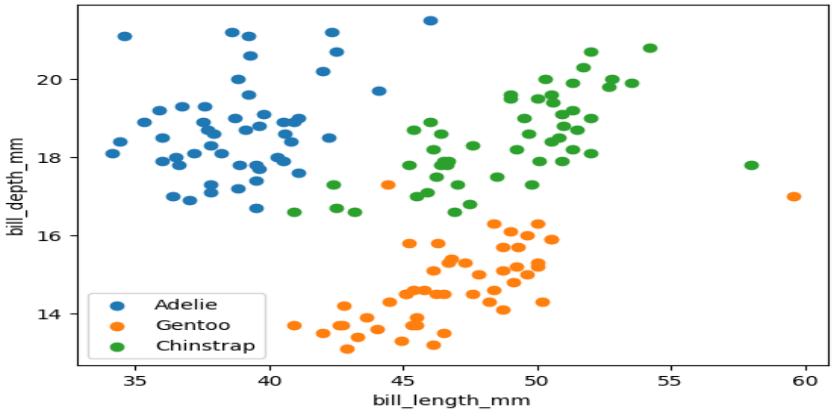
Neural Network Task 1

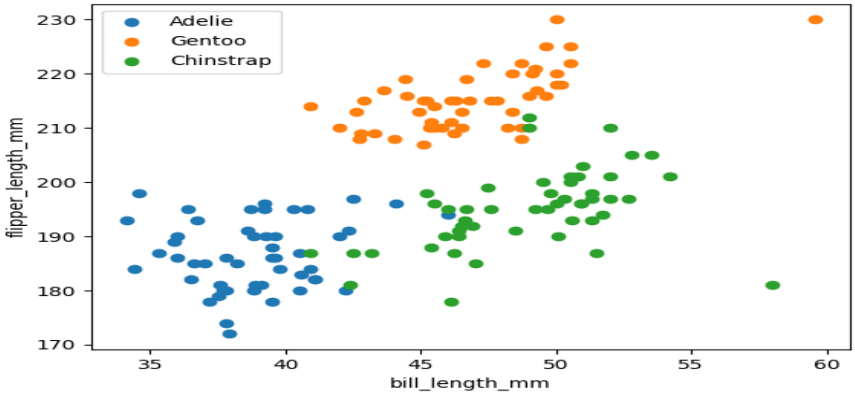
1. Visualisation:

❖ Bill Length & Bill Depth:



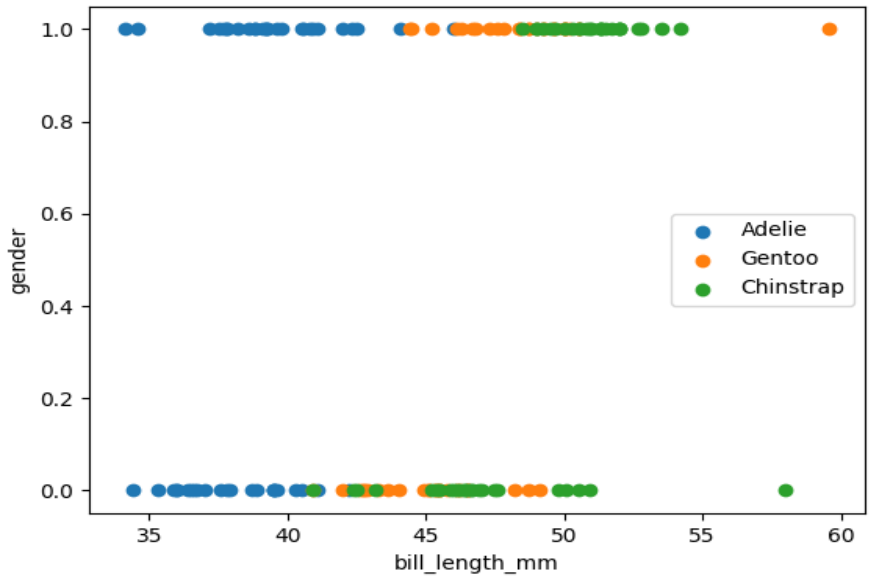
We can discrete between the 3 classes using bill length and bill depth and they can linearly separate from each other.

❖ Bill Length & Flipper Length:



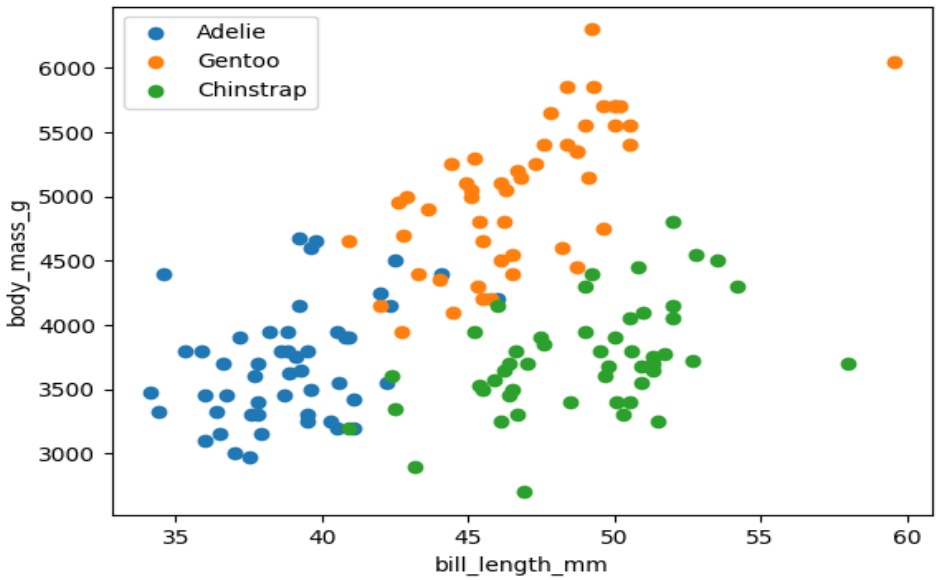
The Gentoo class can be distinguished from the other two classes while the Adelie and Chinstrap are slightly overlapping so they can linearly separate.

❖ Bill Length & Gender:



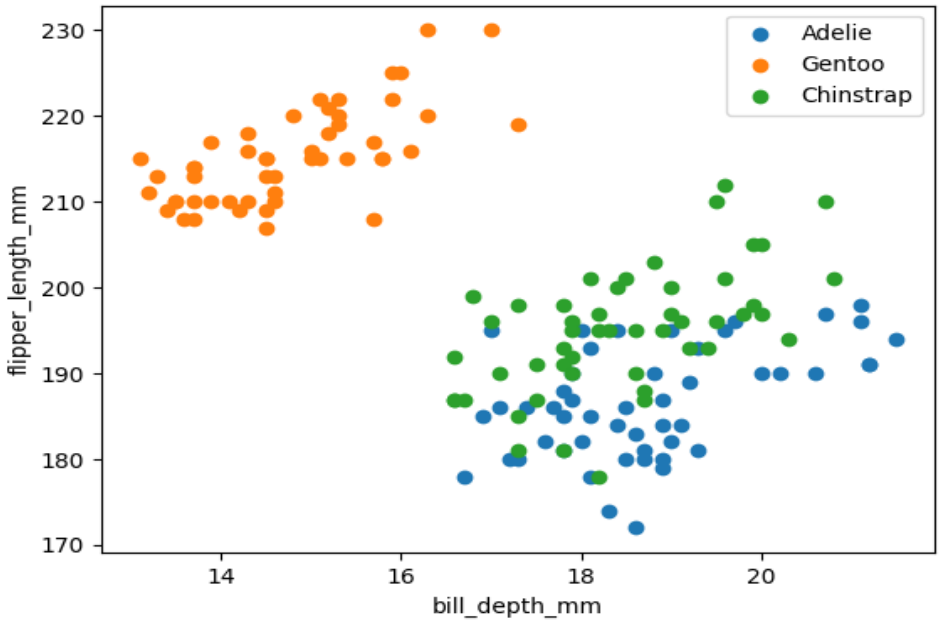
We can't distinguish between the classes using gender as there is many overlapping between them.

❖ Bill Length & Body Math:



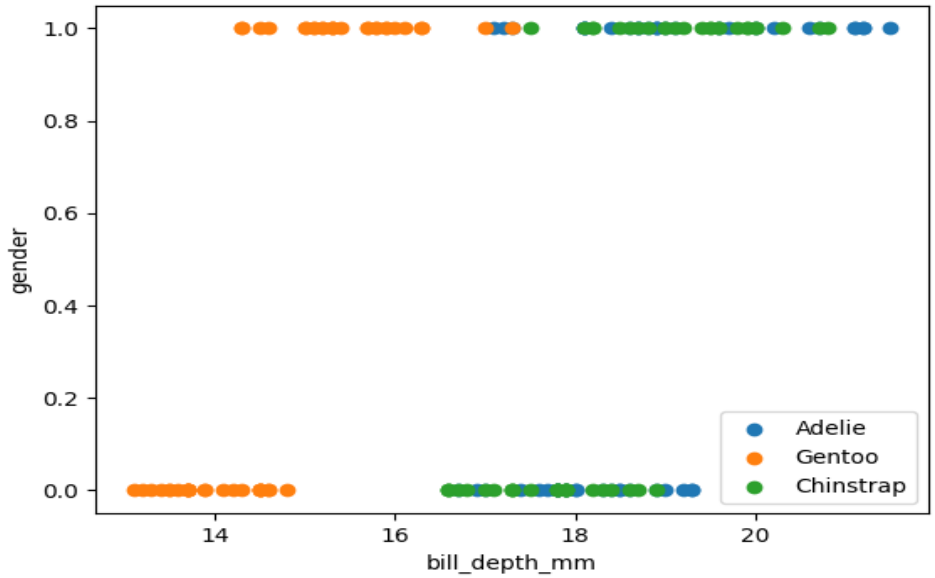
There is some overlapping between the three classes but we can linearly separate between them.

❖ Bill Depth & Flipper Length:



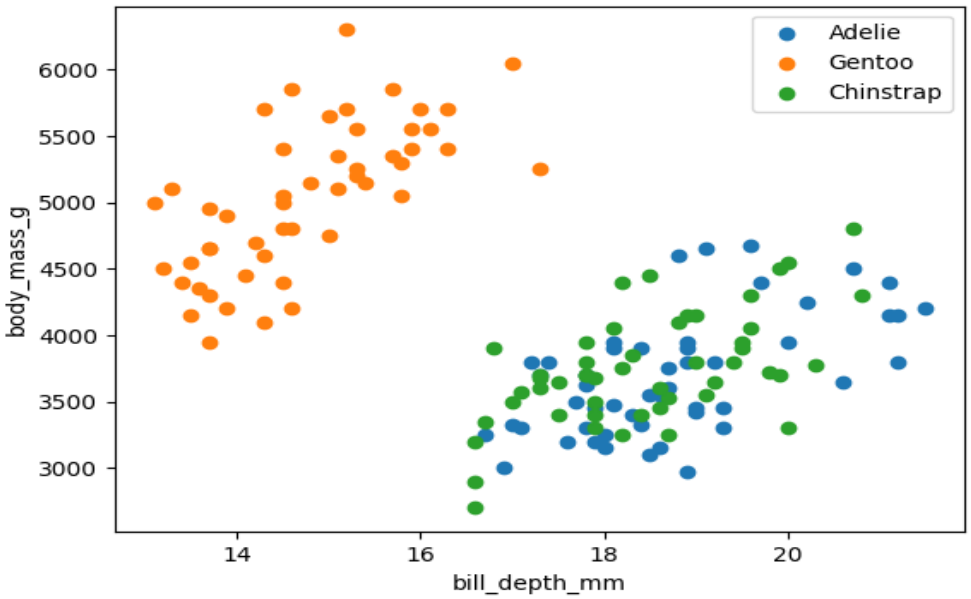
We can distinguish between Gentoo and the other two classes but we can't distinguish between Adelie and Chinstrap.

❖ Bill Depth & Gender:



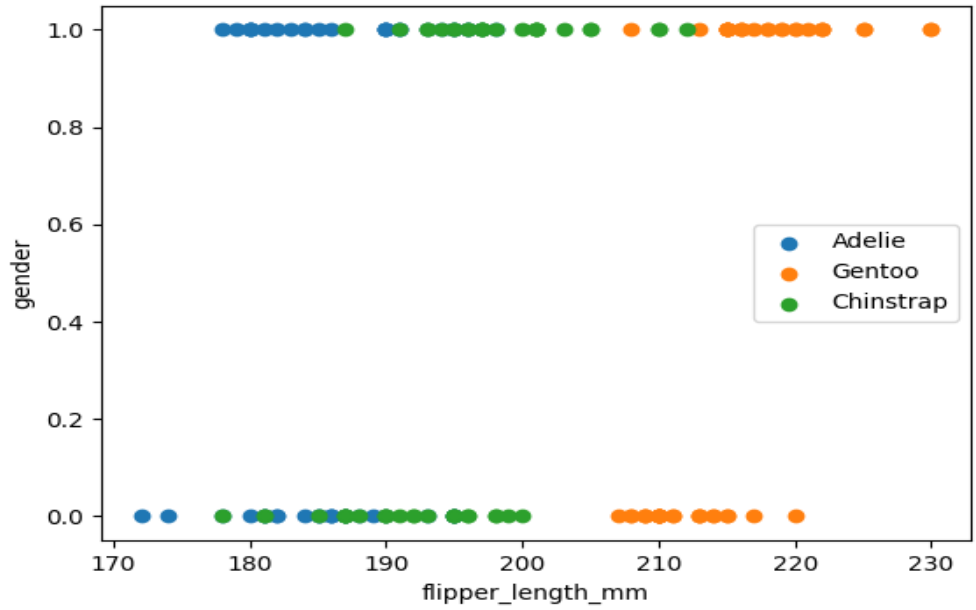
We can't separate between the classes using gender.

❖ Bill Depth & Body Mass:



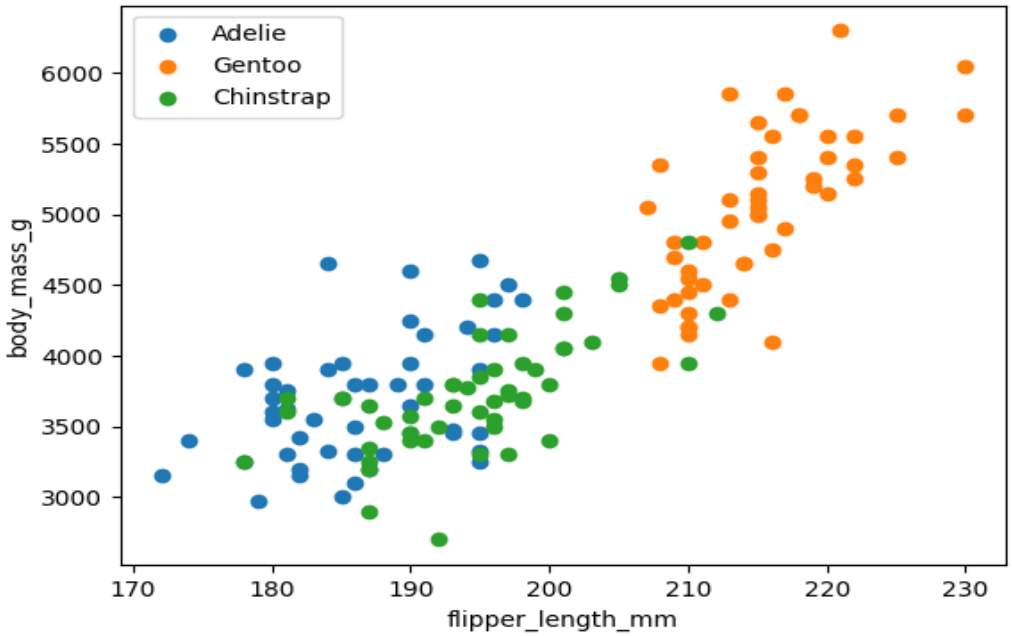
We can separate Gentoo from the other two classes but we can't distinguish between Adelie and Chinstrap as there have a lot of overlapping.

❖ Flapper Length & Gender:



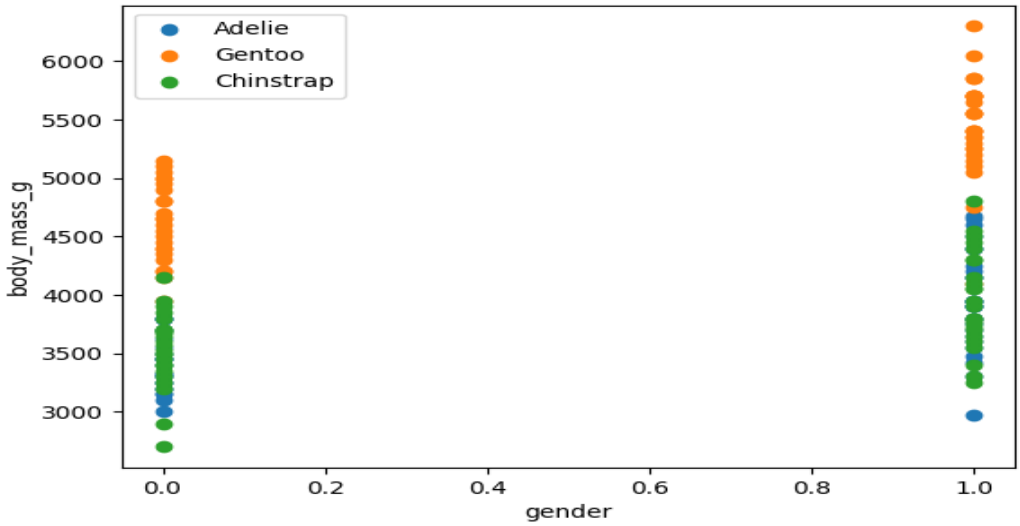
We can't distinguish between the classes using gender.

❖ Flapper Length & Body Mass:



We can linearly separate between Gentoo and Adelie, we can separate between Gentoo and Chinstrap with some overlapping and we can't linearly separate between Adelie and Chinstrap.

❖ Gender & Body Mass:



We can't separate between classes using gender.

2. Accuracy:

Adelie	Gentoo	Chinstrap	Bill Length	Bill Depth	Flapper Length	Gender	Body Mass	Accuracy
✓	✓		✓	✓				1.0
✓	✓		✓		✓			0.5
✓	✓		✓			✓		0.5
✓	✓		✓				✓	0.5
✓	✓			✓	✓			0.975
✓	✓			✓		✓		0.5
✓	✓			✓			✓	1.0
✓	✓				✓	✓		1.0
✓	✓				✓		✓	0.5
✓	✓					✓	✓	0.5
✓		✓	✓	✓				0.975
✓		✓	✓		✓			0.85
✓		✓	✓			✓		0.975
✓		✓	✓				✓	0.5
✓		✓		✓	✓			0.5
✓		✓		✓		✓		0.5
✓		✓		✓			✓	0.5
✓		✓			✓	✓		0.5
✓		✓			✓		✓	0.5
✓		✓				✓	✓	0.5

	✓	✓	✓	✓				0.55
	✓	✓	✓		✓			0.675
	✓	✓	✓			✓		0.5
	✓	✓	✓				✓	0.5
	✓	✓		✓	✓			0.925
	✓	✓		✓		✓		1.0
	✓	✓		✓			✓	0.5
	✓	✓			✓	✓		0.5
	✓	✓			✓		✓	0.5
	✓	✓				✓	✓	0.5