**Italian society of medical and intervention radiology society (SIRM) Dataset**.

Case #1

1. Simple imputer
2. dummies = pd.get\_dummies(X[categorical\_features], drop\_first=False)

The [F1-Score] using LR classifier, is: 76.0

The [Recall] using LR classifier, is: 77.0

The [Precision] using LR classifier, is: 77.0

The [F1-Score] using SVM classifier, is: 76.0

The [Recall] using SVM classifier, is: 77.0

The [Precision] using SVM classifier, is: 77.0

The [F1-Score] using KNN classifier, is: 78.0

The [Recall] using KNN classifier, is: 79.0

The [Precision] using KNN classifier, is: 79.0

The [F1-Score] using NB classifier, is: 46.0

The [Recall] using NB classifier, is: 57.99999999999999

The [Precision] using NB classifier, is: 56.00000000000001

The [F1-Score] using DT classifier, is: 73.0

The [Recall] using DT classifier, is: 74.0

The [Precision] using DT classifier, is: 74.0

**The [F1-Score] using RF classifier, is: 81.0**

**The [Recall] using RF classifier, is: 82.0**

**The [Precision] using RF classifier, is: 83.0**

The [F1-Score] using XGB classifier, is: 74.0

The [Recall] using XGB classifier, is: 74.0

The [Precision] using XGB classifier, is: 74.0

Case #2

1. Simple imputer
2. dummies = pd.get\_dummies(X[categorical\_features], drop\_first=True)

The [F1-Score] using LR classifier, is: 74.0

The [Recall] using LR classifier, is: 75.0

The [Precision] using LR classifier, is: 75.0

The [F1-Score] using SVM classifier, is: 77.0

The [Recall] using SVM classifier, is: 80.0

The [Precision] using SVM classifier, is: 80.0

The [F1-Score] using KNN classifier, is: 71.0

The [Recall] using KNN classifier, is: 73.0

The [Precision] using KNN classifier, is: 74.0

The [F1-Score] using NB classifier, is: 46.0

The [Recall] using NB classifier, is: 57.99999999999999

The [Precision] using NB classifier, is: 56.00000000000001

The [F1-Score] using DT classifier, is: 74.0

The [Recall] using DT classifier, is: 75.0

The [Precision] using DT classifier, is: 73.0

**The [F1-Score] using RF classifier, is: 81.0**

**The [Recall] using RF classifier, is: 82.0**

**The [Precision] using RF classifier, is: 83.0**

The [F1-Score] using XGB classifier, is: 74.0

The [Recall] using XGB classifier, is: 74.0

The [Precision] using XGB classifier, is: 74.0

Case #3

1. Knnimputer k=11
2. dummies = pd.get\_dummies(X[categorical\_features], drop\_first=False)

**The [F1-Score] using LR classifier, is: 100.0**

**The [Recall] using LR classifier, is: 100.0**

**The [Precision] using LR classifier, is: 100.0**

The [F1-Score] using SVM classifier, is: 97.0

The [Recall] using SVM classifier, is: 97.0

The [Precision] using SVM classifier, is: 97.0

The [F1-Score] using KNN classifier, is: 98.0

The [Recall] using KNN classifier, is: 99.0

The [Precision] using KNN classifier, is: 98.0

The [F1-Score] using NB classifier, is: 89.0

The [Recall] using NB classifier, is: 92.0

The [Precision] using NB classifier, is: 90.0

The [F1-Score] using DT classifier, is: 97.0

The [Recall] using DT classifier, is: 97.0

The [Precision] using DT classifier, is: 97.0

The [F1-Score] using RF classifier, is: 98.0

The [Recall] using RF classifier, is: 98.0

The [Precision] using RF classifier, is: 99.0

The [F1-Score] using XGB classifier, is: 97.0

The [Recall] using XGB classifier, is: 97.0

The [Precision] using XGB classifier, is: 97.0

Case #4

1. Knnimputer k=11
2. dummies = pd.get\_dummies(X[categorical\_features], drop\_first=True)

The [F1-Score] using LR classifier, is: 59.0

The [Recall] using LR classifier, is: 64.0

The [Precision] using LR classifier, is: 63.0

The [F1-Score] using SVM classifier, is: 55.00000000000001

The [Recall] using SVM classifier, is: 56.99999999999999

The [Precision] using SVM classifier, is: 56.00000000000001

The [F1-Score] using KNN classifier, is: 64.0

The [Recall] using KNN classifier, is: 67.0

The [Precision] using KNN classifier, is: 66.0

The [F1-Score] using NB classifier, is: 46.0

The [Recall] using NB classifier, is: 57.99999999999999

The [Precision] using NB classifier, is: 56.00000000000001

The [F1-Score] using DT classifier, is: 59.0

The [Recall] using DT classifier, is: 64.0

The [Precision] using DT classifier, is: 62.0

**The [F1-Score] using RF classifier, is: 71.0**

**The [Recall] using RF classifier, is: 75.0**

**The [Precision] using RF classifier, is: 72.0**

The [F1-Score] using XGB classifier, is: 71.0

The [Recall] using XGB classifier, is: 74.0

The [Precision] using XGB classifier, is: 71.0