Hyder Presswala B-2 16010122151 PSOT Tutorial:-06

BATCH -2

Q.1 Test the significance of the difference between the means of two normal population with the same standard deviation from the following data.

	Size	Mean	St. Dev
Sample-1	1000	25	5
Sample-2	2000	23	7

Code:-

sm1=25# mean for sample 1

sm2=23 # mean for sample 2

sd1=5 # standard deviation of sample1

sd2=7 # standard deviation of sample2

n1=1000 # size of sample 1

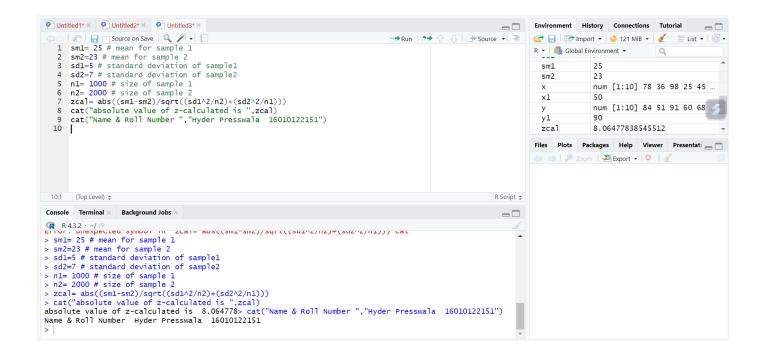
n2=2000 # size of sample 2

 $zcal = abs((sm1-sm2)/sqrt((sd1^2/n2)+(sd2^2/n1)))$

cat("absolute value of z-calculated is ",zcal)

cat("Name & Roll Number ","Hyder Presswala 16010122151")

Output:-



Q.2. The weights of eight randomly selected athletes are recorded in kilograms: 70, 75, 78, 80, 82, 85, 87, 90. The weights of twelve randomly selected basketball players are recorded in kilograms: 72, 74, 76, 78, 79, 80, 82, 83, 84, 85, 87, 88. Can it be concluded that basketball players, on average, weigh more than athletes?

```
Code:-
```

```
x1 <- c(70, 75, 78, 80, 82, 85, 87, 90)

x2 <- c(72, 74, 76, 78, 79, 80, 82, 83, 84, 85, 87, 88)

sm1= mean (x1) # mean for sample 1

sm2= mean (x2) # mean for sample 2

sd1=sd(x1) # standard deviation of sample1

sd2= sd(x2) # standard deviation of sample2

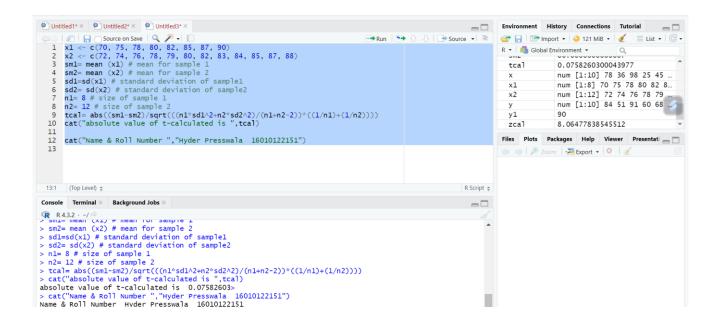
n1= 8 # size of sample 1

n2= 12 # size of sample 2

tcal= abs((sm1-sm2)/sqrt(((n1*sd1^2+n2*sd2^2)/(n1+n2-2))*((1/n1)+(1/n2))))

cat("absolute value of t-calculated is ",tcal)

cat("Name & Roll Number ","Hyder Presswala 16010122151")
```



Q.3. A random sample of 300 observations has a mean of 15.5 kg. Can it be a random sample from a population whose mean is 16 kg and variance is 20 kg?

Code:-

Output:-

```
pm=16 # population mean

sm=15.5 # sample mean

sd=4.47 # standard deviation of sample or population

n= 300 # size of sample

zcal= abs((sm-pm)/(sd/sqrt(n)))

cat("absolute value of z-calculated is ",zcal)

cat("name & rollno"," Sarvesh Pingale & 16010122144")

cat("Name & Roll Number ","Hyder Presswala 16010122151")
```

