Project 3
STAT 355

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```
# initialize parameters for normal distribution
N <- 40 # size
mu <- 3 # mean
sigma <- 2 # standard deviation

sampMeans <- randDist(N, mu, sigma, "normal", "part1.tex")
plotHist(sampMeans, "hist1.png", 0.1)
```

1 Part 1

An oceanographer wants to test, on the basis of a random sample of size 35, whether the average depth of the ocean in a certain area is 72.4 fathoms. At the 0.05 level of significance, what will the oceanographer decide if she gets a sample mean of 73.2? Assume the population standard deviation is 2.1.

The null hypothesis, H_0, claims the mean depth of the ocean in a certain area is 72.4, while the alternative hypothesis, H_a says otherwise.

$$H_0 : \mu = 72.4 \; vs \; H_a : \mu = 73.2$$