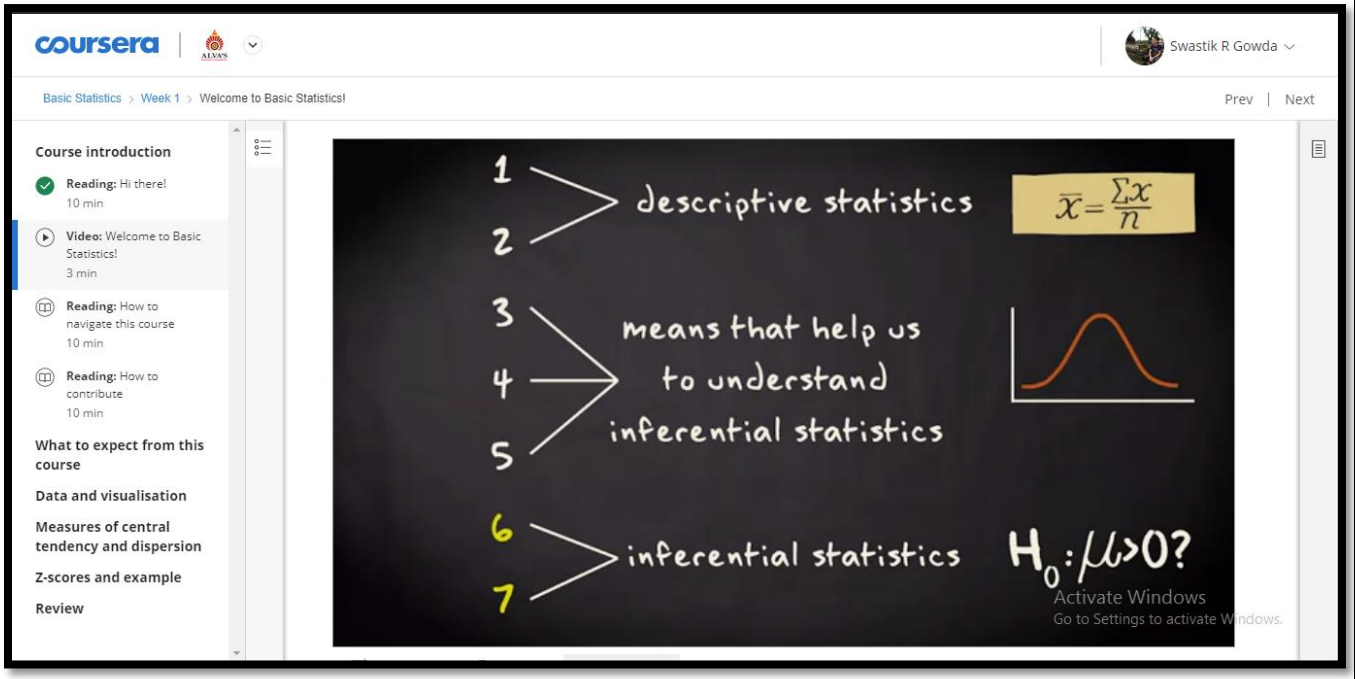
DAILY ASSESSMENT

Date:	20-July-2020	Name:	Swastik R Gowda
Course:	Coursera	USN:	4AL17EC091
Topic:	Basic Statistics (Week – 1)	Semester & Section:	6th Sem 'B' Sec
Github Repository:	swastik-gowda		

FORENOON SESSION DETAILS

Image of session



Report – Report can be typed or hand written for up to two pages.

Basic Statistics:

- Z-scores and example Sometimes researchers want to know if a specific observation is common or exceptional. To answer that question, they express a score in terms of the number of standard deviations it is removed from the mean.
- This number is what we call az-score. If we recode original scores into z-scores, we say that west and ardize a variable. Measures of central tendency and dispersion Besides summarizing data by means of tables and/or graphs, it can also be useful to describe the center of a distribution.
- We can do that by means of so-called measures of central tendency: the mode, median and mean. Yet to adequately describe a distribution we need more information. We also need information about the variability or dispersion of the data. We need, in other words, measures of dispersion.
- Well-known measures of dispersion are the range, the interquartile range, the variance and the standard deviation. A graph that nicely presents the variability of a distribution is the box plot.

Sometimes researchers ask the question if a specific observation is common or exceptional.

- To answer that question, they express a score in terms of the number of standard deviations it is removed from the mean if a distribution is strongly skewed to the left, large negative z-scores are more common because there are more extreme values on the left side of the distribution.
- A rule that applies to any distribution regardless shape, is that 75% of the data must lie within a z-score of plus or minus 2. And 89% within a z-score of plus or minus 3. So in itself a z-score gives you, to a certain extent, information about how extreme an observation is.
- Z-scores are even more useful if you want to compare different distributions. Let's, for example, look at the question whether a body weight of 19.3 is common or not.
- Interval and ratio variables are what we call quantitative variables because the categories are represented by numerical values. Quantitative variables can also be distinguished in discrete and continuous variables.
- A variable is discrete if its possible categories form a set of separate numbers Discover Basic Data Types Some of R's most basic types to get started are:•Decimals values like4.5are called numerics.
- Natural numbers like4are called integers. Integers are also numerics. Boolean values (TRUE or FALSE) are called logical. Text (or string) values are called characters. Coercion: Taming your data It is possible to transform your data from one type to the other. Next to theclass() function, you can use theas() functions to enforce data to change types. For example, var <- "3"var_num <- as.numeric(var) converts the character string"3"invarto a numeric3and assigns it tovar_num.
- However, keep in my that it is not always possible to convert the types without losing information or getting errors. Making a Bar Graph We easily can make graphs to visualize our data. Let's visualize the number of manual and automatic transmissions in our car sample through a bar graph, using the functionbarplot().

- The first argument ofbarplot() is a vector containing the heights of each bar. These heights correspond to the proportional frequencies of a desired measure in your data.
- You can obtain this information using thetable()function.We are going to make a bar graph of theam (transmission) variable of themtcarsdataset.
- In this case, the height of the bars can be the frequency of manual and automatic transmission cars. Therefore, here we are going to usetable() and barplot() to make this plot. Remember, you can select a specific variable using either$or[,].
- If you need to look at your data you can simply enter mt cars into your console, or if you just want to check the variables you can always enterstr(mtcars)in your console