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| الاء احمد محمد عبد العال | 20191700119 |
| محمود سلامه محمد | 20191700601 |
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Report of Task1

First: Visualization data of 3 classes

Chart, scatter chart

Description automatically generated

1. bill\_length\_mm,bill\_depth\_mm:- We can discriminate with the classes.
2. bill\_length\_mm,flipper\_length\_mm:- We can discriminate with the classes.
3. bill\_length\_mm, gender:- We can discriminate between adelie and other classes(chinstrap,Gentoo).
4. bill\_length\_mm, body\_mass\_g:- We can discriminate with the classes.
5. bill\_depth\_mm,flipper\_length\_mm:- We can discriminate between Gentoo and other classes(chinstrap,Adelie).
6. .bill\_depth\_mm, gender:- We can discriminate between Gentoo and other classes(chinstrap,Adelie).
7. bill\_depth\_mm,body\_mass\_g:- We can discriminate between Gentoo and other classes(chinstrap,Adelie).
8. flipper\_length\_mm,gender:- We can discriminate between Gentoo and other classes(chinstrap,Adelie).
9. flipper\_length\_mm, body\_mass\_g:- We can discriminate between Gentoo and other classes(chinstrap,Adelie).
10. gender,body\_mass\_g:- We can discriminate between Gentoo and other classes(chinstrap,Adelie).

Second:

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| --- | --- |
| Accuracy:100%  Learning rate:0.1  Epochs:10  Classes : Adelie and Gentoo  Confusion matrix:  [[20 0]  [ 0 20]]  Chart, scatter chart  Description automatically generated | Accuracy:95 %  Learning rate:0.1  Epochs:100  Classes: Adelie and chinstrap  Confusion matrix:  [[19 1]  [ 1 19]]  Chart, scatter chart  Description automatically generated |

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| Accuracy:100%  Learning rate:0.1  Epochs:10  Classes : Adelie and Chinstrap  Confusion matrix:  [[20 0]  [ 0 20]] | Accuracy:95%  Learning rate:0.5  Epochs:100  Classes : Gentoo and Chinstrap  Confusion matrix:  [[20 2]  [ 0 18]] |

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| Accuracy:85%  Learning rate:1.0  Epochs:100  Classes : Gentoo and Chinstrap  Confusion matrix:  [[16 2]  [ 4 18]] | Accuracy:100 %  Learning rate:1.0  Epochs:100  Classes : Gentoo and Chinstrap  Confusion matrix:  [[16 2]  [ 4 18]] |

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| --- | --- |
| Accuracy:100 %  Learning rate:0.5  Epochs:100  Classes : Gentoo and Chinstrap  Confusion matrix:  [[20 0]  [ 0 20]] | Accuracy:75 %  Learning rate:0.5  Epochs:100  Classes : Gentoo and Chinstrap  Confusion matrix:  [[20 10]  [ 0 10]] |

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| --- | --- |
| Accuracy:100 %  Learning rate:0.1  Epochs:100  Classes : Adelie and Gentoo  Confusion matrix:  [[20 0]  [ 0 20]] | Accuracy:97 %  Learning rate:0.1  Epochs:100  Classes : Adelie and Gentoo  Confusion matrix:  [[20 1]  [ 0 19]] |
| Accuracy:100 %  Learning rate:0.1  Epochs:100  Classes : Adelie and Gentoo  Confusion matrix:  [[20 0]  [ 0 20]] | Accuracy:77 %  Learning rate:0.5  Epochs:100  Classes : Adelie and Chinstrap  Confusion matrix:  [[14 3]  [ 6 17]] |