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STAT400

Project

1. Basics Statistics for Uniform Sample on interval [0,1]

**————— 12/2/2016 12:45:01 PM ————————————————————**

Welcome to Minitab, press F1 for help.

MTB > Executing from file: C:\Program Files (x86)\Minitab\Minitab 17\English\Macros\Startup.mac

This Software was purchased for academic use only.

Commercial use of the Software is prohibited.

MTB > Save "C:\Users\Surtej\Desktop\SarinMT.MPJ";

SUBC> Project;

SUBC> Replace.

Saving file as: ‘C:\Users\Surtej\Desktop\SarinMT.MPJ’

Existing file replaced.

MTB > Random 1000 C1;

SUBC> Uniform 0.0 1.0.

MTB > Describe C1;

SUBC> Mean;

SUBC> StDeviation;

SUBC> Median;

SUBC> IQRange;

SUBC> Count.

**Descriptive Statistics: C1**

Total

Variable Count Mean StDev Median IQR

C1 1000 0.49456 0.28641 0.48651 0.47614

1. Histogram of Uniform Distribution [0,1]



1. Basic Statistics for the Sampling Distribution of the Sample Mean for Samples of Size 12

MTB > Histogram C1;

SUBC> Bar;

SUBC> Distribution;

SUBC> Normal.

**Histogram of C1**

MTB > Random 1000 C2-C13;

SUBC> Uniform 0.0 1.0.

MTB > RMean C2-C13 C14.

MTB > Describe C14;

SUBC> Mean;

SUBC> StDeviation;

SUBC> Median;

SUBC> IQRange;

SUBC> Count.

**Descriptive Statistics: Sampling Distn for n = 12**

Total

Variable Count Mean StDev Median IQR

Sampling Distn for n = 1 1000 0.50326 0.08348 0.50409 0.11352

1. Histogram of the Sampling Distribution of the Sample Mean for Samples of Size 12



1. Basic Statistics for the Sampling Distribution of the Sample Mean for Samples of Size 36

MTB > Histogram C14;

SUBC> Bar;

SUBC> Distribution;

SUBC> Normal.

**Histogram of Sampling Distn for n = 12**

MTB > Random 1000 C15-C50;

SUBC> Uniform 0.0 1.0.

MTB > RMean C15-C50 C51.

MTB > Describe C51;

SUBC> Mean;

SUBC> StDeviation;

SUBC> Median;

SUBC> IQRange;

SUBC> Count.

**Descriptive Statistics: Sampling Distn for n = 36**

Total

Variable Count Mean StDev Median IQR

Sampling Distn for n = 3 1000 0.50044 0.04720 0.49937 0.06506

1. Histogram for the Sampling Distribution of the Sample Mean for Samples of Size 36



1. The percentage of Confidence Intervals produced that contain and do not contain the true Mean

MTB > Histogram C51;

SUBC> Bar;

SUBC> Distribution;

SUBC> Normal.

**Histogram of Sampling Distn for n = 36**

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MTB > Let C52 = C51 - (1.645\*(SQRT(1/12)/SQRT(36)))

MTB > Let C53 = C42 + (1.645\*(SQRT(1/12)/SQRT(30)))

MTB > Let C54 = IF(C52>0.5,1,0)

MTB > Let C55 = IF(C53<0.5,1,0)

MTB > Sum C54.

**Sum of LL>mean**

Sum of LL>mean = 43

MTB > Sum C55.

**Sum of UL <mean**

Sum of UL <mean = 418

MTB > Save "C:\Users\Surtej\Desktop\SarinMT.MPJ";

SUBC> Project;

SUBC> Replace.

Saving file as: ‘C:\Users\Surtej\Desktop\SarinMT.MPJ’

Existing file replaced.

The total number of intervals that do not contain the population mean = 461

The total number of intervals that do not contain the population mean = (1000 – 461) = 539

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Percentage of Confidence Intervals produced that do contain the true Mean = 0.539%

Percentage of Confidence Intervals produced that do not contain the true Mean = 0.461%