EDA_LA2

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data

```
##                     Country.name           Regional.indicator Ladder.score
## 1                        Finland               Western Europe        7.842
## 2                        Denmark               Western Europe        7.620
## 3                    Switzerland               Western Europe        7.571
## 4                        Iceland               Western Europe        7.554
## 5                    Netherlands               Western Europe        7.464
## 6                         Norway               Western Europe        7.392
## 7                         Sweden               Western Europe        7.363
## 8                     Luxembourg               Western Europe        7.324
## 9                    New Zealand         North America and ANZ        7.277
## 10                       Austria               Western Europe        7.268
## 11                     Australia         North America and ANZ        7.183
## 12                        Israel  Middle East and North Africa        7.157
## 13                       Germany               Western Europe        7.155
## 14                        Canada         North America and ANZ        7.103
## 15                       Ireland               Western Europe        7.085
## 16                    Costa Rica     Latin America and Caribbean       7.069
## 17                United Kingdom               Western Europe        7.064
## 18                Czech Republic     Central and Eastern Europe       6.965
## 19                 United States         North America and ANZ        6.951
## 20                       Belgium               Western Europe        6.834
## 21                        France               Western Europe        6.690
## 22                       Bahrain  Middle East and North Africa        6.647
## 23                         Malta               Western Europe        6.602
## 24        Taiwan Province of China                   East Asia        6.584
## 25          United Arab Emirates  Middle East and North Africa        6.561
## 26                  Saudi Arabia  Middle East and North Africa        6.494
## 27                         Spain               Western Europe        6.491
## 28                         Italy               Western Europe        6.483
## 29                      Slovenia     Central and Eastern Europe       6.461
## 30                     Guatemala     Latin America and Caribbean       6.435
## 31                       Uruguay     Latin America and Caribbean       6.431
## 32                     Singapore                 Southeast Asia        6.377
## 33                        Kosovo     Central and Eastern Europe       6.372
## 34                      Slovakia     Central and Eastern Europe       6.331
## 35                        Brazil     Latin America and Caribbean       6.330
## 36                        Mexico     Latin America and Caribbean       6.317
## 37                       Jamaica     Latin America and Caribbean       6.309
## 38                     Lithuania     Central and Eastern Europe       6.255
## 39                        Cyprus               Western Europe        6.223
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## 40                     Estonia      Central and Eastern Europe   6.189
## 41                      Panama       Latin America and Caribbean  6.180
## 42                  Uzbekistan Commonwealth of Independent States 6.179
## 43                       Chile       Latin America and Caribbean  6.172
## 44                      Poland       Central and Eastern Europe   6.166
## 45                  Kazakhstan Commonwealth of Independent States 6.152
## 46                     Romania       Central and Eastern Europe   6.140
## 47                      Kuwait       Middle East and North Africa 6.106
## 48                      Serbia       Central and Eastern Europe   6.078
## 49                 El Salvador       Latin America and Caribbean  6.061
## 50                   Mauritius              Sub-Saharan Africa    6.049
## 51                      Latvia       Central and Eastern Europe   6.032
## 52                    Colombia       Latin America and Caribbean  6.012
## 53                     Hungary       Central and Eastern Europe   5.992
## 54                    Thailand              Southeast Asia        5.985
## 55                   Nicaragua       Latin America and Caribbean  5.972
## 56                       Japan                   East Asia        5.940
## 57                   Argentina       Latin America and Caribbean  5.929
## 58                    Portugal                Western Europe      5.929
## 59                    Honduras       Latin America and Caribbean  5.919
## 60                     Croatia       Central and Eastern Europe   5.882
## 61                 Philippines              Southeast Asia        5.880
## 62                 South Korea                   East Asia        5.845
## 63                        Peru       Latin America and Caribbean  5.840
## 64      Bosnia and Herzegovina       Central and Eastern Europe   5.813
## 65                     Moldova Commonwealth of Independent States 5.766
## 66                     Ecuador       Latin America and Caribbean  5.764
## 67                  Kyrgyzstan Commonwealth of Independent States 5.744
## 68                      Greece                Western Europe      5.723
## 69                     Bolivia       Latin America and Caribbean  5.716
## 70                    Mongolia                   East Asia        5.677
## 71                    Paraguay       Latin America and Caribbean  5.653
## 72                  Montenegro       Central and Eastern Europe   5.581
## 73          Dominican Republic       Latin America and Caribbean  5.545
## 74                North Cyprus                Western Europe      5.536
## 75                     Belarus Commonwealth of Independent States 5.534
## 76                      Russia Commonwealth of Independent States 5.477
## 77  Hong Kong S.A.R. of China                   East Asia        5.477
## 78                  Tajikistan Commonwealth of Independent States 5.466
## 79                     Vietnam              Southeast Asia        5.411
## 80                       Libya       Middle East and North Africa 5.410
## 81                    Malaysia              Southeast Asia        5.384
## 82                   Indonesia              Southeast Asia        5.345
## 83         Congo (Brazzaville)           Sub-Saharan Africa       5.342
## 84                       China                   East Asia        5.339
## 85                 Ivory Coast           Sub-Saharan Africa       5.306
## 86                     Armenia Commonwealth of Independent States 5.283
## 87                       Nepal                  South Asia        5.269
## 88                    Bulgaria       Central and Eastern Europe   5.266
## 89                    Maldives                  South Asia        5.198
## 90                  Azerbaijan Commonwealth of Independent States 5.171
## 91                    Cameroon           Sub-Saharan Africa       5.142
## 92                     Senegal           Sub-Saharan Africa       5.132
## 93                     Albania       Central and Eastern Europe   5.117
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## 94            North Macedonia         Central and Eastern Europe   5.101
## 95                      Ghana                 Sub-Saharan Africa    5.088
## 96                      Niger                 Sub-Saharan Africa    5.074
## 97               Turkmenistan Commonwealth of Independent States    5.066
## 98                     Gambia                 Sub-Saharan Africa    5.051
## 99                      Benin                 Sub-Saharan Africa    5.045
## 100                      Laos                     Southeast Asia    5.030
## 101                Bangladesh                         South Asia    5.025
## 102                    Guinea                 Sub-Saharan Africa    4.984
## 103              South Africa                 Sub-Saharan Africa    4.956
## 104                    Turkey       Middle East and North Africa    4.948
## 105                  Pakistan                         South Asia    4.934
## 106                   Morocco       Middle East and North Africa    4.918
## 107                 Venezuela          Latin America and Caribbean  4.892
## 108                   Georgia Commonwealth of Independent States    4.891
## 109                   Algeria       Middle East and North Africa    4.887
## 110                   Ukraine Commonwealth of Independent States    4.875
## 111                      Iraq       Middle East and North Africa    4.854
## 112                     Gabon                 Sub-Saharan Africa    4.852
## 113              Burkina Faso                 Sub-Saharan Africa    4.834
## 114                  Cambodia                     Southeast Asia    4.830
## 115                Mozambique                 Sub-Saharan Africa    4.794
## 116                   Nigeria                 Sub-Saharan Africa    4.759
## 117                      Mali                 Sub-Saharan Africa    4.723
## 118                      Iran       Middle East and North Africa    4.721
## 119                    Uganda                 Sub-Saharan Africa    4.636
## 120                   Liberia                 Sub-Saharan Africa    4.625
## 121                     Kenya                 Sub-Saharan Africa    4.607
## 122                   Tunisia       Middle East and North Africa    4.596
## 123                   Lebanon       Middle East and North Africa    4.584
## 124                   Namibia                 Sub-Saharan Africa    4.574
## 125    Palestinian Territories       Middle East and North Africa    4.517
## 126                   Myanmar                     Southeast Asia    4.426
## 127                    Jordan       Middle East and North Africa    4.395
## 128                      Chad                 Sub-Saharan Africa    4.355
## 129                 Sri Lanka                         South Asia    4.325
## 130                 Swaziland                 Sub-Saharan Africa    4.308
## 131                    Comoros                 Sub-Saharan Africa    4.289
## 132                     Egypt       Middle East and North Africa    4.283
## 133                  Ethiopia                 Sub-Saharan Africa    4.275
## 134                Mauritania                 Sub-Saharan Africa    4.227
## 135                Madagascar                 Sub-Saharan Africa    4.208
## 136                      Togo                 Sub-Saharan Africa    4.107
## 137                    Zambia                 Sub-Saharan Africa    4.073
## 138              Sierra Leone                 Sub-Saharan Africa    3.849
## 139                     India                         South Asia    3.819
## 140                   Burundi                 Sub-Saharan Africa    3.775
## 141                     Yemen       Middle East and North Africa    3.658
## 142                  Tanzania                 Sub-Saharan Africa    3.623
## 143                     Haiti          Latin America and Caribbean  3.615
## 144                    Malawi                 Sub-Saharan Africa    3.600
## 145                   Lesotho                 Sub-Saharan Africa    3.512
## 146                  Botswana                 Sub-Saharan Africa    3.467
## 147                    Rwanda                 Sub-Saharan Africa    3.415
```

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## 148              Zimbabwe              Sub-Saharan Africa      3.145
## 149            Afghanistan                    South Asia      2.523
##    Standard.error.of.ladder.score upperwhisker lowerwhisker
## 1                          0.032        7.904        7.780
## 2                          0.035        7.687        7.552
## 3                          0.036        7.643        7.500
## 4                          0.059        7.670        7.438
## 5                          0.027        7.518        7.410
## 6                          0.035        7.462        7.323
## 7                          0.036        7.433        7.293
## 8                          0.037        7.396        7.252
## 9                          0.040        7.355        7.198
## 10                         0.036        7.337        7.198
## 11                         0.041        7.265        7.102
## 12                         0.034        7.224        7.090
## 13                         0.040        7.232        7.077
## 14                         0.042        7.185        7.021
## 15                         0.040        7.164        7.006
## 16                         0.056        7.179        6.960
## 17                         0.038        7.138        6.990
## 18                         0.049        7.062        6.868
## 19                         0.049        7.047        6.856
## 20                         0.034        6.901        6.767
## 21                         0.037        6.762        6.618
## 22                         0.068        6.779        6.514
## 23                         0.044        6.688        6.516
## 24                         0.038        6.659        6.510
## 25                         0.039        6.637        6.484
## 26                         0.056        6.604        6.384
## 27                         0.042        6.574        6.408
## 28                         0.045        6.572        6.395
## 29                         0.043        6.546        6.376
## 30                         0.073        6.577        6.292
## 31                         0.046        6.521        6.341
## 32                         0.043        6.460        6.293
## 33                         0.059        6.487        6.257
## 34                         0.041        6.411        6.251
## 35                         0.043        6.415        6.245
## 36                         0.053        6.420        6.213
## 37                         0.156        6.615        6.004
## 38                         0.045        6.344        6.167
## 39                         0.049        6.319        6.128
## 40                         0.038        6.263        6.115
## 41                         0.073        6.323        6.036
## 42                         0.068        6.312        6.045
## 43                         0.046        6.262        6.081
## 44                         0.040        6.245        6.087
## 45                         0.047        6.243        6.060
## 46                         0.057        6.253        6.027
## 47                         0.066        6.235        5.977
## 48                         0.053        6.181        5.974
## 49                         0.065        6.188        5.933
## 50                         0.059        6.165        5.933
## 51                         0.036        6.103        5.961
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## 52                          0.061      6.132      5.892
## 53                          0.047      6.085      5.899
## 54                          0.047      6.077      5.893
## 55                          0.083      6.134      5.810
## 56                          0.040      6.020      5.861
## 57                          0.056      6.040      5.819
## 58                          0.055      6.037      5.821
## 59                          0.082      6.081      5.758
## 60                          0.048      5.975      5.788
## 61                          0.052      5.982      5.778
## 62                          0.042      5.928      5.763
## 63                          0.075      5.988      5.692
## 64                          0.050      5.911      5.715
## 65                          0.046      5.856      5.677
## 66                          0.057      5.875      5.653
## 67                          0.046      5.834      5.653
## 68                          0.046      5.813      5.632
## 69                          0.053      5.819      5.613
## 70                          0.042      5.760      5.595
## 71                          0.092      5.832      5.473
## 72                          0.054      5.686      5.475
## 73                          0.071      5.685      5.405
## 74                          0.051      5.636      5.435
## 75                          0.047      5.625      5.442
## 76                          0.033      5.541      5.413
## 77                          0.049      5.573      5.380
## 78                          0.034      5.532      5.400
## 79                          0.039      5.488      5.334
## 80                          0.076      5.558      5.262
## 81                          0.049      5.480      5.289
## 82                          0.056      5.454      5.235
## 83                          0.097      5.533      5.151
## 84                          0.029      5.397      5.281
## 85                          0.078      5.460      5.152
## 86                          0.058      5.397      5.168
## 87                          0.070      5.406      5.132
## 88                          0.054      5.371      5.160
## 89                          0.072      5.339      5.057
## 90                          0.040      5.250      5.091
## 91                          0.074      5.288      4.996
## 92                          0.068      5.266      4.998
## 93                          0.059      5.234      5.001
## 94                          0.051      5.202      5.001
## 95                          0.067      5.219      4.958
## 96                          0.102      5.273      4.875
## 97                          0.036      5.136      4.996
## 98                          0.089      5.225      4.877
## 99                          0.073      5.189      4.901
## 100                         0.045      5.119      4.941
## 101                         0.046      5.115      4.934
## 102                         0.090      5.160      4.808
## 103                         0.060      5.074      4.839
## 104                         0.046      5.038      4.857
## 105                         0.068      5.066      4.802
```

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## 106                            0.060       5.036         4.800
## 107                            0.064       5.017         4.767
## 108                            0.054       4.998         4.785
## 109                            0.053       4.991         4.783
## 110                            0.052       4.977         4.773
## 111                            0.059       4.970         4.738
## 112                            0.075       4.998         4.706
## 113                            0.081       4.993         4.675
## 114                            0.067       4.963         4.698
## 115                            0.103       4.997         4.592
## 116                            0.052       4.861         4.658
## 117                            0.082       4.884         4.563
## 118                            0.055       4.828         4.614
## 119                            0.073       4.780         4.493
## 120                            0.106       4.833         4.417
## 121                            0.072       4.747         4.466
## 122                            0.058       4.709         4.484
## 123                            0.055       4.691         4.477
## 124                            0.064       4.700         4.448
## 125                            0.067       4.649         4.384
## 126                            0.052       4.527         4.324
## 127                            0.062       4.516         4.273
## 128                            0.094       4.540         4.171
## 129                            0.066       4.454         4.196
## 130                            0.071       4.448         4.168
## 131                            0.084       4.454         4.123
## 132                            0.045       4.371         4.195
## 133                            0.051       4.374         4.175
## 134                            0.070       4.365         4.090
## 135                            0.072       4.349         4.068
## 136                            0.077       4.258         3.956
## 137                            0.069       4.209         3.938
## 138                            0.077       4.001         3.698
## 139                            0.026       3.869         3.769
## 140                            0.107       3.985         3.565
## 141                            0.070       3.794         3.521
## 142                            0.071       3.762         3.485
## 143                            0.173       3.953         3.276
## 144                            0.092       3.781         3.419
## 145                            0.120       3.748         3.276
## 146                            0.074       3.611         3.322
## 147                            0.068       3.548         3.282
## 148                            0.058       3.259         3.030
## 149                            0.038       2.596         2.449
##     Logged.GDP.per.capita Social.support Healthy.life.expectancy
## 1              10.775          0.954                    72.000
## 2              10.933          0.954                    72.700
## 3              11.117          0.942                    74.400
## 4              10.878          0.983                    73.000
## 5              10.932          0.942                    72.400
## 6              11.053          0.954                    73.300
## 7              10.867          0.934                    72.700
## 8              11.647          0.908                    72.600
## 9              10.643          0.948                    73.400
```

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## 10            10.906          0.934            73.300
## 11            10.796          0.940            73.900
## 12            10.575          0.939            73.503
## 13            10.873          0.903            72.500
## 14            10.776          0.926            73.800
## 15            11.342          0.947            72.400
## 16             9.880          0.891            71.400
## 17            10.707          0.934            72.500
## 18            10.556          0.947            70.807
## 19            11.023          0.920            68.200
## 20            10.823          0.906            72.199
## 21            10.704          0.942            74.000
## 22            10.669          0.862            69.495
## 23            10.674          0.931            72.200
## 24            10.871          0.898            69.600
## 25            11.085          0.844            67.333
## 26            10.743          0.891            66.603
## 27            10.571          0.932            74.700
## 28            10.623          0.880            73.800
## 29            10.529          0.948            71.400
## 30             9.053          0.813            64.958
## 31             9.966          0.925            69.100
## 32            11.488          0.915            76.953
## 33             9.318          0.821            63.813
## 34            10.369          0.936            69.201
## 35             9.577          0.882            66.601
## 36             9.859          0.831            68.597
## 37             9.186          0.877            67.500
## 38            10.499          0.935            67.906
## 39            10.576          0.802            73.898
## 40            10.481          0.941            68.800
## 41            10.350          0.896            69.652
## 42             8.836          0.918            65.255
## 43            10.071          0.882            70.000
## 44            10.382          0.898            69.702
## 45            10.155          0.952            65.200
## 46            10.284          0.832            67.355
## 47            10.817          0.843            66.900
## 48             9.787          0.873            68.600
## 49             9.054          0.762            66.402
## 50            10.008          0.905            66.701
## 51            10.315          0.927            67.100
## 52             9.557          0.847            68.001
## 53            10.358          0.943            68.000
## 54             9.805          0.888            67.401
## 55             8.620          0.864            67.657
## 56            10.611          0.884            75.100
## 57             9.962          0.898            69.000
## 58            10.421          0.879            72.600
## 59             8.648          0.812            67.300
## 60            10.217          0.924            70.799
## 61             9.076          0.830            62.000
## 62            10.651          0.799            73.900
## 63             9.458          0.832            68.250
```

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## 64               9.590        0.870             68.098
## 65               9.454        0.857             65.699
## 66               9.313        0.821             68.800
## 67               8.538        0.893             64.401
## 68              10.279        0.823             72.600
## 69               9.046        0.810             63.901
## 70               9.400        0.935             62.500
## 71               9.448        0.893             65.900
## 72               9.940        0.858             68.699
## 73               9.802        0.853             66.102
## 74              10.576        0.820             73.898
## 75               9.853        0.910             66.253
## 76              10.189        0.903             64.703
## 77              11.000        0.836             76.820
## 78               8.091        0.860             64.281
## 79               8.973        0.850             68.034
## 80               9.622        0.827             62.300
## 81              10.238        0.817             67.102
## 82               9.365        0.811             62.236
## 83               8.117        0.636             58.221
## 84               9.673        0.811             69.593
## 85               8.551        0.644             50.114
## 86               9.487        0.799             67.055
## 87               8.120        0.774             64.233
## 88              10.016        0.931             67.000
## 89               9.826        0.913             70.600
## 90               9.569        0.836             65.656
## 91               8.189        0.710             53.515
## 92               8.118        0.710             59.802
## 93               9.520        0.697             68.999
## 94               9.693        0.805             65.474
## 95               8.580        0.727             57.586
## 96               7.098        0.641             53.780
## 97               9.629        0.983             62.409
## 98               7.686        0.690             55.160
## 99               8.087        0.489             54.713
## 100              8.947        0.728             58.968
## 101              8.454        0.693             64.800
## 102              7.838        0.639             55.008
## 103              9.403        0.860             56.904
## 104             10.240        0.822             67.199
## 105              8.458        0.651             58.709
## 106              8.903        0.560             66.208
## 107              9.073        0.861             66.700
## 108              9.585        0.671             64.300
## 109              9.342        0.802             66.005
## 110              9.436        0.888             64.902
## 111              9.240        0.746             60.583
## 112              9.603        0.776             59.962
## 113              7.678        0.672             54.151
## 114              8.360        0.765             62.000
## 115              7.158        0.744             54.706
## 116              8.533        0.740             50.102
## 117              7.744        0.724             51.969
```

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## 118                                  9.584           0.710                   66.300
## 119                                  7.677           0.781                   56.101
## 120                                  7.288           0.720                   56.498
## 121                                  8.361           0.688                   60.704
## 122                                  9.266           0.691                   67.201
## 123                                  9.626           0.848                   67.355
## 124                                  9.161           0.818                   56.799
## 125                                  8.485           0.826                   62.250
## 126                                  8.541           0.779                   59.302
## 127                                  9.182           0.767                   67.000
## 128                                  7.364           0.619                   48.478
## 129                                  9.470           0.827                   67.299
## 130                                  9.065           0.770                   50.833
## 131                                  8.031           0.626                   57.349
## 132                                  9.367           0.750                   61.998
## 133                                  7.694           0.764                   59.000
## 134                                  8.542           0.795                   57.161
## 135                                  7.396           0.686                   59.305
## 136                                  7.362           0.569                   54.914
## 137                                  8.145           0.708                   55.809
## 138                                  7.434           0.630                   51.651
## 139                                  8.755           0.603                   60.633
## 140                                  6.635           0.490                   53.400
## 141                                  7.578           0.832                   57.122
## 142                                  7.876           0.702                   57.999
## 143                                  7.477           0.540                   55.700
## 144                                  6.958           0.537                   57.948
## 145                                  7.926           0.787                   48.700
## 146                                  9.782           0.784                   59.269
## 147                                  7.676           0.552                   61.400
## 148                                  7.943           0.750                   56.201
## 149                                  7.695           0.463                   52.493
##      Freedom.to.make.life.choices Generosity Perceptions.of.corruption
## 1                           0.949     -0.098                     0.186
## 2                           0.946      0.030                     0.179
## 3                           0.919      0.025                     0.292
## 4                           0.955      0.160                     0.673
## 5                           0.913      0.175                     0.338
## 6                           0.960      0.093                     0.270
## 7                           0.945      0.086                     0.237
## 8                           0.907     -0.034                     0.386
## 9                           0.929      0.134                     0.242
## 10                          0.908      0.042                     0.481
## 11                          0.914      0.159                     0.442
## 12                          0.800      0.031                     0.753
## 13                          0.875      0.011                     0.460
## 14                          0.915      0.089                     0.415
## 15                          0.879      0.077                     0.363
## 16                          0.934     -0.126                     0.809
## 17                          0.859      0.233                     0.459
## 18                          0.858     -0.208                     0.868
## 19                          0.837      0.098                     0.698
## 20                          0.783     -0.153                     0.646
## 21                          0.822     -0.147                     0.571
```

9

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## 22                   0.925    0.089              0.722
## 23                   0.927    0.133              0.653
## 24                   0.784   -0.070              0.721
## 25                   0.932    0.074              0.589
## 26                   0.877   -0.149              0.684
## 27                   0.761   -0.081              0.745
## 28                   0.693   -0.084              0.866
## 29                   0.949   -0.101              0.806
## 30                   0.906   -0.038              0.775
## 31                   0.896   -0.092              0.590
## 32                   0.927   -0.018              0.082
## 33                   0.869    0.257              0.917
## 34                   0.766   -0.124              0.911
## 35                   0.804   -0.071              0.756
## 36                   0.862   -0.147              0.799
## 37                   0.890   -0.137              0.884
## 38                   0.773   -0.203              0.826
## 39                   0.763   -0.015              0.844
## 40                   0.909   -0.106              0.527
## 41                   0.872   -0.166              0.856
## 42                   0.970    0.311              0.515
## 43                   0.742   -0.044              0.830
## 44                   0.841   -0.165              0.735
## 45                   0.853   -0.069              0.733
## 46                   0.845   -0.219              0.938
## 47                   0.867   -0.104              0.736
## 48                   0.778    0.002              0.835
## 49                   0.888   -0.110              0.688
## 50                   0.867   -0.054              0.789
## 51                   0.715   -0.162              0.800
## 52                   0.837   -0.135              0.841
## 53                   0.755   -0.186              0.876
## 54                   0.884    0.287              0.895
## 55                   0.836    0.020              0.664
## 56                   0.796   -0.258              0.638
## 57                   0.828   -0.182              0.834
## 58                   0.892   -0.244              0.887
## 59                   0.857    0.081              0.809
## 60                   0.754   -0.118              0.939
## 61                   0.917   -0.097              0.742
## 62                   0.672   -0.083              0.727
## 63                   0.822   -0.154              0.891
## 64                   0.706    0.113              0.931
## 65                   0.822   -0.079              0.918
## 66                   0.842   -0.124              0.843
## 67                   0.935    0.119              0.908
## 68                   0.582   -0.288              0.823
## 69                   0.875   -0.077              0.839
## 70                   0.708    0.116              0.856
## 71                   0.876    0.028              0.882
## 72                   0.708   -0.034              0.812
## 73                   0.860   -0.133              0.714
## 74                   0.795    0.012              0.626
## 75                   0.650   -0.180              0.627
```

```
## 76                         0.718   -0.111              0.845
## 77                         0.717    0.067              0.403
## 78                         0.832   -0.056              0.553
## 79                         0.940   -0.098              0.796
## 80                         0.771   -0.087              0.667
## 81                         0.895    0.125              0.839
## 82                         0.873    0.542              0.867
## 83                         0.695   -0.068              0.745
## 84                         0.904   -0.146              0.755
## 85                         0.741   -0.016              0.794
## 86                         0.825   -0.168              0.629
## 87                         0.782    0.152              0.727
## 88                         0.788   -0.096              0.932
## 89                         0.854    0.024              0.825
## 90                         0.814   -0.223              0.506
## 91                         0.731    0.026              0.848
## 92                         0.695   -0.046              0.801
## 93                         0.785   -0.030              0.901
## 94                         0.751    0.038              0.905
## 95                         0.807    0.123              0.848
## 96                         0.806    0.018              0.693
## 97                         0.877    0.273              0.888
## 98                         0.697    0.424              0.746
## 99                         0.757   -0.034              0.661
## 100                        0.910    0.123              0.658
## 101                        0.877   -0.041              0.682
## 102                        0.697    0.095              0.766
## 103                        0.749   -0.067              0.860
## 104                        0.576   -0.139              0.776
## 105                        0.726    0.098              0.787
## 106                        0.774   -0.236              0.801
## 107                        0.615   -0.169              0.827
## 108                        0.783   -0.238              0.655
## 109                        0.480   -0.067              0.752
## 110                        0.724   -0.011              0.924
## 111                        0.630   -0.053              0.875
## 112                        0.731   -0.200              0.840
## 113                        0.695   -0.009              0.748
## 114                        0.959    0.034              0.843
## 115                        0.882    0.061              0.684
## 116                        0.737    0.037              0.878
## 117                        0.697   -0.036              0.827
## 118                        0.608    0.218              0.714
## 119                        0.709    0.122              0.855
## 120                        0.735    0.050              0.850
## 121                        0.779    0.287              0.825
## 122                        0.656   -0.201              0.870
## 123                        0.525   -0.073              0.898
## 124                        0.719   -0.149              0.847
## 125                        0.653   -0.163              0.821
## 126                        0.876    0.509              0.660
## 127                        0.755   -0.167              0.705
## 128                        0.579    0.041              0.807
## 129                        0.841    0.079              0.863
```

```
## 130                         0.647   -0.185                        0.708
## 131                         0.548    0.082                        0.781
## 132                         0.749   -0.182                        0.795
## 133                         0.752    0.082                        0.761
## 134                         0.561   -0.106                        0.731
## 135                         0.552   -0.005                        0.803
## 136                         0.619    0.032                        0.772
## 137                         0.782    0.061                        0.823
## 138                         0.717    0.084                        0.866
## 139                         0.893    0.089                        0.774
## 140                         0.626   -0.024                        0.607
## 141                         0.602   -0.147                        0.800
## 142                         0.833    0.183                        0.577
## 143                         0.593    0.422                        0.721
## 144                         0.780    0.038                        0.729
## 145                         0.715   -0.131                        0.915
## 146                         0.824   -0.246                        0.801
## 147                         0.897    0.061                        0.167
## 148                         0.677   -0.047                        0.821
## 149                         0.382   -0.102                        0.924
##      Ladder.score.in.Dystopia Explained.by..Log.GDP.per.capita
## 1                        2.43                            1.446
## 2                        2.43                            1.502
## 3                        2.43                            1.566
## 4                        2.43                            1.482
## 5                        2.43                            1.501
## 6                        2.43                            1.543
## 7                        2.43                            1.478
## 8                        2.43                            1.751
## 9                        2.43                            1.400
## 10                       2.43                            1.492
## 11                       2.43                            1.453
## 12                       2.43                            1.376
## 13                       2.43                            1.480
## 14                       2.43                            1.447
## 15                       2.43                            1.644
## 16                       2.43                            1.134
## 17                       2.43                            1.423
## 18                       2.43                            1.370
## 19                       2.43                            1.533
## 20                       2.43                            1.463
## 21                       2.43                            1.421
## 22                       2.43                            1.409
## 23                       2.43                            1.411
## 24                       2.43                            1.480
## 25                       2.43                            1.555
## 26                       2.43                            1.435
## 27                       2.43                            1.375
## 28                       2.43                            1.393
## 29                       2.43                            1.360
## 30                       2.43                            0.845
## 31                       2.43                            1.164
## 32                       2.43                            1.695
## 33                       2.43                            0.937
```

```
## 34                2.43                1.304
## 35                2.43                1.028
## 36                2.43                1.126
## 37                2.43                0.891
## 38                2.43                1.350
## 39                2.43                1.377
## 40                2.43                1.344
## 41                2.43                1.298
## 42                2.43                0.769
## 43                2.43                1.200
## 44                2.43                1.309
## 45                2.43                1.230
## 46                2.43                1.275
## 47                2.43                1.461
## 48                2.43                1.101
## 49                2.43                0.845
## 50                2.43                1.178
## 51                2.43                1.285
## 52                2.43                1.021
## 53                2.43                1.301
## 54                2.43                1.107
## 55                2.43                0.693
## 56                2.43                1.389
## 57                2.43                1.162
## 58                2.43                1.323
## 59                2.43                0.703
## 60                2.43                1.251
## 61                2.43                0.853
## 62                2.43                1.403
## 63                2.43                0.986
## 64                2.43                1.032
## 65                2.43                0.985
## 66                2.43                0.935
## 67                2.43                0.665
## 68                2.43                1.273
## 69                2.43                0.842
## 70                2.43                0.966
## 71                2.43                0.983
## 72                2.43                1.155
## 73                2.43                1.106
## 74                2.43                1.377
## 75                2.43                1.124
## 76                2.43                1.241
## 77                2.43                1.525
## 78                2.43                0.508
## 79                2.43                0.817
## 80                2.43                1.044
## 81                2.43                1.259
## 82                2.43                0.954
## 83                2.43                0.518
## 84                2.43                1.061
## 85                2.43                0.669
## 86                2.43                0.996
## 87                2.43                0.519
```

```
## 88                  2.43                      1.181
## 89                  2.43                      1.115
## 90                  2.43                      1.025
## 91                  2.43                      0.543
## 92                  2.43                      0.518
## 93                  2.43                      1.008
## 94                  2.43                      1.068
## 95                  2.43                      0.680
## 96                  2.43                      0.162
## 97                  2.43                      1.046
## 98                  2.43                      0.367
## 99                  2.43                      0.507
## 100                 2.43                      0.808
## 101                 2.43                      0.635
## 102                 2.43                      0.420
## 103                 2.43                      0.967
## 104                 2.43                      1.260
## 105                 2.43                      0.637
## 106                 2.43                      0.792
## 107                 2.43                      0.852
## 108                 2.43                      1.030
## 109                 2.43                      0.946
## 110                 2.43                      0.979
## 111                 2.43                      0.910
## 112                 2.43                      1.037
## 113                 2.43                      0.364
## 114                 2.43                      0.603
## 115                 2.43                      0.183
## 116                 2.43                      0.663
## 117                 2.43                      0.387
## 118                 2.43                      1.030
## 119                 2.43                      0.364
## 120                 2.43                      0.228
## 121                 2.43                      0.603
## 122                 2.43                      0.919
## 123                 2.43                      1.045
## 124                 2.43                      0.882
## 125                 2.43                      0.646
## 126                 2.43                      0.666
## 127                 2.43                      0.890
## 128                 2.43                      0.255
## 129                 2.43                      0.990
## 130                 2.43                      0.849
## 131                 2.43                      0.488
## 132                 2.43                      0.954
## 133                 2.43                      0.370
## 134                 2.43                      0.666
## 135                 2.43                      0.266
## 136                 2.43                      0.254
## 137                 2.43                      0.528
## 138                 2.43                      0.279
## 139                 2.43                      0.741
## 140                 2.43                      0.000
## 141                 2.43                      0.329
```

```
## 142                       2.43                            0.433
## 143                       2.43                            0.294
## 144                       2.43                            0.113
## 145                       2.43                            0.451
## 146                       2.43                            1.099
## 147                       2.43                            0.364
## 148                       2.43                            0.457
## 149                       2.43                            0.370
##      Explained.by..Social.support Explained.by..Healthy.life.expectancy
## 1                           1.106                                 0.741
## 2                           1.108                                 0.763
## 3                           1.079                                 0.816
## 4                           1.172                                 0.772
## 5                           1.079                                 0.753
## 6                           1.108                                 0.782
## 7                           1.062                                 0.763
## 8                           1.003                                 0.760
## 9                           1.094                                 0.785
## 10                          1.062                                 0.782
## 11                          1.076                                 0.801
## 12                          1.074                                 0.788
## 13                          0.993                                 0.757
## 14                          1.044                                 0.798
## 15                          1.092                                 0.753
## 16                          0.966                                 0.722
## 17                          1.062                                 0.757
## 18                          1.090                                 0.703
## 19                          1.030                                 0.621
## 20                          0.998                                 0.747
## 21                          1.081                                 0.804
## 22                          0.899                                 0.662
## 23                          1.055                                 0.747
## 24                          0.982                                 0.665
## 25                          0.860                                 0.594
## 26                          0.964                                 0.571
## 27                          1.057                                 0.826
## 28                          0.940                                 0.798
## 29                          1.093                                 0.722
## 30                          0.790                                 0.519
## 31                          1.042                                 0.649
## 32                          1.019                                 0.897
## 33                          0.807                                 0.483
## 34                          1.066                                 0.653
## 35                          0.944                                 0.571
## 36                          0.830                                 0.634
## 37                          0.932                                 0.599
## 38                          1.065                                 0.612
## 39                          0.765                                 0.801
## 40                          1.079                                 0.640
## 41                          0.976                                 0.667
## 42                          1.027                                 0.528
## 43                          0.946                                 0.678
## 44                          0.982                                 0.668
## 45                          1.103                                 0.527
```

```
## 46                   0.832                        0.595
## 47                   0.857                        0.580
## 48                   0.924                        0.634
## 49                   0.675                        0.565
## 50                   0.996                        0.574
## 51                   1.047                        0.587
## 52                   0.866                        0.615
## 53                   1.083                        0.615
## 54                   0.957                        0.596
## 55                   0.904                        0.604
## 56                   0.949                        0.838
## 57                   0.980                        0.646
## 58                   0.939                        0.760
## 59                   0.787                        0.593
## 60                   1.039                        0.703
## 61                   0.828                        0.426
## 62                   0.758                        0.801
## 63                   0.833                        0.623
## 64                   0.919                        0.618
## 65                   0.888                        0.542
## 66                   0.806                        0.640
## 67                   0.971                        0.501
## 68                   0.811                        0.760
## 69                   0.782                        0.486
## 70                   1.065                        0.442
## 71                   0.970                        0.549
## 72                   0.891                        0.637
## 73                   0.879                        0.555
## 74                   0.806                        0.801
## 75                   1.007                        0.560
## 76                   0.992                        0.511
## 77                   0.841                        0.893
## 78                   0.895                        0.498
## 79                   0.873                        0.616
## 80                   0.821                        0.435
## 81                   0.797                        0.587
## 82                   0.786                        0.433
## 83                   0.392                        0.307
## 84                   0.785                        0.665
## 85                   0.409                        0.052
## 86                   0.758                        0.585
## 87                   0.702                        0.496
## 88                   1.055                        0.583
## 89                   1.015                        0.697
## 90                   0.841                        0.541
## 91                   0.556                        0.159
## 92                   0.558                        0.357
## 93                   0.529                        0.646
## 94                   0.772                        0.535
## 95                   0.595                        0.287
## 96                   0.402                        0.167
## 97                   1.172                        0.439
## 98                   0.511                        0.210
## 99                   0.058                        0.196
```

```
## 100                          0.598                                0.330
## 101                          0.520                                0.514
## 102                          0.399                                0.206
## 103                          0.895                                0.265
## 104                          0.809                                0.590
## 105                          0.423                                0.322
## 106                          0.219                                0.558
## 107                          0.897                                0.574
## 108                          0.470                                0.498
## 109                          0.765                                0.552
## 110                          0.958                                0.517
## 111                          0.638                                0.381
## 112                          0.707                                0.362
## 113                          0.472                                0.179
## 114                          0.680                                0.426
## 115                          0.634                                0.196
## 116                          0.625                                0.051
## 117                          0.590                                0.110
## 118                          0.557                                0.561
## 119                          0.718                                0.240
## 120                          0.580                                0.253
## 121                          0.508                                0.385
## 122                          0.515                                0.590
## 123                          0.868                                0.595
## 124                          0.801                                0.262
## 125                          0.819                                0.434
## 126                          0.713                                0.341
## 127                          0.685                                0.583
## 128                          0.353                                0.000
## 129                          0.820                                0.593
## 130                          0.693                                0.074
## 131                          0.367                                0.279
## 132                          0.647                                0.426
## 133                          0.679                                0.331
## 134                          0.749                                0.273
## 135                          0.503                                0.341
## 136                          0.239                                0.203
## 137                          0.552                                0.231
## 138                          0.377                                0.100
## 139                          0.316                                0.383
## 140                          0.062                                0.155
## 141                          0.831                                0.272
## 142                          0.540                                0.300
## 143                          0.173                                0.227
## 144                          0.168                                0.298
## 145                          0.731                                0.007
## 146                          0.724                                0.340
## 147                          0.202                                0.407
## 148                          0.649                                0.243
## 149                          0.000                                0.126
##      Explained.by..Freedom.to.make.life.choices Explained.by..Generosity
## 1                                         0.691                    0.124
## 2                                         0.686                    0.208
## 3                                         0.653                    0.204
```

```
## 4                               0.698              0.293
## 5                               0.647              0.302
## 6                               0.703              0.249
## 7                               0.685              0.244
## 8                               0.639              0.166
## 9                               0.665              0.276
## 10                              0.640              0.215
## 11                              0.647              0.291
## 12                              0.509              0.208
## 13                              0.600              0.195
## 14                              0.648              0.246
## 15                              0.606              0.238
## 16                              0.673              0.105
## 17                              0.580              0.340
## 18                              0.580              0.052
## 19                              0.554              0.252
## 20                              0.489              0.088
## 21                              0.536              0.092
## 22                              0.661              0.246
## 23                              0.664              0.275
## 24                              0.490              0.142
## 25                              0.670              0.236
## 26                              0.603              0.090
## 27                              0.462              0.135
## 28                              0.379              0.133
## 29                              0.690              0.122
## 30                              0.638              0.163
## 31                              0.625              0.128
## 32                              0.664              0.176
## 33                              0.593              0.356
## 34                              0.468              0.107
## 35                              0.514              0.142
## 36                              0.585              0.092
## 37                              0.618              0.099
## 38                              0.476              0.056
## 39                              0.464              0.178
## 40                              0.641              0.119
## 41                              0.596              0.079
## 42                              0.716              0.391
## 43                              0.438              0.159
## 44                              0.558              0.080
## 45                              0.573              0.143
## 46                              0.564              0.045
## 47                              0.591              0.120
## 48                              0.482              0.189
## 49                              0.615              0.116
## 50                              0.590              0.153
## 51                              0.405              0.082
## 52                              0.554              0.100
## 53                              0.454              0.067
## 54                              0.611              0.375
## 55                              0.553              0.201
## 56                              0.504              0.020
## 57                              0.544              0.069
```

```
## 58                          0.621              0.029
## 59                          0.578              0.241
## 60                          0.453              0.111
## 61                          0.651              0.125
## 62                          0.353              0.134
## 63                          0.536              0.087
## 64                          0.395              0.261
## 65                          0.536              0.137
## 66                          0.560              0.107
## 67                          0.673              0.266
## 68                          0.243              0.000
## 69                          0.600              0.138
## 70                          0.397              0.263
## 71                          0.602              0.206
## 72                          0.397              0.166
## 73                          0.581              0.101
## 74                          0.503              0.196
## 75                          0.326              0.070
## 76                          0.409              0.115
## 77                          0.408              0.232
## 78                          0.548              0.152
## 79                          0.679              0.124
## 80                          0.474              0.131
## 81                          0.624              0.270
## 82                          0.598              0.541
## 83                          0.381              0.144
## 84                          0.636              0.093
## 85                          0.438              0.177
## 86                          0.540              0.079
## 87                          0.488              0.287
## 88                          0.494              0.125
## 89                          0.575              0.204
## 90                          0.526              0.043
## 91                          0.425              0.205
## 92                          0.381              0.158
## 93                          0.491              0.168
## 94                          0.450              0.212
## 95                          0.517              0.268
## 96                          0.516              0.200
## 97                          0.602              0.366
## 98                          0.384              0.465
## 99                          0.457              0.166
## 100                         0.643              0.268
## 101                         0.603              0.161
## 102                         0.384              0.250
## 103                         0.447              0.144
## 104                         0.236              0.097
## 105                         0.418              0.252
## 106                         0.477              0.034
## 107                         0.284              0.078
## 108                         0.488              0.032
## 109                         0.119              0.144
## 110                         0.417              0.181
## 111                         0.302              0.153
```

```
## 112                                  0.424                  0.058
## 113                                  0.381                  0.182
## 114                                  0.702                  0.210
## 115                                  0.608                  0.228
## 116                                  0.433                  0.212
## 117                                  0.384                  0.164
## 118                                  0.275                  0.330
## 119                                  0.398                  0.267
## 120                                  0.430                  0.221
## 121                                  0.483                  0.375
## 122                                  0.334                  0.057
## 123                                  0.175                  0.140
## 124                                  0.411                  0.091
## 125                                  0.330                  0.082
## 126                                  0.601                  0.520
## 127                                  0.455                  0.079
## 128                                  0.240                  0.215
## 129                                  0.559                  0.239
## 130                                  0.323                  0.067
## 131                                  0.202                  0.241
## 132                                  0.446                  0.069
## 133                                  0.451                  0.241
## 134                                  0.218                  0.119
## 135                                  0.207                  0.185
## 136                                  0.289                  0.209
## 137                                  0.487                  0.227
## 138                                  0.408                  0.243
## 139                                  0.622                  0.246
## 140                                  0.298                  0.172
## 141                                  0.268                  0.092
## 142                                  0.549                  0.307
## 143                                  0.257                  0.463
## 144                                  0.484                  0.213
## 145                                  0.405                  0.103
## 146                                  0.539                  0.027
## 147                                  0.627                  0.227
## 148                                  0.359                  0.157
## 149                                  0.000                  0.122
##      Explained.by..Perceptions.of.corruption Dystopia...residual
## 1                                      0.481                3.253
## 2                                      0.485                2.868
## 3                                      0.413                2.839
## 4                                      0.170                2.967
## 5                                      0.384                2.798
## 6                                      0.427                2.580
## 7                                      0.448                2.683
## 8                                      0.353                2.653
## 9                                      0.445                2.612
## 10                                     0.292                2.784
## 11                                     0.317                2.598
## 12                                     0.119                3.083
## 13                                     0.306                2.824
## 14                                     0.335                2.585
## 15                                     0.367                2.384
```

```
## 16                          0.083              3.387
## 17                          0.306              2.596
## 18                          0.046              3.124
## 19                          0.154              2.807
## 20                          0.187              2.862
## 21                          0.235              2.521
## 22                          0.139              2.631
## 23                          0.183              2.268
## 24                          0.139              2.687
## 25                          0.223              2.422
## 26                          0.163              2.668
## 27                          0.124              2.513
## 28                          0.047              2.794
## 29                          0.085              2.388
## 30                          0.105              3.375
## 31                          0.223              2.600
## 32                          0.547              1.379
## 33                          0.014              3.182
## 34                          0.018              2.714
## 35                          0.117              3.015
## 36                          0.089              2.961
## 37                          0.035              3.135
## 38                          0.073              2.624
## 39                          0.061              2.578
## 40                          0.263              2.103
## 41                          0.053              2.509
## 42                          0.271              2.477
## 43                          0.070              2.682
## 44                          0.130              2.438
## 45                          0.132              2.446
## 46                          0.001              2.830
## 47                          0.130              2.368
## 48                          0.066              2.682
## 49                          0.160              3.085
## 50                          0.096              2.462
## 51                          0.089              2.536
## 52                          0.063              2.794
## 53                          0.040              2.432
## 54                          0.028              2.309
## 55                          0.176              2.841
## 56                          0.192              2.048
## 57                          0.067              2.461
## 58                          0.033              2.225
## 59                          0.083              2.934
## 60                          0.000              2.325
## 61                          0.126              2.872
## 62                          0.135              2.262
## 63                          0.031              2.744
## 64                          0.005              2.583
## 65                          0.013              2.665
## 66                          0.062              2.653
## 67                          0.020              2.648
## 68                          0.074              2.561
## 69                          0.064              2.805
```

```
## 70                         0.053           2.492
## 71                         0.037           2.306
## 72                         0.081           2.254
## 73                         0.144           2.178
## 74                         0.200           1.653
## 75                         0.199           2.247
## 76                         0.060           2.148
## 77                         0.342           1.236
## 78                         0.247           2.619
## 79                         0.091           2.211
## 80                         0.174           2.331
## 81                         0.064           1.784
## 82                         0.046           1.987
## 83                         0.124           3.476
## 84                         0.117           1.982
## 85                         0.092           3.469
## 86                         0.198           2.127
## 87                         0.135           2.642
## 88                         0.005           1.823
## 89                         0.073           1.520
## 90                         0.276           1.919
## 91                         0.058           3.195
## 92                         0.088           3.071
## 93                         0.024           2.250
## 94                         0.022           2.042
## 95                         0.058           2.684
## 96                         0.157           3.470
## 97                         0.033           1.409
## 98                         0.123           2.990
## 99                         0.178           3.482
## 100                        0.179           2.204
## 101                        0.164           2.427
## 102                        0.111           3.216
## 103                        0.051           2.187
## 104                        0.104           1.852
## 105                        0.097           2.784
## 106                        0.088           2.749
## 107                        0.072           2.135
## 108                        0.181           2.191
## 109                        0.120           2.242
## 110                        0.010           1.813
## 111                        0.041           2.429
## 112                        0.064           2.201
## 113                        0.122           3.133
## 114                        0.061           2.148
## 115                        0.163           2.783
## 116                        0.039           2.736
## 117                        0.072           3.016
## 118                        0.144           1.823
## 119                        0.054           2.596
## 120                        0.057           2.857
## 121                        0.073           2.180
## 122                        0.044           2.138
## 123                        0.026           1.736
```

```
## 124                                              0.059            2.068
## 125                                              0.075            2.131
## 126                                              0.178            1.407
## 127                                              0.150            1.553
## 128                                              0.084            3.209
## 129                                              0.049            1.075
## 130                                              0.147            2.155
## 131                                              0.101            2.610
## 132                                              0.092            1.648
## 133                                              0.114            2.089
## 134                                              0.133            2.069
## 135                                              0.087            2.620
## 136                                              0.107            2.806
## 137                                              0.074            1.975
## 138                                              0.047            2.396
## 139                                              0.106            1.405
## 140                                              0.212            2.876
## 141                                              0.089            1.776
## 142                                              0.231            1.263
## 143                                              0.139            2.060
## 144                                              0.134            2.190
## 145                                              0.015            1.800
## 146                                              0.088            0.648
## 147                                              0.493            1.095
## 148                                              0.075            1.205
## 149                                              0.010            1.895
```

```
colnames(data)
```

```
##  [1] "Country.name"
##  [2] "Regional.indicator"
##  [3] "Ladder.score"
##  [4] "Standard.error.of.ladder.score"
##  [5] "upperwhisker"
##  [6] "lowerwhisker"
##  [7] "Logged.GDP.per.capita"
##  [8] "Social.support"
##  [9] "Healthy.life.expectancy"
## [10] "Freedom.to.make.life.choices"
## [11] "Generosity"
## [12] "Perceptions.of.corruption"
## [13] "Ladder.score.in.Dystopia"
## [14] "Explained.by..Log.GDP.per.capita"
## [15] "Explained.by..Social.support"
## [16] "Explained.by..Healthy.life.expectancy"
## [17] "Explained.by..Freedom.to.make.life.choices"
## [18] "Explained.by..Generosity"
## [19] "Explained.by..Perceptions.of.corruption"
## [20] "Dystopia...residual"
```

scatter plot plotted for n_student in x axis and pretest in y axis

```
library(ggplot2)
plot(data$Ladder.score,data$lowerwhisker)
```
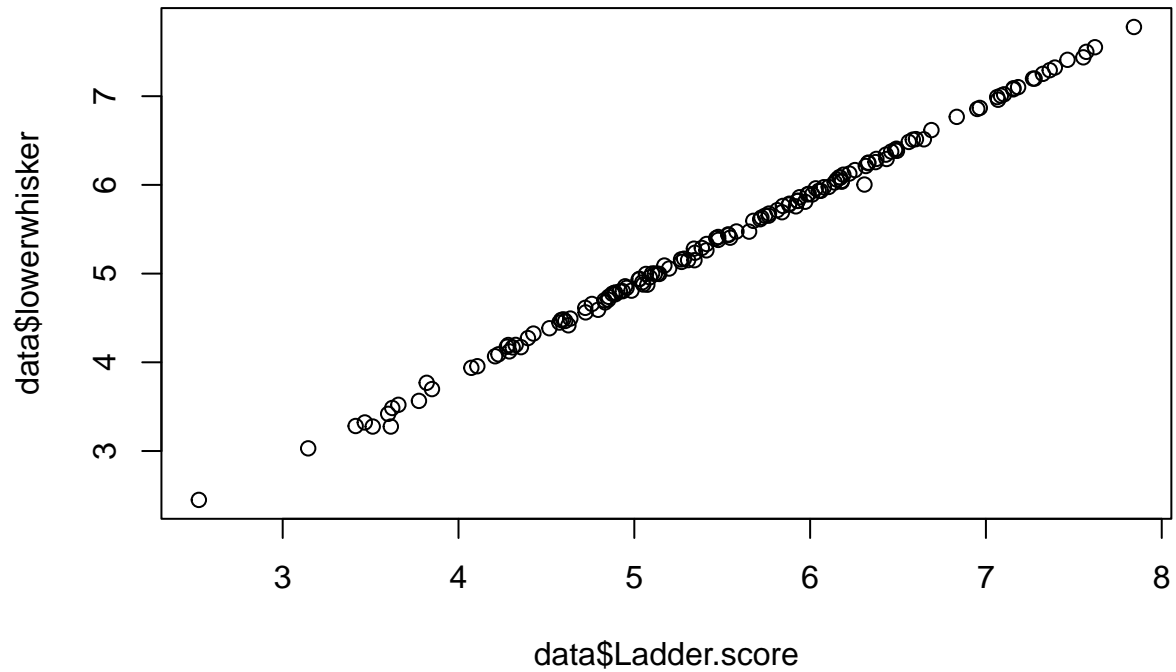

Visualizing the scatter plot using ggplot() function

```
ggplot(data,aes(x=Ladder.score,y=upperwhisker))+geom_point()
```
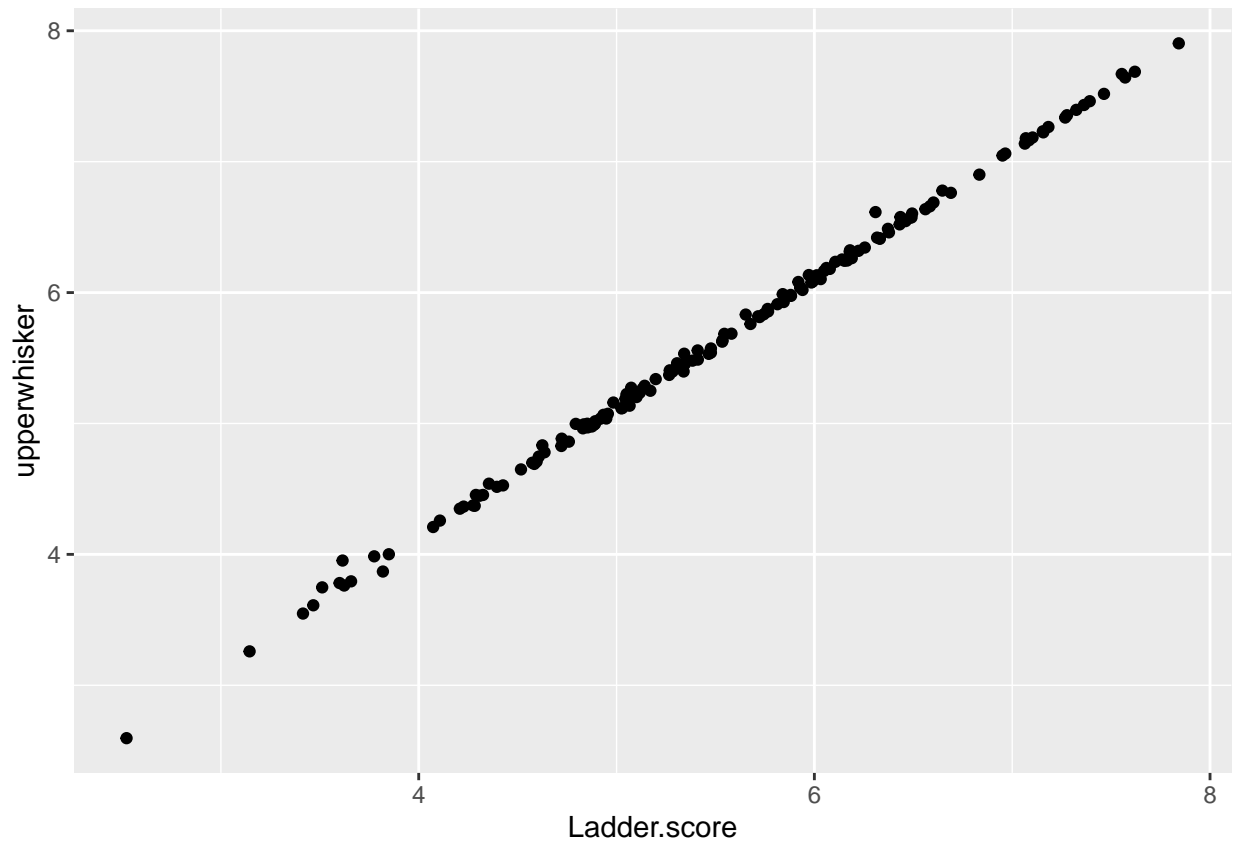
Visualizing the scatter plot using ggplot() function when x and y values are vectors

```
ggplot(NULL,aes(x=data$Ladder.score,y=data$Social.support))+geom_point()
```
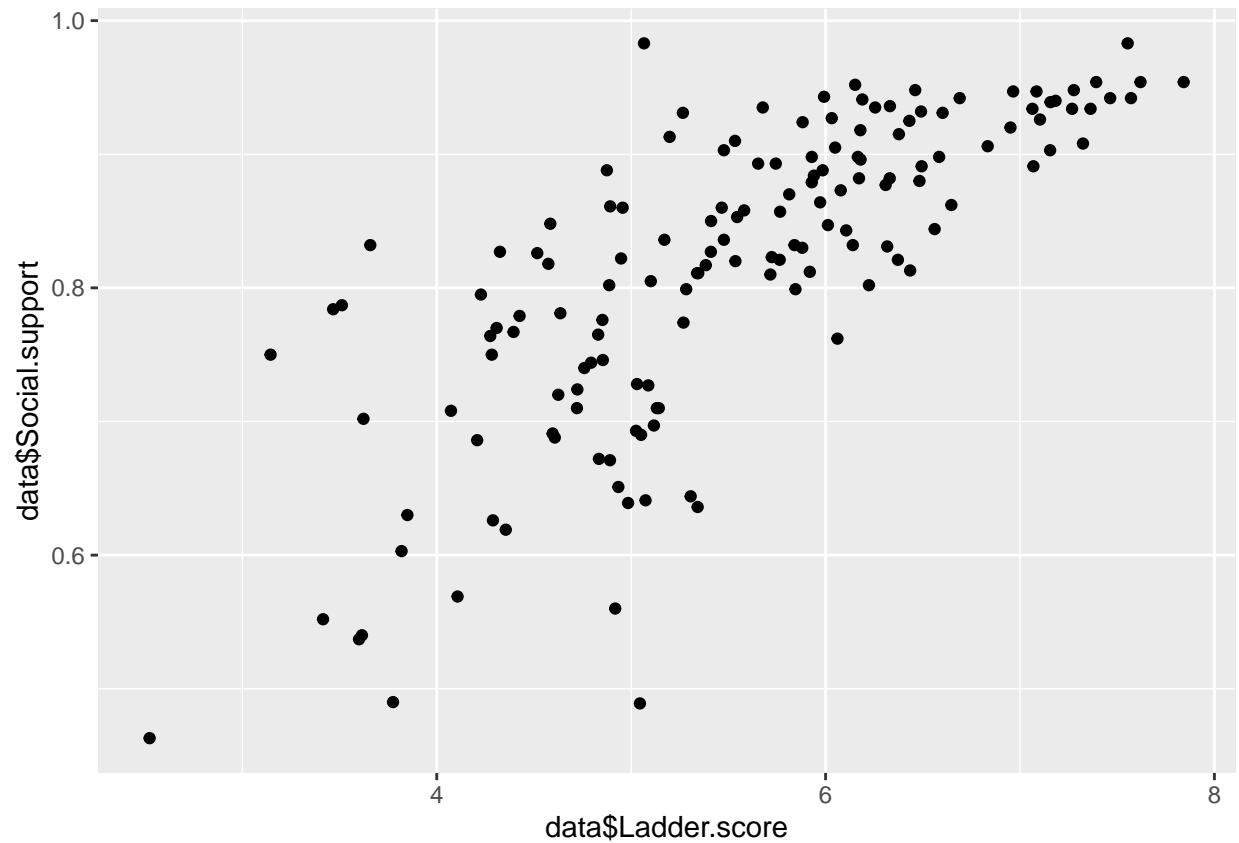
Visualizing the line graph using plot function by passing x and y parameters

```
plot(data$Ladder.score,data$Social.support,type="l");
```
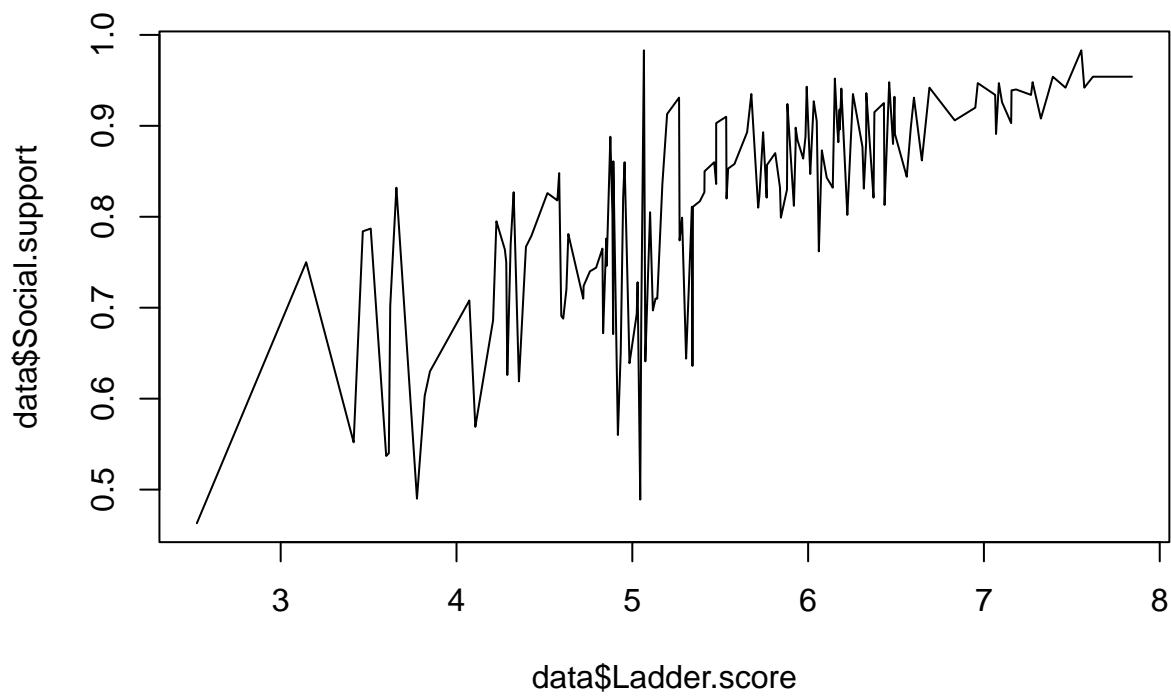
Visualizing the line graph using the ggplot() function

```
ggplot(data,aes(x=lowerwhisker,y=upperwhisker)) + geom_line()
```
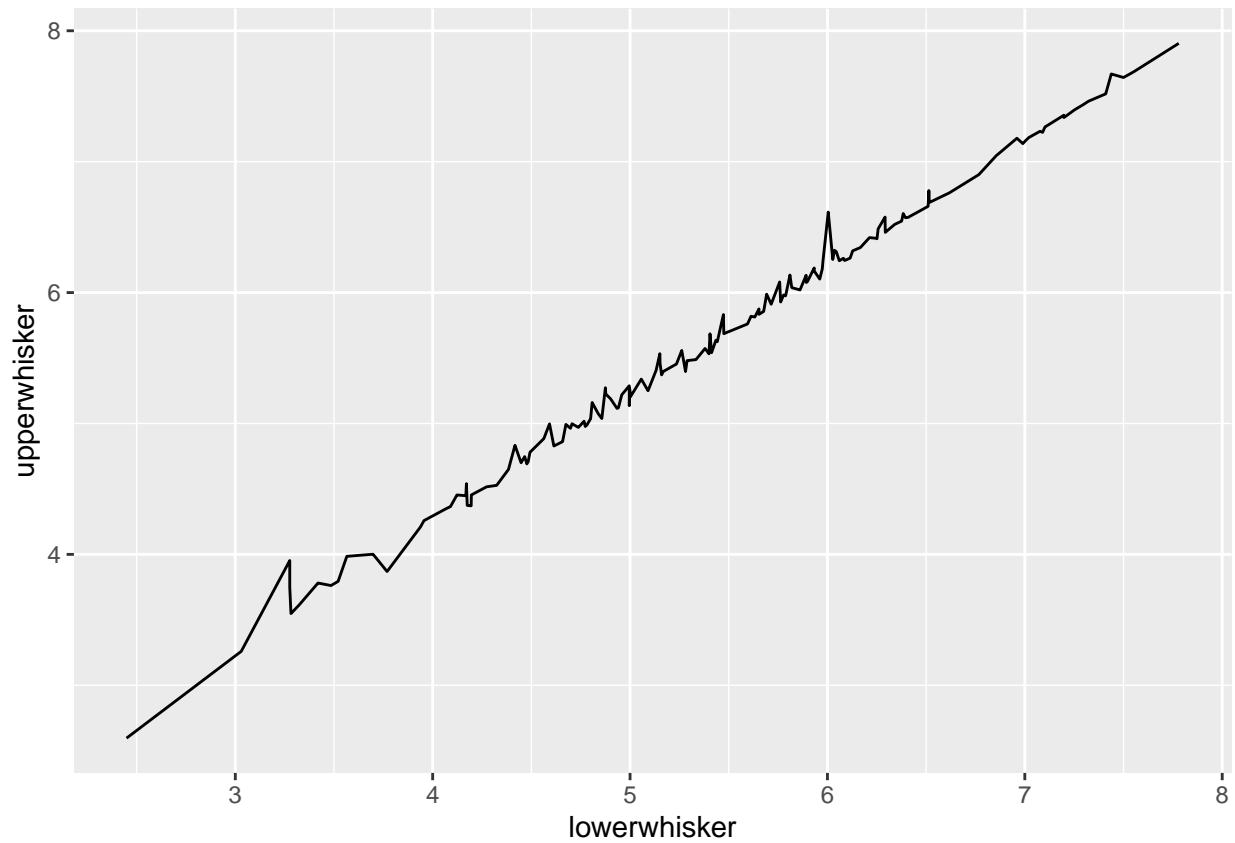
Visualizing the line graph using geom_line() function and plotting the points on top of it

```
ggplot(data,aes(x=upperwhisker,y=lowerwhisker)) + geom_line()+geom_point()
```
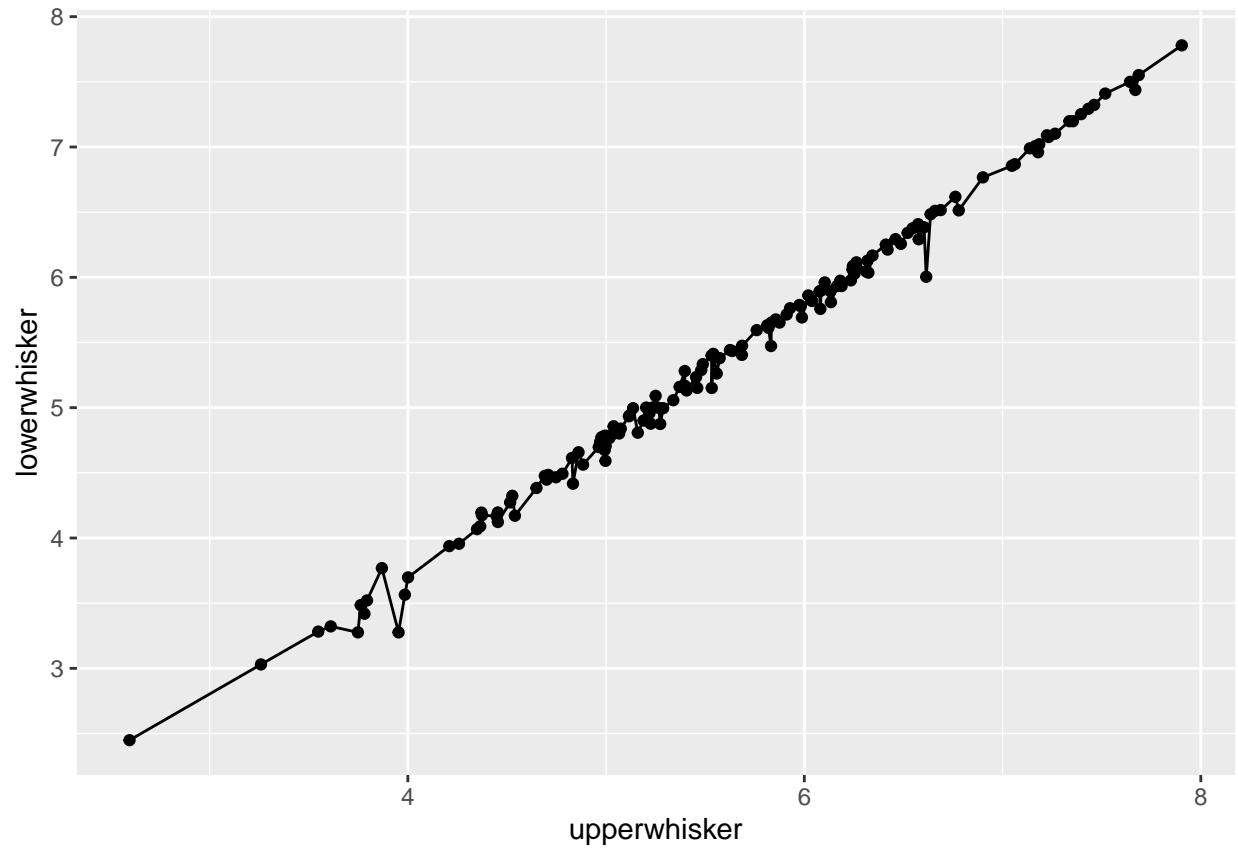
Visualizing the bar graph by plotting x and y axis using barplot function

```
barplot(data$Ladder.score,names.arg=data$lowerwhisker)
```
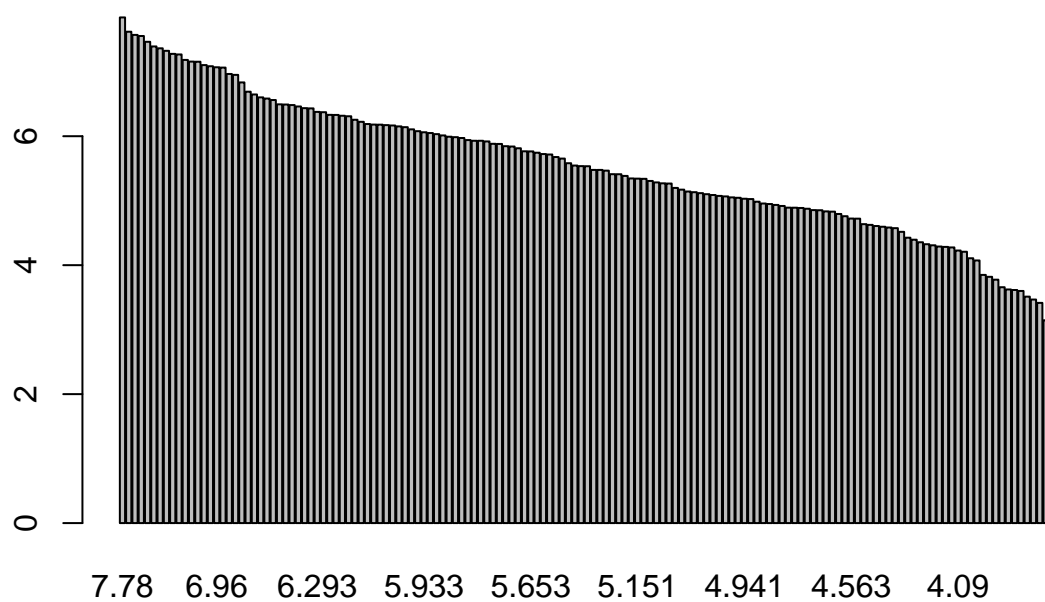
Visualizing the bargraph using ggplot() function

```
ggplot(data,aes(x=lowerwhisker,y=upperwhisker))+geom_col()
```
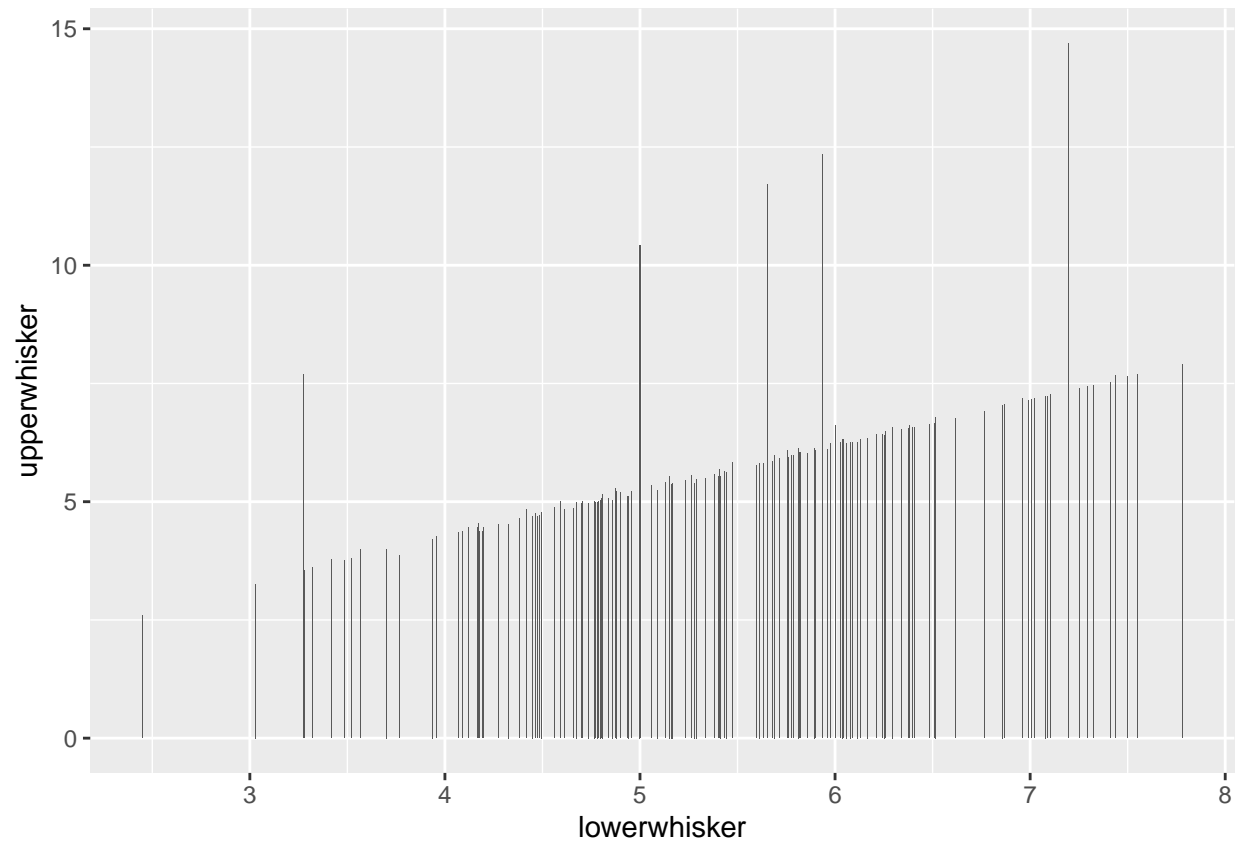
Visualizing the bargraph using ggplot() function using geom_bar() function

```
ggplot(data,aes(x=lowerwhisker))+geom_bar()
```
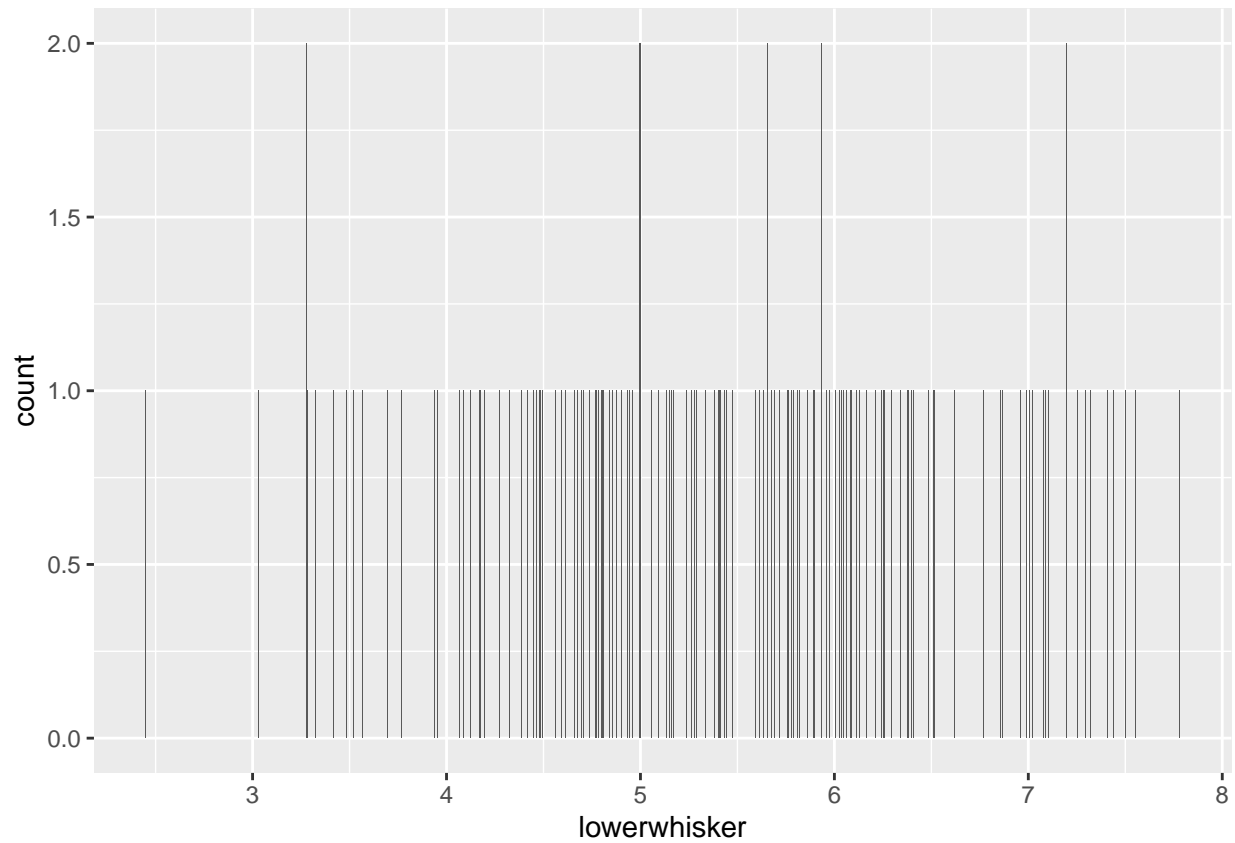
Visualizing the histograms using the hist() function

```
hist(data$Ladder.score,breaks=10)
```

Histogram of data$Ladder.score

Frequency
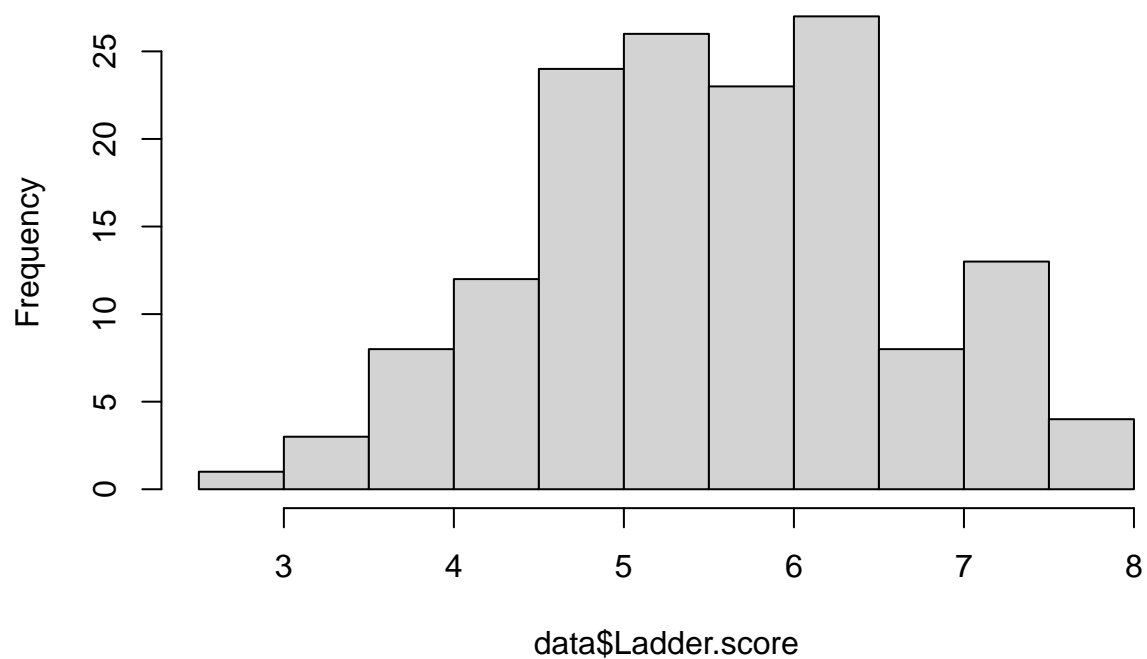
data$Ladder.score

Visualizing the histograms using the ggplot() function

```
ggplot(data,aes(x=Ladder.score)) + geom_histogram(binwidth = 4)
```
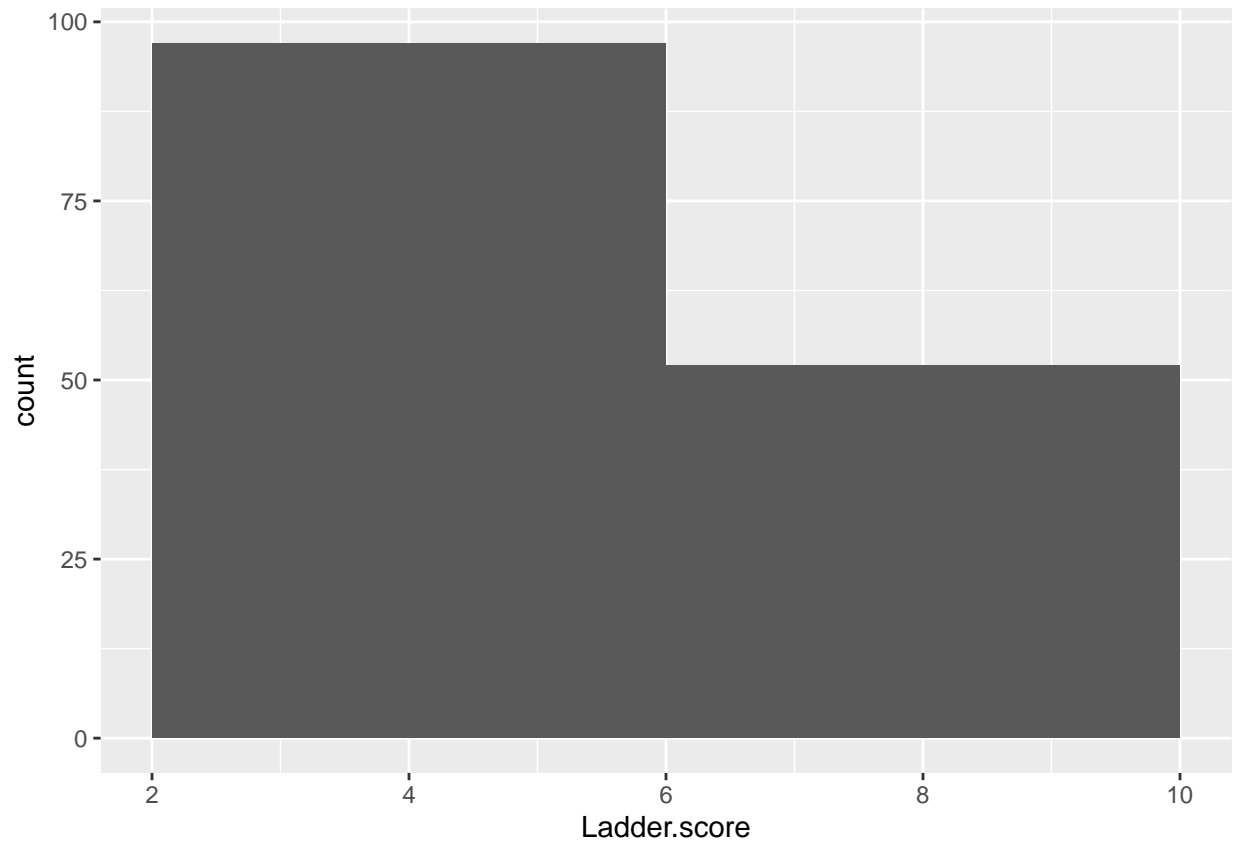
Visualizing the bargraph using ggplot() function and it fills the light blue colour to the bars and the border lines of the bar will be black

```
ggplot(data,aes(x=Ladder.score,y=data$lowerwhisker)) + geom_col(fill="lightblue",colour="black")
```

```
## Warning: Use of 'data$lowerwhisker' is discouraged. Use 'lowerwhisker' instead.
```
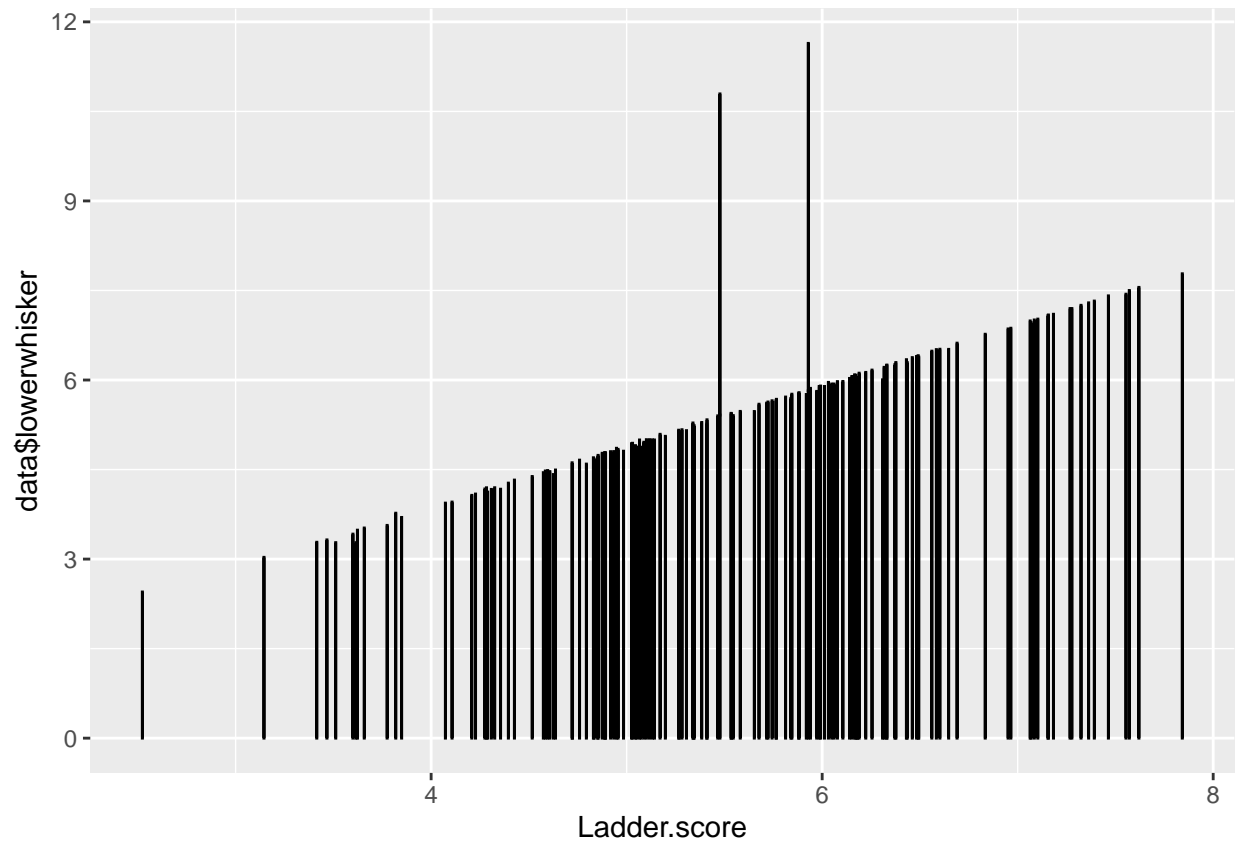
Visualizing the bargraph and mapping the posttest coloumn to the fill colour

```
ggplot(data,aes(x=Ladder.score,y=lowerwhisker,fill=upperwhisker))+geom_col(position="dodge")
```
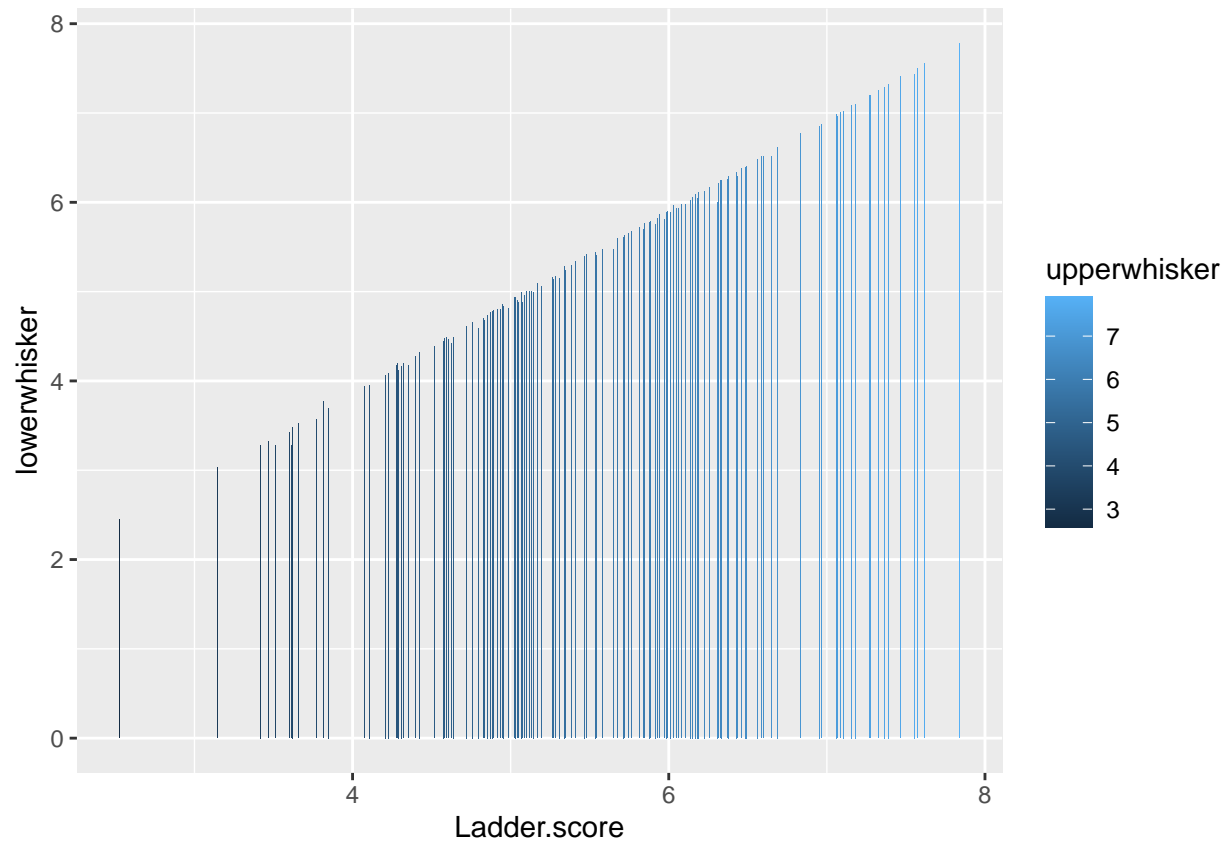
Bar of points

```
ggplot(data,aes(x=Ladder.score))+geom_bar()
```
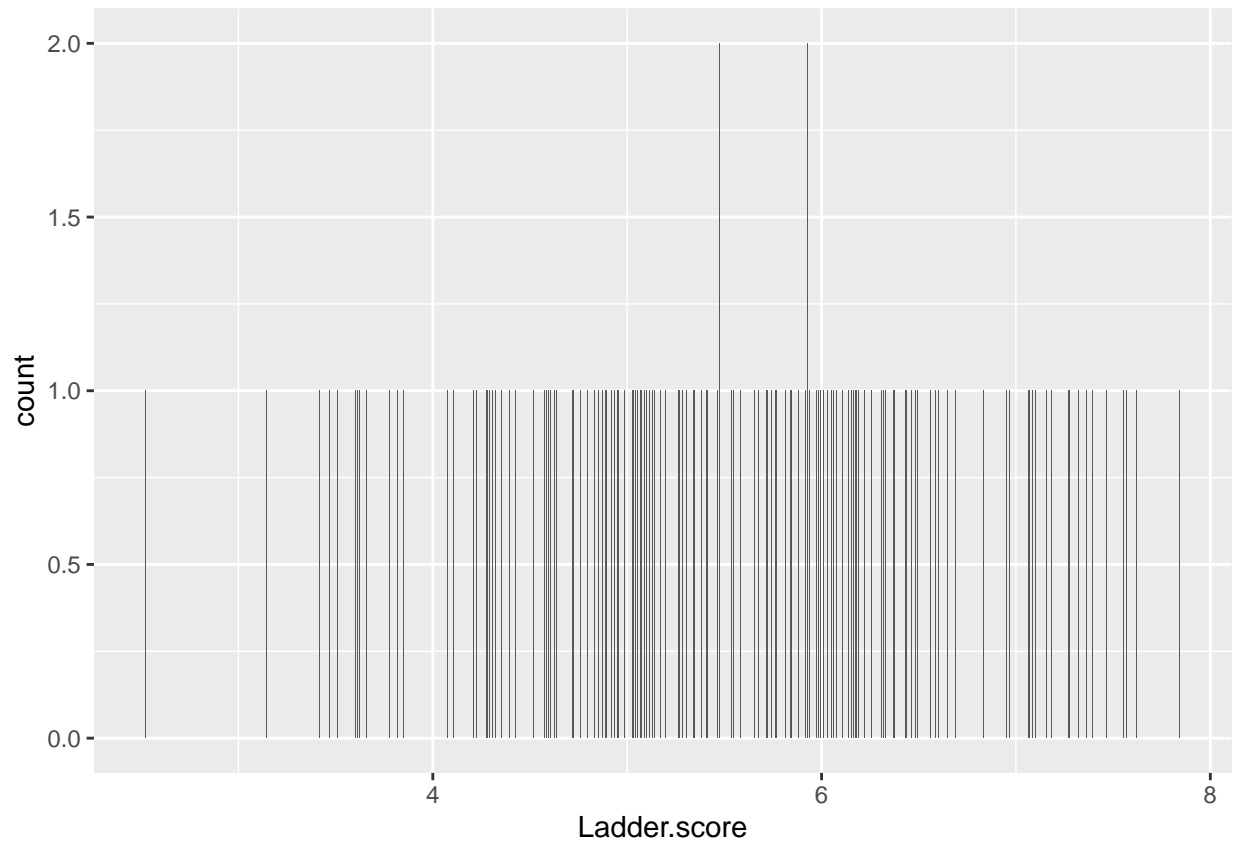
Creating a boxplot using boxplot() function

```
plot(data$Ladder.score, data$lowerwhisker)
```
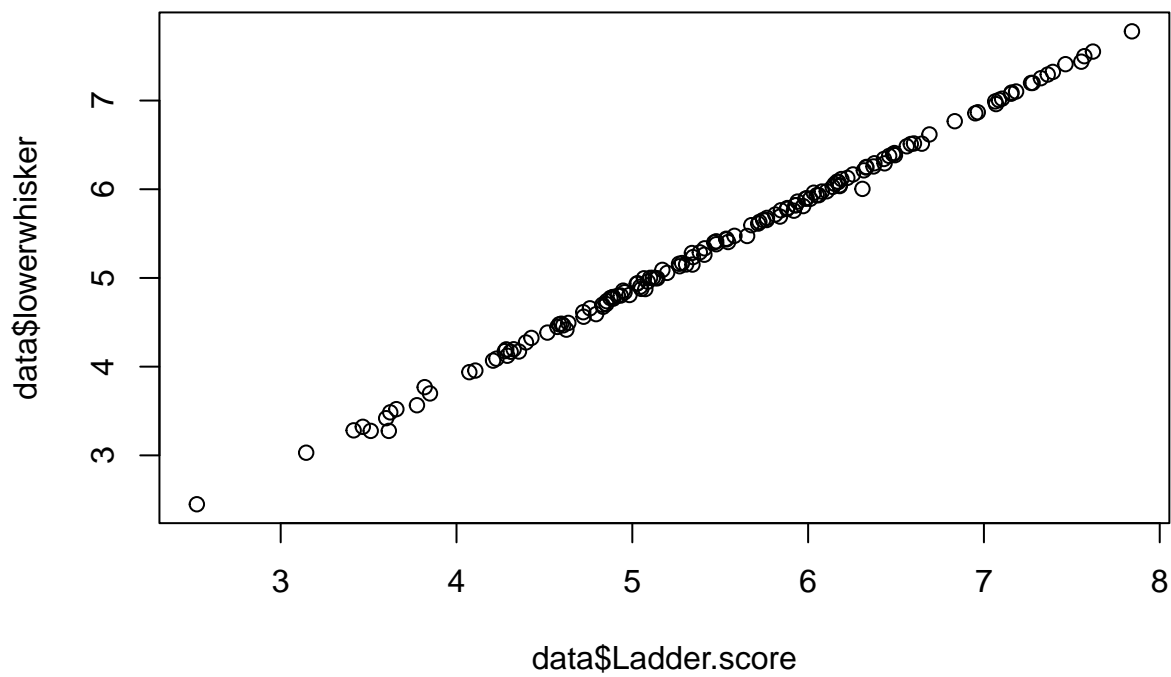
Put interaction of two variables on x-axis

```
boxplot(Ladder.score ~  + lowerwhisker, data = data)
```
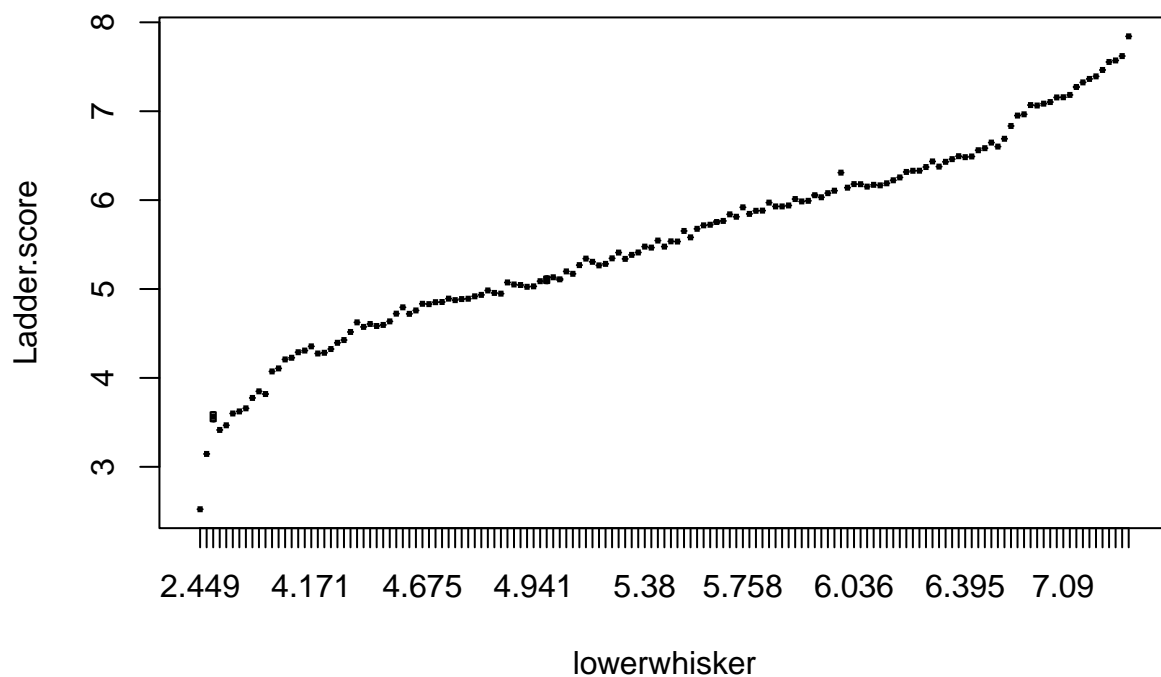
Visualization of boxplot using the ggplot() function

```
ggplot(data, aes(x = upperwhisker, y = Ladder.score)) + geom_boxplot()
```

```
## Warning: Continuous x aesthetic -- did you forget aes(group=...)?
```
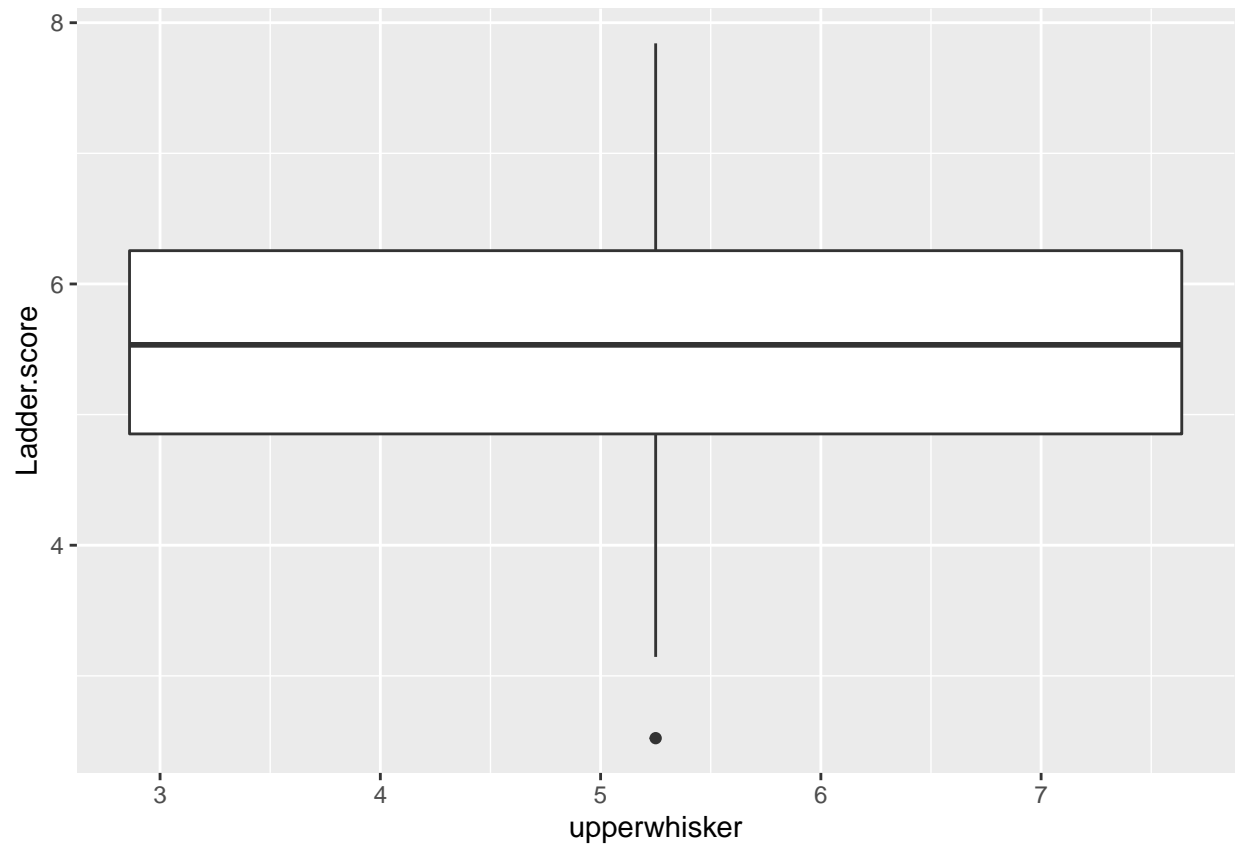
Make box plots for multiple variables, by combining the variables with interaction(),

```
ggplot(data, aes(x = interaction(lowerwhisker, Ladder.score), y = upperwhisker)) + geom_boxplot()
```
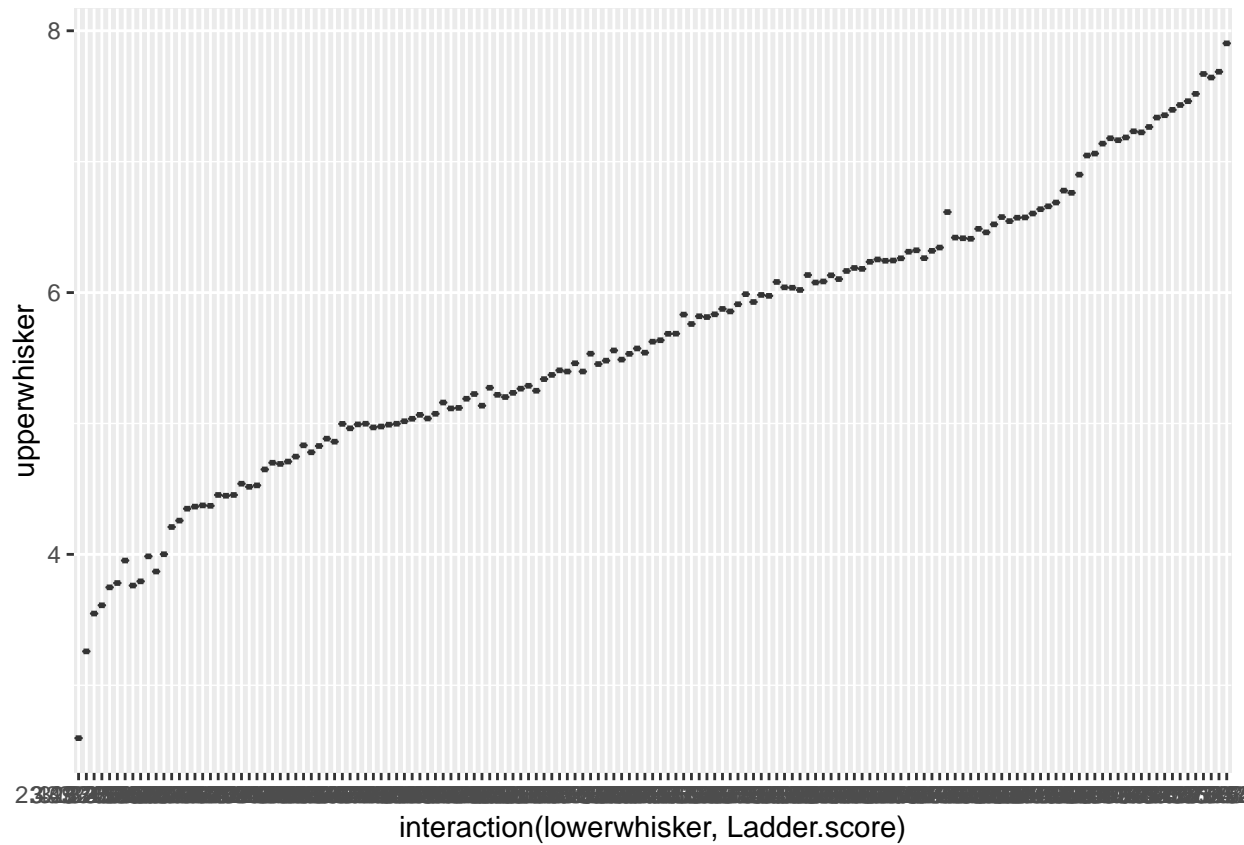
When the x variable is a factor, you must also use aes(group=1) to ensure that ggplot knows that the data points belong together and should be connected with a line

```
ggplot(data, aes(x = upperwhisker, y = lowerwhisker, group = 1)) + geom_line()
```
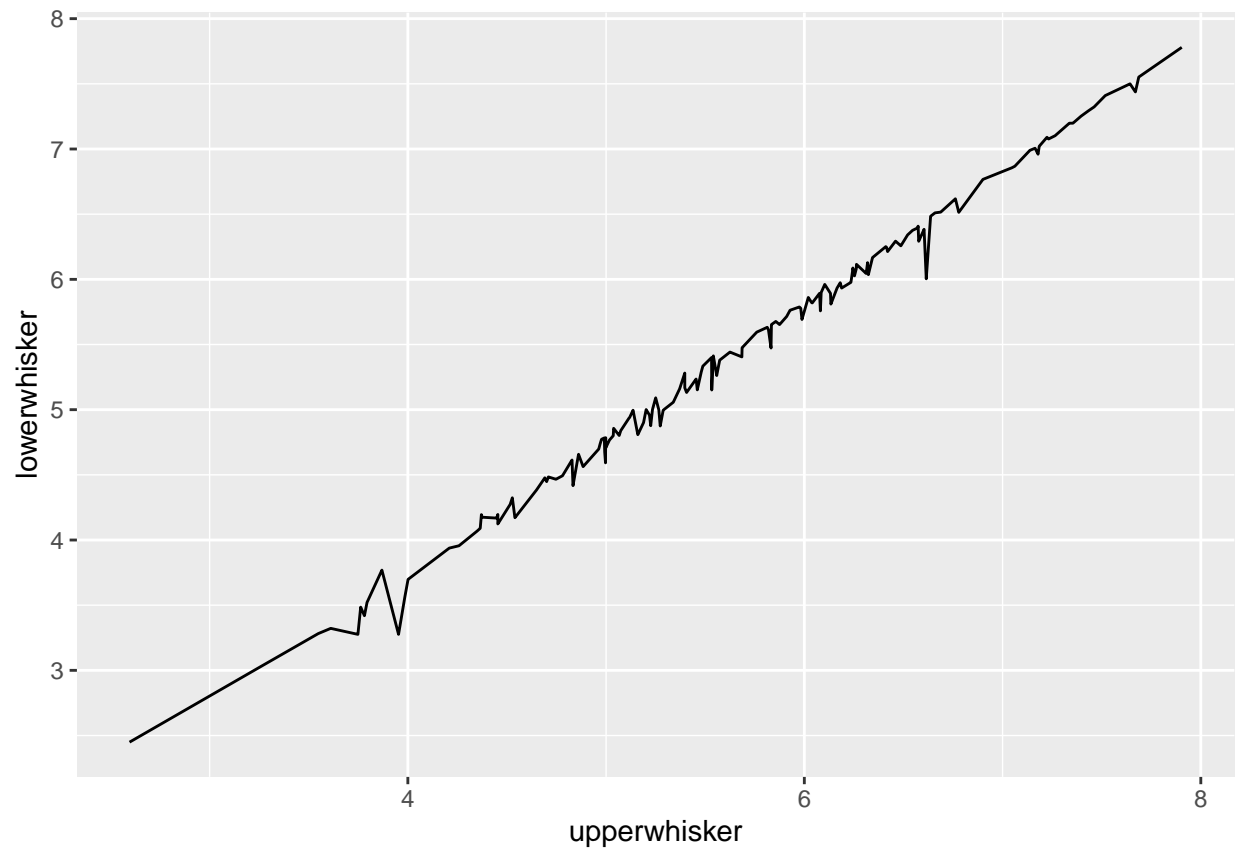
Variables mapped to the x- and y-axes, map another (discrete) vari- able to colour or linetype

```
ggplot(data, aes(x = upperwhisker, y = lowerwhisker, colour = "red")) + geom_line()
```
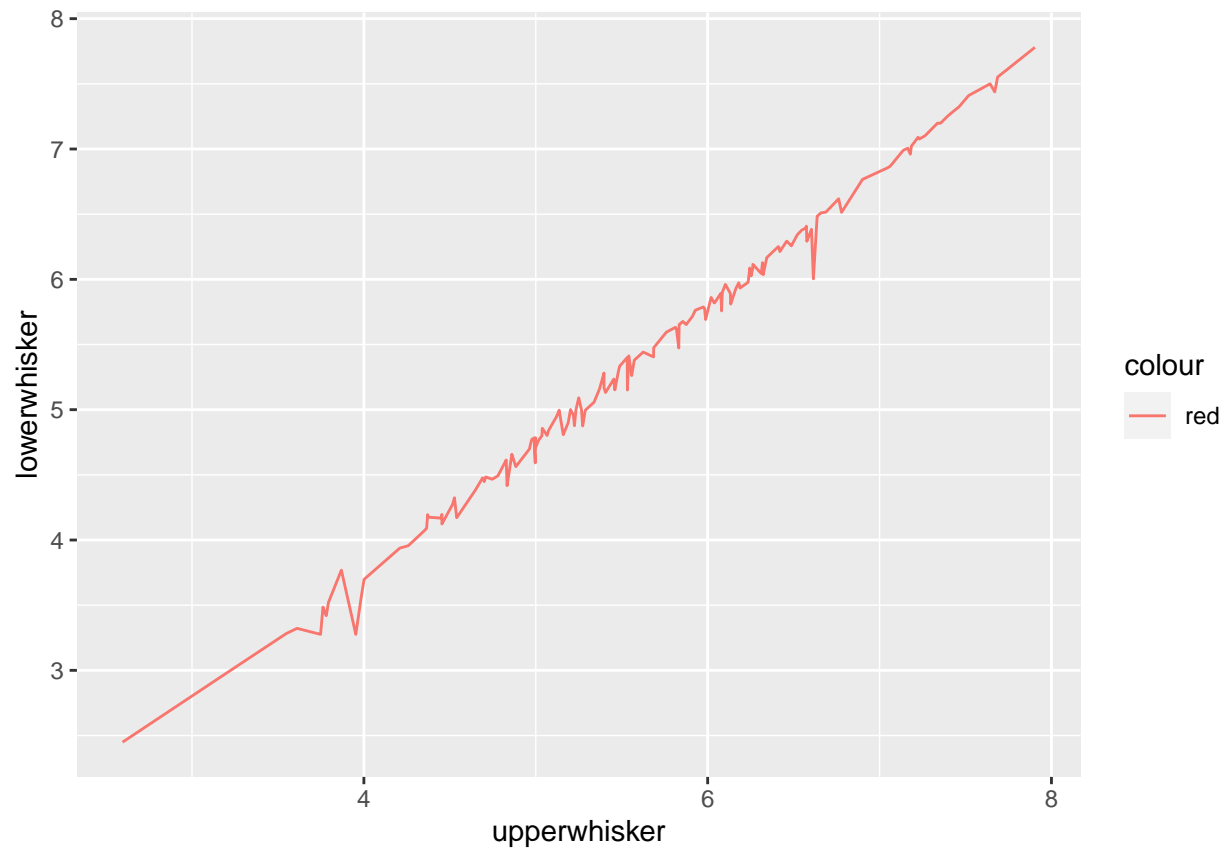
Changing the appearnce of the lines

```
ggplot(data, aes(x = lowerwhisker, y = upperwhisker)) +
 geom_line(linetype = "dashed", size = 1, colour = "blue")
```
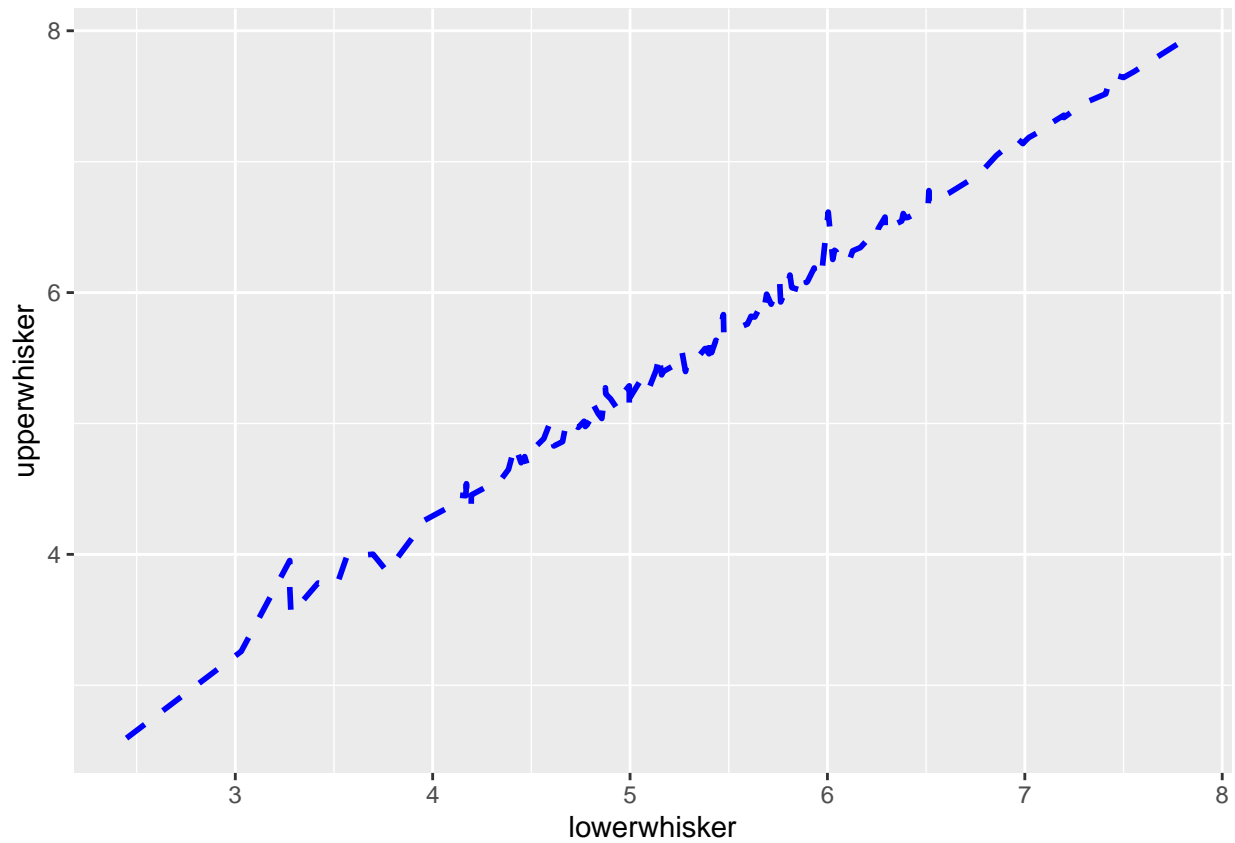
In geom_point(), set the size, shape, colour, and/or fill outside of aes() (the result is shown

```
ggplot(data, aes(x = upperwhisker, y = lowerwhisker)) + geom_line() +
 geom_point(size = 4, shape = 22, colour = "darkred", fill = "pink")
```
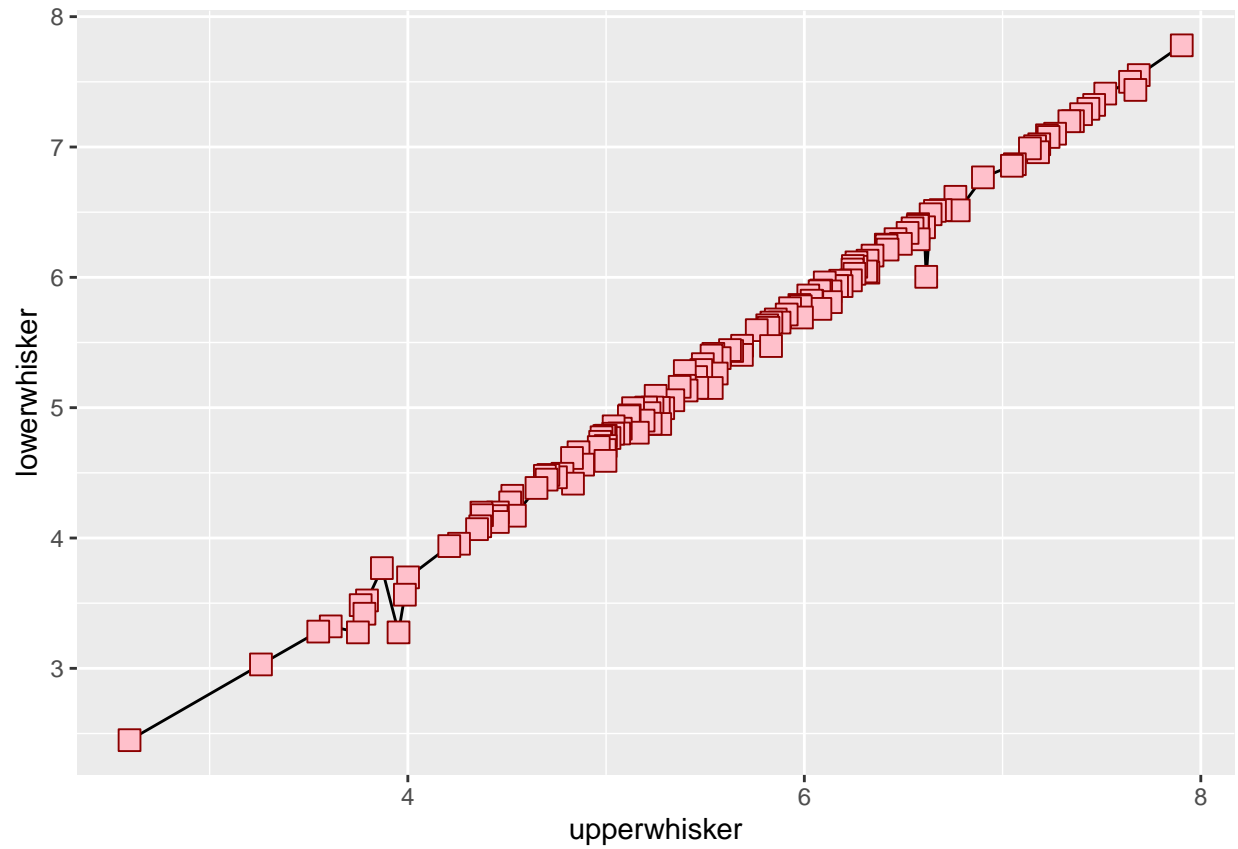
Visualizing the density curve using geom_density() fucntion and map a continuous variable n_student to x

```
ggplot(data, aes(x = lowerwhisker)) +
 geom_density()
```
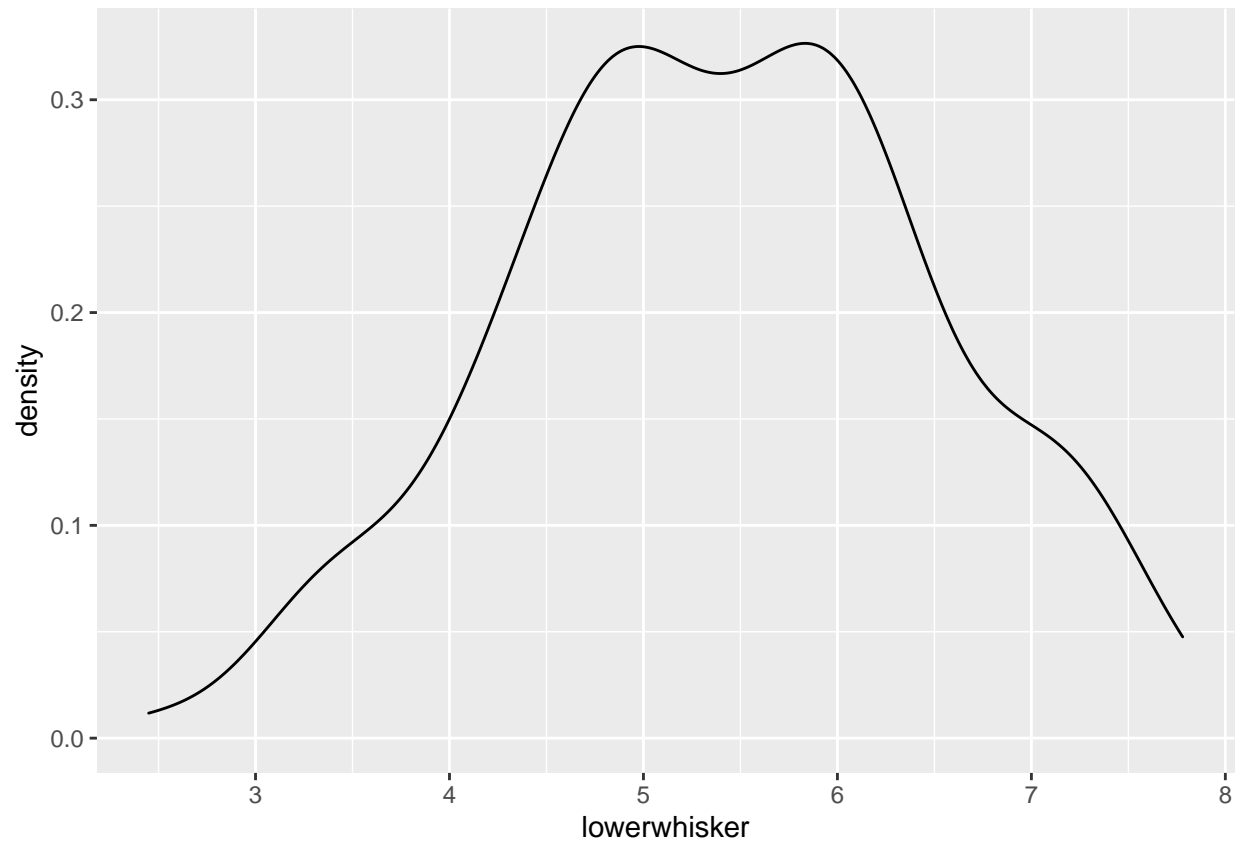
It removes the lines along the bottom and side and using expand_limits() increases the y range to include the value 0

```
ggplot(data, aes(x =Ladder.score)) + geom_line(stat = "density") +
 expand_limits(y = 0)
```
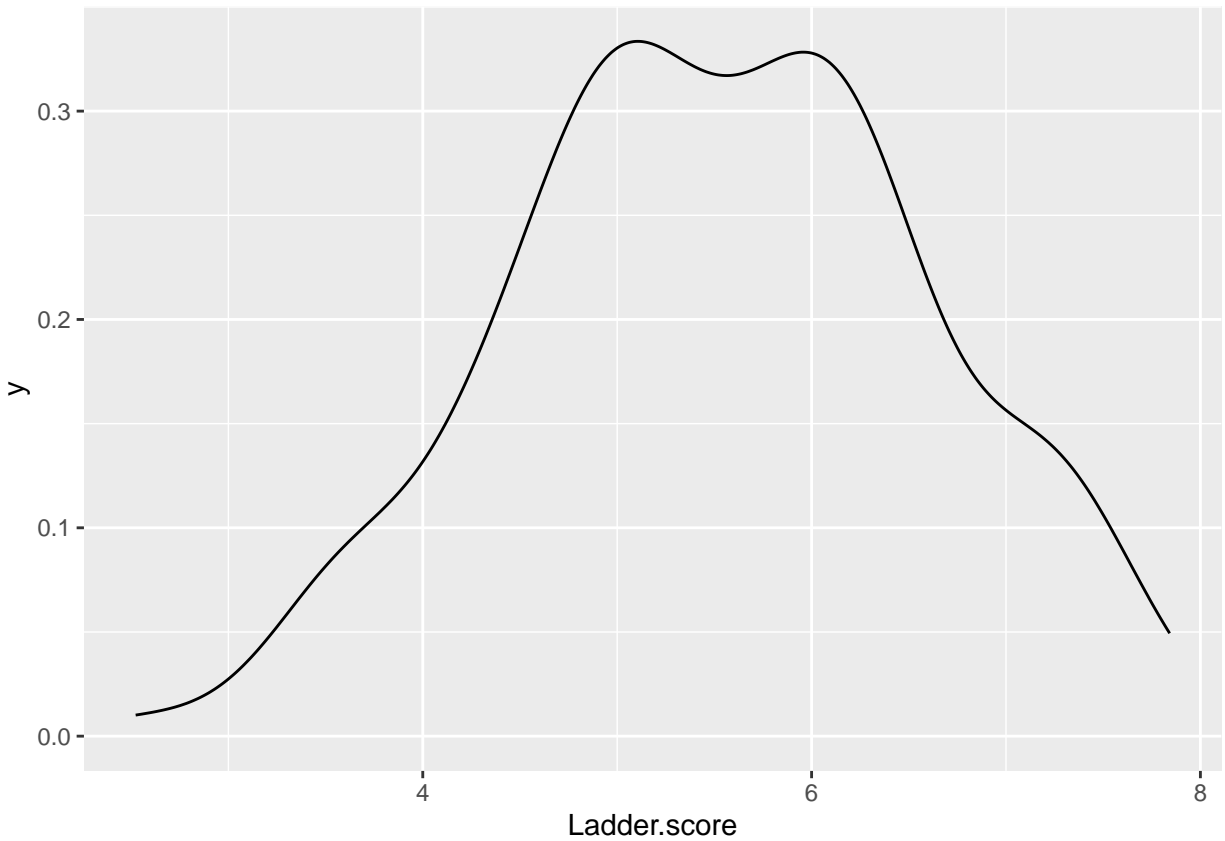
Visualizing the density curve using the geom_line function and using a adjust parameter which is used to get the extent to which the density curve should be smoother

```
ggplot(data, aes(x = lowerwhisker)) +
 geom_line(stat = "density") +
 geom_line(stat = "density", adjust = .25, colour = "red") +
 geom_line(stat = "density", adjust = 2, colour = "blue")
```
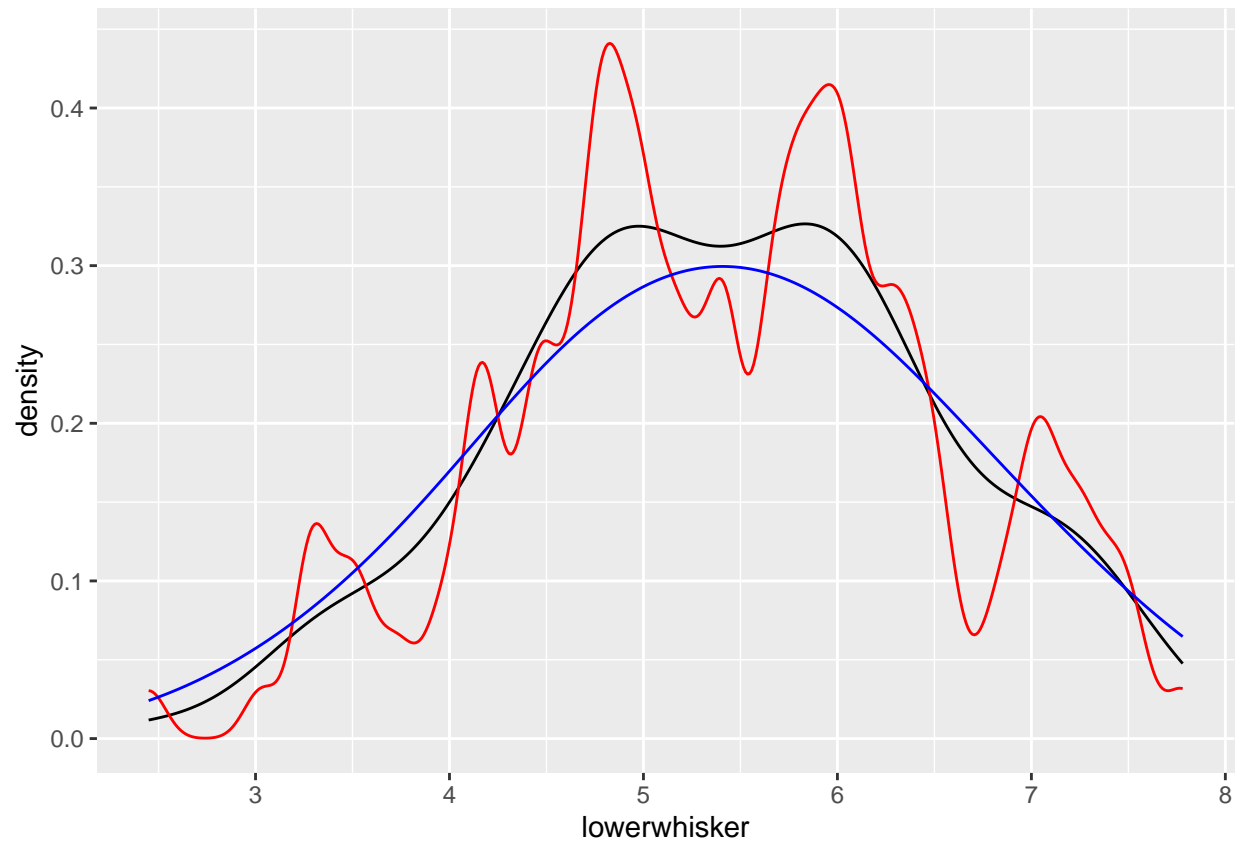
Visualizing the frequency polygon

```
ggplot(data, aes(x=Ladder.score)) +  geom_freqpoly()
```

```
## `stat_bin()` using `bins = 30`. Pick better value with `binwidth`.
```
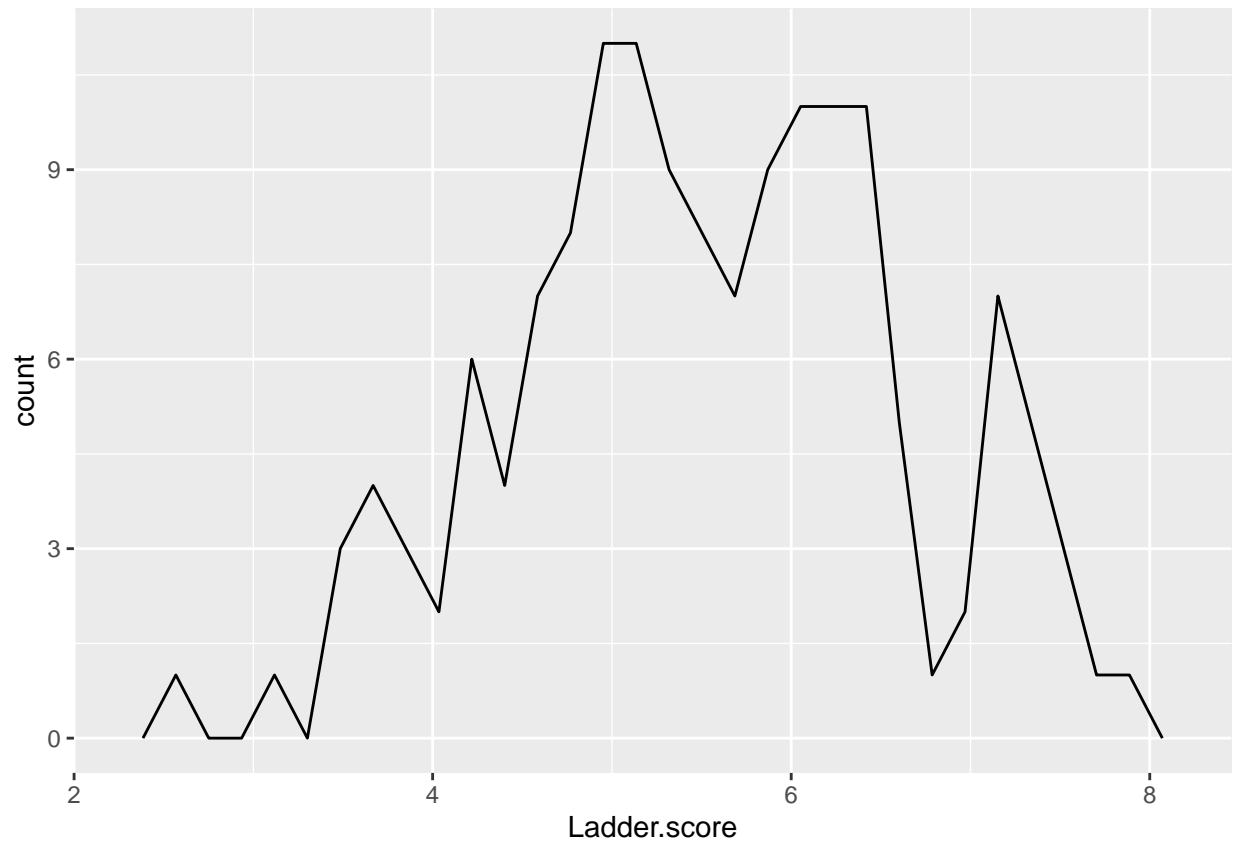
Visualizing the frequency polygon along with the bandwidth parameter

```
ggplot(data, aes(x = upperwhisker)) +  geom_freqpoly(binwidth = 4)
```
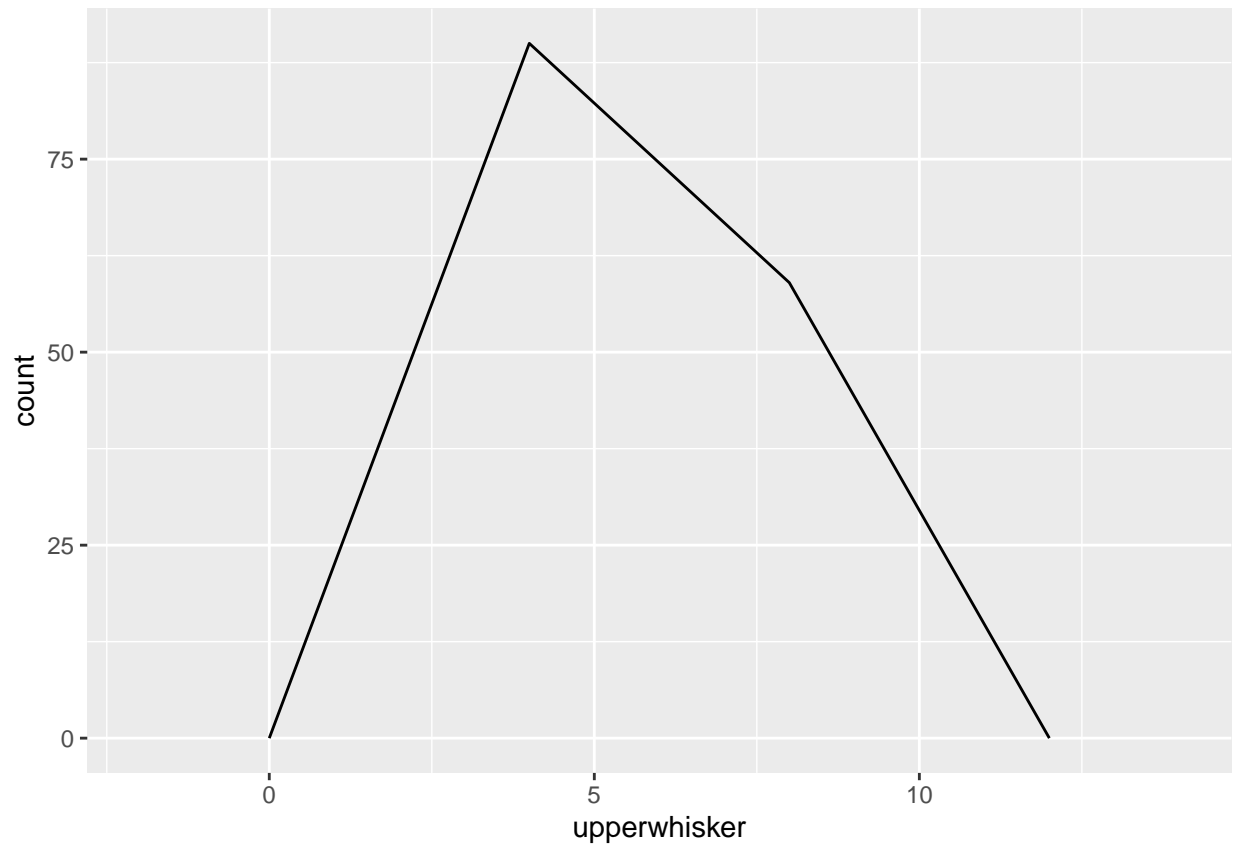
Visualization of the boxplot by changing the width of the bars

```
ggplot(data, aes(x = factor(Ladder.score), y = upperwhisker)) + geom_boxplot(width = .5)
```
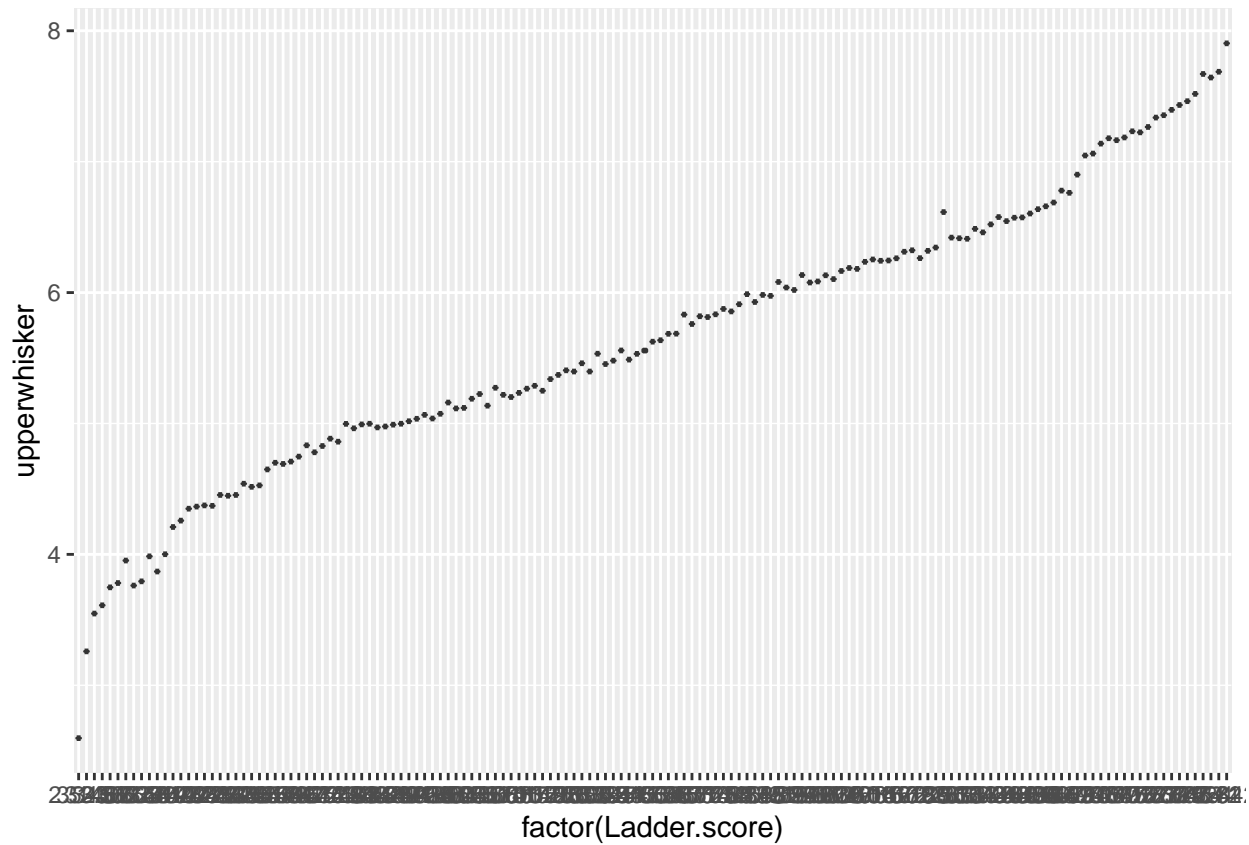
Visualization of the a box plot of just a single group, we have to provide some arbitrary value for x.In this case,we'll set it to 1 and remove the x-axis tick markers and label

```
ggplot(data, aes(x = 1, y = Ladder.score)) +
 geom_boxplot() +
 scale_x_continuous(breaks = NULL) +
 theme(axis.title.x = element_blank())
```
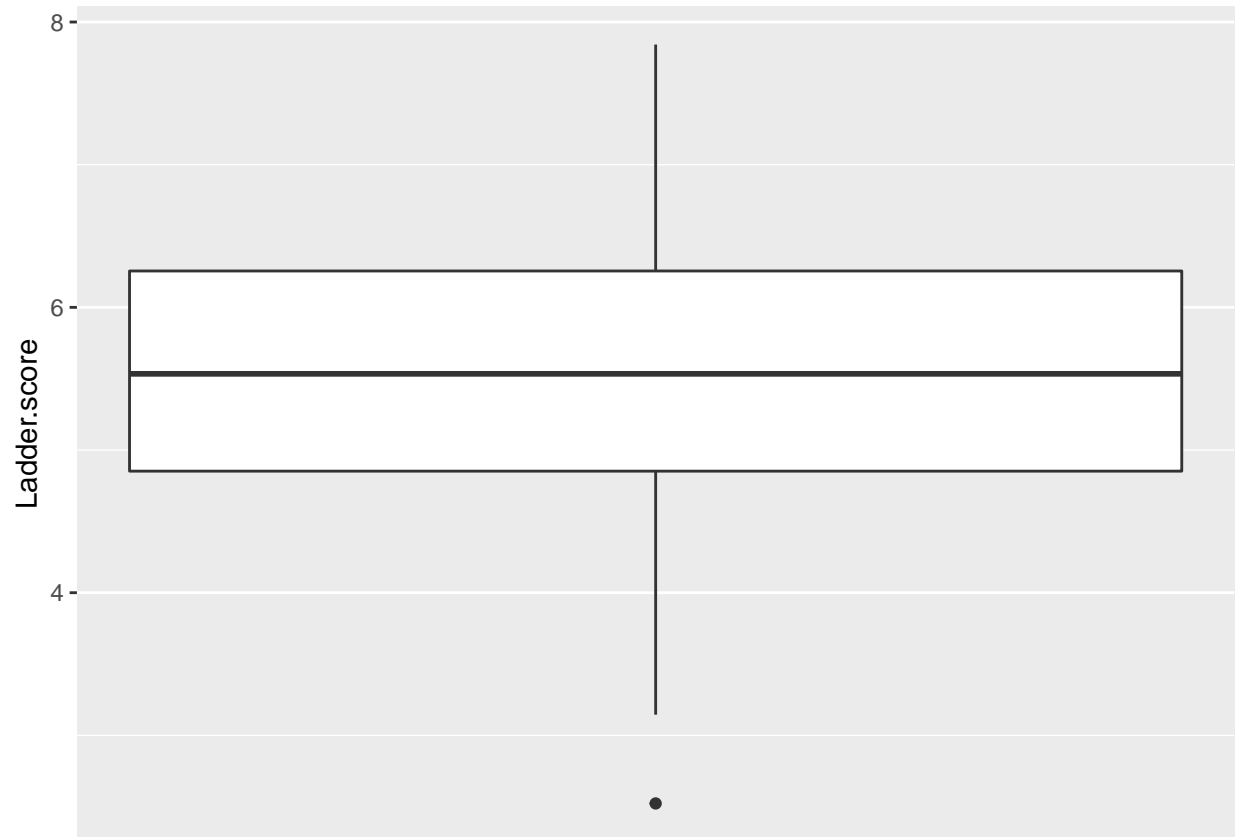
Adding the notches to the box plot using geom_boxplot() and set notch = TRUE

```
ggplot(data, aes(x = factor(lowerwhisker), y = upperwhisker)) +
 geom_boxplot(notch = TRUE)
```

```
## notch went outside hinges. Try setting notch=FALSE.
## notch went outside hinges. Try setting notch=FALSE.
## notch went outside hinges. Try setting notch=FALSE.
## notch went outside hinges. Try setting notch=FALSE.
## notch went outside hinges. Try setting notch=FALSE.
## notch went outside hinges. Try setting notch=FALSE.
```
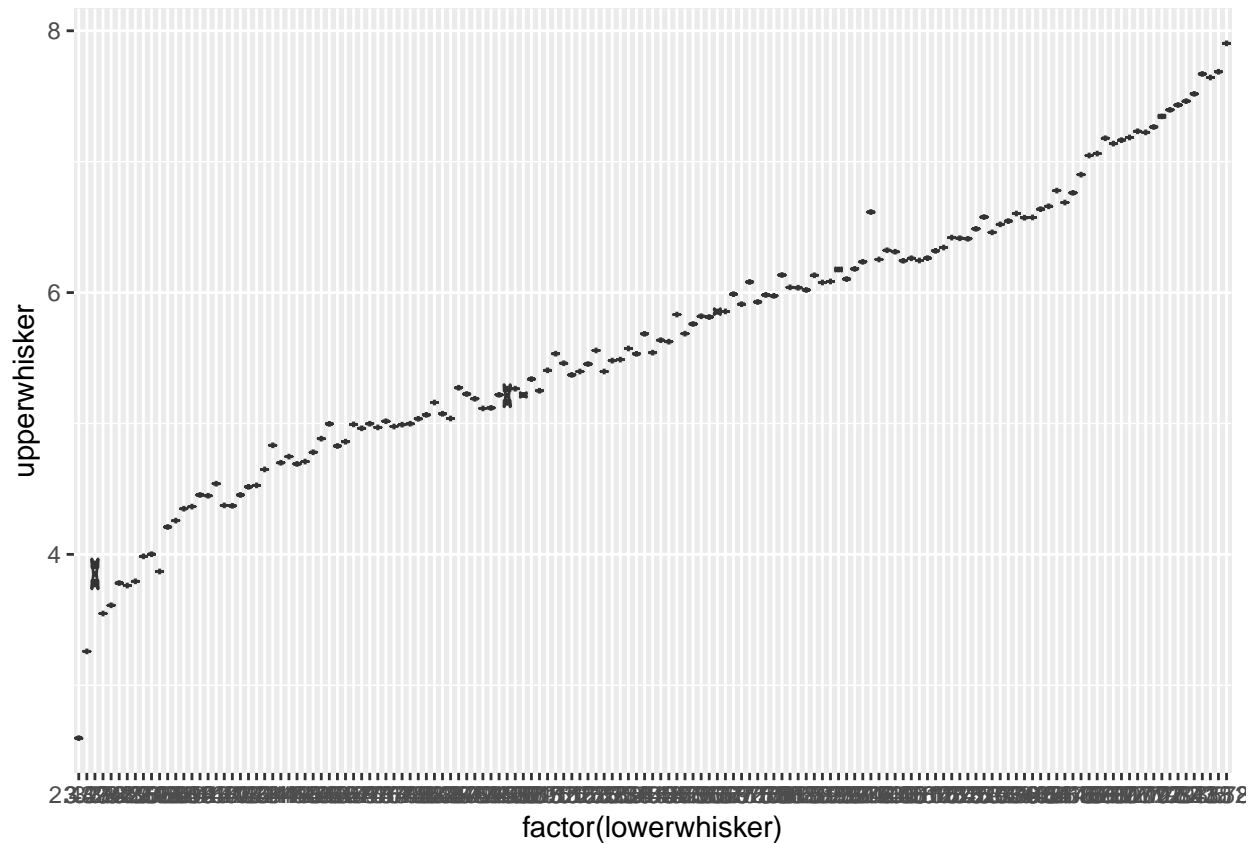
Visualizing the box plot by adding the stat_summary function which includes the function of mean which leads to adding of the means to the boxplot

```
ggplot(data, aes(x = factor(lowerwhisker), y = upperwhisker)) +
 geom_boxplot() +
 stat_summary(fun.y = "mean", geom = "point", shape = 23, size = 3,
 fill = "white")
```

```
## Warning: 'fun.y' is deprecated. Use 'fun' instead.
```
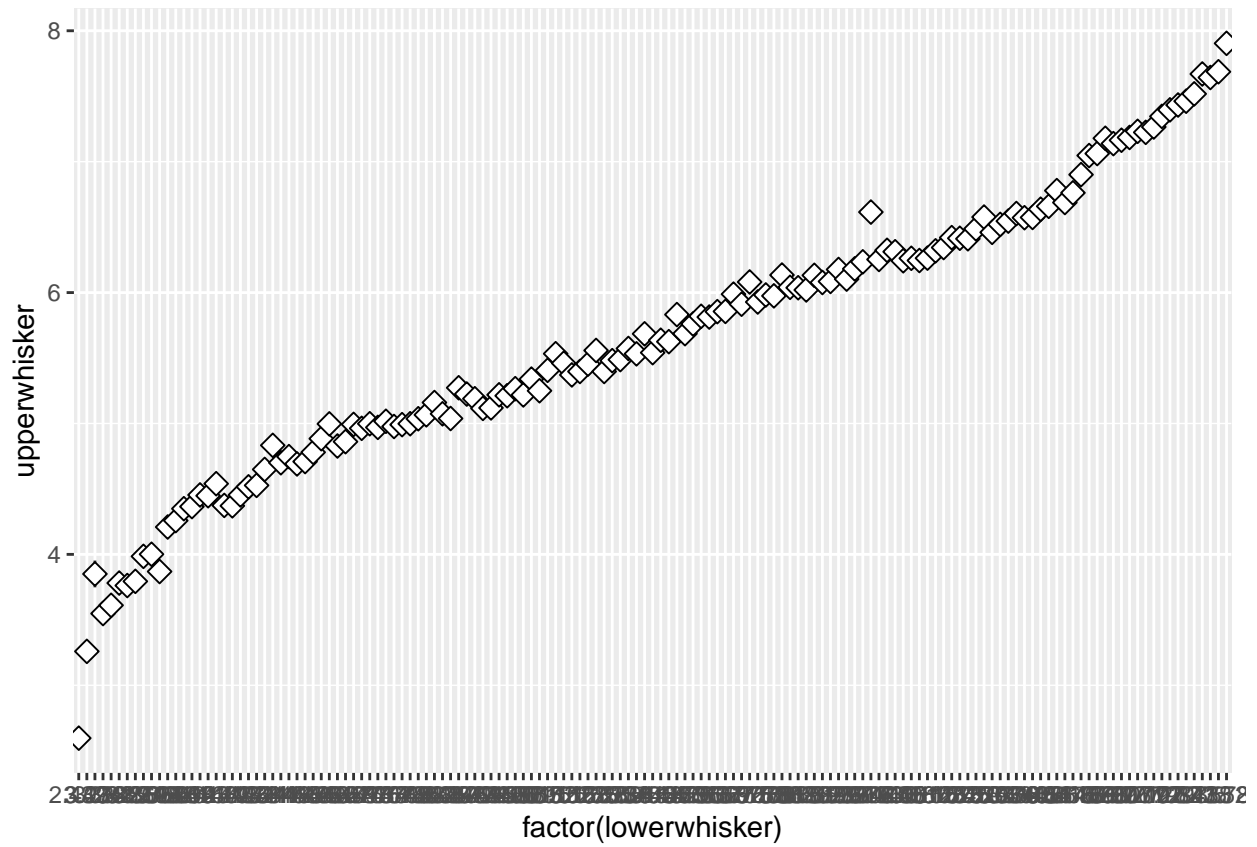
Visualization of the violin plot

```
ggplot(data, aes(x = Ladder.score, y = lowerwhisker)) + geom_violin()
```

Visualization of the violin plot with the boxplpot overlaid on it

```
ggplot(data,aes(x=lowerwhisker,y=upperwhisker))+ geom_violin() +
 geom_boxplot(width = .1, fill = "black", outlier.colour = NA) +
 stat_summary(fun.y = median, geom = "point", fill = "white", shape = 21,
 size = 2.5)
```

Warning: 'fun.y' is deprecated. Use 'fun' instead.

Warning: Continuous x aesthetic -- did you forget aes(group=...)?
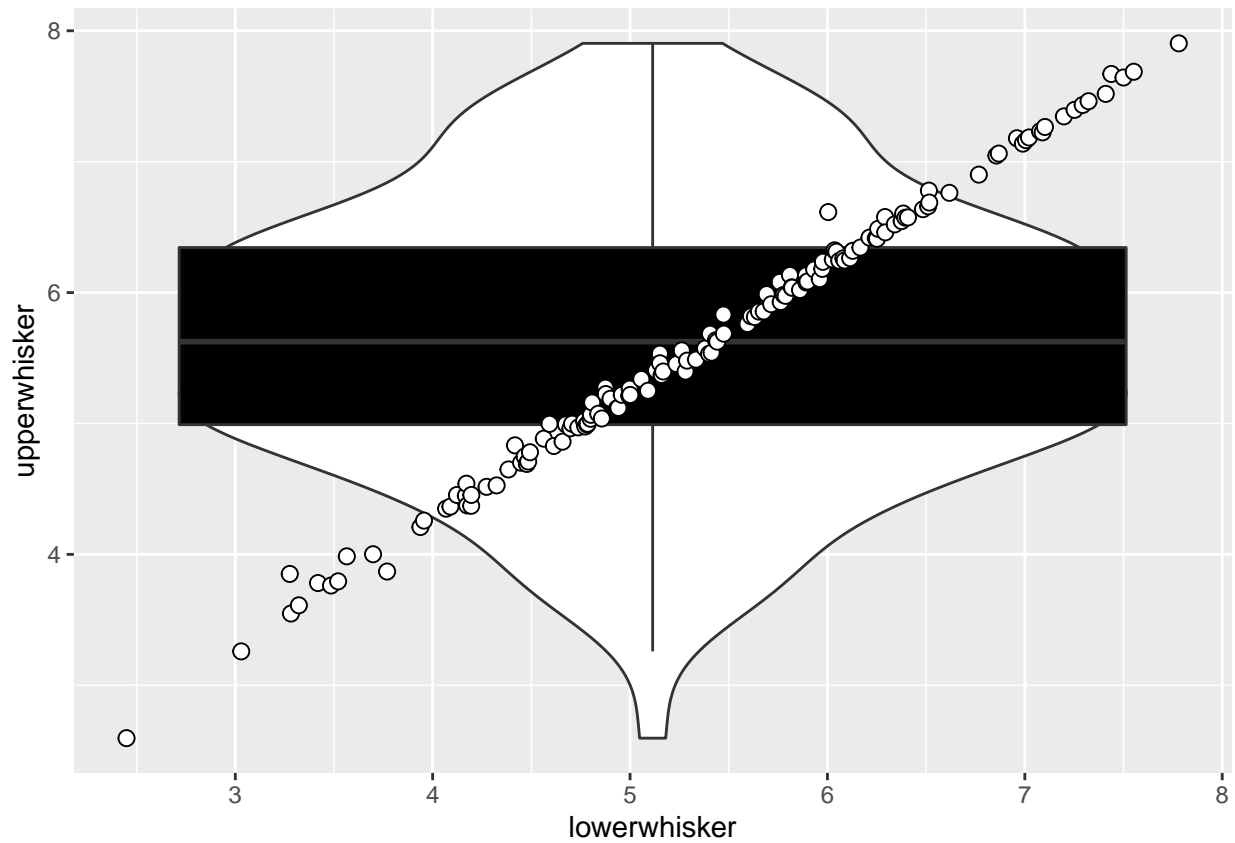
Visualization of the violin plot by adding tails at the end

```
ggplot(data,aes(x=Ladder.score,y=lowerwhisker))+ geom_violin(trim = FALSE)
```
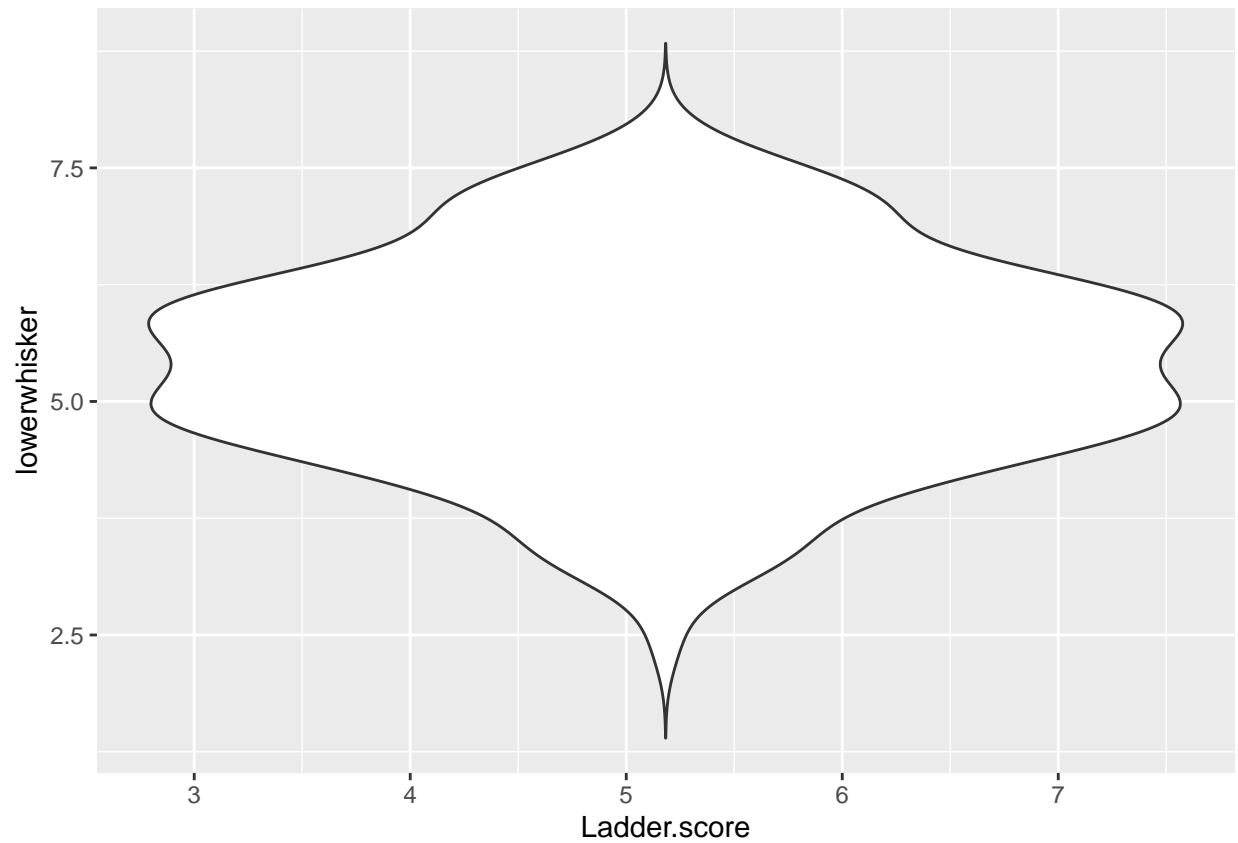
Visualization of the violin plot with area proportional to number of observations

```
ggplot(data,aes(x=lowerwhisker,y=Ladder.score)) + geom_violin(scale = "count")
```
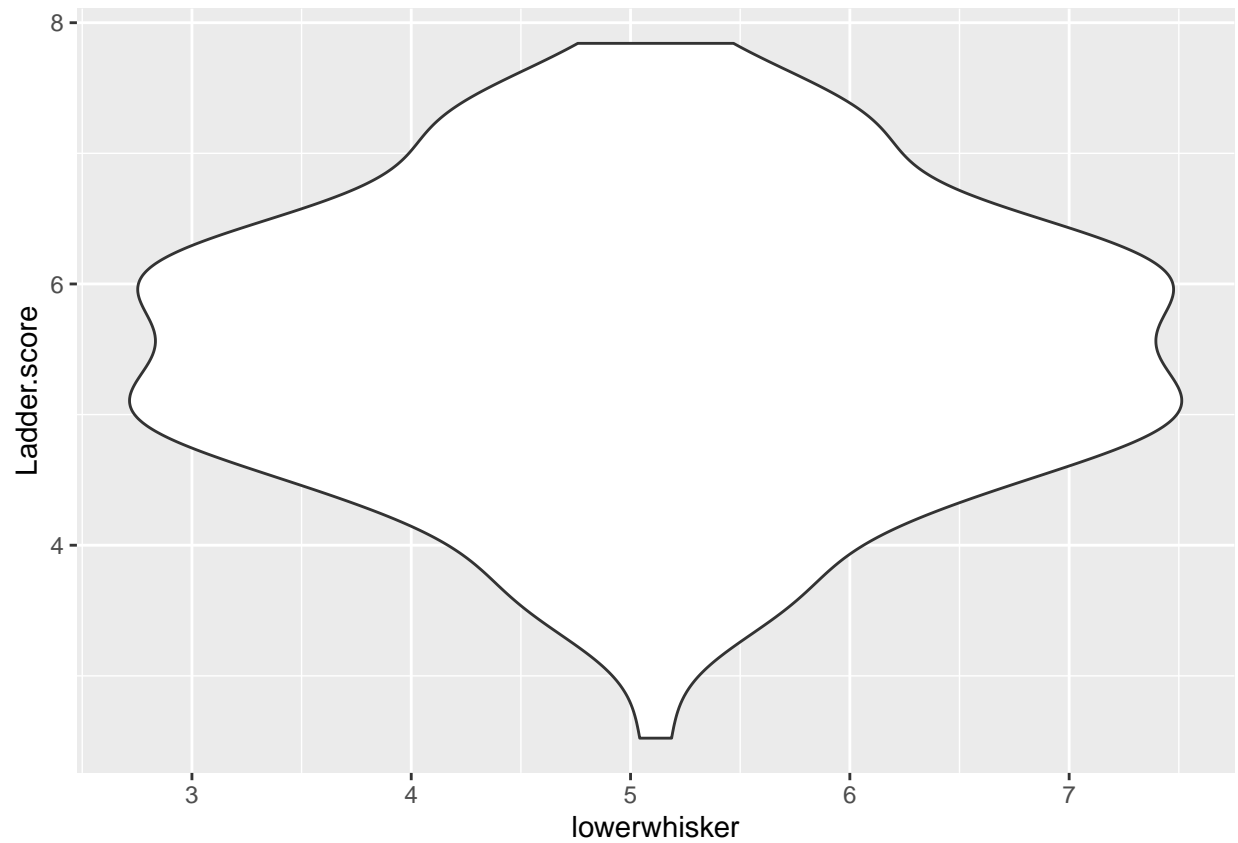
Visualization of the dot plot using the geom_dotplot() function

```
ggplot(data, aes(x = Ladder.score)) +
 geom_dotplot()
```

```
## Bin width defaults to 1/30 of the range of the data. Pick better value with 'binwidth'.
```
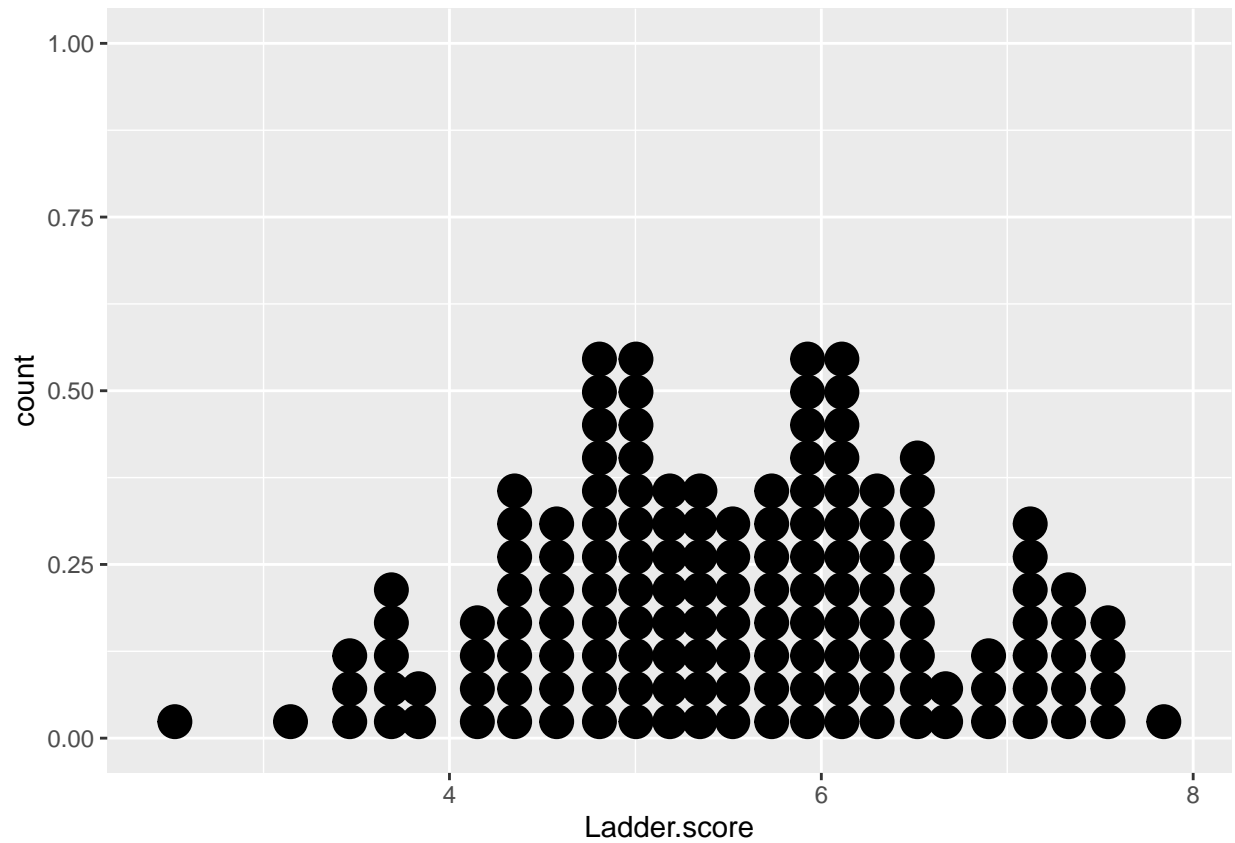
Visualization of dot plot using geom_dotplot() bins the data along the x-axis and stacks on the y-axis

```
ggplot(data,aes(x=upperwhisker)) +
geom_dotplot(binwidth = .25) +
geom_rug() +
scale_y_continuous(breaks = NULL) +
theme(axis.title.y = element_blank())
```
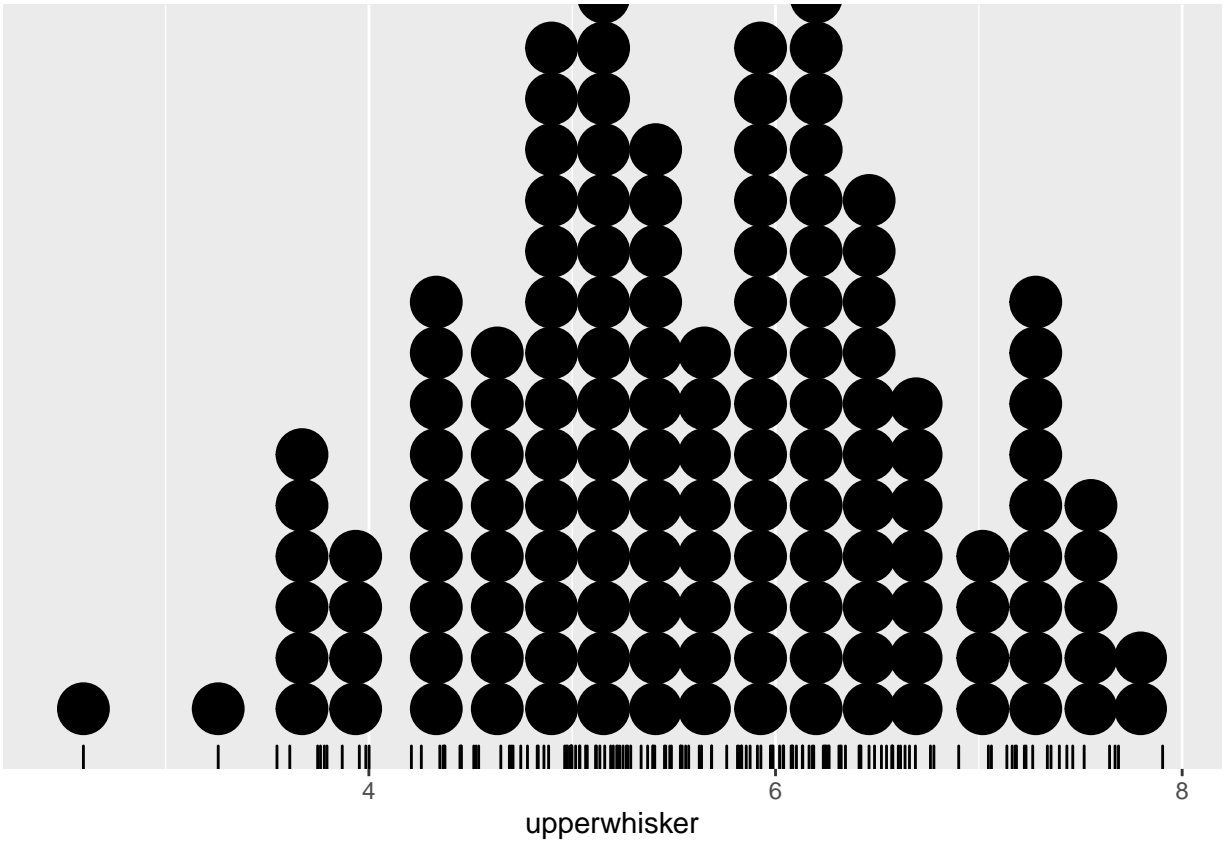
Visualization of dot plot using dotplot() function and to use bins that are arranged with a fixed, regular spacing, like a histogram.

```
ggplot(data,aes(x=Ladder.score)) +
geom_dotplot(method = "histodot", binwidth = .25) +
geom_rug() +
scale_y_continuous(breaks = NULL) +
theme(axis.title.y = element_blank())
```
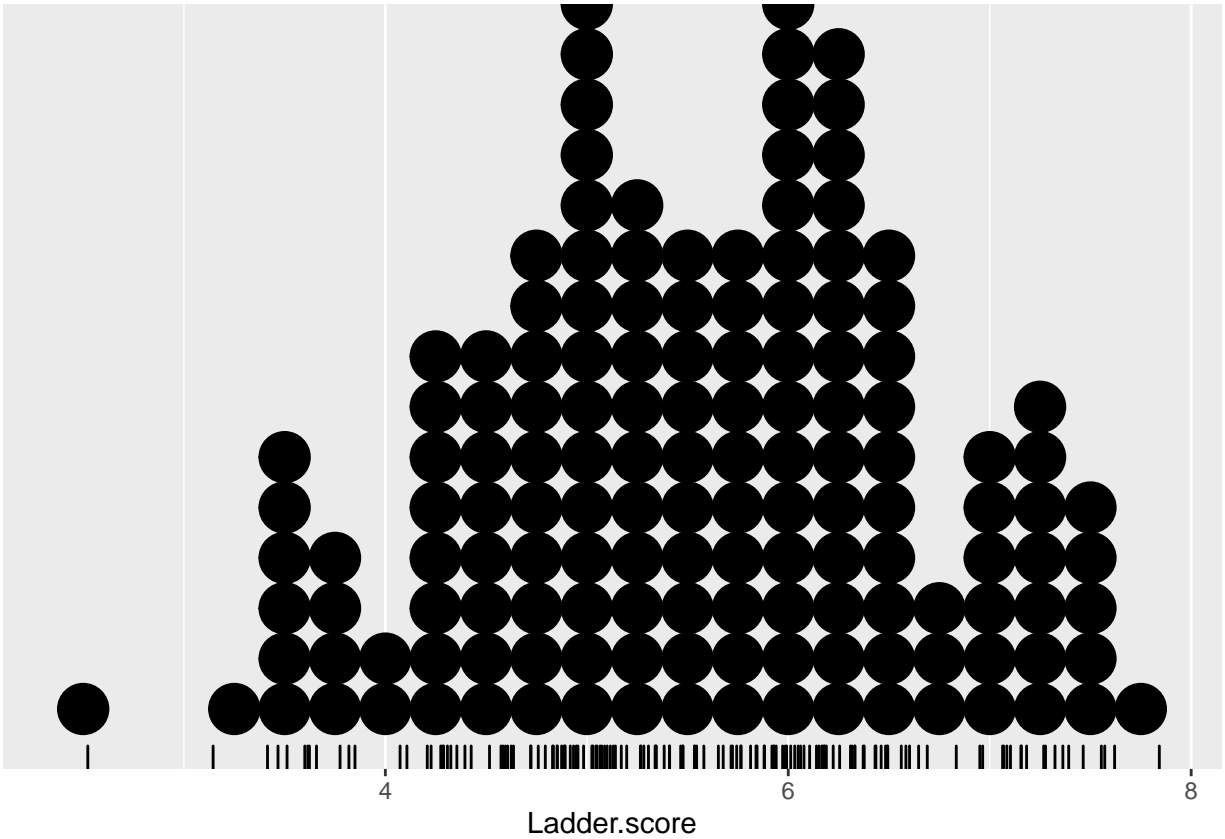
Visualization of dot plot and the dots can also be stacked centered using stackdir="center"

```
ggplot(data,aes(x=lowerwhisker))+
geom_dotplot(binwidth = .25, stackdir = "center") +
scale_y_continuous(breaks = NULL) +
theme(axis.title.y = element_blank())
```
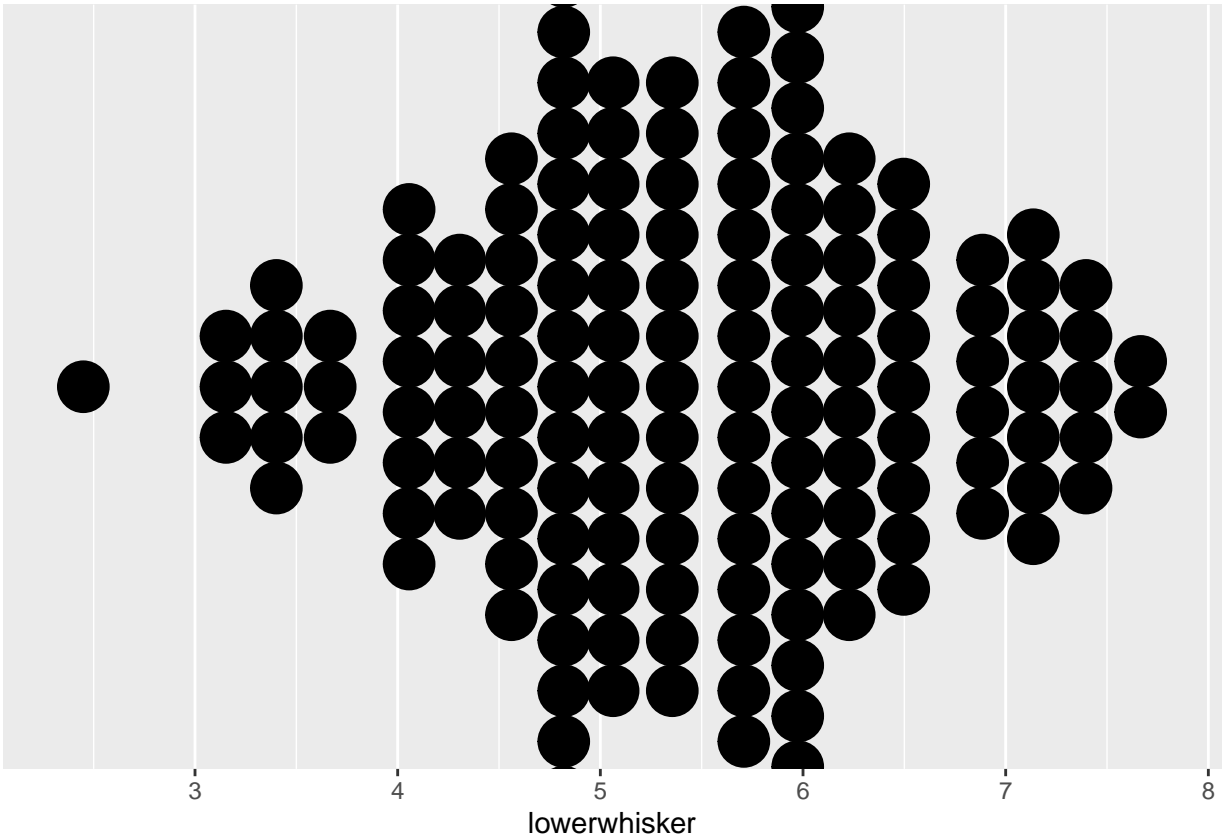
Visualization of dot plot and the dots can also be stacked centered using stackdir="centerwhole"

```
 ggplot(data,aes(x=upperwhisker)) +
geom_dotplot(binwidth = .25, stackdir = "centerwhole") +
scale_y_continuous(breaks = NULL) +
theme(axis.title.y = element_blank())
```
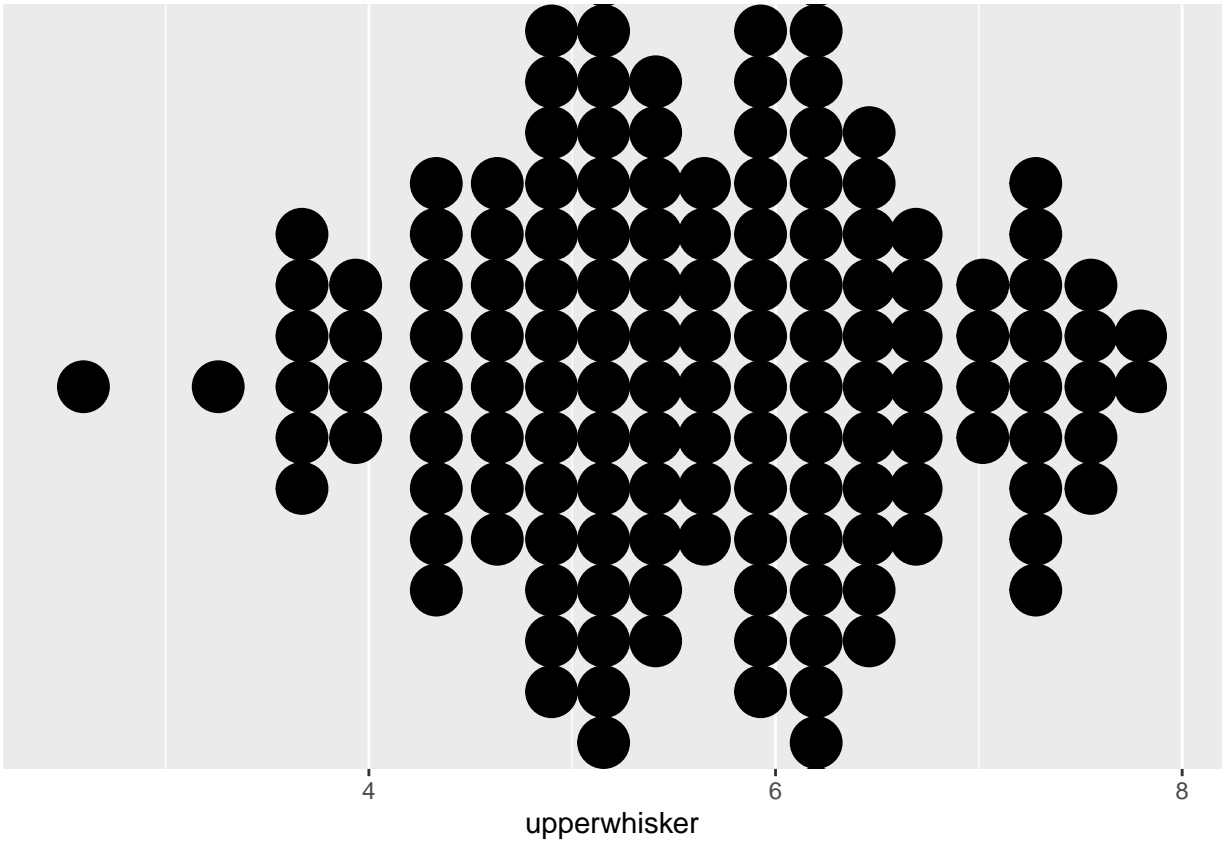
Visualization of dotplot and to stack the dots along the y-axis, and group them along the x-axis, by setting binaxis = "y".

```
ggplot(data, aes(x = Ladder.score, y = upperwhisker)) +
 geom_dotplot(binaxis = "y", binwidth = .5, stackdir = "center")
```
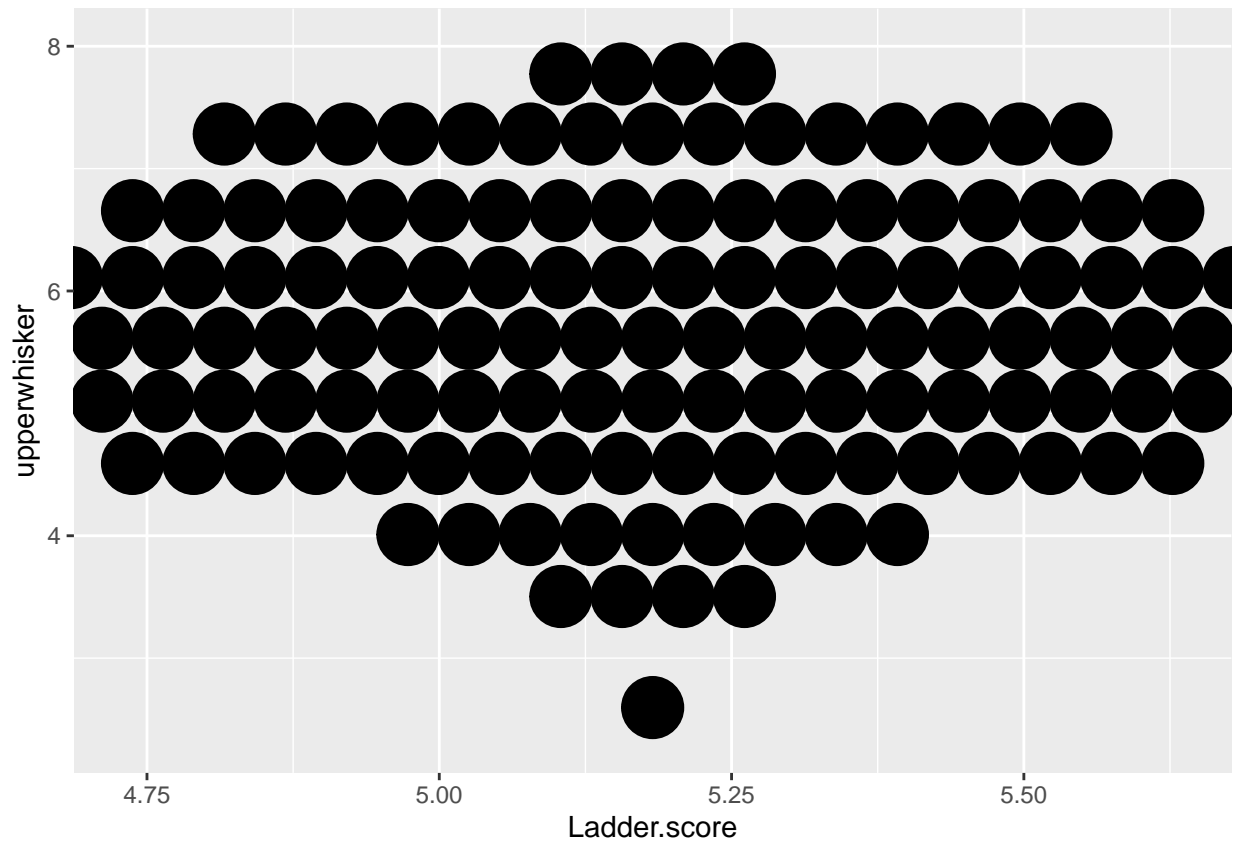
Visualization of dot plots overlaid on box plots and to make the dots hollow and have the box plots not show outliers

```
ggplot(data, aes(x = lowerwhisker, y = upperwhisker)) +
 geom_boxplot(outlier.colour = NA, width = .4) +
 geom_dotplot(binaxis = "y", binwidth = .5, stackdir = "center", fill = NA)
```

```
## Warning: Continuous x aesthetic -- did you forget aes(group=...)?
```
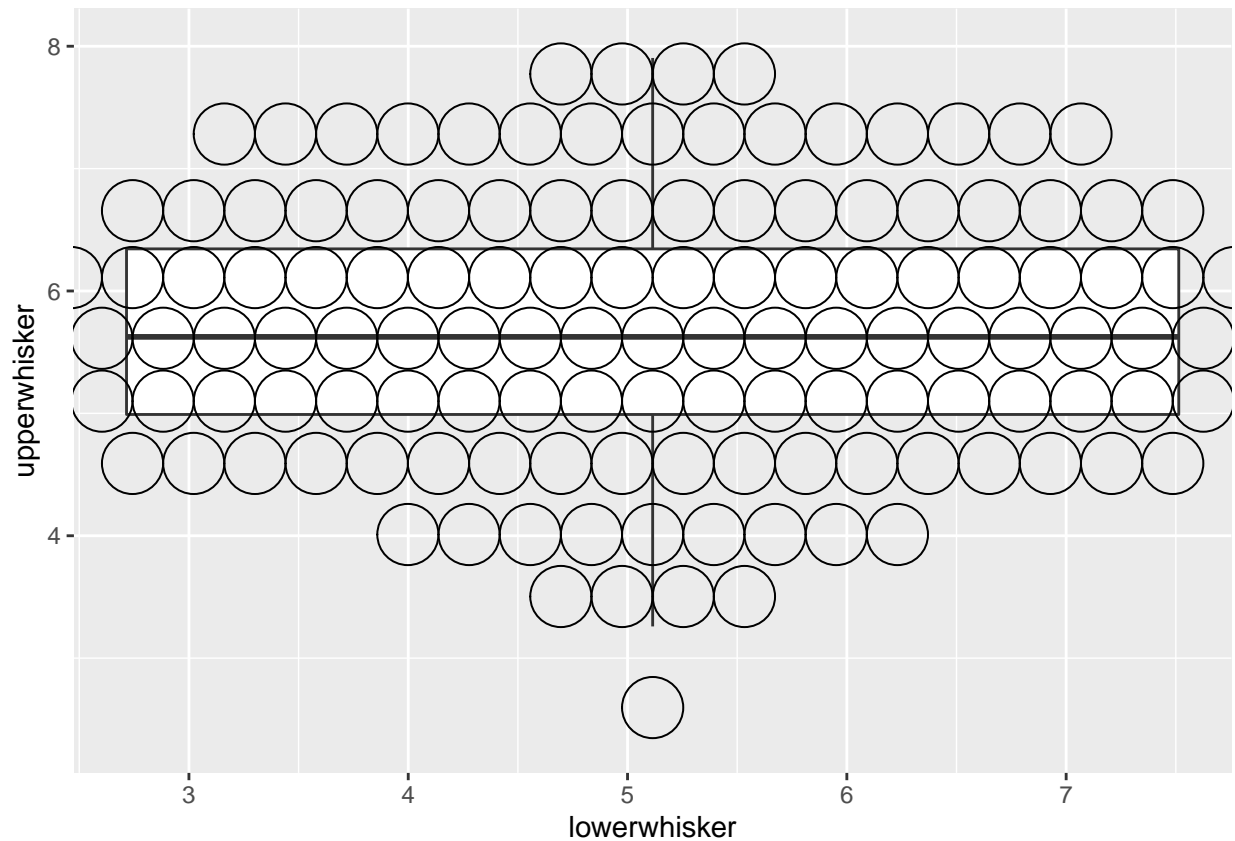
Visualization of dot plot on top of box plot by specifying binaxis,binwidth,stackdir

```
ggplot(data, aes(x = upperwhisker, y = lowerwhisker)) +
 geom_boxplot(aes(x = as.numeric(upperwhisker) + .2, group = lowerwhisker), width = .25) +
 geom_dotplot(
 aes(x = as.numeric(upperwhisker) - .2, group = upperwhisker),
 binaxis = "y",
 binwidth = .5,
 stackdir = "center"
 ) +
 scale_x_continuous(
 breaks = 1:nlevels(data$lowerwhisker),
 labels = levels(data$Ladder.score)
 )
```
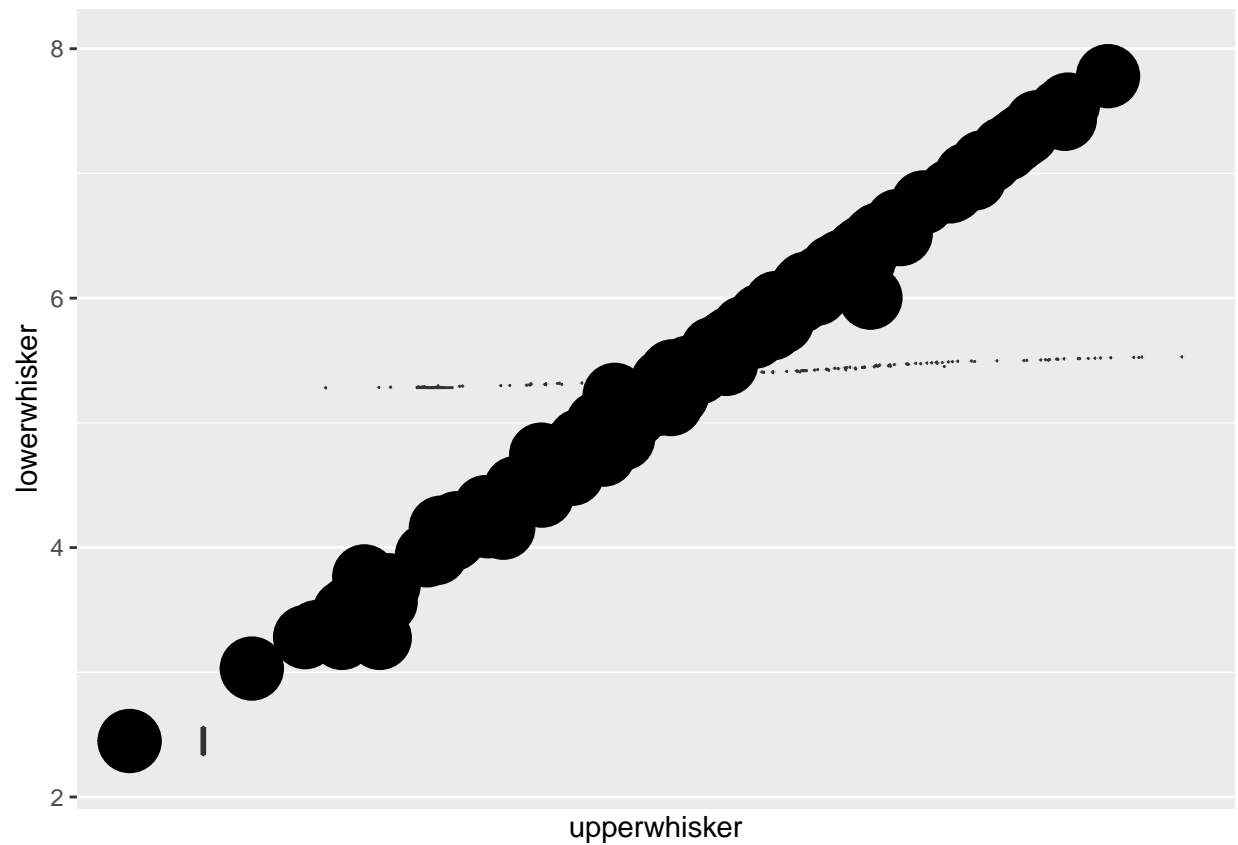
Plotting the density of two-dimensional data

```
ggplot(data,aes(x=Ladder.score,y=lowerwhisker)) +
geom_point() +
stat_density2d()
```
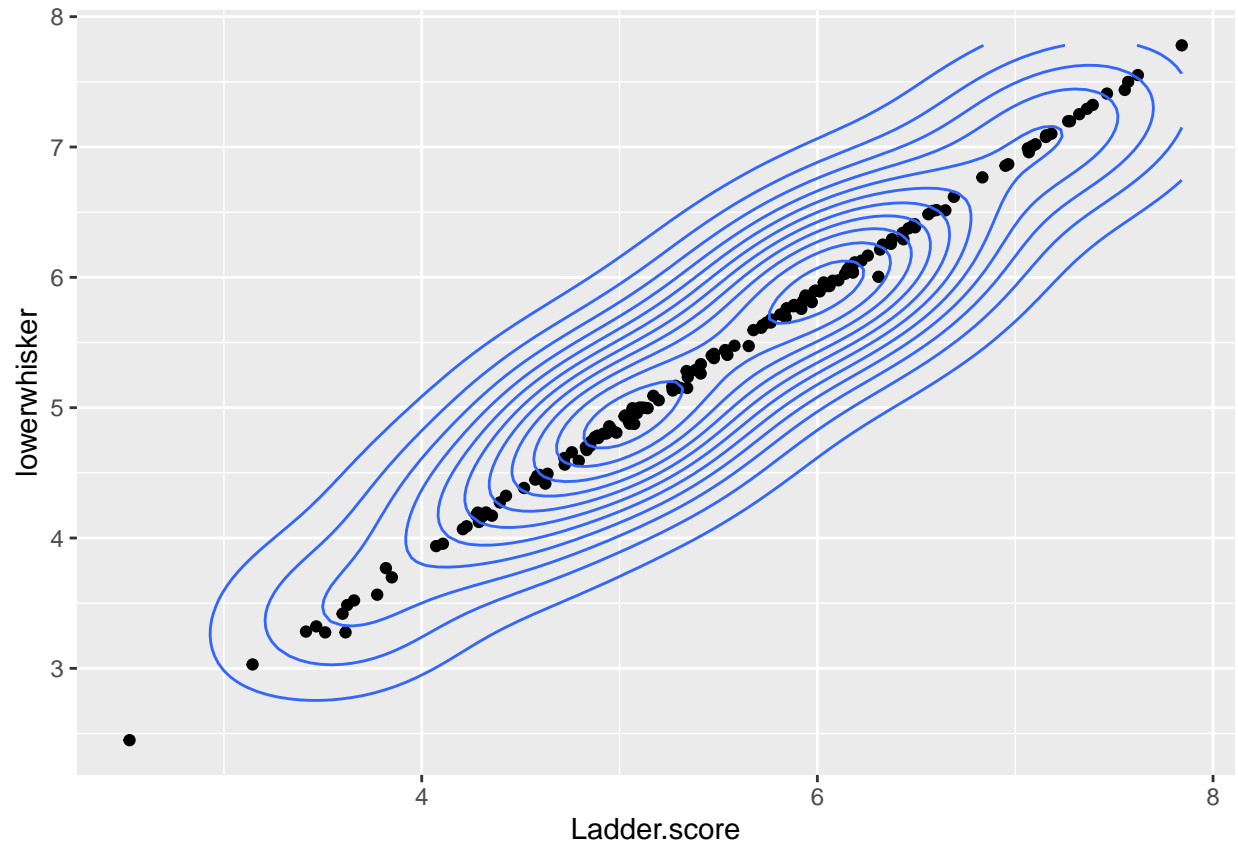
Maps the height of the density curve to the color of the contour lines, by using ..level..

```
ggplot(data,aes(x=upperwhisker,y=lowerwhisker))+
 stat_density2d(aes(colour = ..level..))
```
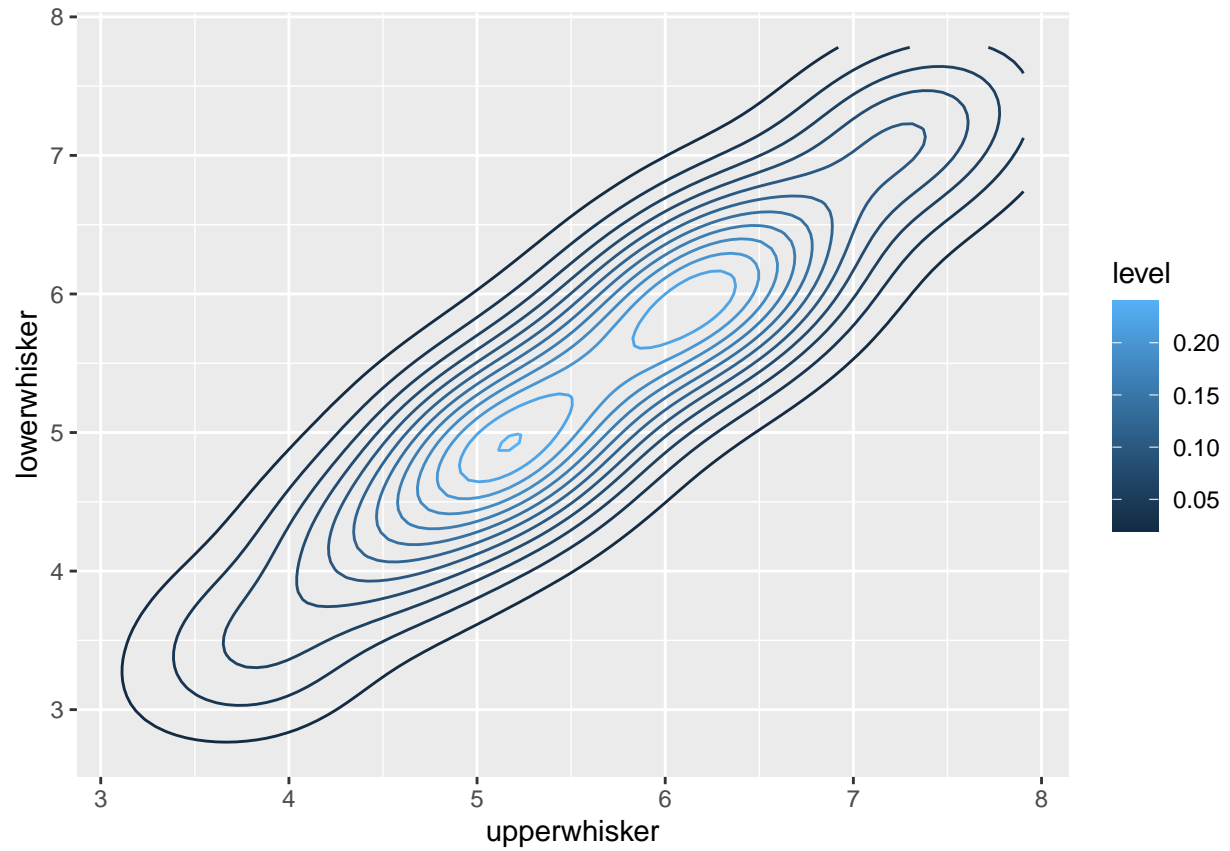
Maps density estimate to fill color

```
ggplot(data,aes(x=lowerwhisker,y=Ladder.score)) +
 stat_density2d(aes(fill = ..density..), geom = "raster", contour = FALSE)
```
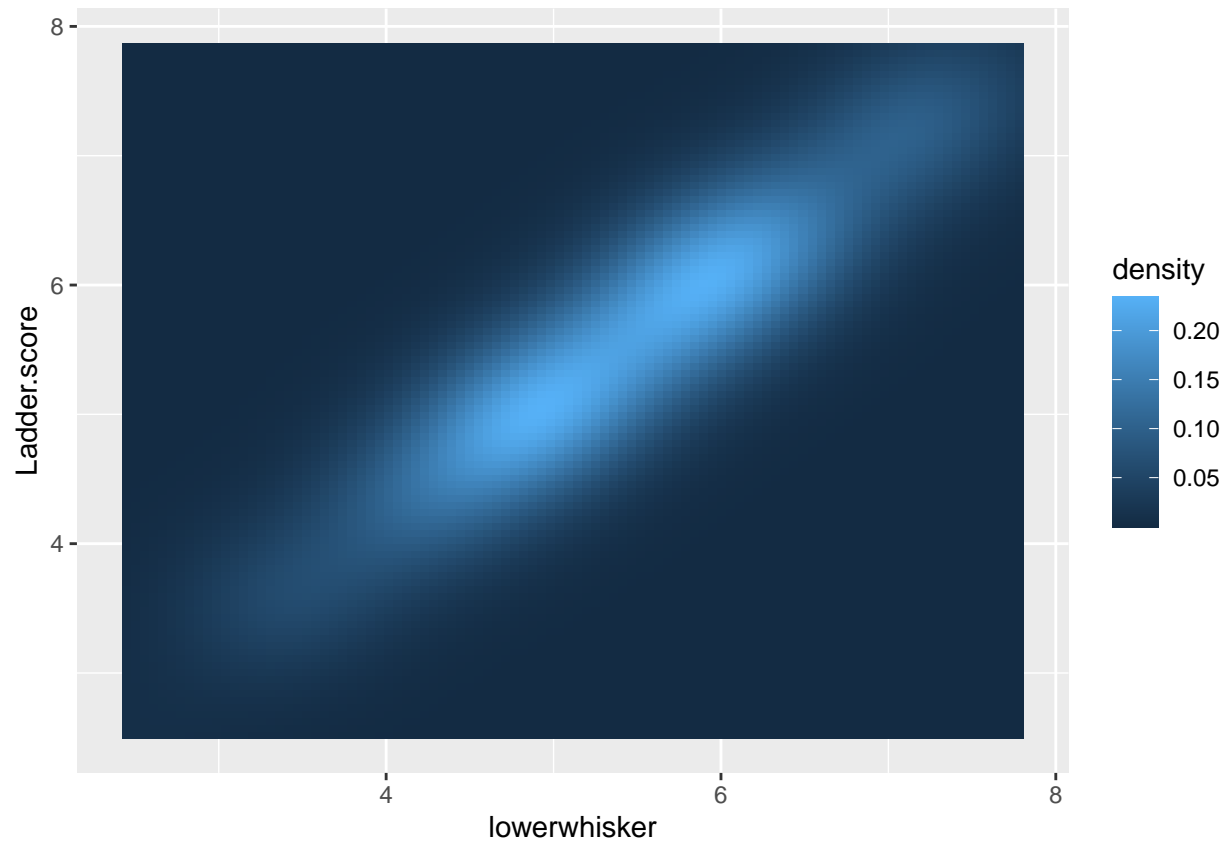
With points, and map density estimate to alpha

```
ggplot(data,aes(x=Ladder.score,y=lowerwhisker)) +
geom_point() +
stat_density2d(aes(alpha = ..density..), geom = "tile", contour = FALSE)
```