Assignment-5th.R

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# Assignment 5  
  
#1  
seg.df <- read.csv("http://goo.gl/qw303p")  
tmp.tab <- table(rep(c(1:4), times=c(25,25,25,20)))  
tmp.tab

##   
## 1 2 3 4   
## 25 25 25 20

chisq.test(tmp.tab)

##   
## Chi-squared test for given probabilities  
##   
## data: tmp.tab  
## X-squared = 0.78947, df = 3, p-value = 0.852

# p Value is less than 0.05 so we fail to reject the null hypothesis   
tmp.tab <- table(rep(c(1:4), times=c(25,25,25,10)))  
tmp.tab

##   
## 1 2 3 4   
## 25 25 25 10

chisq.test(tmp.tab)

##   
## Chi-squared test for given probabilities  
##   
## data: tmp.tab  
## X-squared = 7.9412, df = 3, p-value = 0.04724

# p Value is less than 0.05 so we reject the null hypothesis   
  
#2  
seg.df <- read.csv("http://goo.gl/qw303p")  
seg.df

## age gender income kids ownHome subscribe Segment  
## 1 47.31613 Male 49482.8104 2 ownNo subNo Suburb mix  
## 2 31.38684 Male 35546.2883 1 ownYes subNo Suburb mix  
## 3 43.20034 Male 44169.1864 0 ownYes subNo Suburb mix  
## 4 37.31700 Female 81041.9864 1 ownNo subNo Suburb mix  
## 5 40.95439 Female 79353.0144 3 ownYes subNo Suburb mix  
## 6 43.03387 Male 58143.3633 4 ownYes subNo Suburb mix  
## 7 37.55696 Male 19282.2306 3 ownNo subNo Suburb mix  
## 8 28.45129 Male 47245.2385 0 ownNo subNo Suburb mix  
## 9 44.20268 Female 48332.5198 1 ownNo subNo Suburb mix  
## 10 35.15167 Female 52567.8903 0 ownYes subNo Suburb mix  
## 11 47.61097 Male 47917.5632 0 ownYes subNo Suburb mix  
## 12 37.58036 Female 65767.4783 0 ownNo subNo Suburb mix  
## 13 33.21556 Female 69337.6563 2 ownNo subNo Suburb mix  
## 14 43.18109 Male 57200.1456 3 ownYes subNo Suburb mix  
## 15 39.35748 Male 47099.7736 1 ownYes subNo Suburb mix  
## 16 42.03056 Male 57036.8373 3 ownYes subNo Suburb mix  
## 17 41.96189 Female 53127.0588 0 ownYes subNo Suburb mix  
## 18 43.98136 Female 41254.8043 0 ownYes subNo Suburb mix  
## 19 37.61905 Female 63528.4749 1 ownYes subNo Suburb mix  
## 20 32.41215 Female 52649.5372 2 ownYes subYes Suburb mix  
## 21 47.94154 Female 48197.8083 1 ownYes subNo Suburb mix  
## 22 36.70162 Female 46163.3833 6 ownYes subNo Suburb mix  
## 23 30.47705 Male 44151.9309 2 ownNo subNo Suburb mix  
## 24 38.32010 Female 56128.0088 2 ownYes subNo Suburb mix  
## 25 32.72702 Female 62519.8908 4 ownYes subNo Suburb mix  
## 26 40.42549 Female 51195.9684 1 ownYes subNo Suburb mix  
## 27 26.86546 Male 59440.8741 2 ownNo subNo Suburb mix  
## 28 44.50259 Male 57362.5902 0 ownNo subNo Suburb mix  
## 29 35.16896 Female 56112.1228 1 ownNo subNo Suburb mix  
## 30 39.61932 Female 76488.6997 2 ownNo subNo Suburb mix  
## 31 53.55814 Male 65717.4307 1 ownNo subNo Suburb mix  
## 32 43.11086 Female 45175.3562 3 ownNo subNo Suburb mix  
## 33 37.16119 Male 49943.1184 1 ownYes subNo Suburb mix  
## 34 36.84212 Male 60040.7919 4 ownNo subNo Suburb mix  
## 35 45.27542 Female 65169.5772 0 ownNo subNo Suburb mix  
## 36 34.45582 Male 46765.3105 1 ownNo subNo Suburb mix  
## 37 43.55514 Male 61291.8147 3 ownYes subNo Suburb mix  
## 38 42.68749 Female 49392.6699 1 ownNo subNo Suburb mix  
## 39 33.15106 Female 30769.5507 2 ownYes subNo Suburb mix  
## 40 40.58123 Female 59804.9327 2 ownYes subNo Suburb mix  
## 41 44.54560 Male 52648.8944 2 ownYes subNo Suburb mix  
## 42 29.99606 Female 54260.2018 3 ownNo subNo Suburb mix  
## 43 41.40382 Male 49741.6174 2 ownYes subNo Suburb mix  
## 44 42.75470 Male 71992.0985 1 ownNo subNo Suburb mix  
## 45 45.86259 Male 51918.2468 1 ownNo subNo Suburb mix  
## 46 33.59209 Male 55377.8222 1 ownNo subNo Suburb mix  
## 47 38.66712 Female 67502.1248 3 ownYes subNo Suburb mix  
## 48 39.74316 Female 67932.8488 1 ownNo subNo Suburb mix  
## 49 47.10274 Female 46714.9353 3 ownNo subNo Suburb mix  
## 50 41.48944 Male 28270.1540 2 ownYes subNo Suburb mix  
## 51 37.02455 Female 73304.4268 2 ownYes subNo Suburb mix  
## 52 40.34058 Male 58037.9194 2 ownYes subNo Suburb mix  
## 53 33.96322 Female 55847.4111 6 ownYes subYes Suburb mix  
## 54 43.39355 Male 62190.8436 3 ownNo subNo Suburb mix  
## 55 42.07810 Female 52813.2367 4 ownYes subNo Suburb mix  
## 56 45.47721 Male 51578.9315 4 ownNo subNo Suburb mix  
## 57 36.88033 Male 54140.7913 1 ownYes subNo Suburb mix  
## 58 34.46528 Male 60971.7596 2 ownNo subNo Suburb mix  
## 59 34.73221 Male 27670.2187 1 ownNo subNo Suburb mix  
## 60 41.20959 Male 59138.2371 3 ownNo subNo Suburb mix  
## 61 40.03368 Female 46748.8665 1 ownNo subNo Suburb mix  
## 62 49.03158 Male 57948.6190 1 ownNo subNo Suburb mix  
## 63 41.52649 Female 40776.8761 3 ownNo subNo Suburb mix  
## 64 36.38841 Female 49348.1789 1 ownNo subNo Suburb mix  
## 65 46.20892 Male 68636.4558 1 ownNo subYes Suburb mix  
## 66 40.08666 Female 61386.5004 2 ownNo subNo Suburb mix  
## 67 38.91893 Female 39588.2797 1 ownNo subNo Suburb mix  
## 68 32.79289 Female 72675.4162 3 ownYes subNo Suburb mix  
## 69 32.32869 Female 56246.7084 2 ownNo subNo Suburb mix  
## 70 43.06391 Male 59188.6143 1 ownNo subNo Suburb mix  
## 71 36.22376 Female 53428.0641 1 ownNo subNo Suburb mix  
## 72 39.81910 Female 70379.2582 2 ownYes subNo Suburb mix  
## 73 49.22168 Female 38400.5648 1 ownYes subNo Suburb mix  
## 74 41.54144 Male 51412.5562 1 ownNo subNo Suburb mix  
## 75 32.83309 Male 53166.7449 4 ownYes subNo Suburb mix  
## 76 33.14907 Male 85290.5087 4 ownNo subNo Suburb mix  
## 77 44.32636 Male 46079.0635 1 ownNo subNo Suburb mix  
## 78 39.43205 Male 60008.6669 3 ownNo subNo Suburb mix  
## 79 42.31337 Male 49674.7882 0 ownYes subNo Suburb mix  
## 80 39.58306 Male 49815.6708 1 ownYes subNo Suburb mix  
## 81 47.88036 Female 79544.1970 1 ownYes subNo Suburb mix  
## 82 37.65794 Female 52289.0548 3 ownNo subNo Suburb mix  
## 83 43.01101 Female 66932.7264 1 ownYes subNo Suburb mix  
## 84 34.28161 Male 49346.7008 2 ownYes subYes Suburb mix  
## 85 36.45280 Male 66274.9978 1 ownNo subNo Suburb mix  
## 86 35.87205 Male 39442.7177 1 ownNo subNo Suburb mix  
## 87 45.34742 Female 47002.8361 1 ownYes subNo Suburb mix  
## 88 44.21695 Female 42339.1332 5 ownNo subNo Suburb mix  
## 89 41.89570 Female 58871.4753 3 ownNo subYes Suburb mix  
## 90 39.63465 Male 76184.6653 2 ownYes subNo Suburb mix  
## 91 45.19053 Male 68937.1991 5 ownYes subNo Suburb mix  
## 92 48.34718 Female 63683.9619 2 ownYes subNo Suburb mix  
## 93 40.13206 Male 57134.9392 0 ownNo subNo Suburb mix  
## 94 40.95554 Male 60770.5726 3 ownNo subNo Suburb mix  
## 95 45.48013 Male 53416.8575 3 ownYes subYes Suburb mix  
## 96 40.74383 Male 44890.7040 5 ownYes subNo Suburb mix  
## 97 36.60923 Female 58891.1509 2 ownYes subNo Suburb mix  
## 98 36.46002 Female 57985.5501 1 ownNo subNo Suburb mix  
## 99 45.92352 Male 56015.7433 3 ownYes subNo Suburb mix  
## 100 42.52799 Male 29257.5668 1 ownNo subNo Suburb mix  
## 101 24.73796 Male 18457.8479 1 ownNo subYes Urban hip  
## 102 26.10222 Male 26487.8252 1 ownNo subYes Urban hip  
## 103 23.25671 Male 11985.2492 1 ownNo subNo Urban hip  
## 104 21.36267 Male 16646.4787 3 ownNo subNo Urban hip  
## 105 23.49583 Male 17784.5689 1 ownNo subNo Urban hip  
## 106 23.44395 Male 23886.4666 1 ownNo subNo Urban hip  
## 107 23.19013 Male 17510.2760 1 ownNo subYes Urban hip  
## 108 21.24035 Male 18419.2505 1 ownYes subYes Urban hip  
## 109 22.11202 Male 21107.3687 0 ownNo subNo Urban hip  
## 110 23.01437 Male 25506.1916 2 ownNo subNo Urban hip  
## 111 23.38313 Female 21698.8196 3 ownNo subNo Urban hip  
## 112 24.30151 Male 23843.5090 0 ownNo subNo Urban hip  
## 113 24.24272 Male 15493.4030 1 ownNo subNo Urban hip  
## 114 20.71259 Male 22517.2059 3 ownNo subNo Urban hip  
## 115 26.92514 Male 25210.8682 0 ownNo subNo Urban hip  
## 116 23.33063 Male 17382.0137 4 ownNo subNo Urban hip  
## 117 23.82711 Female 22760.1756 0 ownNo subNo Urban hip  
## 118 23.85926 Female 18118.8648 1 ownYes subNo Urban hip  
## 119 24.68625 Male 32191.1488 1 ownNo subNo Urban hip  
## 120 25.58442 Male 23812.1453 2 ownYes subNo Urban hip  
## 121 24.69923 Female 12544.6837 1 ownNo subYes Urban hip  
## 122 23.27414 Female 22402.7340 0 ownYes subNo Urban hip  
## 123 26.72028 Male 23996.5067 1 ownNo subNo Urban hip  
## 124 22.30333 Female 24541.2444 1 ownNo subNo Urban hip  
## 125 24.97678 Male 22905.3596 2 ownYes subNo Urban hip  
## 126 23.72295 Male 22014.3736 0 ownNo subNo Urban hip  
## 127 23.76510 Male 20297.1186 0 ownNo subNo Urban hip  
## 128 21.80737 Male 27807.2395 2 ownNo subYes Urban hip  
## 129 22.75965 Female 15910.5360 0 ownNo subYes Urban hip  
## 130 22.22459 Female 20222.0214 2 ownYes subYes Urban hip  
## 131 23.97756 Male 18106.8369 0 ownNo subNo Urban hip  
## 132 25.20195 Female 22102.8352 2 ownNo subNo Urban hip  
## 133 25.93903 Female 17366.8618 0 ownNo subNo Urban hip  
## 134 21.00289 Female 27244.1731 1 ownNo subNo Urban hip  
## 135 27.62706 Male 22179.1781 1 ownNo subNo Urban hip  
## 136 23.08861 Male 33909.4970 3 ownNo subNo Urban hip  
## 137 24.88971 Male 23326.4486 2 ownNo subYes Urban hip  
## 138 21.49348 Female 17082.7436 2 ownNo subNo Urban hip  
## 139 28.32910 Female 31284.8545 2 ownYes subNo Urban hip  
## 140 25.15129 Male 17757.6682 1 ownNo subNo Urban hip  
## 141 25.17703 Female 20125.7986 2 ownNo subYes Urban hip  
## 142 24.81695 Female 23839.4836 0 ownNo subNo Urban hip  
## 143 22.34075 Male 16341.0906 0 ownNo subNo Urban hip  
## 144 22.43433 Male 24533.9310 2 ownYes subNo Urban hip  
## 145 24.79497 Female 25841.2453 0 ownYes subNo Urban hip  
## 146 19.25993 Female 18592.9616 0 ownNo subNo Urban hip  
## 147 25.94617 Female 12406.0997 0 ownNo subNo Urban hip  
## 148 25.65686 Male 28329.0210 1 ownNo subNo Urban hip  
## 149 23.49909 Female 27211.8267 0 ownNo subNo Urban hip  
## 150 24.54052 Female 23052.3354 0 ownYes subNo Urban hip  
## 151 56.32296 Female 91509.2454 0 ownYes subNo Travelers  
## 152 64.45890 Male 61052.0774 0 ownYes subNo Travelers  
## 153 45.92522 Male -5183.3542 0 ownYes subNo Travelers  
## 154 57.00277 Female 68364.6298 0 ownNo subNo Travelers  
## 155 68.05828 Female 25772.2414 0 ownYes subNo Travelers  
## 156 66.89691 Male 54060.5906 0 ownYes subNo Travelers  
## 157 66.18974 Female 66616.4022 0 ownYes subNo Travelers  
## 158 43.35230 Male 51787.8842 0 ownNo subNo Travelers  
## 159 75.91358 Female 23968.1072 0 ownYes subNo Travelers  
## 160 60.69423 Male -693.9989 0 ownYes subNo Travelers  
## 161 52.41496 Female 50531.7187 0 ownYes subNo Travelers  
## 162 53.67557 Female 85769.6373 0 ownYes subNo Travelers  
## 163 55.84116 Male 75456.8034 0 ownYes subNo Travelers  
## 164 53.32173 Male 72314.9976 0 ownYes subNo Travelers  
## 165 51.48324 Male 36907.6333 0 ownYes subNo Travelers  
## 166 65.95216 Female 46832.3649 0 ownYes subNo Travelers  
## 167 62.08242 Male 94845.2531 0 ownYes subNo Travelers  
## 168 45.51076 Female 50337.3613 0 ownYes subNo Travelers  
## 169 57.36672 Female 58287.2035 0 ownYes subNo Travelers  
## 170 50.41308 Male 60738.5930 0 ownYes subNo Travelers  
## 171 64.85144 Female 78231.3345 0 ownYes subNo Travelers  
## 172 49.43379 Male 61153.4316 0 ownNo subYes Travelers  
## 173 64.70641 Male 45517.1451 0 ownNo subYes Travelers  
## 174 70.60405 Male 48697.1456 0 ownNo subNo Travelers  
## 175 41.51737 Male 39379.3518 0 ownYes subNo Travelers  
## 176 57.17534 Male 47529.0857 0 ownYes subNo Travelers  
## 177 51.18432 Male 61453.2040 0 ownYes subNo Travelers  
## 178 62.34615 Female 48371.3626 0 ownYes subNo Travelers  
## 179 62.47079 Male 68895.3070 0 ownYes subNo Travelers  
## 180 57.39567 Female 37797.9068 0 ownYes subNo Travelers  
## 181 55.15229 Female 96508.8939 0 ownYes subNo Travelers  
## 182 55.76861 Female 55318.2211 0 ownYes subNo Travelers  
## 183 57.79006 Female 105537.8216 0 ownYes subNo Travelers  
## 184 68.05148 Male 104312.4450 0 ownYes subNo Travelers  
## 185 50.50749 Female 48946.0734 0 ownYes subYes Travelers  
## 186 48.84991 Female 59075.1193 0 ownNo subNo Travelers  
## 187 58.60794 Female 60168.2825 0 ownYes subNo Travelers  
## 188 56.42121 Female 64723.6017 0 ownYes subNo Travelers  
## 189 58.31855 Male 86776.8179 0 ownYes subNo Travelers  
## 190 39.08879 Female 77424.6476 0 ownYes subNo Travelers  
## 191 68.05990 Female 51535.1140 0 ownNo subNo Travelers  
## 192 61.13651 Male 72646.7373 0 ownYes subNo Travelers  
## 193 63.89972 Male 50749.3893 0 ownNo subNo Travelers  
## 194 50.83716 Male 42467.3689 0 ownYes subYes Travelers  
## 195 44.03781 Male 51354.4811 0 ownYes subNo Travelers  
## 196 46.14294 Male 77294.7603 0 ownYes subNo Travelers  
## 197 50.32201 Female 62286.3156 0 ownYes subNo Travelers  
## 198 53.36651 Male 60976.5295 0 ownYes subNo Travelers  
## 199 57.50554 Male 79570.0474 0 ownYes subYes Travelers  
## 200 61.32715 Female 15346.6801 0 ownYes subNo Travelers  
## 201 62.76302 Female 46587.2163 0 ownYes subNo Travelers  
## 202 64.63338 Male 113456.7973 0 ownNo subNo Travelers  
## 203 44.91466 Male 63595.4752 0 ownYes subNo Travelers  
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## 205 51.33729 Female 78019.7152 0 ownNo subNo Travelers  
## 206 68.04916 Female 69075.4494 0 ownNo subNo Travelers  
## 207 66.40856 Female 101173.5572 0 ownYes subNo Travelers  
## 208 60.96893 Male 60930.7442 0 ownYes subNo Travelers  
## 209 60.56487 Male 62932.7986 0 ownNo subNo Travelers  
## 210 47.77695 Female 92431.4551 0 ownYes subNo Travelers  
## 211 54.29376 Male 45947.0295 0 ownYes subNo Travelers  
## 212 51.70697 Female 68450.7529 0 ownNo subNo Travelers  
## 213 62.39423 Female 82348.6867 0 ownYes subNo Travelers  
## 214 52.39165 Male 49195.3690 0 ownYes subNo Travelers  
## 215 71.89326 Female 60279.3325 0 ownYes subYes Travelers  
## 216 59.60740 Male 36982.5616 0 ownYes subNo Travelers  
## 217 51.35711 Female 71487.6243 0 ownNo subNo Travelers  
## 218 60.65538 Female 74776.7720 0 ownNo subNo Travelers  
## 219 56.51857 Male 37604.6675 0 ownNo subYes Travelers  
## 220 61.59071 Female 29870.5387 0 ownYes subNo Travelers  
## 221 78.19725 Female 24604.4294 0 ownYes subNo Travelers  
## 222 47.16294 Male 64843.0853 0 ownNo subNo Travelers  
## 223 80.48618 Male 82076.8295 0 ownYes subYes Travelers  
## 224 57.26986 Male 48402.1918 0 ownYes subYes Travelers  
## 225 58.85948 Male 114278.2556 0 ownYes subNo Travelers  
## 226 61.11271 Male 96902.3924 0 ownYes subNo Travelers  
## 227 55.86648 Female 58359.6944 0 ownNo subNo Travelers  
## 228 54.87589 Female 106430.0483 0 ownYes subNo Travelers  
## 229 61.12275 Female 72474.4584 0 ownNo subNo Travelers  
## 230 66.06278 Male 55406.7404 0 ownNo subNo Travelers  
## 231 32.19585 Female 50595.7770 2 ownYes subNo Moving up  
## 232 37.85733 Male 50980.4842 5 ownYes subNo Moving up  
## 233 46.48570 Female 40590.0810 3 ownNo subNo Moving up  
## 234 31.12771 Male 52298.0727 2 ownNo subNo Moving up  
## 235 33.88701 Male 57663.8608 3 ownNo subNo Moving up  
## 236 36.35087 Male 56977.0858 2 ownYes subNo Moving up  
## 237 33.03199 Female 36411.9826 0 ownNo subNo Moving up  
## 238 37.62096 Male 46974.9880 3 ownYes subNo Moving up  
## 239 30.34396 Male 65233.2557 2 ownNo subNo Moving up  
## 240 42.90665 Female 58739.3097 3 ownYes subNo Moving up  
## 241 32.58348 Female 49509.4299 1 ownYes subNo Moving up  
## 242 34.24554 Female 57037.8632 1 ownNo subYes Moving up  
## 243 36.97339 Female 53792.4011 0 ownNo subNo Moving up  
## 244 39.22999 Female 69947.6029 2 ownNo subNo Moving up  
## 245 39.42243 Female 57265.3026 0 ownNo subNo Moving up  
## 246 38.53708 Female 49895.1765 3 ownNo subNo Moving up  
## 247 35.73317 Female 52953.4124 2 ownYes subNo Moving up  
## 248 30.72502 Female 70541.4989 4 ownNo subNo Moving up  
## 249 43.00192 Female 66923.6198 0 ownNo subNo Moving up  
## 250 33.72563 Male 39678.9516 2 ownNo subNo Moving up  
## 251 40.70749 Female 54864.7827 2 ownNo subNo Moving up  
## 252 34.60063 Female 60045.4724 0 ownYes subNo Moving up  
## 253 37.78847 Male 68037.8091 4 ownNo subNo Moving up  
## 254 34.15682 Female 73797.5015 0 ownNo subNo Moving up  
## 255 32.57808 Female 53604.1712 3 ownNo subNo Moving up  
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## 258 30.88631 Female 50473.3576 3 ownYes subYes Moving up  
## 259 33.99961 Female 61154.5388 1 ownNo subNo Moving up  
## 260 31.71306 Female 65688.5287 3 ownNo subNo Moving up  
## 261 38.52915 Female 49267.0873 2 ownYes subYes Moving up  
## 262 28.58994 Female 29771.9069 3 ownNo subNo Moving up  
## 263 36.00375 Male 51829.6230 1 ownNo subNo Moving up  
## 264 34.18425 Male 45637.0949 1 ownYes subNo Moving up  
## 265 39.05297 Male 53668.8595 7 ownYes subNo Moving up  
## 266 31.74411 Female 43413.7199 4 ownNo subNo Moving up  
## 267 35.89567 Male 62087.1248 0 ownNo subNo Moving up  
## 268 34.42021 Female 49235.0167 2 ownNo subNo Moving up  
## 269 43.17971 Male 39779.9940 0 ownYes subNo Moving up  
## 270 38.28148 Female 41097.1038 2 ownNo subNo Moving up  
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## 272 42.03798 Female 58756.3158 2 ownNo subNo Moving up  
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## 274 40.16990 Female 44125.3994 4 ownYes subNo Moving up  
## 275 37.41808 Female 36257.9281 1 ownNo subNo Moving up  
## 276 39.14320 Female 45347.0054 1 ownYes subYes Moving up  
## 277 29.76301 Female 50720.2154 0 ownNo subNo Moving up  
## 278 36.23860 Female 46540.8764 1 ownNo subYes Moving up  
## 279 37.24773 Female 50560.1687 3 ownYes subNo Moving up  
## 280 37.35856 Female 59663.2802 1 ownNo subNo Moving up  
## 281 31.69081 Female 55940.7776 3 ownNo subNo Moving up  
## 282 34.03454 Female 66007.9894 3 ownNo subNo Moving up  
## 283 36.89752 Female 39366.9527 1 ownNo subYes Moving up  
## 284 38.16915 Female 54509.2542 2 ownNo subNo Moving up  
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## 286 40.30668 Female 54740.2793 0 ownYes subNo Moving up  
## 287 36.24118 Male 49775.2883 1 ownNo subYes Moving up  
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## 289 26.40436 Female 73240.6228 2 ownNo subNo Moving up  
## 290 42.40763 Male 53520.3553 1 ownNo subNo Moving up  
## 291 35.88063 Male 66423.7386 1 ownNo subNo Moving up  
## 292 36.22989 Female 41192.2799 4 ownNo subNo Moving up  
## 293 39.54330 Female 58933.3443 2 ownYes subYes Moving up  
## 294 35.79961 Female 52352.6865 1 ownNo subYes Moving up  
## 295 36.14964 Male 40522.3920 0 ownYes subNo Moving up  
## 296 32.95227 Female 43882.4256 0 ownYes subNo Moving up  
## 297 40.96255 Female 64197.0869 2 ownNo subNo Moving up  
## 298 38.22980 Male 47580.9268 0 ownNo subYes Moving up  
## 299 33.17036 Male 60747.3364 1 ownNo subNo Moving up  
## 300 34.38388 Male 53674.9314 5 ownYes subNo Moving up

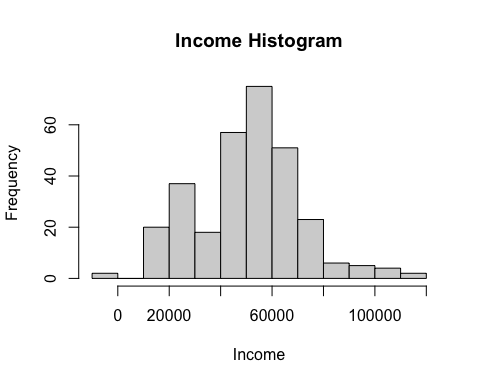
str(seg.df)

## 'data.frame': 300 obs. of 7 variables:  
## $ age : num 47.3 31.4 43.2 37.3 41 ...  
## $ gender : chr "Male" "Male" "Male" "Female" ...  
## $ income : num 49483 35546 44169 81042 79353 ...  
## $ kids : int 2 1 0 1 3 4 3 0 1 0 ...  
## $ ownHome : chr "ownNo" "ownYes" "ownYes" "ownNo" ...  
## $ subscribe: chr "subNo" "subNo" "subNo" "subNo" ...  
## $ Segment : chr "Suburb mix" "Suburb mix" "Suburb mix" "Suburb mix" ...

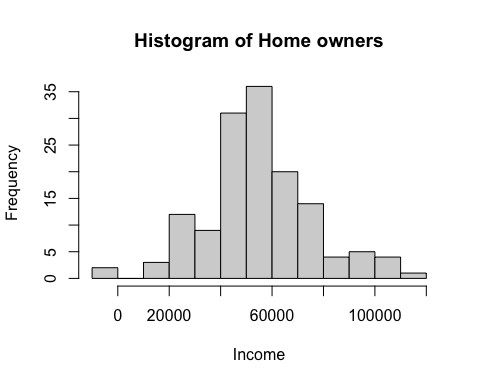
chisq.test(table(seg.df$Segment))

##   
## Chi-squared test for given probabilities  
##   
## data: table(seg.df$Segment)  
## X-squared = 17.333, df = 3, p-value = 0.0006035

# p Value is less than 0.05 so we reject the null hypothesis   
  
#3  
#3partA  
hist(seg.df$income, main="Income Histogram",xlab="Income",ylab="Frequency")



with(seg.df,hist(income[ownHome=="ownYes"], main="Histogram of Home owners",xlab="Income",ylab="Frequency"))



with(seg.df,hist(income[ownHome=="ownNo"],main="Histogram of Non-Home owners",xlab="Income",ylab="Frequency"))  
#3partB  
t.test(income~ownHome,data=seg.df)#p-value = 0.001195 is less than 0.05 so we reject it

##   
## Welch Two Sample t-test  
##   
## data: income by ownHome  
## t = -3.2731, df = 285.25, p-value = 0.001195  
## alternative hypothesis: true difference in means between group ownNo and group ownYes is not equal to 0  
## 95 percent confidence interval:  
## -12080.155 -3007.193  
## sample estimates:  
## mean in group ownNo mean in group ownYes   
## 47391.01 54934.68

#3partC  
t.test(income~ownHome,data=seg.df, Segment=="Travelers")

##   
## Welch Two Sample t-test  
##   
## data: income by ownHome  
## t = 0.26561, df = 53.833, p-value = 0.7916  
## alternative hypothesis: true difference in means between group ownNo and group ownYes is not equal to 0  
## 95 percent confidence interval:  
## -8508.993 11107.604  
## sample estimates:  
## mean in group ownNo mean in group ownYes   
## 63188.42 61889.12

#we fail to reject the hypthesis that mweans income does not differ   
  
#4 part A  
#Null hypothesis: the 2 population means are equal  
#Alternative hypothesis: the 2 population means differ  
seg.aov.own <- aov(income~ownHome,data=seg.df)  
anova(seg.aov.own)

## Analysis of Variance Table  
##   
## Response: income  
## Df Sum Sq Mean Sq F value Pr(>F)   
## ownHome 1 4.2527e+09 4252661211 10.832 0.001118 \*\*  
## Residuals 298 1.1700e+11 392611030   
## ---  
## Signif. codes: 0 '\*\*\*' 0.001 '\*\*' 0.01 '\*' 0.05 '.' 0.1 ' ' 1

sqrt(10.832)

## [1] 3.2912

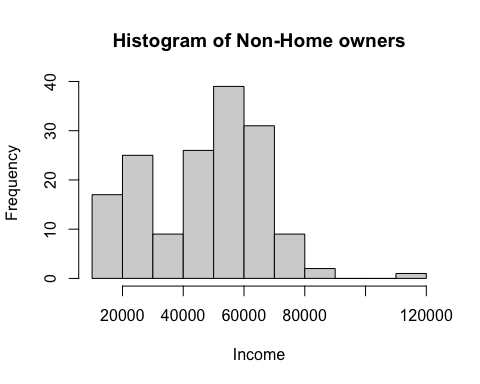
#Using a significance level of .05, the test is statistically significant  
#Decision: Reject the null hypothesis  
#Conclude: The sample evidence suggest that the population means differ  
  
#4 part B  
# ANNOVA used to compare two or more population means   
# T Means is used to compare only 2 independent groups   
# the results are the same in ANNNOVA and T test   
# the F value is the squared value of the t value from T test  
# F value is the test statistic in ANNOVA  
  
#4 part C  
#the P value is 0.001195 and P value from ANOVA is 0.001118  
  
#4 part D  
table(seg.df$Segment)

##   
## Moving up Suburb mix Travelers Urban hip   
## 70 100 80 50

seg.aov.seg <- aov(income~Segment,data=seg.df)  
anova(seg.aov.seg)

## Analysis of Variance Table  
##   
## Response: income  
## Df Sum Sq Mean Sq F value Pr(>F)   
## Segment 3 5.4970e+10 1.8323e+10 81.828 < 2.2e-16 \*\*\*  
## Residuals 296 6.6281e+10 2.2392e+08   
## ---  
## Signif. codes: 0 '\*\*\*' 0.001 '\*\*' 0.01 '\*' 0.05 '.' 0.1 ' ' 1

library(lattice)



histogram(~income | Segment, data=seg.df)

