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Stat135 Lab1

101 LAB

Problem 1

Estimated Proportion: 0.236

Estimated SE: 0.0189001

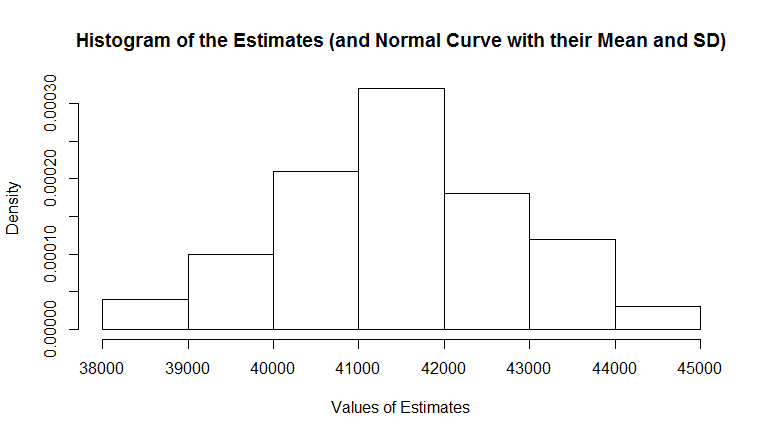
Confidence Interval: 0.1989558 0.2730442

Problem 2

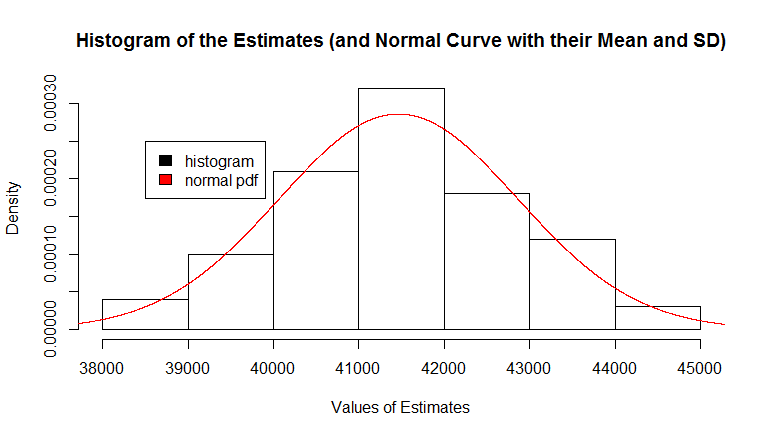
(b) Average: 41503.18

SD: 1539.565

Histogram:

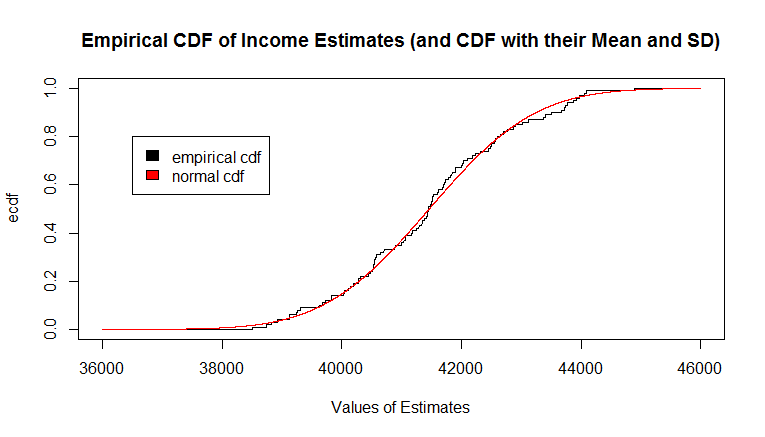


(c) Plot:



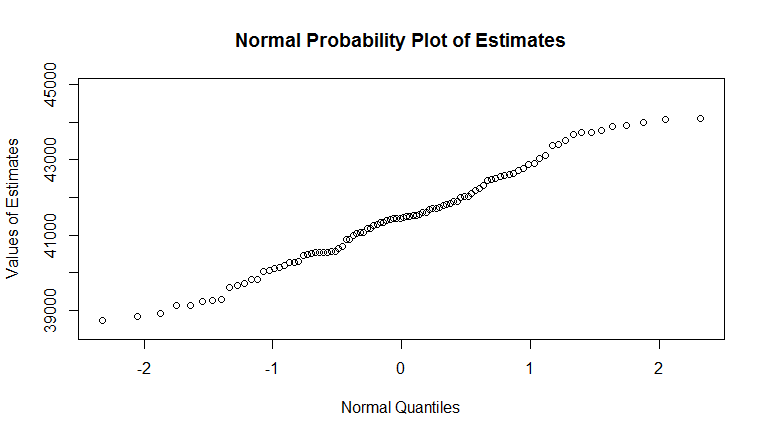
Comment: The curve of normal density fits the histogram very well.

(d) ECDF, Normal CDF:



Comment: The curve of normal cdf fits the curve of empirical cdf very well.

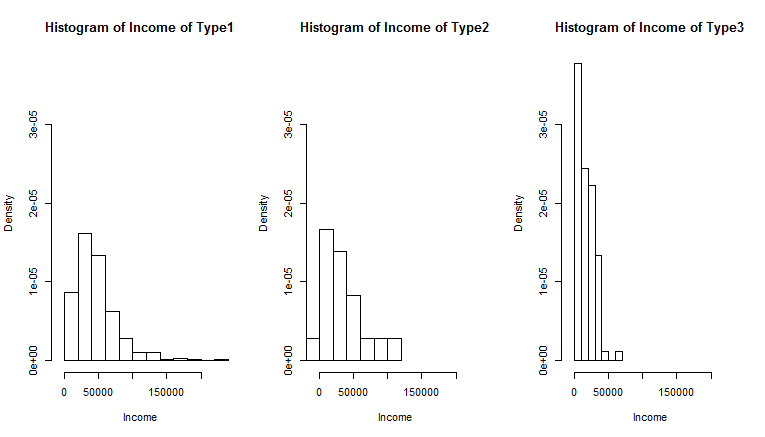
(e) Plot:

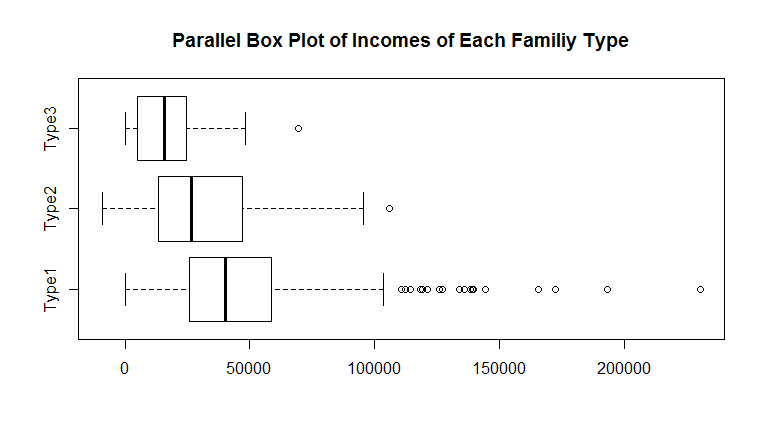


Comment: Since the plot roughly forms a straight line, the approximation is normally distributed.

(f) Number of intervals: 95

Problem 3

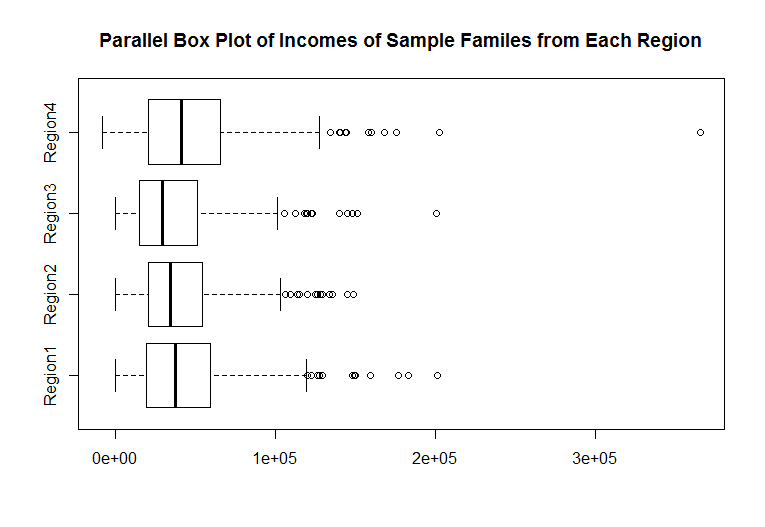




Type1 has some families with income over 100000, so it may be because two people in this family earn money. About 75% of Type1 earns less than 75000 (See Upper Quartile). More than half earn less than 5000 (See Median Bar). About 25% earns less than 25000 (See Lower Quartile). Type3’s most families’ incomes range from 0 to 50000. More than 50% of Type3 earn less than 25000 (See Median Bar). About 75% of Type3 earns less than 50000 (See Upper Quartile Bar). Type2's families are distributed similar to Type1's families but Type2’s families generally have lower income than Type1’s families (because Type2’s upper quartile and median bars are located lower than those of Type1). In general, if we pick one family from each type, Type1 earns more than Type2 and Type2 earns more than Type3.

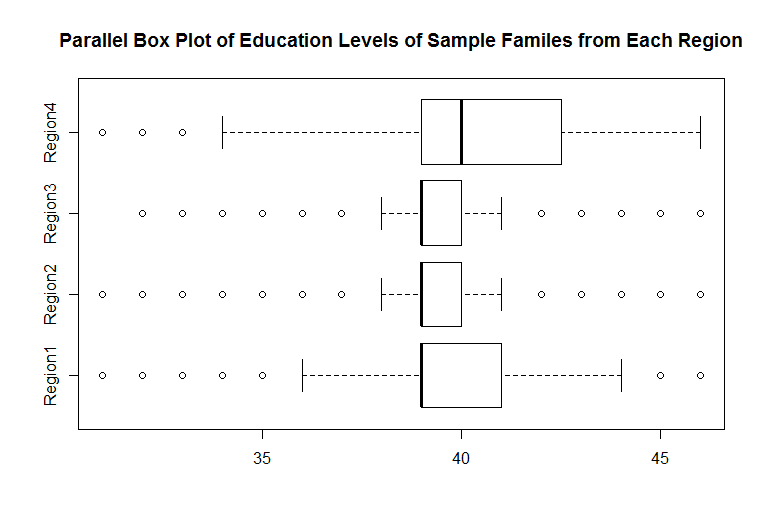
Problem 4

a)



Region1 has the highest median while Region3 has the lowest median. Also, Region1 has the highest upper quartile and lower quartile. Region3 has the lowest upper quartile and lower quartile. But the differences in income do not appear to be significant because median bars are within 10000 of each other. Also, upper/lower quartile bars are within 10000 of each other.

b)



Yes, there appears to be a difference in education level among the four regions. For Region1, Region2, and Region4, 75% of sample have high school diploma (see lower quartile). For Region3, 50% of sample have high school diploma (see median bar). Region1 and Region2's upper quartile's education level is higher than upper quartile of Region4. Region4's upper quartile's education level is higher than that of Region3.