Introduction to Data Science
ASSIGNMENT-1

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PIMA INDIANS ARE NATIVES OF ARIZONA WHO HAVE THE HIGHEST REPORTED RATE OF DIABETES. OUR AIM THROUGH THIS PROJECT IS TO STUDY THE REASON BEHIND THIS HUGE NUMBER OF PEOPLE BEING AFFECTED BY DIABETES AND TO PROVIDE SUITABLE MEASURES TO REDUCE THE NUMBER OF CASES OF DIABETES AMONGST THEM . HENCE WE TOOK INTO CONSIDERATION SOME OF THEIR MEDICAL PARAMETERS   AND PLOTTED THEM ON GRAPHS TO FIND A CORRELATION WITH THEIR CAUSE OF DIABETES.

Assumptions

1. All the women in the sample belong to the same tribe .
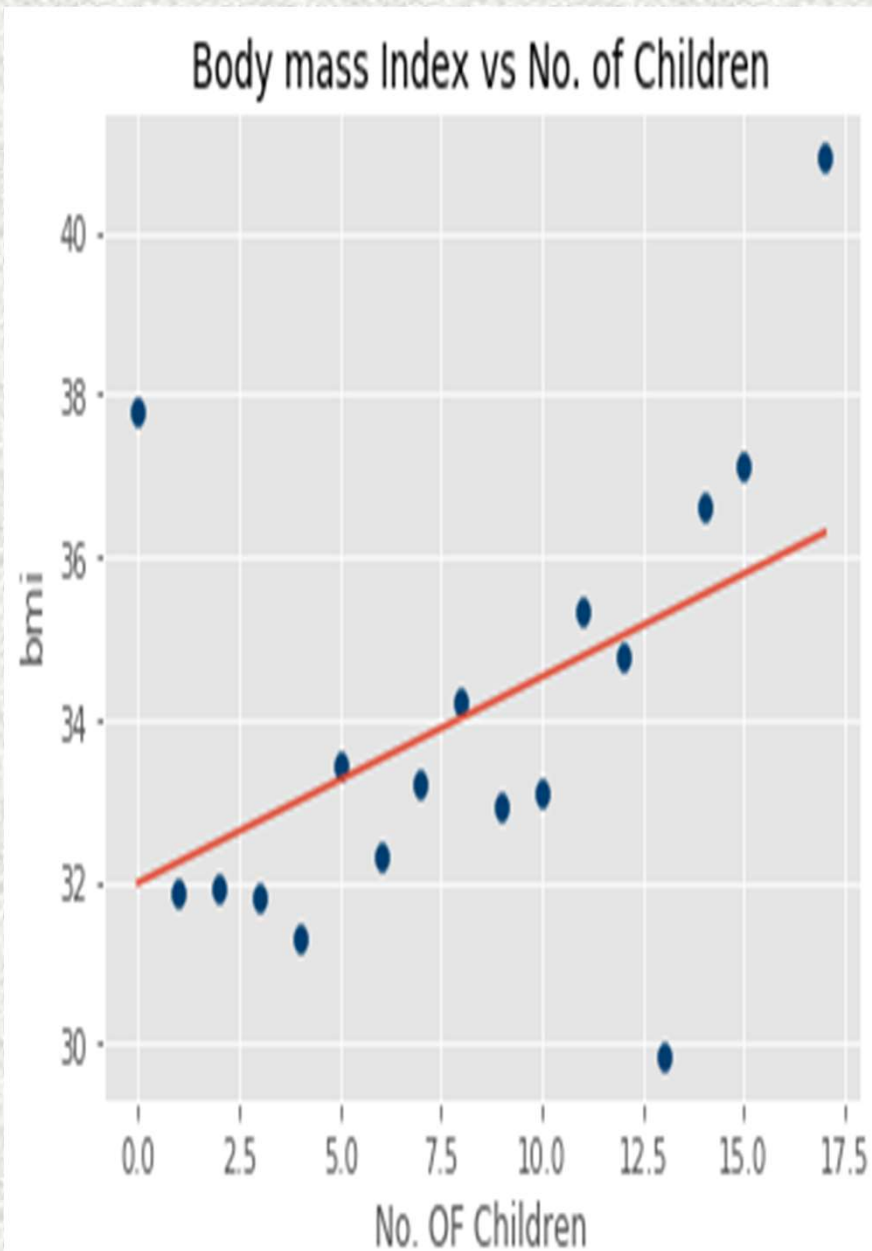Thus genetically all the women are almost the same.
If one of the women in the tribe has diabetes then all the
Women in the tribe should have it and vice versa.
Thus genetics cannot be taken into consideration.

2. As all the women belong to the same tribe
We assume that all of them have the same food Habits.

Body mass Index vs No. of Children

1. After childbirth there are hormonal changes in the woman due to which there is increase in the weight of the woman.

2. Stress: Taking care of a newborn baby is stressful. This stress results in release of Certain hormones like cortisol which increases the appetite thus causing more fat in the body .
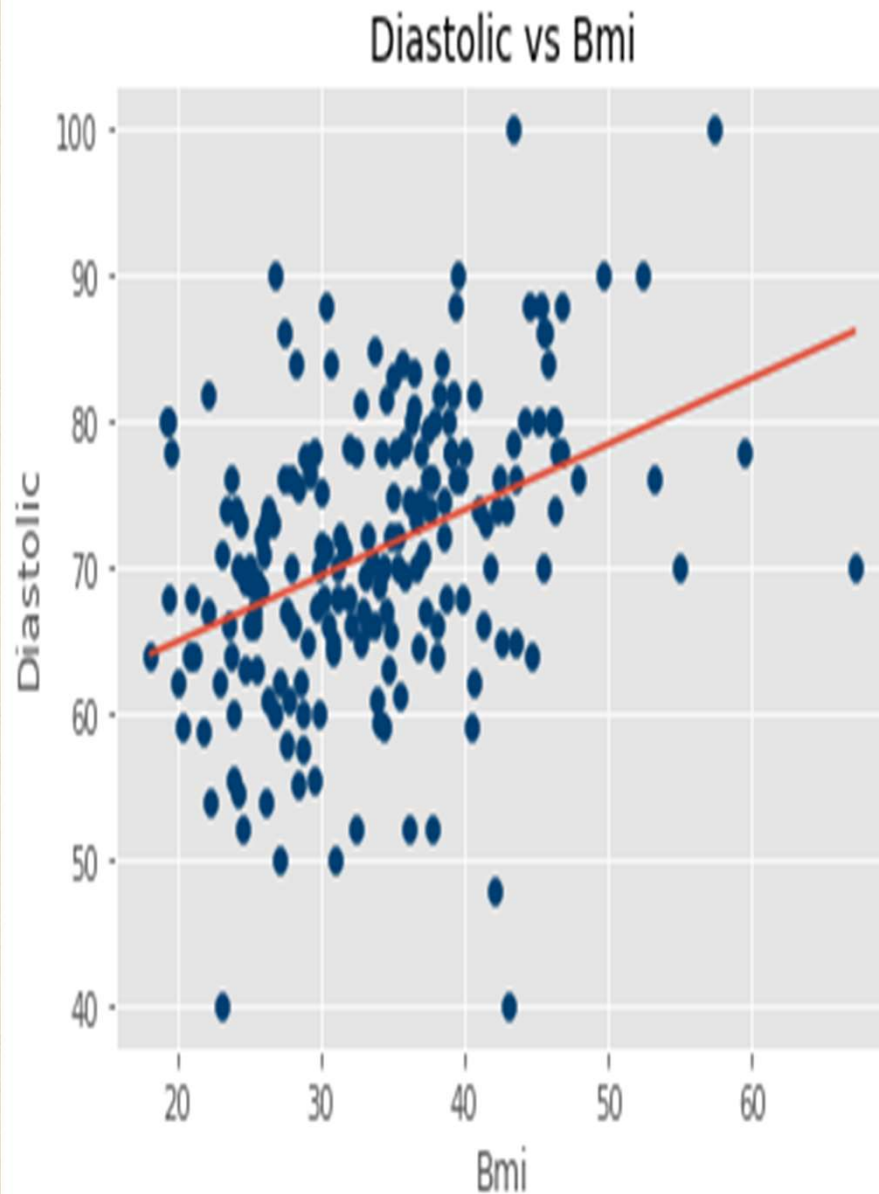
As the bmi increases,
The fat deposits in the walls
Of the arteries due to which
the arteries narrow down,
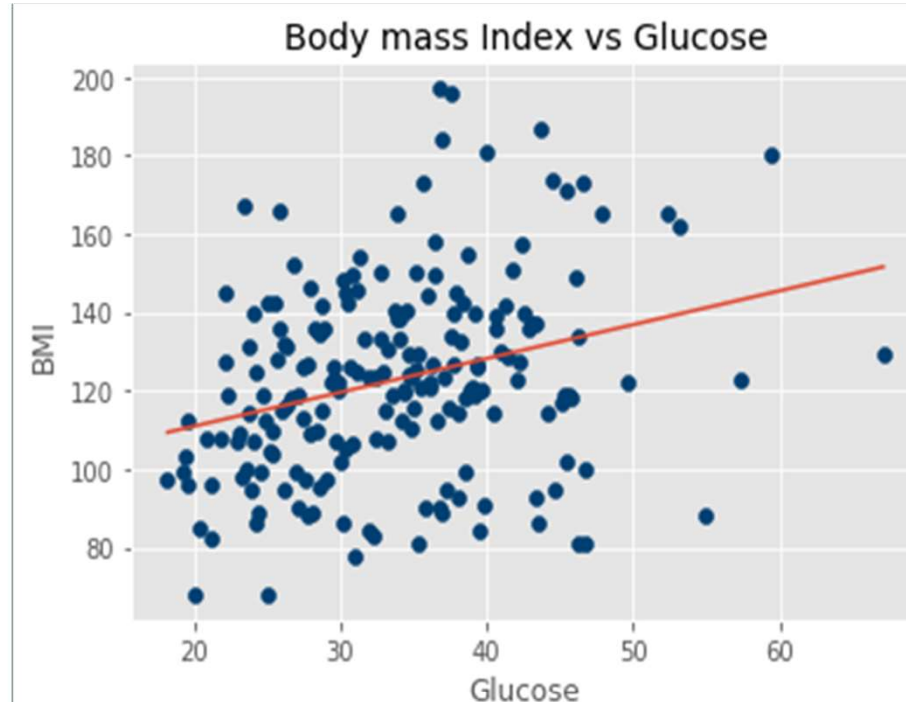Thus increasing the diastolic pressure

Diastolic vs Number of children
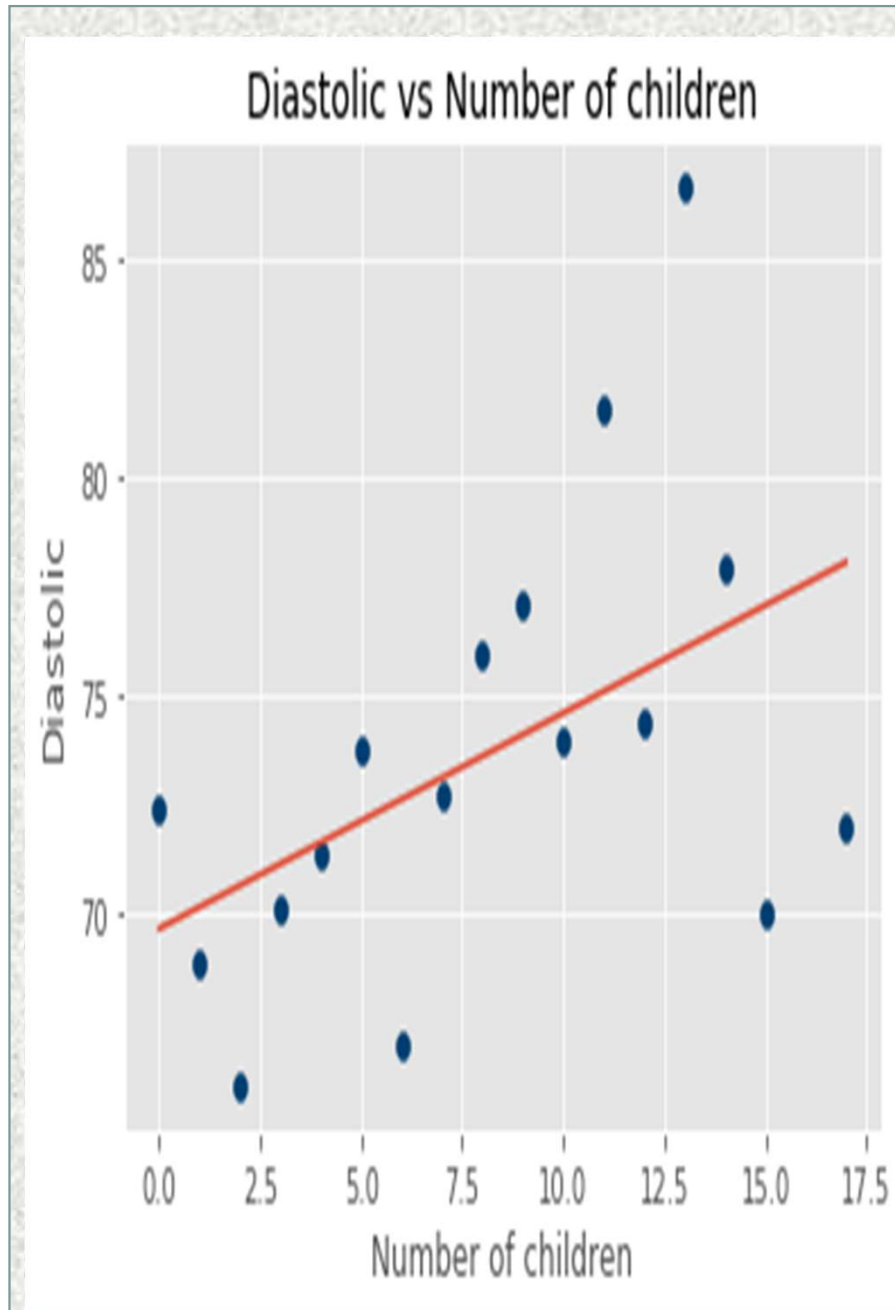
Based on the insights of the previous
2 graphs we can infer that as the
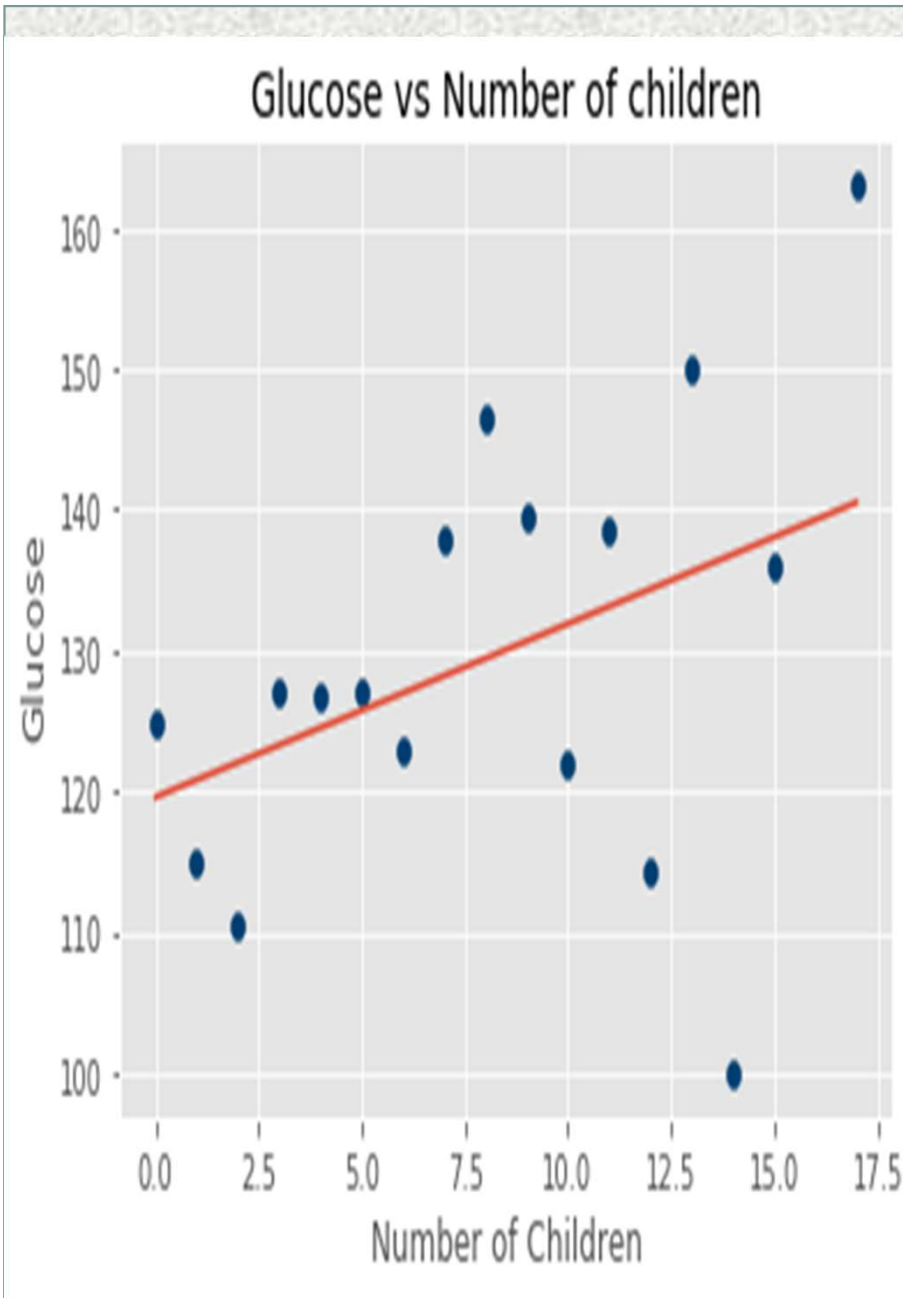a)As the number of children a woman
bears increases
the bmi increases.
b)As bmi increases the diastolic pressure
increases.
Thus we can conclude that
As the number of children a woman bears increases
diastolic pressure
increases.

Body mass Index vs Glucose

Body mass Index vs Insulin

As bmi increases insulin resistance Also increases which results in increased blood glucose level in body Since body weight is associated with bmi It may be expected that bmi should Correlate with blood glucose levels.
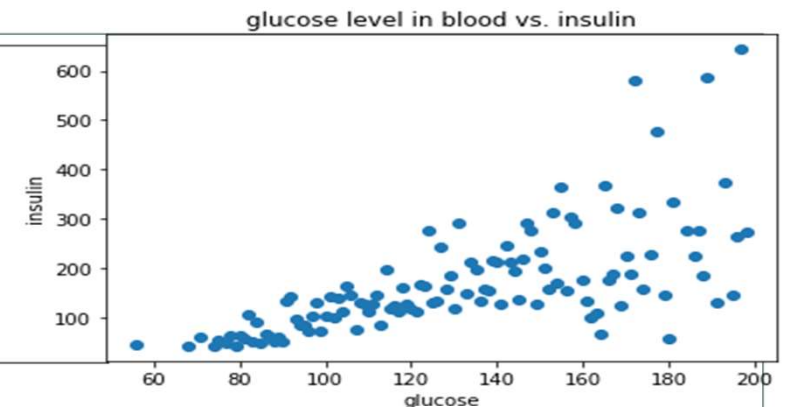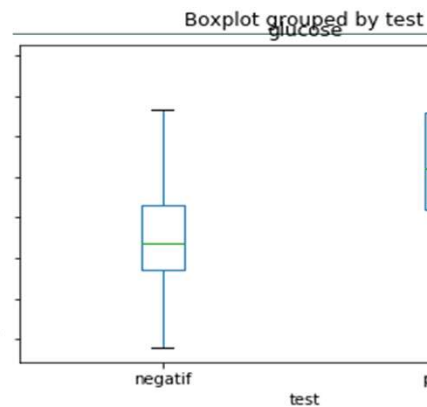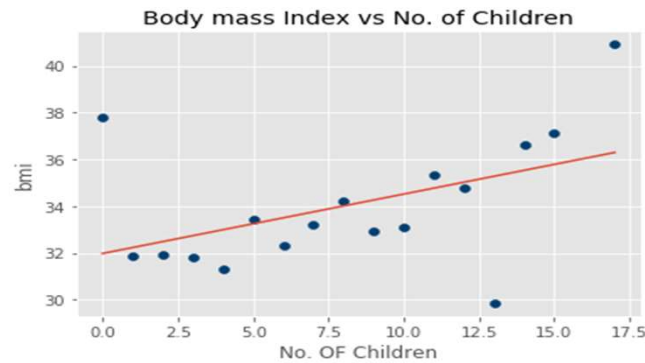
Glucose vs Number of children

Based on the insights of the previous
graphs we can infer that
a)As the number of children
a woman bears increases
The bmi increases.
b)bmi increases with
increase in glucose levels in
the blood.
Thus we can conclude
that as the number of
children increases the
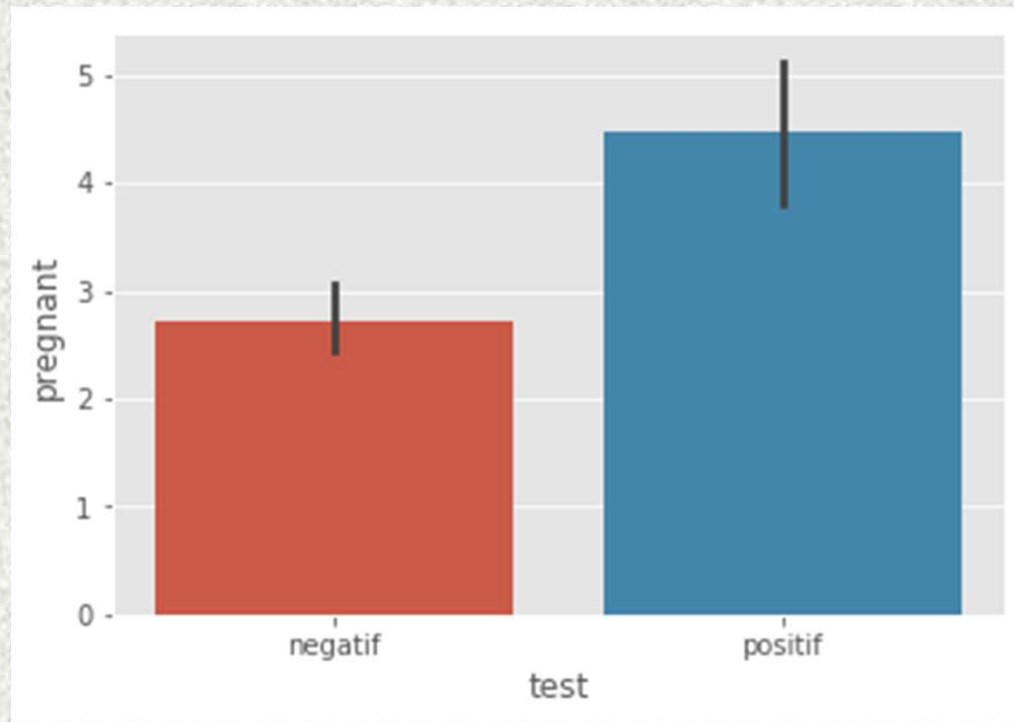blood glucose level also
increases.

Body mass Index vs No. of Children

Boxplot grouped by test

glucose level in blood vs. insulin

1)AS THE NUMBER OF CHILDREN A WOMAN BEARS INCREASES HER BMI INCREASES.

2) MORE THE CARBOHYDRATE LEVEL IN THE BLOOD MORE IS THE REQUIREMENT FOR PANCREASES TO PRODUCE INSULIN TO BREAK IT DOWN INTO SMALLER UNITS CALLED GLUCOSE.

FROM THE PREVIOUS GRAPH WE KNOW THAT AS BLOOD GLUCOSE LEVEL INCREASES BMI INCREASES.

IF THE WOMAN HAS HIGH BMI (OBESE),MORE AMOUNT OF INSULIN IS REQUIRED BY THE BODY . SUPPOSE THERE IS SLIGHT INCREASE IN THE SUGAR CONSUMPTION THEN EXTRA AMOUNT OF INSULIN WILL NOT BE AVAILABLE IN THE BODY. AS MOST OF THE INSULIN PRODUCED WILL ALREADY BE USED.

THUS SUGAR LEVEL IN THE BLOOD INCREASES AND THE PERSON IS TESTED POSITIVE.(GRAPH IN THE NEXT PAGE.)

Thank you