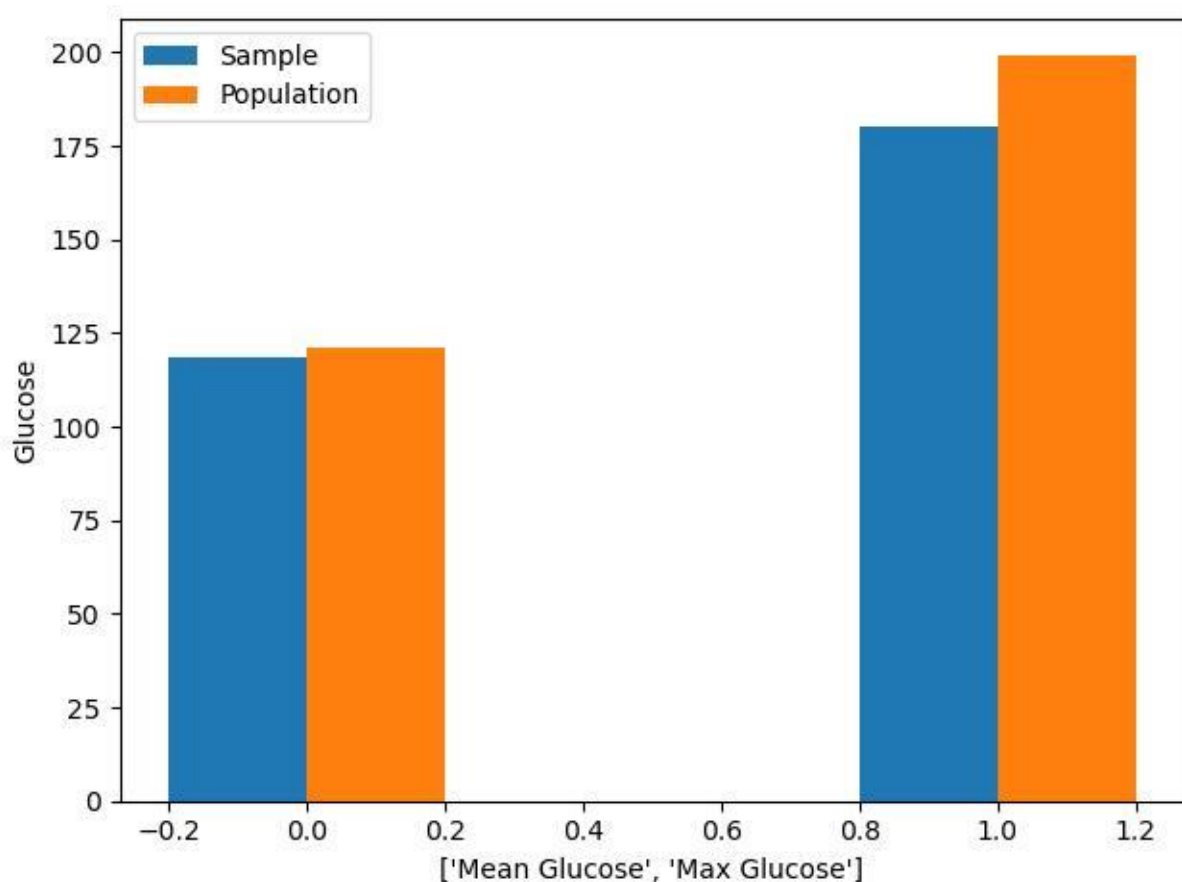


## Report on the Result

(a)

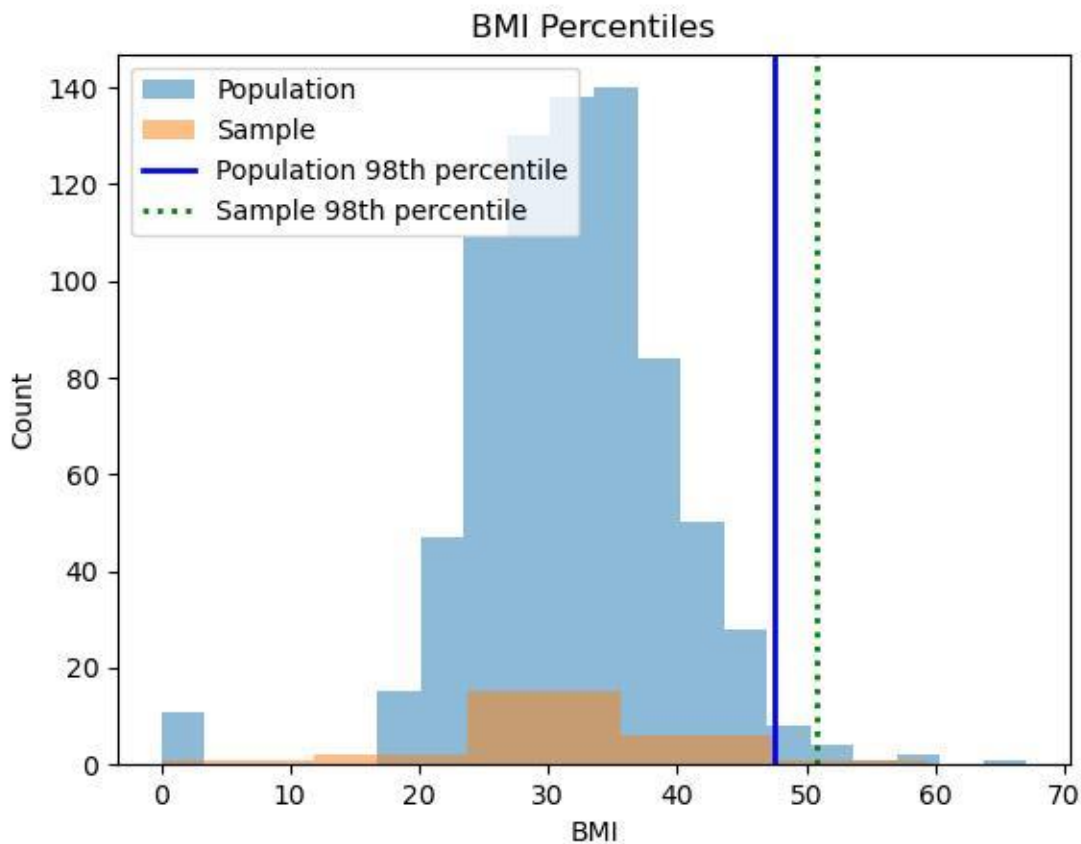
The sample's mean and maximum glucose levels are contrasted with the population's values using a bar plot. The y-axis label specifies that the units of measurement for the glucose levels are mg/dL, and the x-axis labels identify the two variables being compared as "Mean Glucose" and "Max Glucose." The mean and highest glucose levels for the sample are 120 mg/dL and 180 mg/dL, respectively, while these values for the population are 122 mg/dL and 200 mg/dL, respectively. The orange bars show values for the population, whereas the blue bars show values for the sample. The blue bars' heights show that the population's maximal glucose levels are higher than the sample's. The sample mean glucose level is 2 mg/dL less than the population mean glucose level, which is nearly identical, whereas the sample highest glucose level is 20 mg/dL less than the population maximum glucose level.



(b)

The histogram plot compares the 98th percentile of the distribution of BMI values in a sample to the population as a whole. The population BMI values are represented by the blue

histogram, whereas the sample BMI values are represented by the brown histogram. The vertical green dotted line represents the 98th percentile of the sample's BMI values, which are 50.81 BMI units, while the vertical blue line represents the 98th percentile of the population's 47.53 BMI values. The sample had 3.28 higher 98th percentile BMI values than the population, as seen by comparing the two lines. The y-axis shows the number of people with each BMI value, while the x-axis shows the range of BMI values.



(c)

The results of bootstrapping on three distinct blood pressure data are shown in the histogram plot. The top histogram compares the distribution of the bootstrap sample means to the population mean of blood pressure; the red dashed line represents the population mean, and the blue bars reflect the bootstrap sample means' frequency. The purple bars in the middle histogram represent the frequency of the bootstrap standard deviations, and the red dashed line represents the population standard deviation of blood pressure. This histogram compares the distribution of the bootstrap sample standard deviations to the population standard deviation of blood pressure. The bottom histogram compares the distribution of the bootstrap sample's 95th percentile to the population's 95th percentile for blood pressure, with the green bars denoting the lower range. The green bars in the bottom histogram represent the frequency of the 95th percentile of bootstrap samples, and the red dashed line represents the 95th percentile of the population for blood pressure.

The bottom histogram compares the distribution of the 95th percentile of the bootstrap sample to the 95th percentile of the population for blood pressure. Each histogram's x-axis displays the frequency of the bootstrap statistic values, while the y-axis displays how frequently those values really occur. Each histogram's legend lists the population and bootstrap parameters that were compared.

