

Student name	Student ID
Alexander Boyev	314393158
Adir Sabag	312581747

Task #	Your result	Your explanation
(1) Linear regression		
Task 1.1	<p>Epoch: 1000 cost= 0.078951925 W= 0.27455863 b= 0.62186956 Optimization Finished! Training cost= 0.078951925 W= 0.27455863 b= 0.62186956</p> <p>Testing... (Mean square loss Comparison) Testing cost= 6.1499867 Absolute mean square loss difference: 6.071035</p>	As training cost is very low because it predict the data accurately while when we change the testing data to our ID and reverse it. It will not predict the data accurately as result testing cost will become high
Task 1.2	<p>Testing... (Mean square loss Comparison) Testing cost= 1.2206329 Absolute mean square loss difference: 1.2069087</p>	No The training data is not fit. And its graph shows that the data is highly moves towards underfitting.
Task 1.3	<p>Testing... (Mean square loss Comparison) Testing cost= 3.9815042 Absolute mean square loss difference: 1.2522287</p>	The solution of 3 is this that instead of using all Y same keep them most nearer to training input Y in that case it will best Predict that data with properly fitting.
Task 1.4	<p>Testing cost= 5.59537 Absolute mean square loss difference: 12.53093</p>	When we split the data into training and testing and predicted into Milk/Cream hot.
Task 1.5	<p>Training cost= 18.126299 Testing cost= 5.59537 Absolute mean square loss difference: 12.53093</p>	Training cost is high while on testing its cost become low that's why we say that data is moving towards overfitting via generalization results

(2) Logistic regression		
Task 2.1	Optimization Finished! Accuracy: 0.9235	When we decrease the batch size from 100 to 10 its training accuracy is increase which clearly predicts that data is moving towards overfitting if it more decrease to 5 its highly overfit the data
Task 2.2	Optimization Finished! Accuracy: 0.8963	When batch size 400 data will move to somehow Underfitting but currently it is in overfitting situation
Task 2.3	Optimization Finished! Accuracy: 0.9246	Data is on underfitting, but it firstly moves towards overfitting because it gives good results on training data.
(3) Random Forest		
Task 3.1	Test Accuracy: 0.8974	Data is moving towards overfitting Because on training it gives good accuracy
Task 3.2	Test Accuracy: 0.8538	Data is showing overfitting because training data it shows good results that are moving towards
Task 3.3	Test Accuracy: 0.9197	Data is overfitting because data is highly overfitted on the line, it moves from underfitting to overfitting
Task 3.4	Test Accuracy 0.9212	Its gives generalized results. because on training its results somehow low while on testing it gives very good results and moving towards generalization.