

EX4 - Naive Bayes Classifier

Developers:

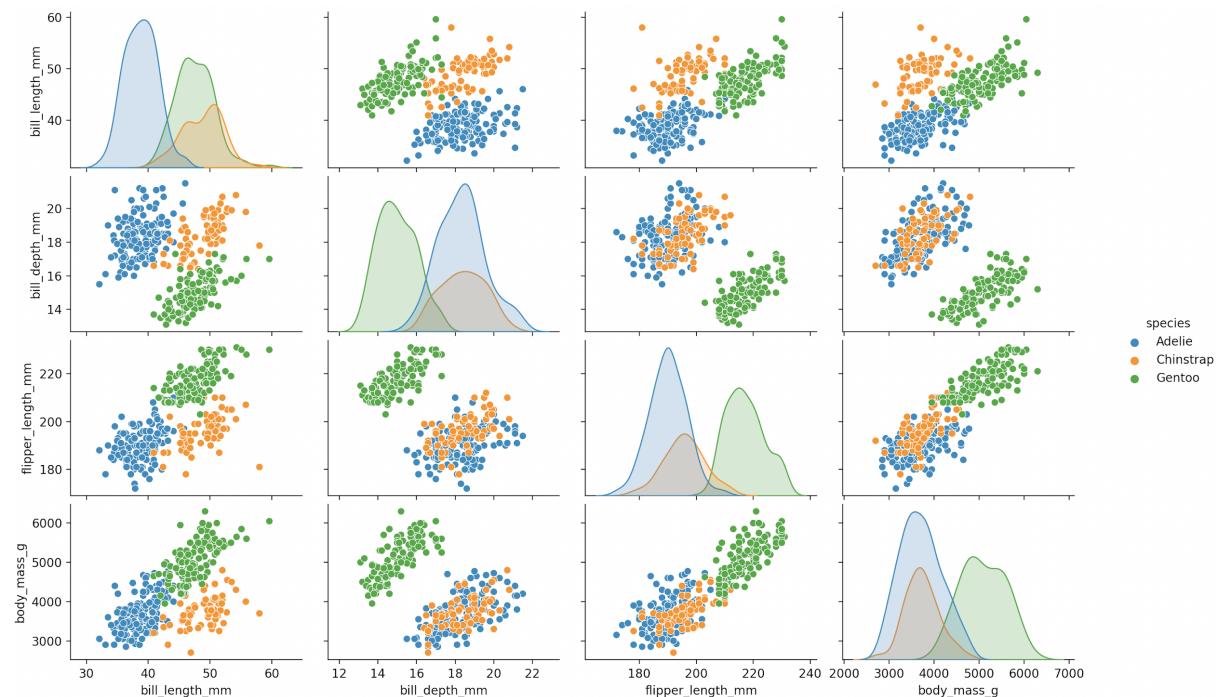
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Task1

#1.1

Two most accurate features are bill_depth_mm and bill_length_mm according to their distribution on the plot below

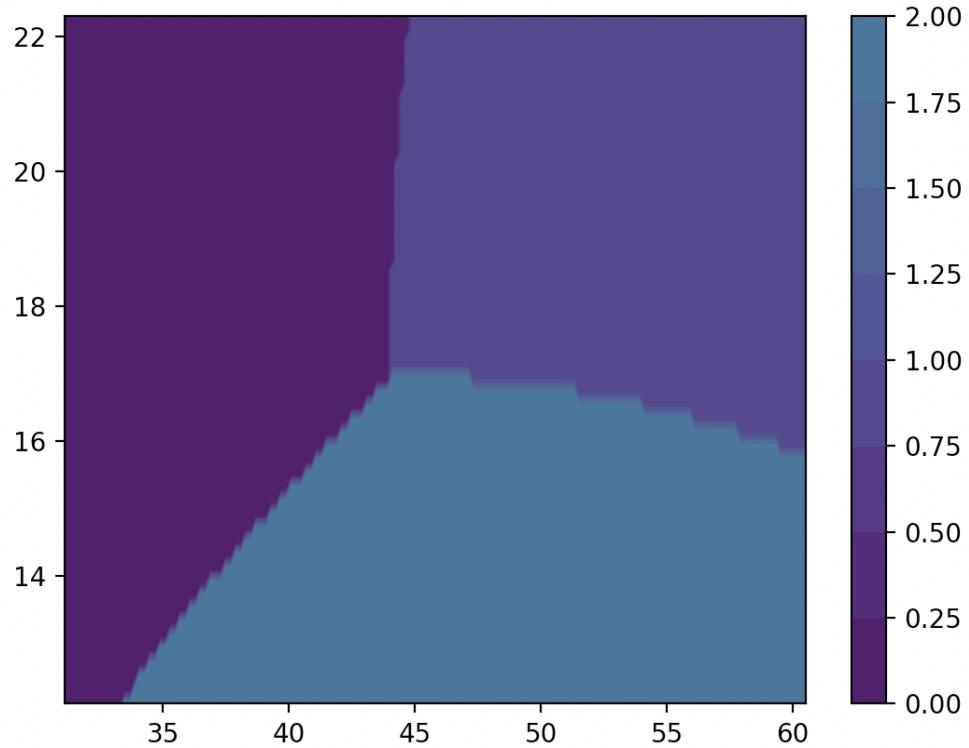


#1.2

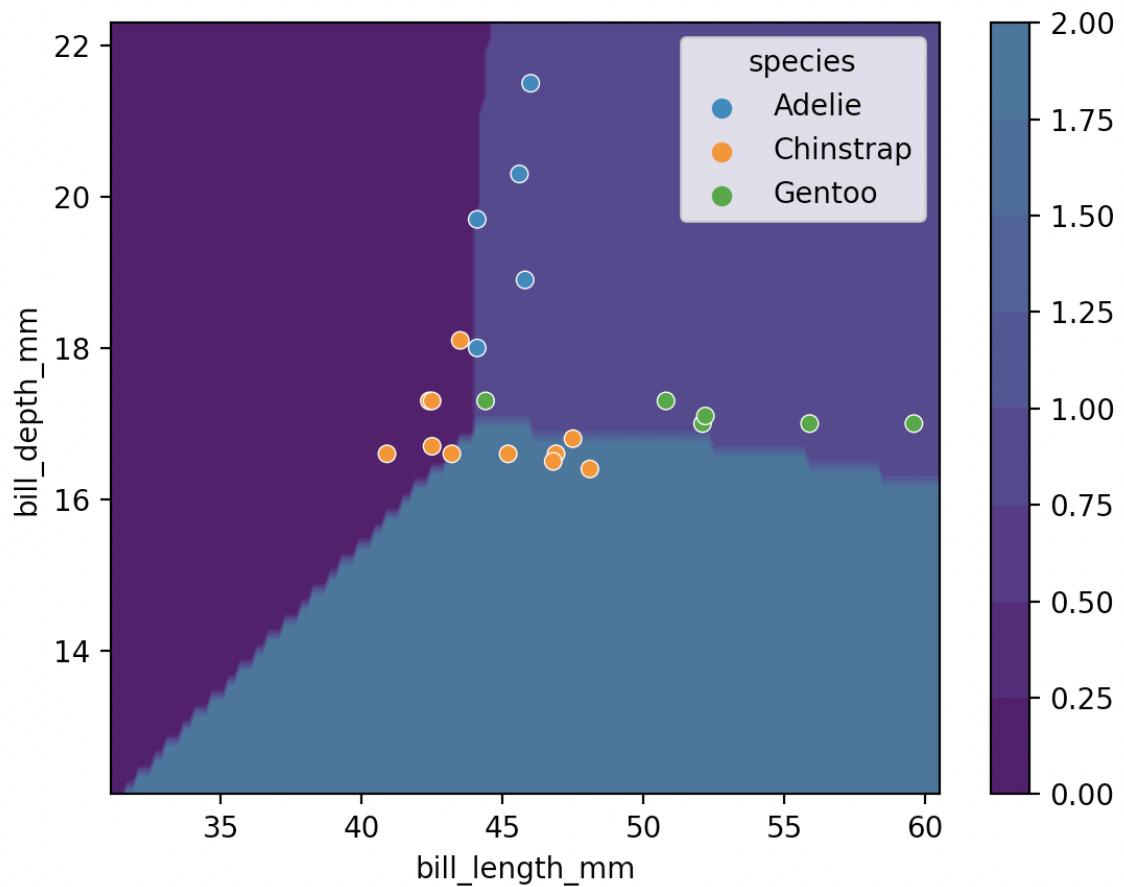
After training our model using Train:Test = 80:20, we got:

Prediction score: 98.50746268656717%

#1.3



#1.4



#1.5

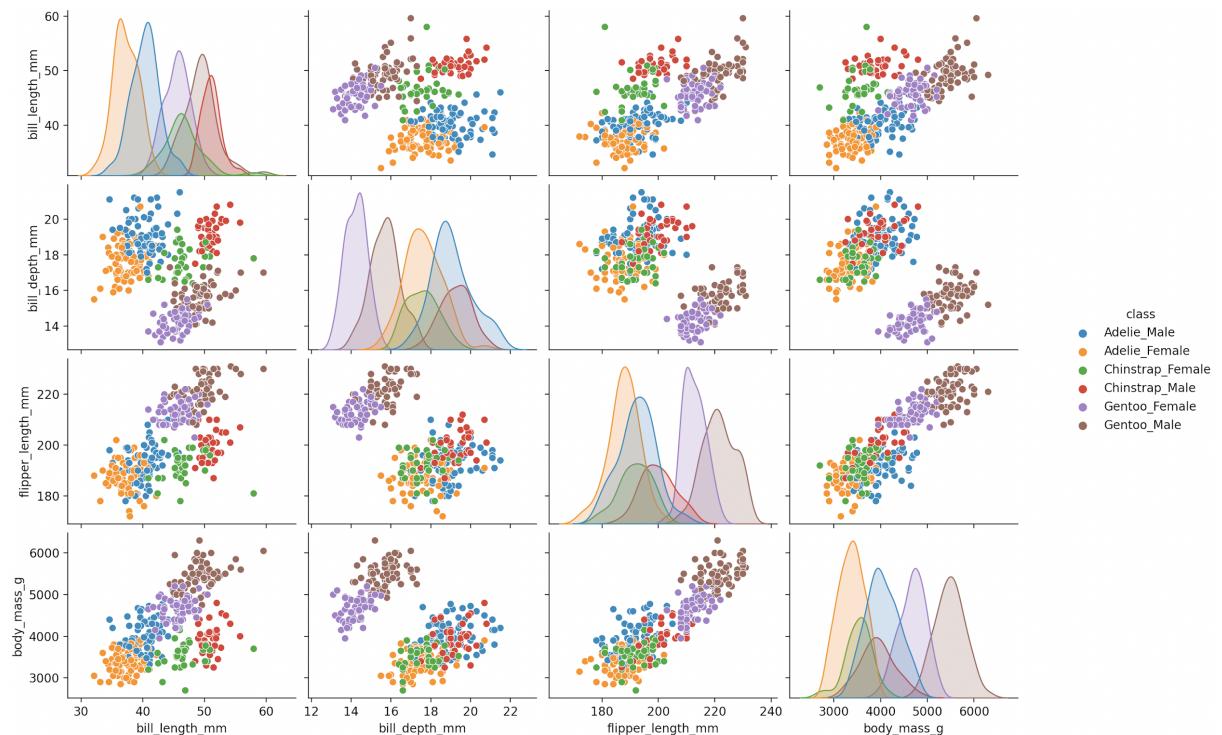
Classification_report:

| | precision | recall | f1-score | support |
|--------------|-----------|--------|----------|---------|
| 1 | 0.96 | 1.00 | 0.98 | 22 |
| 2 | 0.95 | 0.95 | 0.95 | 21 |
| 3 | 1.00 | 0.96 | 0.98 | 24 |
| accuracy | | | 0.97 | 67 |
| macro avg | 0.97 | 0.97 | 0.97 | 67 |
| weighted avg | 0.97 | 0.97 | 0.97 | 67 |

Task2

#2.1

Two most accurate features are bill_depth_mm and bill_length_mm according to their distribution on the plot below

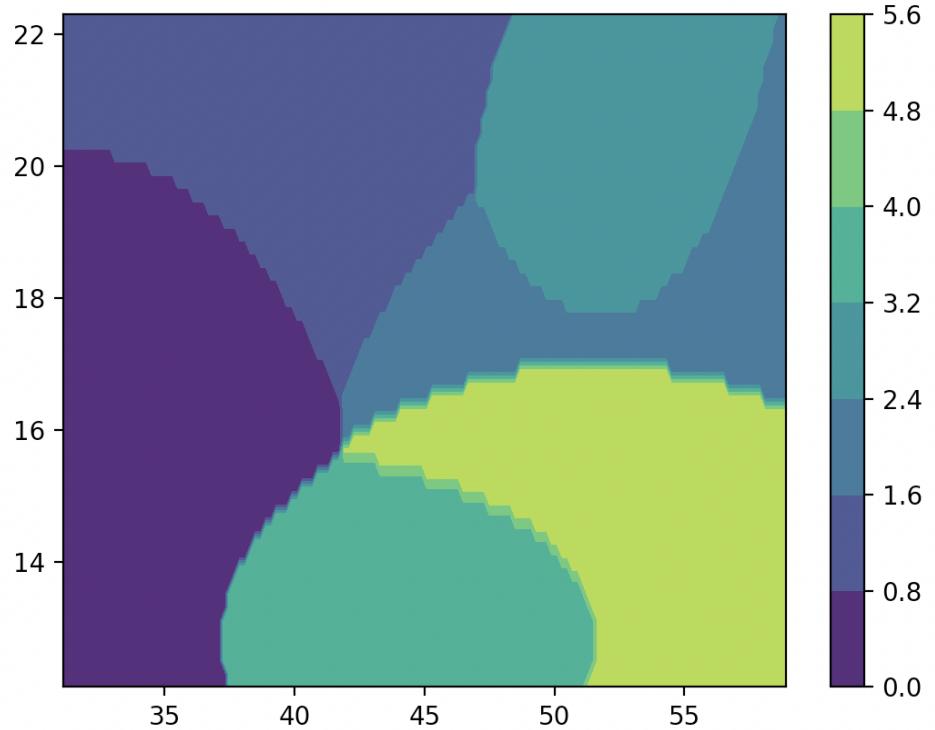


#2.2

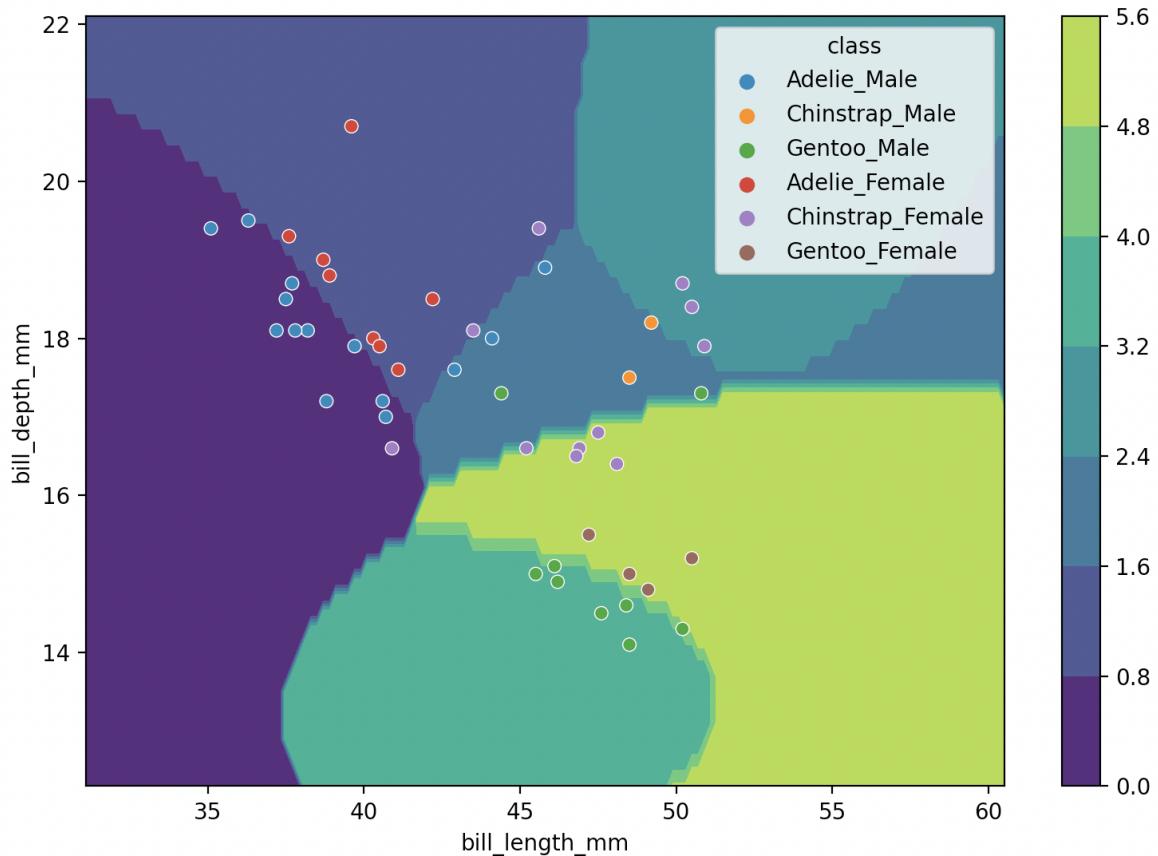
After training our model using Train:Test = 80:20, we got:

Prediction score: 86.56716417910447%

#2.3



#2.4



#2.5

Classification_report:

| | precision | recall | f1-score | support |
|------------------|-----------|--------|----------|---------|
| Adelie_Female | 0.82 | 0.88 | 0.85 | 16 |
| Adelie_Male | 0.87 | 0.81 | 0.84 | 16 |
| Chinstrap_Female | 0.50 | 0.50 | 0.50 | 2 |
| Chinstrap_Male | 0.90 | 1.00 | 0.95 | 9 |
| Gentoo_Female | 0.82 | 1.00 | 0.90 | 9 |
| Gentoo_Male | 1.00 | 0.80 | 0.89 | 15 |
| accuracy | | | 0.87 | 67 |
| macro avg | 0.82 | 0.83 | 0.82 | 67 |
| weighted avg | 0.87 | 0.87 | 0.86 | 67 |