Report for Bag of words Raw

**Report of Model Logistic Regression**

precision recall f1-score support

0 0.72 0.90 0.80 49

1 0.96 0.98 0.97 52

2 0.96 0.87 0.91 52

3 0.85 0.68 0.76 41

4 1.00 1.00 1.00 37

accuracy 0.89 231

macro avg 0.90 0.89 0.89 231

weighted avg 0.90 0.89 0.89 231

Micro AVG:0.8874458874458875

Macro AVG:0.8979014566697439

**<------------------------------------------------------------->**

**Report of Model Perceptron**

precision recall f1-score support

0 0.82 0.86 0.84 49

1 0.96 0.98 0.97 52

2 0.82 0.96 0.88 52

3 0.90 0.63 0.74 41

4 1.00 1.00 1.00 37

accuracy 0.89 231

macro avg 0.90 0.89 0.89 231

weighted avg 0.90 0.89 0.89 231

Micro AVG:0.8917748917748918

Macro AVG:0.9004034835987149

**<------------------------------------------------------------->**

**Report of Model Random Forest**

precision recall f1-score support

0 0.70 0.90 0.79 49

1 0.96 0.98 0.97 52

2 0.93 0.96 0.94 52

3 0.88 0.51 0.65 41

4 1.00 1.00 1.00 37

accuracy 0.88 231

macro avg 0.89 0.87 0.87 231

weighted avg 0.89 0.88 0.87 231

Micro AVG:0.8787878787878788

Macro AVG:0.8923205550564042

**<------------------------------------------------------------->**

**Report of Model NB**

precision recall f1-score support

0 0.68 0.55 0.61 49

1 0.85 0.98 0.91 52

2 0.89 0.60 0.71 52

3 0.80 0.59 0.68 41

4 0.56 1.00 0.72 37

accuracy 0.74 231

macro avg 0.75 0.74 0.72 231

weighted avg 0.77 0.74 0.73 231

Micro AVG:0.7359307359307359

Macro AVG:0.7542640692640692

**<------------------------------------------------------------->**

**Report of Model SVM**

precision recall f1-score support

0 0.75 0.82 0.78 49

1 0.98 0.92 0.95 52

2 0.89 0.65 0.76 52

3 0.56 0.80 0.66 41

4 1.00 0.86 0.93 37

accuracy 0.81 231

macro avg 0.84 0.81 0.82 231

weighted avg 0.84 0.81 0.82 231

Micro AVG:0.8095238095238095

Macro AVG:0.8376735387740675

Report for Bag of words NGRAM

**Report of Model Logistic Regression**

precision recall f1-score support

0 0.65 0.92 0.76 49

1 0.96 0.98 0.97 52

2 1.00 0.79 0.88 52

3 0.84 0.63 0.72 41

4 1.00 1.00 1.00 37

accuracy 0.87 231

macro avg 0.89 0.86 0.87 231

weighted avg 0.89 0.87 0.87 231

Micro AVG:0.8658008658008658

Macro AVG:0.8906295482812459

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**Report of Model Perceptron**

precision recall f1-score support

0 0.75 0.92 0.83 49

1 0.96 0.98 0.97 52

2 0.93 0.83 0.88 52

3 0.83 0.71 0.76 41

4 1.00 1.00 1.00 37

accuracy 0.89 231

macro avg 0.90 0.89 0.89 231

weighted avg 0.89 0.89 0.89 231

Micro AVG:0.8874458874458875

Macro AVG:0.8951236376420955

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**Report of Model Random Forest**

precision recall f1-score support

0 0.59 0.94 0.72 49

1 0.96 0.98 0.97 52

2 0.98 0.79 0.87 52

3 0.81 0.41 0.55 41

4 1.00 1.00 1.00 37

accuracy 0.83 231

macro avg 0.87 0.82 0.82 231

weighted avg 0.87 0.83 0.83 231

Micro AVG:0.8311688311688312

Macro AVG:0.8675444052802543

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**Report of Model NB**

precision recall f1-score support

0 0.55 0.55 0.55 49

1 0.93 0.98 0.95 52

2 0.97 0.60 0.74 52

3 0.86 0.44 0.58 41

4 0.50 1.00 0.67 37

accuracy 0.71 231

macro avg 0.76 0.71 0.70 231

weighted avg 0.78 0.71 0.71 231

Micro AVG:0.70995670995671

Macro AVG:0.7608371985157699

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**Report of Model SVM**

precision recall f1-score support

0 0.72 0.86 0.79 49

1 1.00 0.83 0.91 52

2 1.00 0.52 0.68 52

3 0.48 0.85 0.61 41

4 1.00 0.81 0.90 37

accuracy 0.77 231

macro avg 0.84 0.77 0.78 231

weighted avg 0.85 0.77 0.78 231

Micro AVG:0.7662337662337663

Macro AVG:0.8407179971658006

Report for Bag of words TFIDF

**Report of Model Logistic Regression**

precision recall f1-score support

0 1.00 1.00 1.00 49

1 1.00 1.00 1.00 52

2 1.00 0.90 0.95 52

3 0.89 1.00 0.94 41

4 1.00 1.00 1.00 37

accuracy 0.98 231

macro avg 0.98 0.98 0.98 231

weighted avg 0.98 0.98 0.98 231

Micro AVG:0.9783549783549783

Macro AVG:0.9782608695652174

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**Report of Model Perceptron**

precision recall f1-score support

0 0.98 1.00 0.99 49

1 1.00 0.96 0.98 52

2 0.81 1.00 0.90 52

3 1.00 0.76 0.86 41

4 1.00 0.97 0.99 37

accuracy 0.94 231

macro avg 0.96 0.94 0.94 231

weighted avg 0.95 0.94 0.94 231

Micro AVG:0.9437229437229437

Macro AVG:0.9585000000000001

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**Report of Model Random Forest**

precision recall f1-score support

0 1.00 1.00 1.00 49

1 0.98 1.00 0.99 52

2 0.98 0.90 0.94 52

3 0.91 0.98 0.94 41

4 1.00 1.00 1.00 37

accuracy 0.97 231

macro avg 0.97 0.98 0.97 231

weighted avg 0.97 0.97 0.97 231

Micro AVG:0.974025974025974

Macro AVG:0.9738779302458548

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**Report of Model NB**

precision recall f1-score support

0 0.89 1.00 0.94 49

1 0.91 1.00 0.95 52

2 0.91 0.81 0.86 52

3 1.00 0.59 0.74 41

4 0.76 1.00 0.86 37

accuracy 0.88 231

macro avg 0.89 0.88 0.87 231

weighted avg 0.90 0.88 0.88 231

Micro AVG:0.8831168831168831

Macro AVG:0.8942670623481346

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**Report of Model SVM**

precision recall f1-score support

0 1.00 1.00 1.00 49

1 1.00 0.94 0.97 52

2 1.00 0.75 0.86 52

3 0.69 1.00 0.82 41

4 1.00 0.95 0.97 37

accuracy 0.92 231

macro avg 0.94 0.93 0.92 231

weighted avg 0.95 0.92 0.92 231

Micro AVG:0.922077922077922

Macro AVG:0.9389830508474576