MAT5007 – Applied Statistical Methods

Embedded Lab – *R* Statistical Software

FALL SEMESTER –
20222023L25+L26
SLOT

E-RECORD

Experiment No.: 5

Submitted By

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SITE

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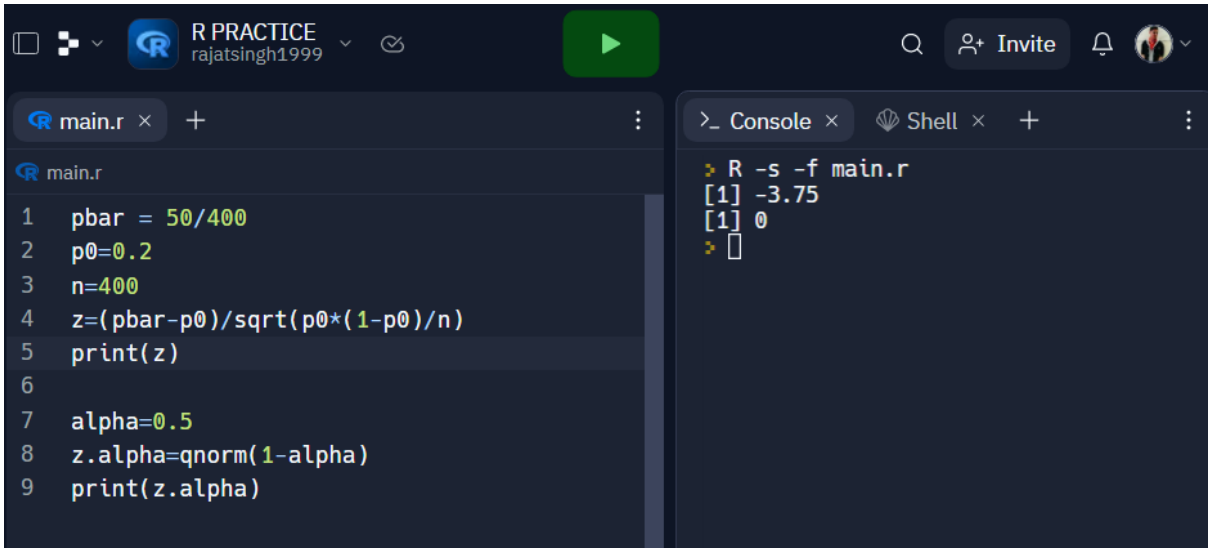
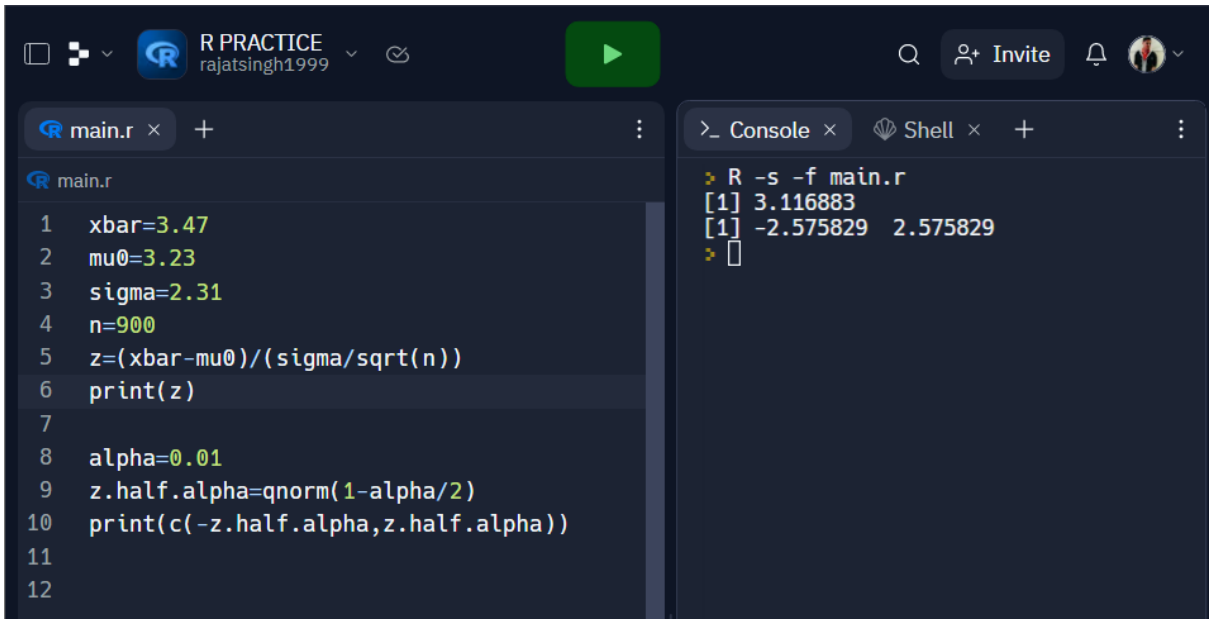
Note:The codes are done in "repl it" environment because I was facing errors in Rstudio due to my laptop data being corrupted. Thank You for the considerations.

1. Experience has shown that 20% of a manufactured product is of top quality. In one day's production of 400 articles, only 50 are of top quality. Write down the R programming code to test whether the production of the day chosen is a representative sample at 95% confidence level.



The test statistic -3.75 is not greater than the critical value of 1.644854. Hence, at 0.05 significance level, we fail to reject the null hypothesis that 20% of the manufactured product is of top quality.

2. A sample of 900 items is found to have a mean of 3.47 cm. Write down the R programming code to test whether it can be reasonably regarded as a simple sample from a population with mean 3.23 cm and SD 2.31 cm at 99% level of confidence.



The test statistic 3.116883 does not lie between the critical values -2.575829 and 2.575829. Hence, at 0.01 significance level, we succeed in rejecting the null hypothesis that it cannot be reasonably regarded as a simple sample from a population with mean 3.23 cm and SD 2.31 cm