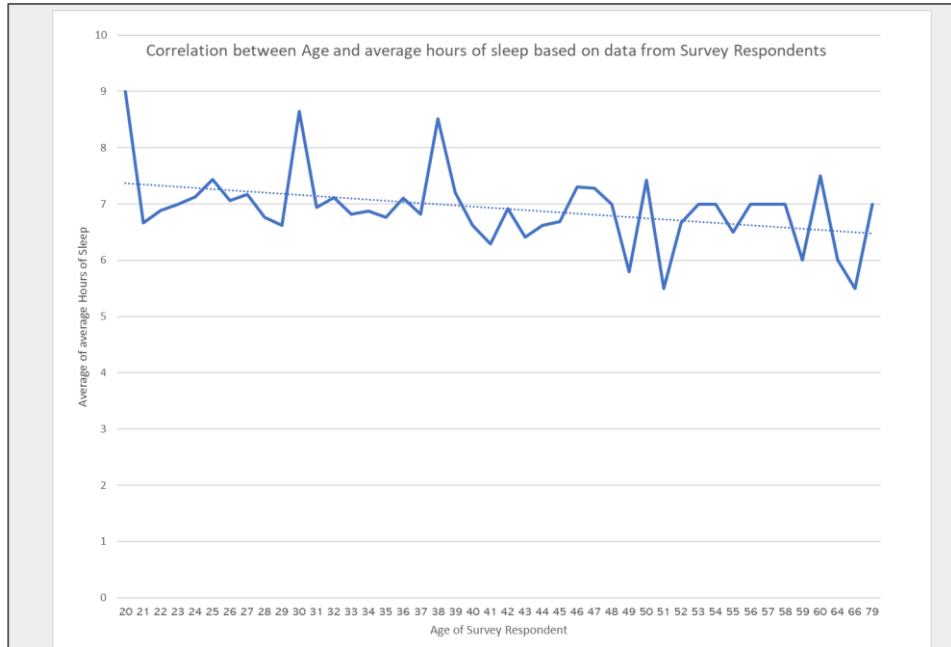# Analysis of Udacity Student Data based on Survey Respondents

Correlation between Age and average hours of sleep based on data from Survey Respondents

Correlation between Age and average hours of sleep based on data from Survey Respondents

Younger respondents in early 20's have the highest sleep average among all survey respondents with the average reaching 9 hours.

All of the survey respondents got an average of at least 7.10 hours of sleep per night as per pivot table. This is confirmed by the grazing on line 7 across all ages.

Based on the graph, it seems like the amount of sleep per night decreases with age.

There were a few outliers in the data set as shown below with ages 1,2,119 which were removed to reflect accurate results.

Age	Average of On average, how many hours of sleep do you get per night?
1	703236
2	7
119	8.652173913

Correlation between Country and Average age of Nanodegree recipient

Correlation between Country and Average age of Nanodegree recipient
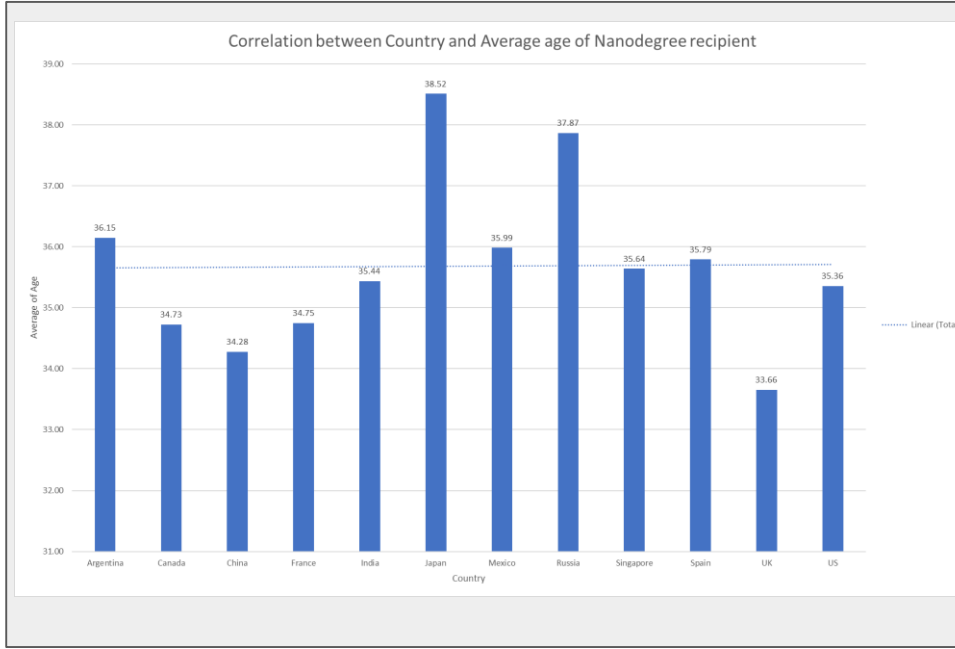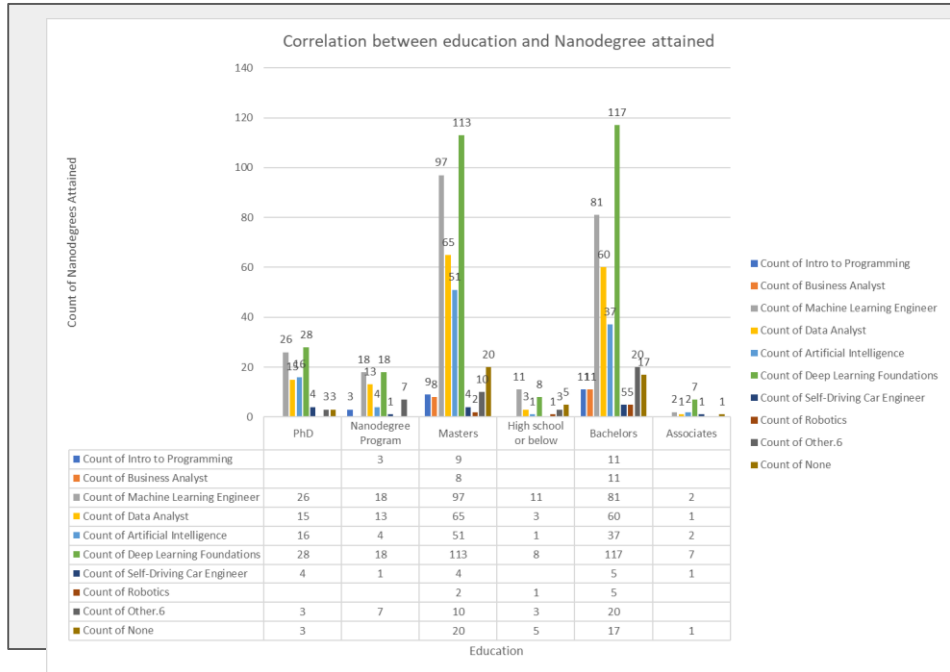
Japan has the highest average age among Nanodegree recipients with an average age of 38.52

UK has the lowest average age among Nanodegree recipients with an average age of 33.66

The average age trend for all countries hovers around 35.5 as indicated by the dotted line.

Correlation between education and Nanodegree attained

Correlation between education and Nanodegree attained

|	PhD	Nanodegree Program	Masters	High school or below	Bachelors	Associates
Count of Intro to Programming		3	9		11	
Count of Business Analyst			8		11	
Count of Machine Learning Engineer	26	18	97	11	81	2
Count of Data Analyst	15	13	65	3	60	1
Count of Artificial Intelligence	16	4	51	1	37	2
Count of Deep Learning Foundations	28	18	113	8	117	7
Count of Self-Driving Car Engineer	4	1	4		5	1
Count of Robotics			2	1	5	
Count of Other.6	3	7	10	3	20	
Count of None	3		20	5	17	1

"Deep Learning Foundations" is the most attained ND among students with Bachelors, Masters, PhD with a total of 117,113, 28 respectively.

Students with Associate degree have attained the least number of Nanodegrees with 14 ND's in total.

Robotics is the least attained ND among students with only 5 degrees awarded across students with Bachelors, Masters and High School education.

Students with Masters degree have attained the highest number of Nanodegrees with 379 ND's in total.

Number of books reads (or listen to) based on the data from survey respondents

Average Number of books read (or listen to) per year based on data from Survey Respondents
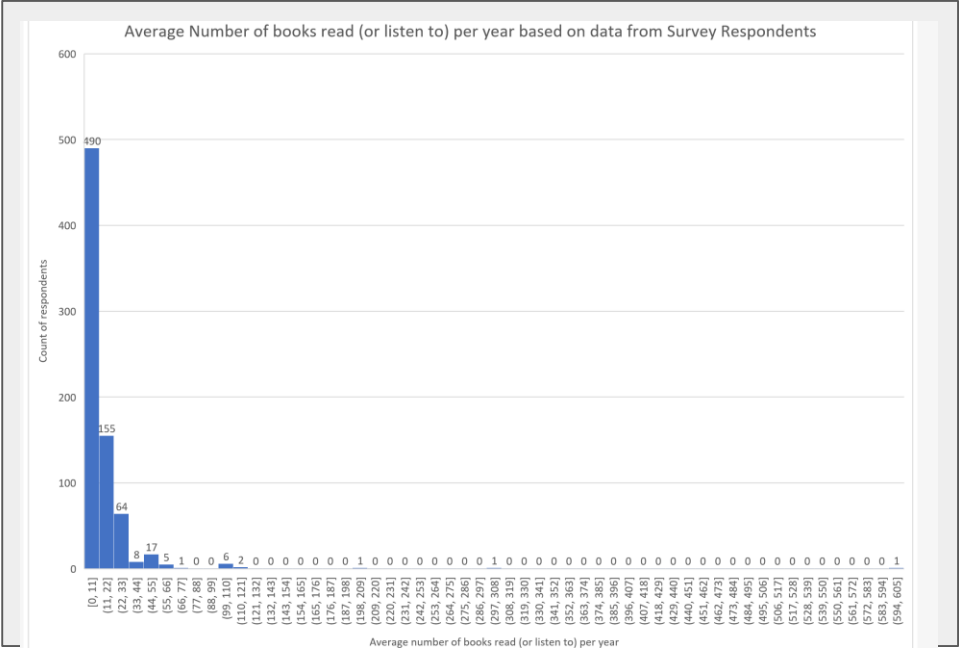
This histogram for Number of books reads (or listen to) based on the data from survey respondents is right skewed. Therefore the mean for each is higher than the median. The calculated values are as below

Mean	13.48336
Median	8
Mode	10
Standard Deviation	28.85525
Range	600
Variance	832.6252

The mean and standard deviation is influenced by outliers while the median is robust. The mode indicates the most frequent occurrence which in this case is 10 books.

Standard deviation measures how far the data values lie from the mean. The histogram indicates a high standard deviation as the data points are spread out over a wider range of values which is confirmed by the range of 600. This is due to the outliers in data.

Lets take the mean and move one standard deviation in either direction. The mean here is 13.49 and the standard deviation is 28.86. We have: 13.49 + 28.86 = 42.35 and 13.49 - 28.85= -15.36

What this means is that most of the students read between -15.37 to 42.35 books per year. The median of these 2 numbers (42.35-15.36)/2 = 13.49 matches with the median of the data set which is again 13.49. This confirms that our calculation is correct.