PDS ASSIGNMENT 3 & 4

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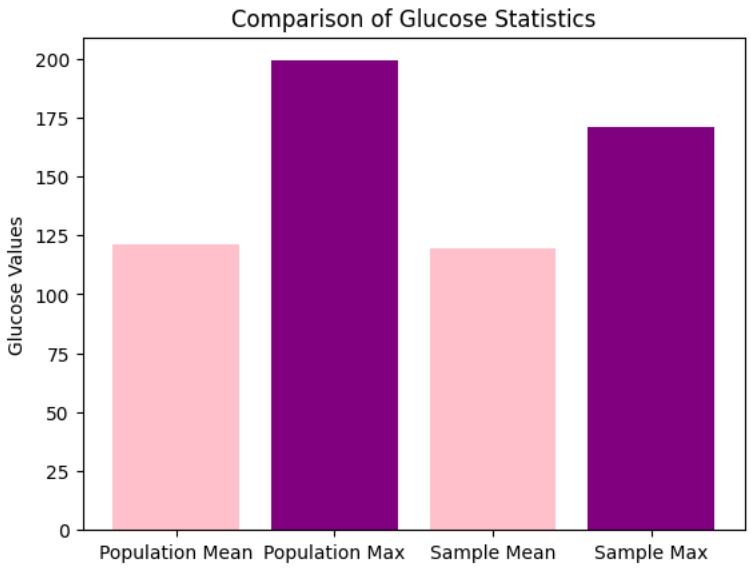
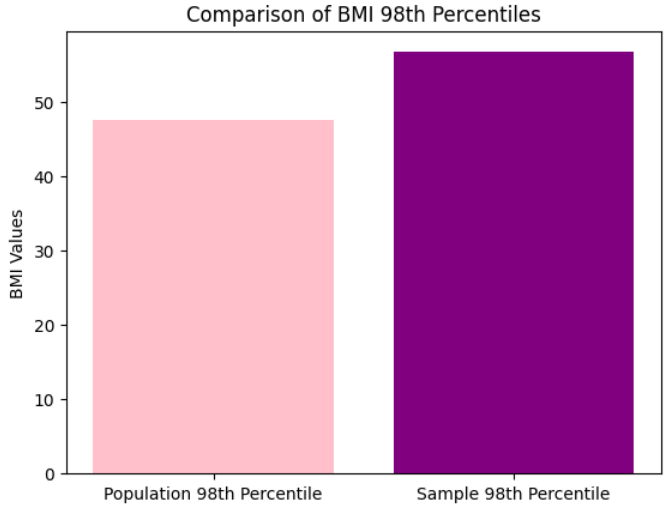
QUESTION 2

2. a) The below graph shows the following:
Seed used = 950
Population Mean: The average glucose level in the entire population.
Population Max: The highest glucose level in the entire population.
Sample Mean: The average glucose level in the random sample of 25 observations.
Sample Max: The highest glucose level in the random sample of 25 observations.

From the graph, it appears that the sample mean is slightly lower than the population mean. The sample max is also lower than the population max. This could be due to random chance when selecting the sample, or it could indicate that the distribution of glucose levels is skewed.



2. b) The population 98th percentile is higher than the sample 98th percentile. This is because smaller samples are less likely to capture the most extreme values present in entire population.



2. c) The bar graph compares the statistics of the bootstrap samples and the population data for various parameters. It includes the mean, standard deviation, 25th, 50th, and 75th percentiles for both the bootstrap samples and the population. Additionally, it calculates and displays the average of the 25th, 50th, and 75th percentiles for comparison. The graph provides a visual representation of how the bootstrap samples align with the population data across these statistical measures.