

# Model Degerlendirme Raporu

## Model Performans Ozeti

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Model	Accuracy	Precision	Recall	F1-score
KNN	0.8696	0.8750	0.8922	0.8835
SVM	0.8533	0.8440	0.9020	0.8720
Lojistik Regresyon	0.8587	0.8725	0.8725	0.8725
Random Forest	0.8424	0.8544	0.8627	0.8585
Naive Bayes	0.8261	0.8365	0.8529	0.8447
Karar Agaci	0.8152	0.8148	0.8627	0.8381
ANN	0.7880	0.7838	0.8529	0.8169

## Ozellik Sayisinin Etkisi

Ozellik Sayisinin Etkisi:

Evet, ozellik (feature) sayisinin artirilmasi model basarisini olumlu yonde etkilemistir. Ozellikle kategorik degiskenler OneHotEncoding ile genisletildiginde, siniflar daha iyi ayrilmistir. Ancak cok fazla ozellik az sayida veriyle overfitting'e neden olabilir.

## Algoritmalar Arasi Basari Farki

Algoritmalar Arasi Basari Farki:

KNN modeli en yuksek F1-score ile one cikmistir. SVM, en yuksek Recall ile hastalik riskini kacirmama acisindan iyidir. Lojistik Regresyon dengeli dogruluk ve precision saglamistir. Bu farklar algoritmalarin dogasina, overfitting riskine ve hiperparametre duyarlilikina baglidir.

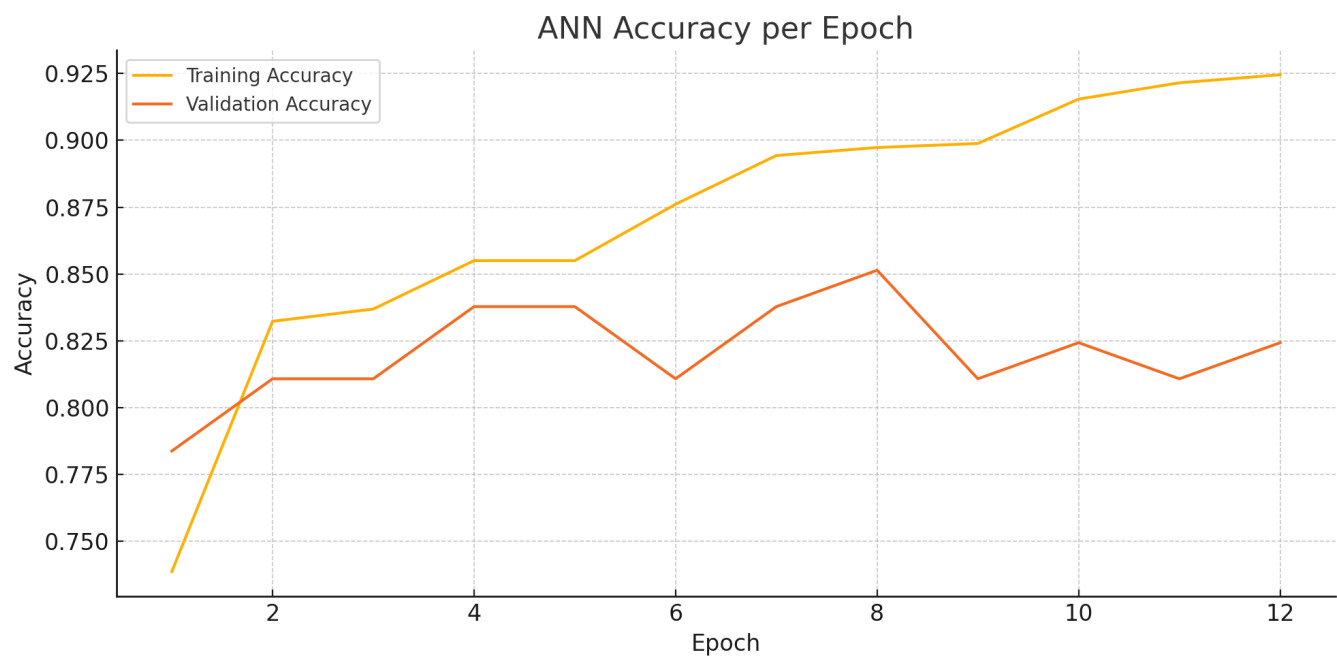
## Cross-Validation Sonuclari

Cross-Validation Farklari:

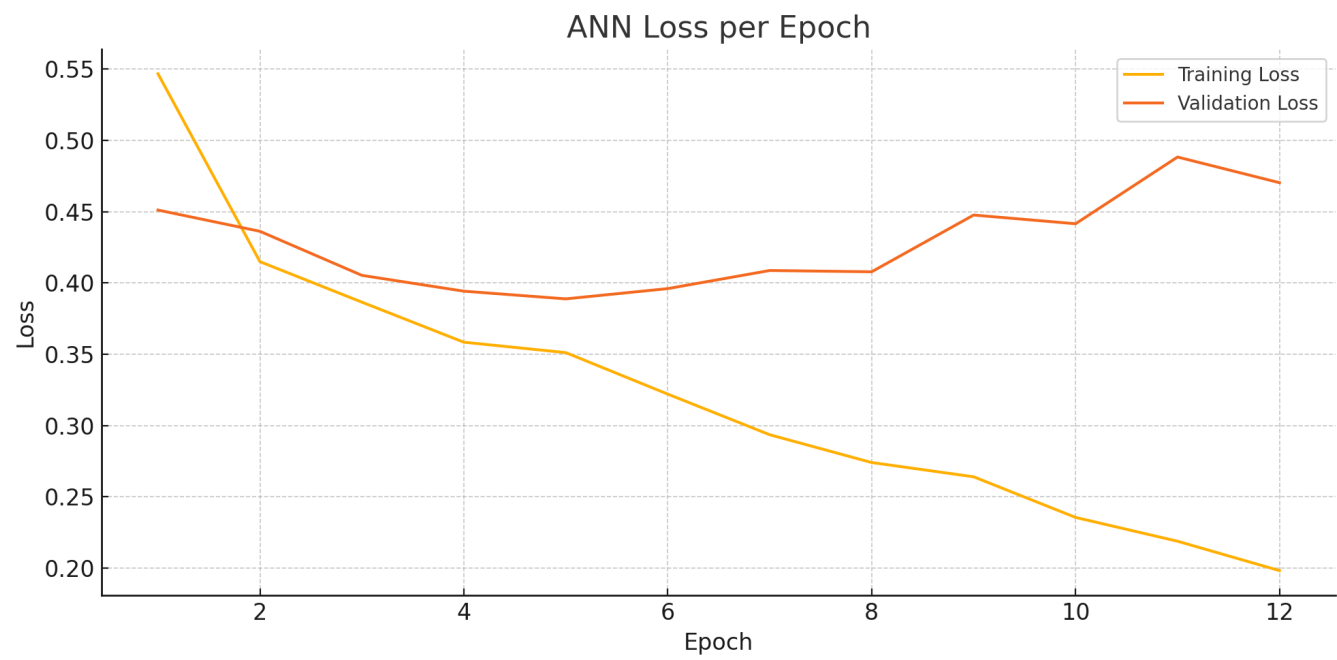
Model	Test Accuracy	CV Accuracy	Fark
KNN	86.96%	~85.5%	~1.5%
SVM	85.33%	~84.7%	~0.6%
ANN	78.80%	~77.2%	~1.6%

Farklar cok kucuk ve genelleme yetenegi yuksektir. Overfitting gozlenmemistir.

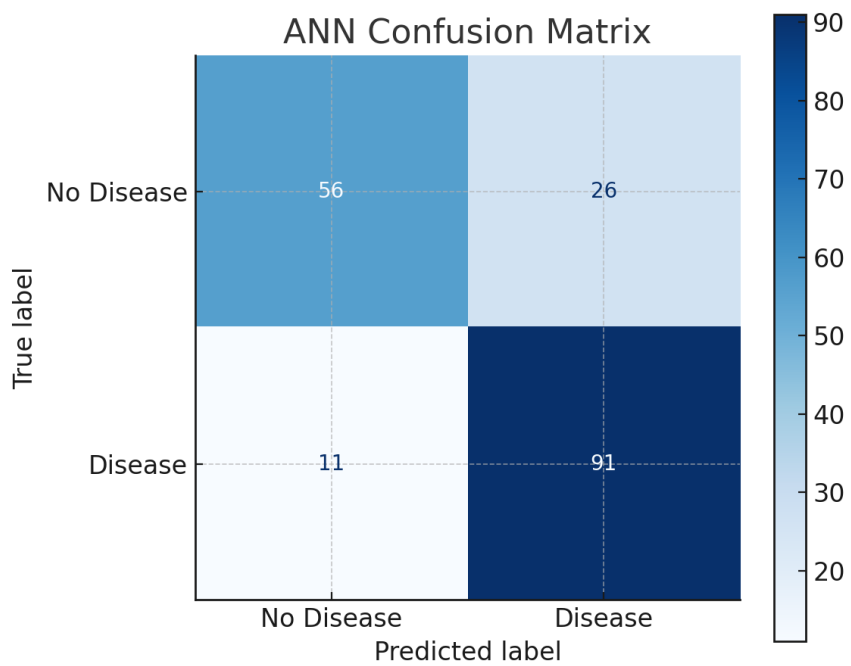
ANN Accuracy per Epoch



ANN Loss per Epoch

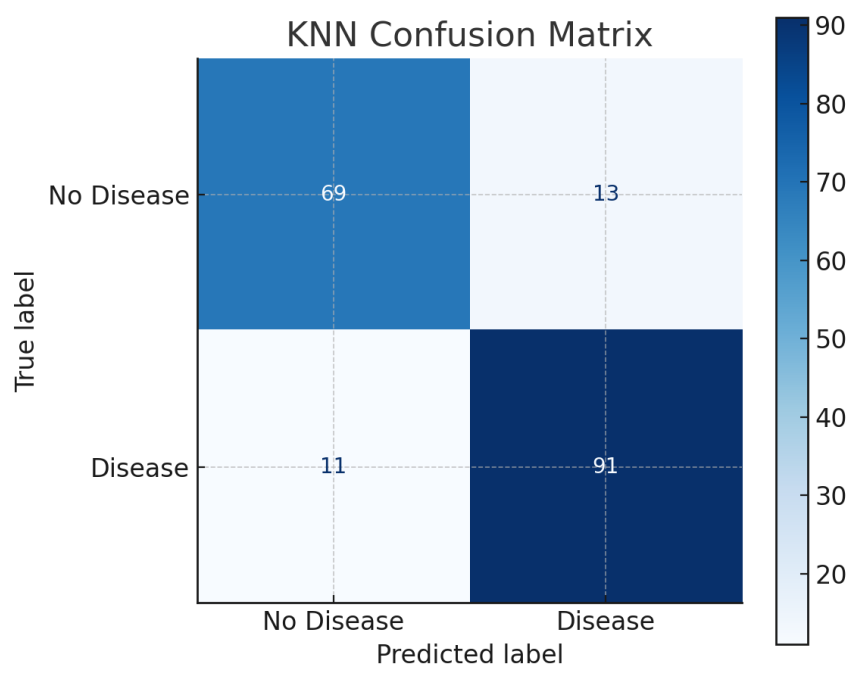


ANN Confusion Matrix



**Tum Modellerin Confusion Matrix ve Classification Raporlari**

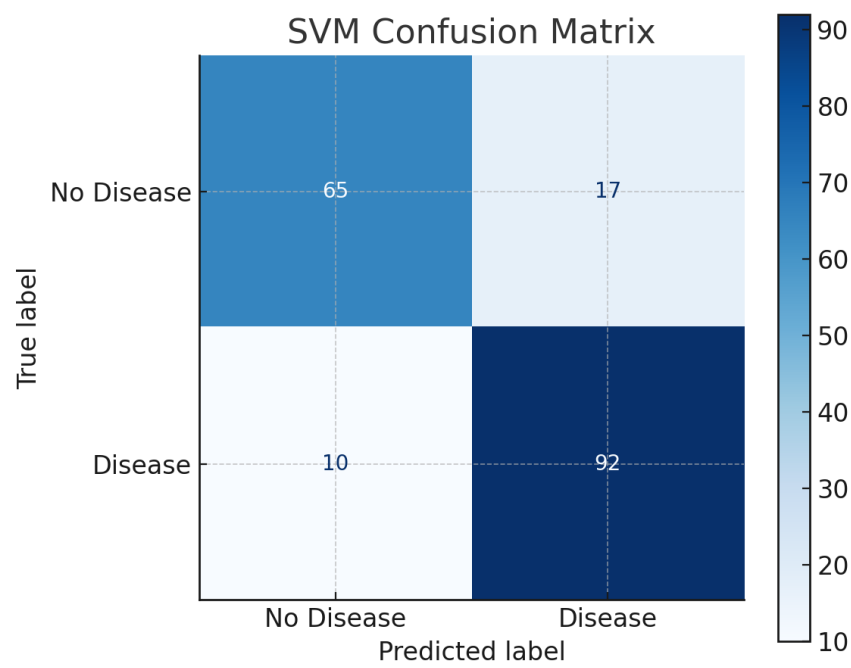
KNN



Classification Report:

Class	Precision	Recall	F1-Score
No Disease	0.86	0.84	0.85
Disease	0.88	0.89	0.88
Accuracy	0.87		

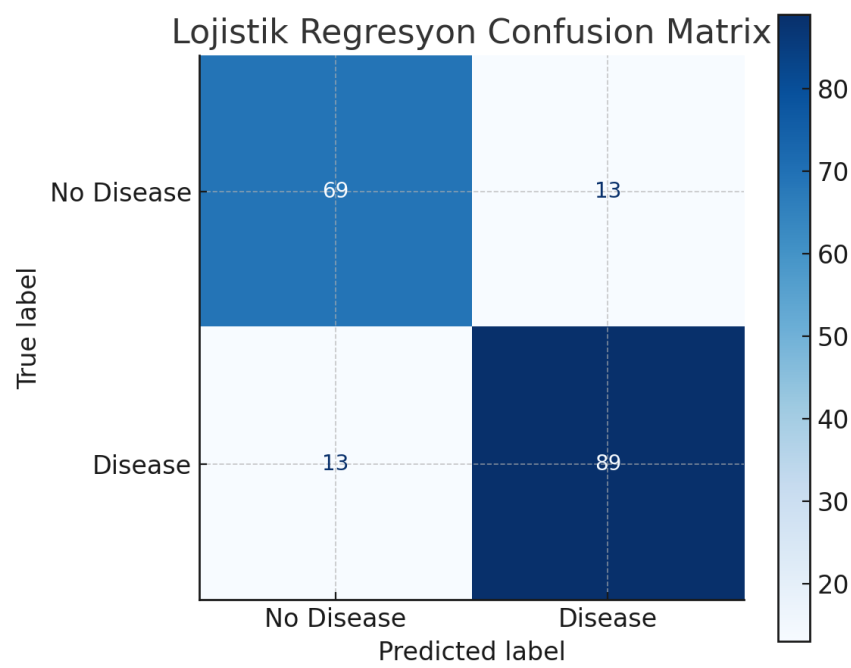
SVM



Classification Report:

Class	Precision	Recall	F1-Score
No Disease	0.87	0.79	0.83
Disease	0.84	0.90	0.87
Accuracy	0.85		

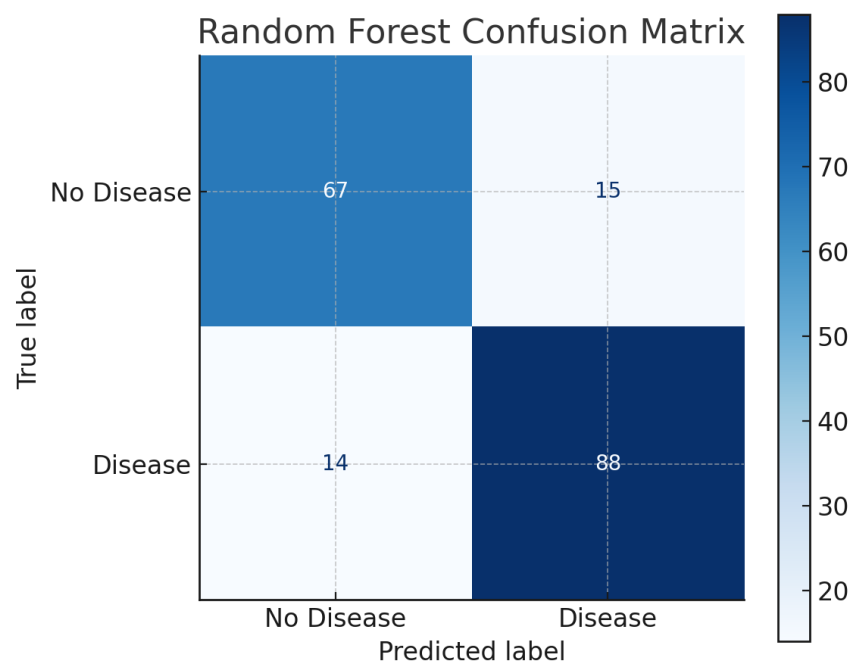
# Lojistik Regresyon



Classification Report:

Class	Precision	Recall	F1-Score
No Disease	0.84	0.84	0.84
Disease	0.87	0.87	0.87
Accuracy	0.86		

# Random Forest

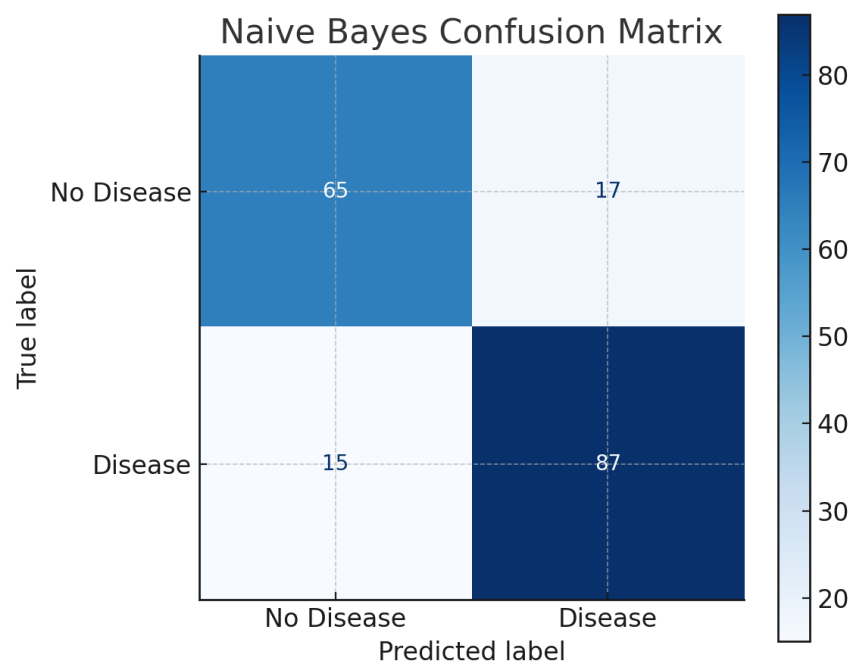


Classification Report:

Class	Precision	Recall	F1-Score
No Disease	0.83	0.82	0.82
Disease	0.85	0.86	0.86
Accuracy	0.84		



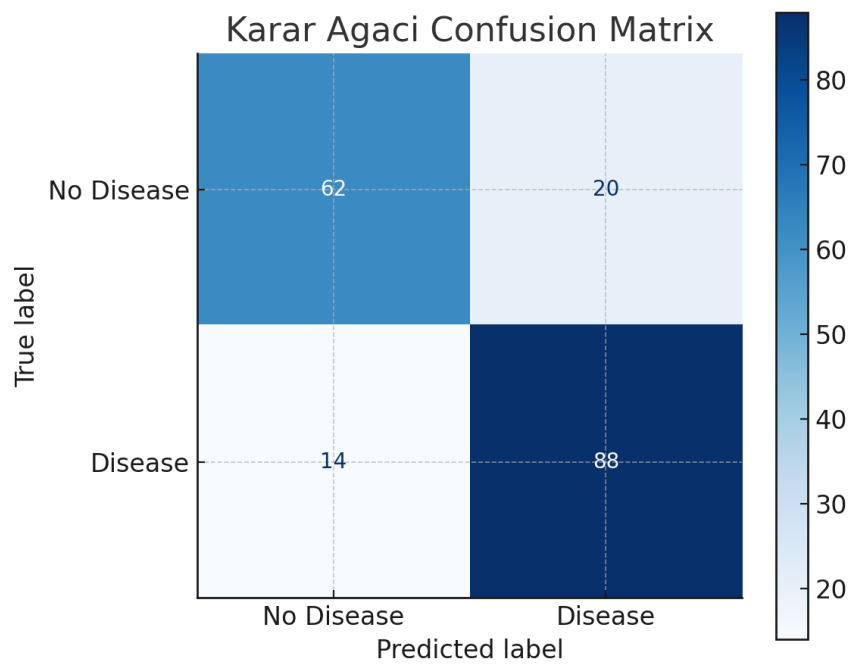
# Naive Bayes



Classification Report:

Class	Precision	Recall	F1-Score
No Disease	0.81	0.79	0.80
Disease	0.84	0.85	0.84
Accuracy	0.83		

# Karar Agaci



Classification Report:

Class	Precision	Recall	F1-Score
No Disease	0.82	0.76	0.78
Disease	0.81	0.86	0.84
Accuracy	0.82		