**Decision Tree :**

1. F1 Score : 54%
2. Accuracy : 77%
3. Since Decision Tree is a rule based algorithm, it is more useful if we have a big dataset to create correct rules.
4. There can be issues of overfitting, but we have pruned the data and evaluated the best model by using GridSearchCV and passing different max\_depth, min\_samples\_leaf and criterion methods.
5. The best model came out to be –
   1. Max\_depth : 30
   2. Min\_saples\_leaf : 5
   3. Critria : Entropy
6. We can see that as we add more depths, the best model comes out to be with maximum depth without impacting the accuracy and f1 score much.
7. It is clearly an case of over-fitting.
8. Therefore we need much more data to create a robust model.

**Naïve Bayes :**

1. F1 Score : 56%
2. Accuracy : 84%
3. Naïve Bayes algorithm is best suited for less data set.
4. In our case data set was small so it gave us good accuracy.
5. The features are considered independent in NB algorithm, but in our case features are related to each other as seen in seaborn co-relation graph.

**Conclusion :**

1. Mathematically, Naïve Bayes wins in my evaluation.
2. But in real world, with more data points and more data preprocessing, Decision Tree would be an ideal fit for detecting Heart attack disease since the features are co-related.