STAT4030/STAT7030 GENERALISED LINEAR MODELLING

R Output for the 2017 Final Examination

Statistical Tables

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> # Selected quantiles of Student's t distribution:
> DF <- c(1:100, 150, 200, 250, 300, 400, 500, 750, 1000, 10000, 1000000)
> tquantiles0.025 <- round(qt(0.025,DF),4)
> tquantiles0.05 <- round(qt(0.05,DF),4)
> tquantiles0.95 <- round(qt(0.95,DF),4)
> tquantiles0.975 <- round(qt(0.975,DF),4)
> tquantiles <- rbind(tquantiles0.025, tquantiles0.05, tquantiles0.95, tquantiles0.975)
> dimnames(tquantiles) <- list(c("t 0.025", "t 0.05 ", "t 0.95 ", "t 0.975"), DF)
> tquantiles
              1       2       3       4       5       6       7       8       9      10
t 0.025 -12.7062 -4.3027 -3.1824 -2.7764 -2.5706 -2.4469 -2.3646 -2.3060 -2.2622 -2.2281
t 0.05   -6.3138 -2.9200 -2.3534 -2.1318 -2.0150 -1.9432 -1.8946 -1.8595 -1.8331 -1.8125
t 0.95    6.3138  2.9200  2.3534  2.1318  2.0150  1.9432  1.8946  1.8595  1.8331  1.8125
t 0.975  12.7062  4.3027  3.1824  2.7764  2.5706  2.4469  2.3646  2.3060  2.2622  2.2281
             11      12      13      14      15      16      17      18      19      20
t 0.025  -2.2010 -2.1788 -2.1604 -2.1448 -2.1314 -2.1199 -2.1098 -2.1009 -2.0930 -2.0860
t 0.05   -1.7959 -1.7823 -1.7709 -1.7613 -1.7531 -1.7459 -1.7396 -1.7341 -1.7291 -1.7247
t 0.95    1.7959  1.7823  1.7709  1.7613  1.7531  1.7459  1.7396  1.7341  1.7291  1.7247
t 0.975   2.2010  2.1788  2.1604  2.1448  2.1314  2.1199  2.1098  2.1009  2.0930  2.0860
             21      22      23      24      25      26      27      28      29      30
t 0.025  -2.0796 -2.0739 -2.0687 -2.0639 -2.0595 -2.0555 -2.0518 -2.0484 -2.0452 -2.0423
t 0.05   -1.7207 -1.7171 -1.7139 -1.7109 -1.7081 -1.7056 -1.7033 -1.7011 -1.6991 -1.6973
t 0.95    1.7207  1.7171  1.7139  1.7109  1.7081  1.7056  1.7033  1.7011  1.6991  1.6973
t 0.975   2.0796  2.0739  2.0687  2.0639  2.0595  2.0555  2.0518  2.0484  2.0452  2.0423
             31      32      33      34      35      36      37      38      39      40
t 0.025  -2.0395 -2.0369 -2.0345 -2.0322 -2.0301 -2.0281 -2.0262 -2.0244 -2.0227 -2.0211
t 0.05   -1.6955 -1.6939 -1.6924 -1.6909 -1.6896 -1.6883 -1.6871 -1.6860 -1.6849 -1.6839
t 0.95    1.6955  1.6939  1.6924  1.6909  1.6896  1.6883  1.6871  1.6860  1.6849  1.6839
t 0.975   2.0395  2.0369  2.0345  2.0322  2.0301  2.0281  2.0262  2.0244  2.0227  2.0211
             41      42      43      44      45      46      47      48      49      50
t 0.025  -2.0195 -2.0181 -2.0167 -2.0154 -2.0141 -2.0129 -2.0117 -2.0106 -2.0096 -2.0086
t 0.05   -1.6829 -1.6820 -1.6811 -1.6802 -1.6794 -1.6787 -1.6779 -1.6772 -1.6766 -1.6759
t 0.95    1.6829  1.6820  1.6811  1.6802  1.6794  1.6787  1.6779  1.6772  1.6766  1.6759
t 0.975   2.0195  2.0181  2.0167  2.0154  2.0141  2.0129  2.0117  2.0106  2.0096  2.0086
             51      52      53      54      55      56      57      58      59      60
t 0.025  -2.0076 -2.0066 -2.0057 -2.0049 -2.0040 -2.0032 -2.0025 -2.0017 -2.0010 -2.0003
t 0.05   -1.6753 -1.6747 -1.6741 -1.6736 -1.6730 -1.6725 -1.6720 -1.6716 -1.6711 -1.6706
t 0.95    1.6753  1.6747  1.6741  1.6736  1.6730  1.6725  1.6720  1.6716  1.6711  1.6706
t 0.975   2.0076  2.0066  2.0057  2.0049  2.0040  2.0032  2.0025  2.0017  2.0010  2.0003
             61      62      63      64      65      66      67      68      69      70
t 0.025  -1.9996 -1.9990 -1.9983 -1.9977 -1.9971 -1.9966 -1.9960 -1.9955 -1.9949 -1.9944
t 0.05   -1.6702 -1.6698 -1.6694 -1.6690 -1.6686 -1.6683 -1.6679 -1.6676 -1.6672 -1.6669
t 0.95    1.6702  1.6698  1.6694  1.6690  1.6686  1.6683  1.6679  1.6676  1.6672  1.6669
t 0.975   1.9996  1.9990  1.9983  1.9977  1.9971  1.9966  1.9960  1.9955  1.9949  1.9944
             71      72      73      74      75      76      77      78      79      80
t 0.025  -1.9939 -1.9935 -1.9930 -1.9925 -1.9921 -1.9917 -1.9913 -1.9908 -1.9905 -1.9901
t 0.05   -1.6666 -1.6663 -1.6660 -1.6657 -1.6654 -1.6652 -1.6649 -1.6646 -1.6644 -1.6641
t 0.95    1.6666  1.6663  1.6660  1.6657  1.6654  1.6652  1.6649  1.6646  1.6644  1.6641
t 0.975   1.9939  1.9935  1.9930  1.9925  1.9921  1.9917  1.9913  1.9908  1.9905  1.9901
             81      82      83      84      85      86      87      88      89      90
t 0.025  -1.9897 -1.9893 -1.9890 -1.9886 -1.9883 -1.9879 -1.9876 -1.9873 -1.9870 -1.9867
t 0.05   -1.6639 -1.6636 -1.6634 -1.6632 -1.6630 -1.6628 -1.6626 -1.6624 -1.6622 -1.6620
t 0.95    1.6639  1.6636  1.6634  1.6632  1.6630  1.6628  1.6626  1.6624  1.6622  1.6620
t 0.975   1.9897  1.9893  1.9890  1.9886  1.9883  1.9879  1.9876  1.9873  1.9870  1.9867
             91      92      93      94      95      96      97      98      99     100
t 0.025  -1.9864 -1.9861 -1.9858 -1.9855 -1.9853 -1.9850 -1.9847 -1.9845 -1.9842 -1.9840
t 0.05   -1.6618 -1.6616 -1.6614 -1.6612 -1.6611 -1.6609 -1.6607 -1.6606 -1.6604 -1.6602
t 0.95    1.6618  1.6616  1.6614  1.6612  1.6611  1.6609  1.6607  1.6606  1.6604  1.6602
t 0.975   1.9864  1.9861  1.9858  1.9855  1.9853  1.9850  1.9847  1.9845  1.9842  1.9840
            150     200     250     300     400     500     750    1000   10000   1e+06
t 0.025  -1.9759 -1.9719 -1.9695 -1.9679 -1.9659 -1.9647 -1.9631 -1.9623 -1.9602 -1.9600
t 0.05   -1.6551 -1.6525 -1.6510 -1.6499 -1.6487 -1.6479 -1.6469 -1.6464 -1.6450 -1.6449
t 0.95    1.6551  1.6525  1.6510  1.6499  1.6487  1.6479  1.6469  1.6464  1.6450  1.6449
t 0.975   1.9759  1.9719  1.9695  1.9679  1.9659  1.9647  1.9631  1.9623  1.9602  1.9600
>
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Statistical Tables continued

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> #Selected quantiles of the Chi-square distribution:
> DF <- c(1:70,75,80,85,90,95,100,150,200,250,300,350,400,450,500,550,600,650,700,
750,800,850,900,950,1000,10000,1000000)
> chisq0.025 <- round(qchisq(0.025,DF),4)
> chisq0.05 <- round(qchisq(0.05,DF),4)
> chisq0.95 <- round(qchisq(0.95,DF),4)
> chisq0.975 <- round(qchisq(0.975,DF),4)
> chisq_quantiles <- rbind(chisq0.025, chisq0.05, chisq0.95, chisq0.975)
> dimnames(chisq_quantiles) <- list(c("chisq 0.025","chisq 0.05 ","chisq 0.95 ",
"chisq 0.975"), DF)
> chisq_quantiles
                 1       2       3       4       5       6       7       8       9      10
chisq 0.025  0.0010  0.0506  0.2158  0.4844  0.8312  1.2373  1.6899  2.1797  2.7004  3.2470
chisq 0.05   0.0039  0.1026  0.3518  0.7107  1.1455  1.6354  2.1673  2.7326  3.3251  3.9403
chisq 0.95   3.8415  5.9915  7.8147  9.4877 11.0705 12.5916 14.0671 15.5073 16.9190 18.3070
chisq 0.975  5.0239  7.3778  9.3484 11.1433 12.8325 14.4494 16.0128 17.5345 19.0228 20.4832
                11      12      13      14      15      16      17      18      19      20
chisq 0.025  3.8157  4.4038  5.0088  5.6287  6.2621  6.9077  7.5642  8.2307  8.9065  9.5908
chisq 0.05   4.5748  5.2260  5.8919  6.5706  7.2609  7.9616  8.6718  9.3905 10.1170 10.8508
chisq 0.95  19.6751 21.0261 22.3620 23.6848 24.9958 26.2962 27.5871 28.8693 30.1435 31.4104
chisq 0.975 21.9200 23.3367 24.7356 26.1189 27.4884 28.8454 30.1910 31.5264 32.8523 34.1696
                21      22      23      24      25      26      27      28      29      30
chisq 0.025 10.2829 10.9823 11.6886 12.4012 13.1197 13.8439 14.5734 15.3079 16.0471 16.7908
chisq 0.05  11.5913 12.3380 13.0905 13.8484 14.6114 15.3792 16.1514 16.9279 17.7084 18.4927
chisq 0.95  32.6706 33.9244 35.1725 36.4150 37.6525 38.8851 40.1133 41.3371 42.5570 43.7730
chisq 0.975 35.4789 36.7807 38.0756 39.3641 40.6465 41.9232 43.1945 44.4608 45.7223 46.9792
                31      32      33      34      35      36      37      38      39      40
chisq 0.025 17.5387 18.2908 19.0467 19.8063 20.5694 21.3359 22.1056 22.8785 23.6543 24.4330
chisq 0.05  19.2806 20.0719 20.8665 21.6643 22.4650 23.2686 24.0749 24.8839 25.6954 26.5093
chisq 0.95  44.9853 46.1943 47.3999 48.6024 49.8018 50.9985 52.1923 53.3835 54.5722 55.7585
chisq 0.975 48.2319 49.4804 50.7251 51.9660 53.2033 54.4373 55.6680 56.8955 58.1201 59.3417
                41      42      43      44      45      46      47      48      49      50
chisq 0.025 25.2145 25.9987 26.7854 27.5746 28.3662 29.1601 29.9562 30.7545 31.5549 32.3574
chisq 0.05  27.3256 28.1440 28.9647 29.7875 30.6123 31.4390 32.2676 33.0981 33.9303 34.7643
chisq 0.95  56.9424 58.1240 59.3035 60.4809 61.6562 62.8296 64.0011 65.1708 66.3386 67.5048
chisq 0.975 60.5606 61.7768 62.9904 64.2015 65.4102 66.6165 67.8206 69.0226 70.2224 71.4202
                51      52      53      54      55      56      57      58      59      60
chisq 0.025 33.1618 33.9681 34.7763 35.5863 36.3981 37.2116 38.0267 38.8435 39.6619 40.4817
chisq 0.05  35.5999 36.4371 37.2759 38.1162 38.9580 39.8013 40.6459 41.4920 42.3393 43.1880
chisq 0.95  68.6693 69.8322 70.9935 72.1532 73.3115 74.4683 75.6237 76.7778 77.9305 79.0819
chisq 0.975 72.6160 73.8099 75.0019 76.1920 77.3805 78.5672 79.7522 80.9356 82.1174 83.2977
                61      62      63      64      65      66      67      68      69      70
chisq 0.025 41.3031 42.1260 42.9503 43.7760 44.6030 45.4314 46.2610 47.0920 47.9242 48.7576
chisq 0.05  44.0379 44.8890 45.7414 46.5949 47.4496 48.3054 49.1623 50.0202 50.8792 51.7393
chisq 0.95  80.2321 81.3810 82.5287 83.6753 84.8206 85.9649 87.1081 88.2502 89.3912 90.5312
chisq 0.975 84.4764 85.6537 86.8296 88.0041 89.1771 90.3489 91.5194 92.6885 93.8565 95.0232
                75       80       85       90       95      100      150      200      250
chisq 0.025  52.9419  57.1532  61.3888  65.6466  69.9249  74.2219 117.9845 162.7280 208.0978
chisq 0.05   56.0541  60.3915  64.7494  69.1260  73.5198  77.9295 122.6918 168.2786 214.3916
chisq 0.95   96.2167 101.8795 107.5217 113.1453 118.7516 124.3421 179.5806 233.9943 287.8815
chisq 0.975 100.8393 106.6286 112.3934 118.1359 123.8580 129.5612 185.8004 241.0579 295.6886
                300      350      400      450      500      550      600      650      700
chisq 0.025 253.9123 300.0637 346.4818 393.1177 439.9360 486.9099 534.0186 581.2454 628.5772
chisq 0.05  260.8781 307.6476 354.6410 401.8173 449.1468 496.6068 544.1801 591.8526 639.6130
chisq 0.95  341.3951 394.6258 447.6325 500.4562 553.1268 605.6668 658.0936 710.4211 762.6607
chisq 0.975 349.8745 403.7233 457.3055 510.6697 563.8515 616.8777 669.7692 722.5423 775.2107
                750      800      850      900      950     1000    10000     1e+06
chisq 0.025 676.0026 723.5126 771.0993 818.7560  866.4769  914.2572  9724.718  997230.1
chisq 0.05  687.4522 735.3623 783.3369 831.3702  879.4574  927.5944  9768.525  997675.0
chisq 0.95  814.8215 866.9114 918.9369 970.9036 1022.8164 1074.6794 10233.749 1002327.3
chisq 0.975 827.7853 880.2753 932.6887 985.0320 1037.3111 1089.5309 10279.070 1002773.7
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(End of R Output)