957444190979004s
   Numpy:
0.0014884471893310547s
   Scipy:
0.005509376525878906s

Matrix 151x151:
   Crout:
0.22724342346191406s
   Doolittle:
0.5919771194458008s
   Cholesky:
0.3020763397216797s
   Numpy:
0.0016119480013305664s
   Scipy:
0.0042705535888671875s

Matrix 152x152:
   Crout:
0.226339101791381184s
   Doolittle:
0.596027135848999s
   Cholesky:
0.308462858200007324s
   Numpy:
0.001432180404663086s
   Scipy:
0.001859426498413086s

Matrix 153x153:
   Crout:
0.23220515251159668s
   Doolittle:
0.5956408977508545s
   Cholesky:
0.268650531768799883s
   Numpy:
0.0015630722045898438s
   Scipy:
0.0017995834350585938s

Matrix 154x154:
   Crout:
0.24181175231933594s
   Doolittle:
0.66068363318969727s
   Cholesky:
0.3223724365234375s
   Numpy:
0.00244903564453125s
   Scipy:
0.0020823478698773047s

Matrix 155x155:
   Crout:
0.2443678379058838s
   Doolittle:
0.6370196342468262s

Cholesky:
0.3221595287322998s
Numpy:
0.0017218589782714844s
Scipy:
0.002250194549560547s

Matrix 156x156:
Crout:
0.24374723434448242s
Doolittle:
0.6344997882843018s
Cholesky:
0.32023429870605470s
Numpy:
0.0015249252319335938s
Scipy:
0.009130001068115234s

Matrix 157x157:
Crout:
0.2537708282470703s
Doolittle:
0.65930676460026611s
Cholesky:
0.33949780464172363s
Numpy:
0.0049312114715576170s
Scipy:
0.0019719600677490234s

Matrix 158x158:
Crout:
0.2516951560974121s
Doolittle:
0.6566390991210938s
Cholesky:
0.33913564682006836s
Numpy:
0.0023000240325927734s
Scipy:
0.002176046371459961s

Matrix 159x159:
Crout:
0.25368618965148926s
Doolittle:
0.681283712387085s
Cholesky:
0.3443486690052124s
Numpy:
0.0018532276153564453s
Scipy:
0.0072247982025146484s

Matrix 160x160:
Crout:
0.2661101818084717s
Doolittle:
0.6786022186279297s
Cholesky:
0.3367037773132324s

Numpy:
0.0021142959594726562s
Scipy:
0.0019021034240722656s

Matrix 161x161:
Crout:
0.2604050636291504s
Doolittle:
0.6836354732513428s
Cholesky:
0.34485745429992676s
Numpy:
0.0025255680084228516s
Scipy:
0.0020661354064941406s

Matrix 162x162:
Crout:
0.27565479278564453s
Doolittle:
0.6866335868835449s
Cholesky:
0.3577744960784912s
Numpy:
0.0027620792388916016s
Scipy:
0.0017657279968261719s

Matrix 163x163:
Crout:
0.2639796733856201s
Doolittle:
0.76784539222271729s
Cholesky:
0.3684360980987549s
Numpy:
0.006161689758300781s
Scipy:
0.004698753356933594s

Matrix 164x164:
Crout:
0.2690165042877197s
Doolittle:
0.717416524887085s
Cholesky:
0.3615736961364746s
Numpy:
0.00146293640136718750s
Scipy:
0.001683950424194336s

Matrix 165x165:
Crout:
0.2714061737060547s
Doolittle:
0.72453522682218994s
Cholesky:
0.37097740173339844s
Numpy:
0.0016145706176757812s

Scipy:
0.0019850730895996094s

Matrix 166x166:
Crout:
0.2751882076263428s
Doolittle:
0.74406814575195310s
Cholesky:
0.36441063380092041s
Numpy:
0.0027046203613281250s
Scipy:
0.005458354949951172s

Matrix 167x167:
Crout:
0.2916750907897949s
Doolittle:
0.757274866104126s
Cholesky:
0.3915426731109619s
Numpy:
0.0024263858795166016s
Scipy:
0.001941680908203125s

Matrix 168x168:
Crout:
0.2916100025177002s
Doolittle:
0.7240631580352783s
Cholesky:
0.376593828201293950s
Numpy:
0.002458333969116211s
Scipy:
0.0033180713653564453s

Matrix 169x169:
Crout:
0.30313563346862793s
Doolittle:
0.764613151550293s
Cholesky:
0.3794209957122803s
Numpy:
0.0015552043914794922s
Scipy:
0.0053942203521728516s

Matrix 170x170:
Crout:
0.2982814311981201s
Doolittle:
0.7585351467132568s
Cholesky:
0.38147830963134766s
Numpy:
0.0047342777252197266s
Scipy:
0.0019385814666748047s

Matrix 171x171:
    Crout:
0.29366040229797363s
    Doolittle:
0.7582294940948486s
    Cholesky:
0.3918275833129883s
    Numpy:
0.0018894672393798828s
    Scipy:
0.0019500255584716797s

Matrix 172x172:
    Crout:
0.3056347370147705s
    Doolittle:
0.79004859992431641s
    Cholesky:
0.3980073928833008s
    Numpy:
0.0111144399642944336s
    Scipy:
0.0020475387573242188s

Matrix 173x173:
    Crout:
0.30307865142822266s
    Doolittle:
0.7925970554351807s
    Cholesky:
0.418745756149292s
    Numpy:
0.002088308334350586s
    Scipy:
0.0019483566284179688s

Matrix 174x174:
    Crout:
0.30742502212524414s
    Doolittle:
0.82465243333953857s
    Cholesky:
0.4122893810272217s
    Numpy:
0.005183219909667969s
    Scipy:
0.0019795894622802734s

Matrix 175x175:
    Crout:
0.30959391593933105s
    Doolittle:
0.830172061920166s
    Cholesky:
0.4119594097137451s
    Numpy:
0.0019326210021972656s
    Scipy:
0.005114316940307617s

Matrix 176x176:

    Crout:
0.3284308910369873s
    Doolittle:
0.8443408012390137s
    Cholesky:
0.4077727794647217s
    Numpy:
0.0015819072723388672s
    Scipy:
0.002013683319091797s

Matrix 177x177:
    Crout:
0.33280205726623535s
    Doolittle:
0.8362703323364258s
    Cholesky:
0.41637730598449707s
    Numpy:
0.0017023086547851562s
    Scipy:
0.0021407604217529297s

Matrix 178x178:
    Crout:
0.3205740451812744s
    Doolittle:
0.8569560050964355s
    Cholesky:
0.4439105987548828s
    Numpy:
0.0023658275604248047s
    Scipy:
0.015732288360595703s

Matrix 179x179:
    Crout:
0.3558685779571533s
    Doolittle:
0.8947982788085938s
    Cholesky:
0.44264817237854004s
    Numpy:
0.0037348270416259766s
    Scipy:
0.002158641815185547s

Matrix 180x180:
    Crout:
0.3385767936706543s
    Doolittle:
0.9092721939086914s
    Cholesky:
0.437760591506958s
    Numpy:
0.0018451213836669922s
    Scipy:
0.0021779537200927734s

Matrix 181x181:
    Crout:
0.32726240158081055s

    Doolittle:
0.8714559078216553s
    Cholesky:
0.44070291519916504s
    Numpy:
0.0022337436667602539s
    Scipy:
0.002091646194458008s

Matrix 182x182:
    Crout:
0.3448350429534912s
    Doolittle:
0.9232919216156006s
    Cholesky:
0.449976305961608887s
    Numpy:
0.0017197132110595703s
    Scipy:
0.0022268295288085938s

Matrix 183x183:
    Crout:
0.3474915027618408s
    Doolittle:
0.8976325988769531s
    Cholesky:
0.45117783546447754s
    Numpy:
0.001986265182495117s
    Scipy:
0.0020742416381835938s

Matrix 184x184:
    Crout:
0.35283374786376953s
    Doolittle:
0.9337129592895508s
    Cholesky:
0.45981124027252197s
    Numpy:
0.006181478500366211s
    Scipy:
0.0038902759552001953s

Matrix 185x185:
    Crout:
0.36348843574523926s
    Doolittle:
1.0108809947113037s
    Cholesky:
0.4758327007293701s
    Numpy:
0.00547981262207703125s
    Scipy:
0.0024204254150390625s

Matrix 186x186:
    Crout:
0.37262487411499023s
    Doolittle:
0.9024693965911865s

Cholesky:
0.466833114462402344s
 Numpy:
0.0020601749420166016s
 Scipy:
0.0022859573364257812s

Matrix 187x187:
 Crout:
0.36059188884277344s
 Doolittle:
0.908761739730835s
 Cholesky:
0.463906764984413086s
 Numpy:
0.0017702579498291016s
 Scipy:
0.0025053024291992188s

Matrix 188x188:
 Crout:
0.366724967956654297s
 Doolittle:
0.93337082862854s
 Cholesky:
0.5032975673675537s
 Numpy:
0.0023729801177978516s
 Scipy:
0.0024874210357666016s

Matrix 189x189:
 Crout:
0.3718118667602539s
 Doolittle:
0.959057092666626s
 Cholesky:
0.4720025062561035s
 Numpy:
0.0020322799682617188s
 Scipy:
0.003699064254760742s

Matrix 190x190:
 Crout:
0.37259840965270996s
 Doolittle:
0.9718446731567383s
 Cholesky:
0.5019211769104004s
 Numpy:
0.004718303680419922s
 Scipy:
0.002393484115600586s

Matrix 191x191:
 Crout:
0.39197301864624023s
 Doolittle:
0.9787473678588867s
 Cholesky:
0.5092160701751709s

 Numpy:
0.008330106735229492s
 Scipy:
0.0024657249450683594s

Matrix 192x192:
 Crout:
0.39719510078430176s
 Doolittle:
1.0256528854370117s
 Cholesky:
0.5045397281646729s
 Numpy:
0.002306699752807617s
 Scipy:
0.0022029876708984375s

Matrix 193x193:
 Crout:
0.37728261947631836s
 Doolittle:
0.9921369552612305s
 Cholesky:
0.50615096609222412s
 Numpy:
0.006033182144165039s
 Scipy:
0.002601146697998047s

Matrix 194x194:
 Crout:
0.4123673439025879s
 Doolittle:
0.9973154067993164s
 Cholesky:
0.5229885578155518s
 Numpy:
0.0070607662200927734s
 Scipy:
0.0024611949920654297s

Matrix 195x195:
 Crout:
0.4080841541290283s
 Doolittle:
1.0492632389068604s
 Cholesky:
0.5224325656890869s
 Numpy:
0.006930112838745117s
 Scipy:
0.00262165069580007812s

Matrix 196x196:
 Crout:
0.4101107120513916s
 Doolittle:
1.0026123523712158s
 Cholesky:
0.520545244216919s
 Numpy:
0.004343271255493164s

 Scipy:
0.0040283203125s

Matrix 197x197:
 Crout:
0.43904805183410645s
 Doolittle:
1.02048921585083s
 Cholesky:
0.5520646572113037s
 Numpy:
0.00229644775390625s
 Scipy:
0.008810281753540039s

Matrix 198x198:
 Crout:
0.4292440414428711s
 Doolittle:
1.0800831317901611s
 Cholesky:
0.5334987640380859s
 Numpy:
0.0019845962524414062s
 Scipy:
0.0025556087493896484s

Matrix 199x199:
 Crout:
0.41686177253723145s
 Doolittle:
1.05014920023468018s
 Cholesky:
0.5385124683380127s
 Numpy:
0.006440162658691406s
 Scipy:
0.0026099681854248047s

Matrix 200x200:
 Crout:
0.412827730178833s
 Doolittle:
1.07247114418151855s
 Cholesky:
0.5589511394500732s
 Numpy:
0.0022842884063720703s
 Scipy:
0.009260177612304688s

Matrix 201x201:
 Crout:
0.4267444610595703s
 Doolittle:
1.0833218097686768s
 Cholesky:
0.548649787902832s
 Numpy:
0.002480030059814453s
 Scipy:
0.0024681109130859375s

Matrix 202x202:
    Crout:
0.43527984619140625s
    Doolittle:
1.1066112518310547s
    Cholesky:
0.5539367198944092s
    Numpy:
0.0024864673614501953s
    Scipy:
0.0028107166290283203s

Matrix 203x203:
    Crout:
0.43082618713378906s
    Doolittle:
1.151435336795044s
    Cholesky:
0.5614988803863525s
    Numpy:
0.005281925201416016s
    Scipy:
0.007899999618530273s

Matrix 204x204:
    Crout:
0.45484089851379395s
    Doolittle:
1.134773307510376s
    Cholesky:
0.5564465522766113s
    Numpy:
0.0035912990057006836s
    Scipy:
0.0025250911712646484s

Matrix 205x205:
    Crout:
0.45005059242248535s
    Doolittle:
1.1432960034416748s
    Cholesky:
0.5717785358428955s
    Numpy:
0.0072116851806640625s
    Scipy:
0.002442598342895508s

Matrix 206x206:
    Crout:
0.46428871154785156s
    Doolittle:
1.2163562774658203s
    Cholesky:
0.6092050075531006s
    Numpy:
0.0017704963684082031s
    Scipy:
0.008396148681640625s

Matrix 207x207:

    Crout:
0.4759945869445801s
    Doolittle:
1.1677720546722412s
    Cholesky:
0.5849089622497559s
    Numpy:
0.002365589141845703s
    Scipy:
0.0060727596282958984s

Matrix 208x208:
    Crout:
0.4865989685058594s
    Doolittle:
1.2113053798675537s
    Cholesky:
0.6129326820373535s
    Numpy:
0.012949705123901367s
    Scipy:
0.0035822391510009766s

Matrix 209x209:
    Crout:
0.466017484664917s
    Doolittle:
1.22348618507385255s
    Cholesky:
0.5958006381988525s
    Numpy:
0.002348661422729492s
    Scipy:
0.0024938583374023438s

Matrix 210x210:
    Crout:
0.498970270156686035s
    Doolittle:
1.22451019287109380s
    Cholesky:
0.6156189441680908s
    Numpy:
0.004734516143798828s
    Scipy:
0.0056743621826171875s

Matrix 211x211:
    Crout:
0.5083053112030029s
    Doolittle:
1.2532055377960205s
    Cholesky:
0.6256048679351807s
    Numpy:
0.003989458084106445s
    Scipy:
0.0033152103424072266s

Matrix 212x212:
    Crout:
0.475649356842041s

    Doolittle:
1.269364833831787s
    Cholesky:
0.6182365417480469s
    Numpy:
0.019610404968826172s
    Scipy:
0.004953861236572266s

Matrix 213x213:
    Crout:
0.4917030334472656s
    Doolittle:
1.268503189086914s
    Cholesky:
0.63074994408721924s
    Numpy:
0.0024390220642089844s
    Scipy:
0.0023796558380126953s

Matrix 214x214:
    Crout:
0.4860196113586426s
    Doolittle:
1.27864694595533691s
    Cholesky:
0.6289024353027344s
    Numpy:
0.0040111541748046875s
    Scipy:
0.0025925636291503906s

Matrix 215x215:
    Crout:
0.5150911808013916s
    Doolittle:
1.2643961906433105s
    Cholesky:
0.6876413822174072s
    Numpy:
0.0026984214782714844s
    Scipy:
0.0026378631591796875s

Matrix 216x216:
    Crout:
0.5279843807220459s
    Doolittle:
1.29806852340699824s
    Cholesky:
0.6472752094268799s
    Numpy:
0.00548243522644043s
    Scipy:
0.0025827884674072266s

Matrix 217x217:
    Crout:
0.516068696975708s
    Doolittle:
1.2797765731811523s

Cholesky:
0.6558864116668701s
    Numpy:
0.002265930175578125s
    Scipy:
0.0026497840881347656s

Matrix 218x218:
    Crout:
0.518125057220459s
    Doolittle:
1.330681324005127s
    Cholesky:
0.65629386901855547s
    Numpy:
0.01244002462020361328s
    Scipy:
0.0029261112213134766s

Matrix 219x219:
    Crout:
0.5155155658721924s
    Doolittle:
1.33995342254463867s
    Cholesky:
0.6659300327301025s
    Numpy:
0.0024628639221191406s
    Scipy:
0.0030524730682373047s

Matrix 220x220:
    Crout:
0.5305030345916748s
    Doolittle:
1.3612990379333496s
    Cholesky:
0.681204080581665s
    Numpy:
0.0063731670037963867s
    Scipy:
0.00300288200378841797s

Matrix 221x221:
    Crout:
0.5404303073883057s
    Doolittle:
1.3660013675689697s
    Cholesky:
0.6867935657501221s
    Numpy:
0.006612300872802734s
    Scipy:
0.0031309127807617188s

Matrix 222x222:
    Crout:
0.5347905158996582s
    Doolittle:
1.4059371948242188s
    Cholesky:
0.7120869159698486s

    Numpy:
0.005369424819946289s
    Scipy:
0.006333112716674805s

Matrix 223x223:
    Crout:
0.54563450813329346s
    Doolittle:
1.382594108581543s
    Cholesky:
0.6991866820983887s
    Numpy:
0.0023152828216552734s
    Scipy:
0.0028736591339111133s

Matrix 224x224:
    Crout:
0.5620348453521729s
    Doolittle:
1.4227771759033203s
    Cholesky:
0.7642323970794678s
    Numpy:
0.013298273086547852s
    Scipy:
0.013725757598876953s

Matrix 225x225:
    Crout:
0.6577463150024414s
    Doolittle:
1.438511610031128s
    Cholesky:
0.6989471912384033s
    Numpy:
0.0023524761199995117s
    Scipy:
0.003598451614379883s

Matrix 226x226:
    Crout:
0.564894437789917s
    Doolittle:
1.49943621158599854s
    Cholesky:
0.8801052570343018s
    Numpy:
0.014191150665283203s
    Scipy:
0.05138039588928223s

Matrix 227x227:
    Crout:
0.6327788829803467s
    Doolittle:
1.486095666885376s
    Cholesky:
0.7218654155731201s
    Numpy:
0.004645109176635742s

    Scipy:
0.003220081329345703s

Matrix 228x228:
    Crout:
0.58894014358520s1s
    Doolittle:
1.4871690273284912s
    Cholesky:
0.7769789695739746s
    Numpy:
0.0025591850280761172s
    Scipy:
0.0037484169006347656s

Matrix 229x229:
    Crout:
0.6146702766418457s
    Doolittle:
1.5105938911437988s
    Cholesky:
0.75083446502685s55s
    Numpy:
0.0025525093078613s28s
    Scipy:
0.0026497840881347656s

Matrix 230x230:
    Crout:
0.5856437683105469s
    Doolittle:
1.48048090934753s42s
    Cholesky:
0.7934236526489258s
    Numpy:
0.0066728591191894531s
    Scipy:
0.014616727828979492s

Matrix 231x231:
    Crout:
0.6183793544769287s
    Doolittle:
1.5035083293914795s
    Cholesky:
0.7572474479675293s
    Numpy:
0.0024344921112060547s
    Scipy:
0.0033633708953857142s

Matrix 232x232:
    Crout:
0.6062984466552734s
    Doolittle:
1.5435178279987671s
    Cholesky:
0.798497200012207s
    Numpy:
0.006742000579833984s
    Scipy:
0.005341768264770508s

Matrix 233x233:
    Crout:
0.6212799549102783s
    Doolittle:
1.5312530994415283s
    Cholesky:
0.7733170986175537s
    Numpy:
0.0035209655576171875s
    Scipy:
0.009416818618774414s

Matrix 234x234:
    Crout:
0.6178803443908691s
    Doolittle:
1.5931634902954102s
    Cholesky:
0.8208863735198975s
    Numpy:
0.002516508102416992s
    Scipy:
0.003552675247192383s

Matrix 235x235:
    Crout:
0.6313536167144775s
    Doolittle:
1.6022977828979492s
    Cholesky:
0.7857067584991455s
    Numpy:
0.0034177303314208984s
    Scipy:
0.0040643215517944336s

Matrix 236x236:
    Crout:
0.6223068237304688s
    Doolittle:
1.620673656463623s
    Cholesky:
0.8108882904052734s
    Numpy:
0.005183696746826172s
    Scipy:
0.0056607723360083984s

Matrix 237x237:
    Crout:
0.6350924968719482s
    Doolittle:
1.6232304573059082s
    Cholesky:
0.8162596225738525s
    Numpy:
0.002591371536254883s
    Scipy:
0.00319671630859375s

Matrix 238x238:

    Crout:
0.6544039249420166s
    Doolittle:
1.6872267723083496s
    Cholesky:
0.8175551891326904s
    Numpy:
0.006742954254150391s
    Scipy:
0.0069043636322021484s

Matrix 239x239:
    Crout:
0.6774647235870361s
    Doolittle:
1.66991686882098389s
    Cholesky:
0.8236613273620605s
    Numpy:
0.004600048065185547s
    Scipy:
0.005234956741333008s

Matrix 240x240:
    Crout:
0.662437915802002s
    Doolittle:
1.73436450958251195s
    Cholesky:
0.839881181716919s
    Numpy:
0.0028121471405029297s
    Scipy:
0.0029952526092529297s

Matrix 241x241:
    Crout:
0.6984903812408447s
    Doolittle:
1.66671323776624512s
    Cholesky:
0.86395430564888037s
    Numpy:
0.004148244857788086s
    Scipy:
0.006528377532958984s

Matrix 242x242:
    Crout:
0.6853370666503906s
    Doolittle:
1.7125762277313232s
    Cholesky:
0.8678979873657227s
    Numpy:
0.021640777587890625s
    Scipy:
0.003271341323852539s

Matrix 243x243:
    Crout:
0.67999267578125s

    Doolittle:
1.7422595024108887s
    Cholesky:
0.8789272308349609s
    Numpy:
0.0087366104412597656s
    Scipy:
0.0036706924438476562s

Matrix 244x244:
    Crout:
0.6881513595581055s
    Doolittle:
1.7320342063903809s
    Cholesky:
0.8955783843994141s
    Numpy:
0.0027964115142822266s
    Scipy:
0.013802051544189453s

Matrix 245x245:
    Crout:
0.6906735897064209s
    Doolittle:
1.7912731170654297s
    Cholesky:
0.8872795104980469s
    Numpy:
0.013460636138916016s
    Scipy:
0.007172107696533203s

Matrix 246x246:
    Crout:
0.7137906551361084s
    Doolittle:
1.7948403358459473s
    Cholesky:
0.8870418071746826s
    Numpy:
0.00615382194519043s
    Scipy:
0.0034732818603515625s

Matrix 247x247:
    Crout:
0.6930909156799316s
    Doolittle:
1.8226220607757568s
    Cholesky:
0.8912570476531982s
    Numpy:
0.009003639221191406s
    Scipy:
0.0204586982727705078s

Matrix 248x248:
    Crout:
0.7476041316986084s
    Doolittle:
1.7973723411560059s

Cholesky:
0.9355630874633789s
Numpy:
0.0023925304412841797s
Scipy:
0.00823831558227539s

Matrix 249x249:
Crout:
0.7310843467712402s
Doolittle:
1.8480112552642822s
Cholesky:
0.939967155456543s
Numpy:
0.003638744354248047s
Scipy:
0.007940053939819336s

Matrix 250x250:
Crout:
0.7333168983459473s
Doolittle:
1.95372867584422852s
Cholesky:
0.9511392116546631s
Numpy:
0.0027158260345458984s
Scipy:
0.009627819061279297s

Matrix 251x251:
Crout:
0.7739138603210449s
Doolittle:
1.8712565898895264s
Cholesky:
0.9441502094268799s
Numpy:
0.0060987472534179969s
Scipy:
0.004317283630371094s

Matrix 252x252:
Crout:
0.8054730892181396s
Doolittle:
1.92630910873341309s
Cholesky:
0.9396712779998779s
Numpy:
0.0075922012329101566s
Scipy:
0.013567686080932617s

Matrix 253x253:
Crout:
0.7729198932647705s
Doolittle:
1.9187352657318115s
Cholesky:
0.9545724391937256s

Numpy:
0.0058252811431884766s
Scipy:
0.018483638763427734s

Matrix 254x254:
Crout:
0.8162031173706055s
Doolittle:
1.95021939277764893s
Cholesky:
0.9566481113433838s
Numpy:
0.0029671192169189453s
Scipy:
0.003939151763916016s

Matrix 255x255:
Crout:
0.8069519996643066s
Doolittle:
1.969468116760254s
Cholesky:
0.95561831951141357s
Numpy:
0.0066471099853515625s
Scipy:
0.003962993621826172s

Matrix 256x256:
Crout:
0.8224492073059082s
Doolittle:
1.9851148128509521s
Cholesky:
0.977618932723999s
Numpy:
0.002960205078125s
Scipy:
0.0076074600219726656s

Matrix 257x257:
Crout:
0.8078553676605225s
Doolittle:
2.011369228363037s
Cholesky:
0.99757289886647461s
Numpy:
0.00265979766845703012s
Scipy:
0.006924390792846668s

Matrix 258x258:
Crout:
0.8342063426971436s
Doolittle:
2.062711000442505s
Cholesky:
1.009472131729126s
Numpy:
0.010348558425903332s

Scipy:
0.005033016204833984s

Matrix 259x259:
Crout:
0.8198444843292236s
Doolittle:
2.08879693031311035s
Cholesky:
1.0262107849121094s
Numpy:
0.0044231414794921875s
Scipy:
0.006665706634521484s

Matrix 260x260:
Crout:
0.8317384719848633s
Doolittle:
2.046345518661499s
Cholesky:
1.03232359886616943s
Numpy:
0.003036975860595703s
Scipy:
0.0034432411193847656s

Matrix 261x261:
Crout:
0.8546264171600342s
Doolittle:
2.10115122795105s
Cholesky:
1.050051212310791s
Numpy:
0.0031776428222265625s
Scipy:
0.009298563003540039s

Matrix 262x262:
Crout:
0.8161540031433105s
Doolittle:
2.16311717033386623s
Cholesky:
1.09057211875591553s
Numpy:
0.0044696331024169922s
Scipy:
0.003637552261352539s

Matrix 263x263:
Crout:
0.8177428245544434s
Doolittle:
2.106132984161377s
Cholesky:
1.2374863624572754s
Numpy:
0.009678840637207031s
Scipy:
0.006834983825683594s

Matrix 264x264:
    Crout:
0.9436163902282715s
    Doolittle:
2.5689828395843506s
    Cholesky:
1.18779973079681396s
    Numpy:
0.007129192352294922s
    Scipy:
0.012404441833496094s

Matrix 265x265:
    Crout:
0.8636088371276855s
    Doolittle:
2.176976442337036s
    Cholesky:
1.0790376663208008s
    Numpy:
0.0029022693634033203s
    Scipy:
0.004933357238769531s

Matrix 266x266:
    Crout:
0.8608663082122803s
    Doolittle:
2.2062244415283203s
    Cholesky:
1.1616954803466797s
    Numpy:
0.004934549331665039s
    Scipy:
0.015341520309448242s

Matrix 267x267:
    Crout:
0.8878633975982666s
    Doolittle:
2.18464994430542s
    Cholesky:
1.1254842281341553s
    Numpy:
0.0032396316528320312s
    Scipy:
0.005301475524902344s

Matrix 268x268:
    Crout:
0.8568463325500488s
    Doolittle:
2.2294793128967285s
    Cholesky:
1.1198718547821045s
    Numpy:
0.003985166549682617s
    Scipy:
0.0038008689880371094s

Matrix 269x269:

    Crout:
0.8529624938964844s
    Doolittle:
2.2506370544433594s
    Cholesky:
1.1052634716033936s
    Numpy:
0.0036809444427490234s
    Scipy:
0.00898289680480957s

Matrix 270x270:
    Crout:
0.8673725128173828s
    Doolittle:
2.2393274307250977s
    Cholesky:
1.1351442337036133s
    Numpy:
0.0028257369995117188s
    Scipy:
0.003693819046020508s

Matrix 271x271:
    Crout:
0.888408899307251s
    Doolittle:
2.273395538330078s
    Cholesky:
1.1613905429840088s
    Numpy:
0.004560232162475586s
    Scipy:
0.0074579715728759766s

Matrix 272x272:
    Crout:
0.8708362579345703s
    Doolittle:
2.2729034423828125s
    Cholesky:
1.1426892280578613s
    Numpy:
0.005365133285522461s
    Scipy:
0.004134654998779297s

Matrix 273x273:
    Crout:
0.917900562286377s
    Doolittle:
2.3485138416290283s
    Cholesky:
1.159930944442749s
    Numpy:
0.006354570388793945s
    Scipy:
0.004610538482666016s

Matrix 274x274:
    Crout:
0.9099838733673096s

    Doolittle:
2.370698928833008s
    Cholesky:
1.1777286529541016s
    Numpy:
0.0041046142578125s
    Scipy:
0.011034965515136719s

Matrix 275x275:
    Crout:
0.9309556484222412s
    Doolittle:
2.33294105552978516s
    Cholesky:
1.1987848281860352s
    Numpy:
0.0113115584182739258s
    Scipy:
0.006887912750244141s

Matrix 276x276:
    Crout:
0.9577124118804932s
    Doolittle:
2.402277946472168s
    Cholesky:
1.1762151718139648s
    Numpy:
0.003433704376220703s
    Scipy:
0.00491023063659668s

Matrix 277x277:
    Crout:
0.9677093029022217s
    Doolittle:
2.417572021484375s
    Cholesky:
1.1888068619915771s
    Numpy:
0.010305404663085938s
    Scipy:
0.007470369338989258s

Matrix 278x278:
    Crout:
0.957489013671875s
    Doolittle:
2.546783685684204s
    Cholesky:
1.2089002132415771s
    Numpy:
0.0026848316192626953s
    Scipy:
0.005753517150878906s

Matrix 279x279:
    Crout:
0.9558258056640625s
    Doolittle:
2.5109260082244873s

Cholesky:
1.2257620056671143s
   Numpy:
0.009762763977050781s
   Scipy:
0.004578590393066406s

Matrix 280x280:
   Crout:
0.9735188484191895s
   Doolittle:
2.493943214416504s
   Cholesky:
1.24591064453125s
   Numpy:
0.004663228988647461s
   Scipy:
0.005022287368774414s

Matrix 281x281:
   Crout:
1.0011012554168701s
   Doolittle:
2.534022569656372s
   Cholesky:
1.2651667594909668s
   Numpy:
0.009633064270019531s
   Scipy:
0.005838632583618164s

Matrix 282x282:
   Crout:
0.9715781211853027s
   Doolittle:
2.5155017375946045s
   Cholesky:
1.252600908279419s
   Numpy:
0.0062875747768066406s
   Scipy:
0.004000425338745117s

Matrix 283x283:
   Crout:
1.009174108505249s
   Doolittle:
2.6534502506256104s
   Cholesky:
1.2472641468048096s
   Numpy:
0.003958702087402344s
   Scipy:
0.004268169403076172s

Matrix 284x284:
   Crout:
0.9992465972900391s
   Doolittle:
2.6318817138671875s
   Cholesky:
1.298027753829956s

Numpy:
0.006709575653076172s
   Scipy:
0.00409388542175293s

Matrix 285x285:
   Crout:
0.9899051189422607s
   Doolittle:
2.6996254920959473s
   Cholesky:
1.2925517559051514s
   Numpy:
0.003614664077758789s
   Scipy:
0.004686594009399414s

Matrix 286x286:
   Crout:
1.0566792488098145s
   Doolittle:
2.6990938186664551s
   Cholesky:
1.3224122524261475s
   Numpy:
0.007658958435058594s
   Scipy:
0.008546590805053711s

Matrix 287x287:
   Crout:
1.0648880004882812s
   Doolittle:
2.78833270072937s
   Cholesky:
1.33822131156921139s
   Numpy:
0.004830121994018555s
   Scipy:
0.0083703994475097656s

Matrix 288x288:
   Crout:
1.063063621520996s
   Doolittle:
2.75547152042388916s
   Cholesky:
1.387463092803955s
   Numpy:
0.011103830337524414s
   Scipy:
0.0045955518112182617s

Matrix 289x289:
   Crout:
1.082456350326538s
   Doolittle:
2.748607873916626s
   Cholesky:
1.389573335647583s
   Numpy:
0.011267662048339844s

Scipy:
0.004660129547119141s

Matrix 290x290:
   Crout:
1.0645530223846436s
   Doolittle:
2.8291561603546143s
   Cholesky:
1.32455718479156494s
   Numpy:
0.0050828456878866211s
   Scipy:
0.004721641540527344s

Matrix 291x291:
   Crout:
1.1036009788513184s
   Doolittle:
2.7833235263824463s
   Cholesky:
1.37883782386677979s
   Numpy:
0.0070345401763916016s
   Scipy:
0.00549006462097168s

Matrix 292x292:
   Crout:
1.1774795055389404s
   Doolittle:
2.8043956756591797s
   Cholesky:
1.41774511333728027s
   Numpy:
0.0060307979583740234s
   Scipy:
0.004924774169921875s

Matrix 293x293:
   Crout:
1.0553309917449951s
   Doolittle:
2.8661417961120605s
   Cholesky:
1.3837804794311523s
   Numpy:
0.00822138786315918s
   Scipy:
0.005297422409057617s

Matrix 294x294:
   Crout:
1.0583827495574951s
   Doolittle:
2.907670259475708s
   Cholesky:
1.40642070077026367s
   Numpy:
0.006478786468505859s
   Scipy:
0.004955291748046875s

Matrix 295x295:
    Crout:
1.09481525421114258s
    Doolittle:
2.95713520005004883s
    Cholesky:
1.42261385917766357s
    Numpy:
0.008330345153808594s
    Scipy:
0.004486560821533203s

Matrix 296x296:
    Crout:
1.0923526287078857s
    Doolittle:
2.960428476333618s
    Cholesky:
1.44558515542663574s
    Numpy:
0.004276752471923828s
    Scipy:
0.009674310684204102s

Matrix 297x297:
    Crout:
1.1285061836242676s
    Doolittle:
2.96917104472106934s
    Cholesky:
1.4509060382843018s
    Numpy:
0.0044455528825927734s
    Scipy:
0.005333423614501953s

Matrix 298x298:
    Crout:
1.1448390483856201s
    Doolittle:
3.104191541671753s
    Cholesky:
1.43816876411143799s
    Numpy:
0.003688812255859375s
    Scipy:
0.007603883743286133s

Matrix 299x299:
    Crout:
1.1723017692565918s
    Doolittle:
3.016958236694336s
    Cholesky:
1.48037600051727295s
    Numpy:
0.003693103790283203s
    Scipy:
0.0051097869873046875s

Matrix 300x300:

    Crout:
1.1712987422943115s
    Doolittle:
3.0650174617767334s
    Cholesky:
1.49196290096984863s
    Numpy:
0.007923603057861328s
    Scipy:
0.004541635513305664s

Matrix 301x301:
    Crout:
1.1498043537139893s
    Doolittle:
3.133171558380127s
    Cholesky:
1.47660493850708s
    Numpy:
0.0066552162170041016s
    Scipy:
0.00785517692565918s

Matrix 302x302:
    Crout:
1.198955774307251s
    Doolittle:
3.061784029006958s
    Cholesky:
1.5158264636993408s
    Numpy:
0.0038437843322753906s
    Scipy:
0.005845308303833008s

Matrix 303x303:
    Crout:
1.216728925704956s
    Doolittle:
3.13512110071014404s
    Cholesky:
1.5183744430541992s
    Numpy:
0.0207819938659966797s
    Scipy:
0.0099763870239925781s

Matrix 304x304:
    Crout:
1.1872367858886719s
    Doolittle:
3.1083860397338867s
    Cholesky:
1.5407922267913818s
    Numpy:
0.007099151611328125s
    Scipy:
0.0047626495361328125s

Matrix 305x305:
    Crout:
1.189662218093872s

    Doolittle:
3.230600118637085s
    Cholesky:
1.540264368057251s
    Numpy:
0.007772857660015625s
    Scipy:
0.007382154446472168s

Matrix 306x306:
    Crout:
1.2167017459869385s
    Doolittle:
3.232699394226074s
    Cholesky:
1.5760293006896973s
    Numpy:
0.0079171657756225586s
    Scipy:
0.004519701100402832s

Matrix 307x307:
    Crout:
1.230881929397583s
    Doolittle:
3.23291325569155283s
    Cholesky:
1.557913064956665s
    Numpy:
0.0044040679931640625s
    Scipy:
0.0055484771728515625s

Matrix 308x308:
    Crout:
1.27000808871582031s
    Doolittle:
3.244041681289673s
    Cholesky:
1.6210246086120605s
    Numpy:
0.0112814903259277344s
    Scipy:
0.0087914466685791016s

Matrix 309x309:
    Crout:
1.29428148269653332s
    Doolittle:
3.3704218886444092s
    Cholesky:
1.583648681640625s
    Numpy:
0.0114367008200922852s
    Scipy:
0.0057277679443359375s

Matrix 310x310:
    Crout:
1.2886412143707275s
    Doolittle:
3.3853197097777832s

Cholesky:
1.640148401260376s
　　Numpy:
0.012911319732666016s
　　Scipy:
0.007668256759643555s

Matrix 311x311:
　　Crout:
1.449023723602295s
　　Doolittle:
3.7322919368743896s
　　Cholesky:
1.725292682647705s
　　Numpy:
0.0046083927154541016s
　　Scipy:
0.005975961685180664s

Matrix 312x312:
　　Crout:
1.5321638584136963s
　　Doolittle:
3.618469715118408s
　　Cholesky:
1.65334296226650146s
　　Numpy:
0.017393589019777539s
　　Scipy:
0.006170749664306641s

Matrix 313x313:
　　Crout:
1.3408095836639404s
　　Doolittle:
3.46307516098022246s
　　Cholesky:
1.6477372646331787s
　　Numpy:
0.005588054656982422s
　　Scipy:
0.004929542541503906s

Matrix 314x314:
　　Crout:
1.3655977249145508s
　　Doolittle:
3.549236297607422s
　　Cholesky:
1.652169942855835s
　　Numpy:
0.004605293273925781s
　　Scipy:
0.010011514663696289s

Matrix 315x315:
　　Crout:
1.3437566757202148s
　　Doolittle:
3.5608203411102295s
　　Cholesky:
1.6821513175964355s

Numpy:
0.006934642791748047s
　　Scipy:
0.006453037261962891s

Matrix 316x316:
　　Crout:
1.3247606754302979s
　　Doolittle:
3.6037657260894775s
　　Cholesky:
1.6665010452270508s
　　Numpy:
0.007750034332275391s
　　Scipy:
0.005282402038574219s

Matrix 317x317:
　　Crout:
1.439927339553833s
　　Doolittle:
3.62369704246521s
　　Cholesky:
1.75515675544473877s
　　Numpy:
0.004547595977783203s
　　Scipy:
0.0050563812255859375s

Matrix 318x318:
　　Crout:
1.3932788372039795s
　　Doolittle:
3.55291867256164455s
　　Cholesky:
1.7276816336810307s
　　Numpy:
0.011169195175170898s
　　Scipy:
0.006009817123413086s

Matrix 319x319:
　　Crout:
1.4056923389434814s
　　Doolittle:
3.6120874881744385s
　　Cholesky:
1.7305047512054443s
　　Numpy:
0.0081787109375s
　　Scipy:
0.008006811141967773s

Matrix 320x320:
　　Crout:
1.4278490543365479s
　　Doolittle:
3.7237751483917236s
　　Cholesky:
1.7363078594207764s
　　Numpy:
0.007837295532226562s

Scipy:
0.004952907562255859s

Matrix 321x321:
　　Crout:
1.4333086013793945s
　　Doolittle:
3.687898635864258s
　　Cholesky:
1.7355306148529053s
　　Numpy:
0.0074923038482666016s
　　Scipy:
0.005725860595703125s

Matrix 322x322:
　　Crout:
1.45077657769958496s
　　Doolittle:
3.738929510116577s
　　Cholesky:
1.75557661056651855s
　　Numpy:
0.005629777908325195s
　　Scipy:
0.0141179561614999023s

Matrix 323x323:
　　Crout:
1.4960777759552002s
　　Doolittle:
3.735558032989502s
　　Cholesky:
1.78841882705688477s
　　Numpy:
0.007274150848388672s
　　Scipy:
0.005357027053833008s

Matrix 324x324:
　　Crout:
1.5137786865234375s
　　Doolittle:
3.83451890945434457s
　　Cholesky:
1.7824351787567139s
　　Numpy:
0.0048272609971069336s
　　Scipy:
0.0051302909851107422s

Matrix 325x325:
　　Crout:
1.472761869430542s
　　Doolittle:
3.822582483291626s
　　Cholesky:
1.8329720497131348s
　　Numpy:
0.005161762237548828s
　　Scipy:
0.005590915679931641s

Matrix 326x326:
    Crout:
1.502000093460083s
    Doolittle:
3.864081382751465s
    Cholesky:
1.857783555984497s
    Numpy:
0.008242607116699219s
    Scipy:
0.005192756652832031s

Matrix 327x327:
    Crout:
1.547607421875s
    Doolittle:
3.889559268951416s
    Cholesky:
1.8241548538208008s
    Numpy:
0.0148670673370361133s
    Scipy:
0.00683283805847168s

Matrix 328x328:
    Crout:
1.5688660144805908s
    Doolittle:
3.939953088760376s
    Cholesky:
1.8218393325805664s
    Numpy:
0.0066089630126953125s
    Scipy:
0.004828453063964844s

Matrix 329x329:
    Crout:
1.5615639686584473s
    Doolittle:
4.003621578216553s
    Cholesky:
1.8397729396820068s
    Numpy:
0.006504535675048828s
    Scipy:
0.005369424819946289s

Matrix 330x330:
    Crout:
1.5963201522827148s
    Doolittle:
4.046728849411011s
    Cholesky:
1.9416007995605469s
    Numpy:
0.017576932907104492s
    Scipy:
0.018054962158203125s

Matrix 331x331:

    Crout:
1.6006698608398438s
    Doolittle:
4.097483396530151s
    Cholesky:
1.9097266197720459s
    Numpy:
0.0065436363220021484s
    Scipy:
0.005745887756347656s

Matrix 332x332:
    Crout:
1.599567174911499s
    Doolittle:
4.109550952911377s
    Cholesky:
1.8707756996154785s
    Numpy:
0.006627321243286133s
    Scipy:
0.008458852767944336s

Matrix 333x333:
    Crout:
1.6372885704040527s
    Doolittle:
4.12201452255249s
    Cholesky:
1.9278805255889893s
    Numpy:
0.0041739940643310355s
    Scipy:
0.007019996643066406s

Matrix 334x334:
    Crout:
1.6191325187683105s
    Doolittle:
4.039910554885864s
    Cholesky:
1.9855456352233887s
    Numpy:
0.01810765266418457s
    Scipy:
0.0074994564056396484s

Matrix 335x335:
    Crout:
1.6106634140014648s
    Doolittle:
4.040003776550293s
    Cholesky:
1.9858019351959229s
    Numpy:
0.008105754852294922s
    Scipy:
0.005462169647216797s

Matrix 336x336:
    Crout:
1.6683495044708252s

    Doolittle:
4.092690706253052s
    Cholesky:
2.104192018508911s
    Numpy:
0.005860805511474609s
    Scipy:
0.005580425262451172s

Matrix 337x337:
    Crout:
1.69078040122298584s
    Doolittle:
4.176831245422363s
    Cholesky:
2.020311117172241s
    Numpy:
0.008728504180908203s
    Scipy:
0.005591731071472168s

Matrix 338x338:
    Crout:
1.6506340503692627s
    Doolittle:
4.208467960357666s
    Cholesky:
2.1079390048980713s
    Numpy:
0.008492946624755860s
    Scipy:
0.00664520263671875s

Matrix 339x339:
    Crout:
1.7180304527282715s
    Doolittle:
4.290037631988525s
    Cholesky:
2.045820951461792s
    Numpy:
0.0105922222213745117s
    Scipy:
0.00648951530456543s

Matrix 340x340:
    Crout:
1.6950604915618896s
    Doolittle:
4.352214336395264s
    Cholesky:
2.0242395401000977s
    Numpy:
0.033260345458984375s
    Scipy:
0.005644798278808594s

Matrix 341x341:
    Crout:
1.7491657733917236s
    Doolittle:
4.459664821624756s

Cholesky:
2.117896080017709s
   Numpy:
0.00558781623840332s
   Scipy:
0.010237932205200195s

Matrix 342x342:
   Crout:
1.7270357608795166s
   Doolittle:
4.499925851821899s
   Cholesky:
2.054835796356201s
   Numpy:
0.004487037658691406s
   Scipy:
0.025265216827392578s

Matrix 343x343:
   Crout:
1.7325530052185059s
   Doolittle:
4.481683731079102s
   Cholesky:
2.147407293319702s
   Numpy:
0.004944801330566406s
   Scipy:
0.007035732269287109s

Matrix 344x344:
   Crout:
1.8202900886535645s

Doolittle:
4.449578046798706s
   Cholesky:
2.1075384616851807s
   Numpy:
0.009863615036010742s
   Scipy:
0.005620479583740234s

Matrix 345x345:
   Crout:
1.7800216674804688s
   Doolittle:
4.522995710372925s
   Cholesky:
2.15741229057312s
   Numpy:
0.004926199937133789s
   Scipy:
0.006882190704345703s

Matrix 346x346:
   Crout:
1.8626127243041992s
   Doolittle:
4.556722164154053s
   Cholesky:
2.13252854347229s
   Numpy:
0.010398149490356445s
   Scipy:
0.005663633346557617s

Matrix 347x347:

Crout:
1.7919347286224365s
   Doolittle:
4.649834156036377s
   Cholesky:
2.185138702392578s
   Numpy:
0.008987903594970703s
   Scipy:
0.007194995880126953s

Matrix 348x348:
   Crout:
1.84953069686889965s
   Doolittle:
4.591117858886719s
   Cholesky:
2.1809751987457275s
   Numpy:
0.006201505661010742s
   Scipy:
0.0059375762939453125s

Matrix 349x349:
   Crout:
1.8182616233825684s
   Doolittle:
5.558870792388916s
   Cholesky:
2.2543725967407227s
   Numpy:
0.010869741439819336s
   Scipy:
0.007779836654663086s