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ASSIGNMENT: Coding Project

GITHUB : https://github.com/ta22adw/Fundamentals-of-Data-Science-Coding-Project

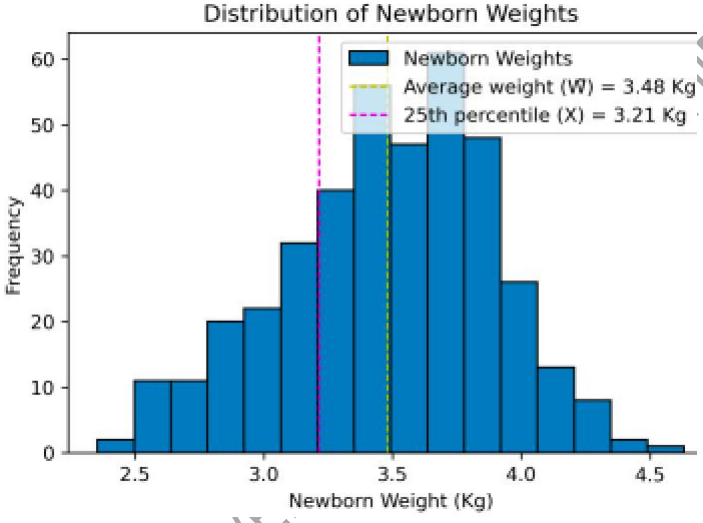
# Newborn Weight Distribution Analysis

**Abstract:**

This study uses a provided dataset to analyse the weight distribution of newborns containing 400 entries. Newborn weight measurements make up the data, which is a vital resource for agencies and healthcare professionals. This paper sheds light on the weight distribution and its importance in healthcare settings by calculating the mean weight and obtaining the necessary number 75% of newborns from the distribution are born with a weight above X.

**Introduction:**

Analysing birth weight distribution accurately is essential for determining baby health and determining the most effective therapies. For the purpose of supplying useful information to healthcare professionals and organisations, this report focuses on analysing a dataset that includes newborns' weight measurements.




**Description of the Data:**

Weight readings for babies make up the dataset offered for study. The weight of a particular baby is represented by each entry in the dataset. The range of weight values in the data reflects the differences in neonatal weight within the population under study. Typically, the dataset consists of a number of continuous weight measurements.

**The Distribution's Description:**

We analyse the dataset to comprehend the infant weight distribution. We can see the distribution pattern by making a histogram and looking at the frequency distribution of the weight readings. The histogram gives a general picture of how common different weight ranges are among babies. Healthcare practitioners can learn more about the general weight features of the newborn population and probable outliers or clusters within the weight distribution by using this analysis.

**Average Weight Calculation:**

The Average weight **(W̃ )** of the newborns is derivedBy adding up all of the weight measurements in the dataset and dividing the total by the overall number of observations, . The following mathematical method can be used to get the mean weight:

$W̃ = \Sigma x / n$

where n denotes the total number of observations and x denotes the total weight measurements. We can determine the average weight to illustrate the neonatal weight distribution's central tendency.

**Average Weight Calculation:**

Calculation of Required Value X: The required value X is that weight over which 75% of the distribution's infants are born. The percentile function in Numpy is used to determine this number, which is the weight over which 75% of the observations fall. The weight threshold that separates the majority of infants from the higher end of the weight distribution can be found by calculating the necessary number X.

100% - 75% = 25% = 25th percentile

**Conclusion:**

The analysis of the neonatal weight distribution presented in this report's conclusion makes use of a dataset that was provided. In order to provide insight into the dataset, the mean weight (W) and the necessary value X are calculated. The weight of a newborn is represented by its mean weight, while the weight that 75% of infants fall under is represented by X. In order to help with data visualisation, the report also contains a histogram that visually represents the distribution. Overall, the dataset is well-understood thanks to this study, which also sheds light on the distribution of infant weight in the studied area