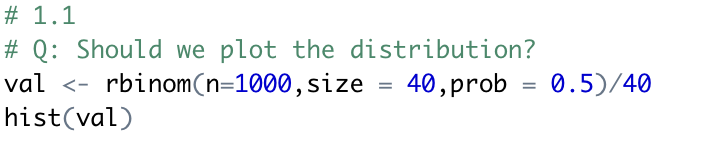
**Q 1.1**



The distribution of the number of heads in the set of coin flips is

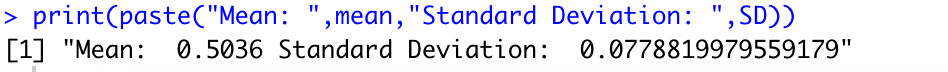
Chart, histogram

Description automatically generated

**Q 1.2**

Graphical user interface

Description automatically generated with medium confidence



**Q 1.3**

The Z-statistic for conducting a test of the null hypothesis that the coin is fair is defined as below

**A picture containing graphical user interface

Description automatically generated**

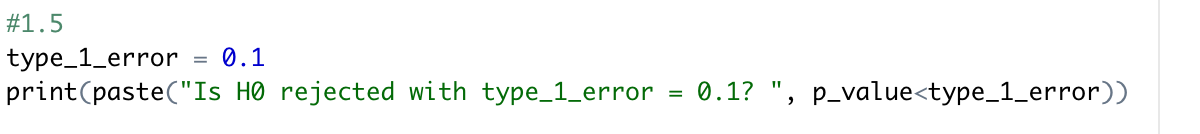
**Q 1.4**

**Text

Description automatically generated with low confidence**

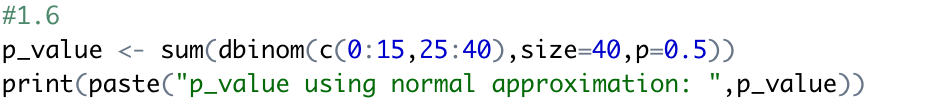
****

**Q 1.5**





**Q 1.6**

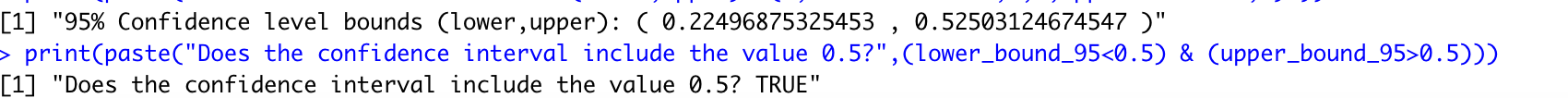
****

****

**Q 1.7**

**Text

Description automatically generated**

****

**Q 1.8**

**Text

Description automatically generated**

**Text

Description automatically generated**

Final comment:

The 90% confidence interval range is narrower compared to 95% confidence interval, therefore there's more chance for the null hypothesis to be rejected

**Q 2.1**

A picture containing diagram

Description automatically generated



**Q 2.2**

**Text

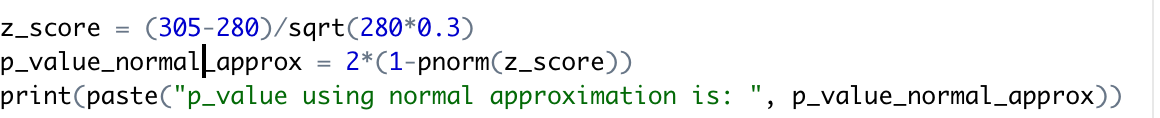
Description automatically generated**

****

Final comment:

Based on above range of 95% confidence interval, the p-value would be less than 0.05, therefore the researcher can reject the null hypothesis that the proportion of drivers wearing their seatbelt after the intervention is equal to 0.7 (or unchanged from before)

**Q 2.3**

****

****

Final comment:

As p\_value is lower than type 1 error probability 0.05, the researcher can reject the null hypothesis that proportion of drivers wearing seatbelt after intervention is same as before intervention. This conclusion is same as the conclusion from the confidence interval found earlier.

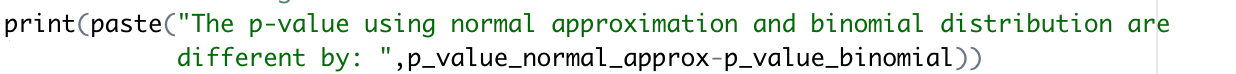
**Q 2.4**

**Text

Description automatically generated**

****

As p-value is lower than type 1 error probability 0.05, the researcher can reject the null hypothesis that proportion of drivers wearing seatbelt after intervention is same as before intervention.





Final comment: The above p-values are not very different.

**Q 2.5**

**Text

Description automatically generated**

****

**Q 3.1**

**Text

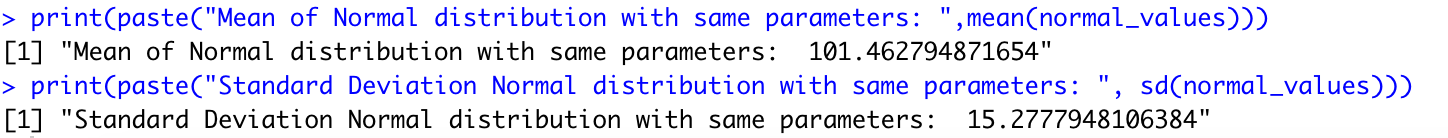
Description automatically generated**

Text

Description automatically generated

Chart, histogram

Description automatically generated



Chart, histogram

Description automatically generated

Final comment:

As seen above, the distribution of the IQ variable approximately resembles a normal distribution as their graphic representations along with their mean and standard deviation is similar.

**Q 3.2**

**A picture containing text

Description automatically generated**

**Text

Description automatically generated**

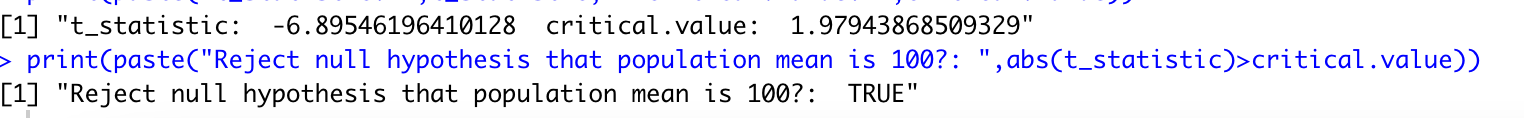
Final comment:

The mean is very well inside the lower bound of the 95% confidence interval.

**Q 3.3**

**Text

Description automatically generated with medium confidence**

****

**Q 3.4**

**Text

Description automatically generated with medium confidence**

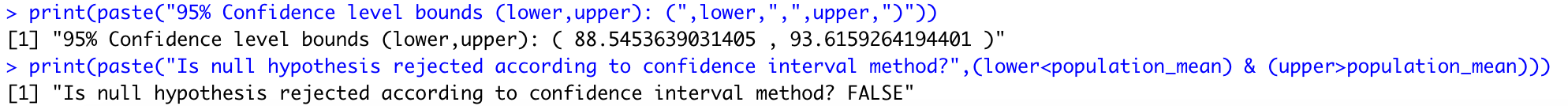
****

Final comment: As the p-value is less than 0.05, the probability of the population mean being as or more extreme is higher therefore null hypothesis that the population mean is 100 is rejected

**Q 3.5**

A picture containing text

Description automatically generated



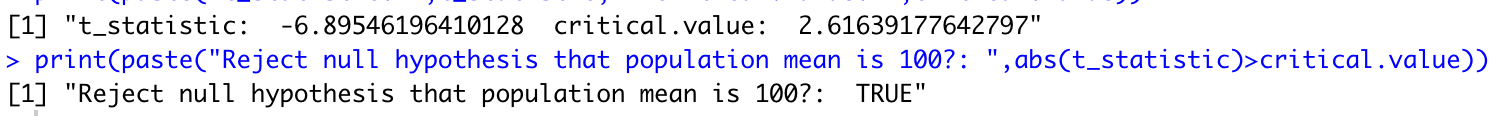
Final comment:

As the bounds of confidence interval ( 88.5453639031405 , 93.6159264194401 ) don't include population mean of 100, the null hypothesis that the population mean is 100 is rejected. This conclusion is the same as hypothesis test method.

**Q 3.6**

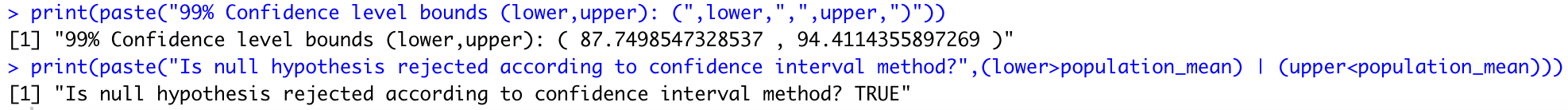
**Text

Description automatically generated**

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**Text

Description automatically generated with low confidence**

****

Final comment:

As the bounds of confidence interval ( 87.7498547328537 , 94.4114355897269 ) don't include population mean of 100, the null hypothesis that the population mean is 100 is rejected. This conclusion is the same as hypothesis test method with 0.01 significance level.