main_train(X_train = X_train_ scaled , X_val=X_val_scaled, X_test=X_test_scaled, y_train=y_train, y_val=y_val, y_test=y_test, model_methodirectory = "/content/virve/shareddrives/test 758 project/saved_models_and_data/Normal_scaled_Data_Models/", data_changes_Note="", attempt_set=1, paraml = 1000, param2 = 42) Precision	main_train(X	***** -V ***				
precision recall f1-score support T-shirt/top 0.78 0.81 0.80 0.80 597 Trouser 0.97 0.97 0.97 60.8 Sandal 0.93 0.94 0.93 621 Shirt 0.65 0.59 0.62 619 Sheaker 0.90 0.93 0.93 590 Ankle boot 0.94 0.92 0.93 590 accuracy macro avg 0.84 0.84 0.84 6000 1 Logistic Regression Iterations= 1000 Random state = 42 Test Classification Report: Test Set Performance: Accuracy: 0.8361 T-shirt/top 0.80 0.80 0.80 1000 Pullover 0.73 0.73 0.73 1000 Pullover 0.73 0.75 0.74 1000 Sandal 0.93 0.90 0.90 1000 Sandal 0.90 0.90 0.90 0.90 0.90 0.90 0.90 0.9		_train =x_tra	ain_scaled	x_val=X	_val_scale	d, X_test=X_test_scaled, y_train=y_train, y_val=y_val, y_test=y_test, model_method =
T-shirt/top 0.78 0.81 0.80 597 frouser 0.97 0.97 0.97 608 Pullover 0.76 0.73 0.74 611 Dress 0.83 0.87 0.85 587 Coat 0.75 0.78 0.76 627 Sandal 0.93 0.94 0.93 621 Shirt 0.65 0.59 0.62 619 Sneaker 0.90 0.93 0.92 550 Bag 0.92 0.90 0.91 590 Ankle boot 0.94 0.92 0.93 590 accuracy 0.84 0.84 0.84 6000 weighted avg 0.84 0.84 0.84 6000 I Logistic Regression Iterations= 1000 Random state = 42 Test Classification Report: Test Set Performance: Accuracy: 0.8361 Precision recall f1-score support T-shirt/top 0.80 0.80 0.80 1000 Pullover 0.73 0.73 0.73 1000 Pullover 0.73 0.75 0.74 1000 Sandal 0.93 0.92 0.93 1000 Shirt 0.62 0.55 0.59 0.09 1000 Shirt 0.62 0.55 0.59 0.000 Shirt 0.62 0.55 0.59 1000 Shake 0.91 0.93 0.92 1.93 1000 Shake 0.91 0.93 0.92 1.99 1000 Shake 0.91 0.93 0.92 1.99 1000 Ankle boot 0.93 0.94 0.94 1.900						
T-shirt/top 0.78 0.81 0.80 597 Trouser 0.97 0.97 0.97 608 Pullover 0.76 0.73 0.74 611 Dress 0.83 0.87 0.85 587 Coat 0.75 0.78 0.76 627 Sandal 0.93 0.94 0.93 621 Shirt 0.65 0.59 0.62 619 Sneaker 0.90 0.93 0.92 550 Bag 0.92 0.90 0.91 590 Ankle boot 0.94 0.92 0.93 590 accuracy macro avg 0.84 0.84 6000 rest See Performance: Accuracy: 0.84 0.84 6000 1 Logistic Regression Iterations= 1000 Random state = 42 Test Classification Report: Test Set Performance: Accuracy: 0.80 0.80 0.80 1000 Trouser 0.96 0.96 0.96 1000 Pullover 0.73 0.73 0.73 1000 Dress 0.82 0.85 0.84 1000 Sandal 0.93 0.92 0.93 1000 Sneaker 0.91 0.93 0.92 0.92 1000 Ankle boot 0.93 0.94 0.94 1000		nrecision	recall	fl-score	support	
Trouser 0.97 0.97 0.97 608 Pullover 0.76 0.73 0.74 611 Dress 0.83 0.87 0.85 587 Coat 0.75 0.78 0.76 627 Sandal 0.93 0.94 0.93 621 Shirt 0.65 0.59 0.62 619 Sneaker 0.90 0.93 0.92 550 Bag 0.92 0.90 0.91 550 Ankle boot 0.94 0.92 0.93 590 accuracy 0.84 6800 macro avg 0.84 0.84 0.84 6000 weighted avg 0.84 0.84 0.84 6000 1 Logistic Regression Iterations= 1000 Random state = 42 Test Classification Report: Test Set Performance: Accuracy: 0.8361 Precision recall f1-score support T-shirt/top 0.80 0.80 0.80 1000 Pullover 0.73 0.73 0.73 1000 Pullover 0.73 0.73 0.73 1000 Snadal 0.93 0.92 0.93 1000 Snitt 0.62 0.56 0.59 1000 Snadal 0.93 0.92 0.93 1000 Snitt 0.62 0.56 0.59 1000 Sneaker 0.91 0.93 0.92 1000 Sneaker 0.91 0.93 0.92 1000 Sneaker 0.91 0.93 0.92 1000 Ankle boot 0.93 0.94 0.94 1000		precipion	100411	11-50010	papport	
Pullover 0.76 0.73 0.74 611 Dress 0.83 0.87 0.85 587 Coat 0.75 0.78 0.76 627 Sandal 0.93 0.94 0.93 621 Shirt 0.65 0.59 0.62 619 Sneaker 0.90 0.93 0.92 550 Bag 0.92 0.90 0.91 590 Ankle boot 0.94 0.92 0.93 590 accuracy 0.84 0.84 6000 macro avg 0.84 0.84 0.84 6000 weighted avg 0.84 0.84 0.84 6000 1 Logistic Regression Iterations= 1000 Random state = 42 Test Classification Report: Test Set Performance: Accuracy: 0.8361 T-shirt/top 0.80 0.80 0.80 1000 Pullover 0.73 0.73 0.73 1000 Dress 0.82 0.85 0.84 1000 Coat 0.73 0.75 0.74 1000 Sandal 0.93 0.92 0.93 1000 Shirt 0.62 0.56 0.59 1000 Shake 0.91 0.93 0.92 0.92 1000 Shake 0.91 0.93 0.92 0.92 1000 Bag 0.91 0.92 0.92 1000 Ankle boot 0.93 0.94 0.94 0.94 1000	T-shirt/top	0.78	0.81	0.80	597	
Dress 0.83 0.87 0.85 587 Coat 0.75 0.78 0.76 627 Sandal 0.93 0.94 0.93 621 Shirt 0.65 0.59 0.62 619 Sheaker 0.90 0.93 0.92 550 Bag 0.92 0.90 0.91 550 Ankleb oct 0.94 0.92 0.93 550 accuracy 0.84 6000 macro avg 0.84 0.84 0.84 6000 weighted avg 0.84 0.84 0.84 6000 1 Logistic Regression Iterations= 1000 Random state = 42 Test Classification Report: Test Set Performance: Accuracy: 0.8361 Precision recall fl-score support T-shirt/top 0.80 0.80 0.80 1000 Pullover 0.73 0.73 0.73 1000 Pullover 0.73 0.73 0.73 1000 Coat 0.73 0.75 0.74 1000 Sandal 0.93 0.92 0.93 1000 Shirt 0.62 0.56 0.59 1000 Shirt 0.62 0.56 0.59 1000 Shirt 0.62 0.56 0.59 1000 Shaker 0.91 0.93 0.92 1000 Ankle boot 0.93 0.94 0.94 1000	Trouser	0.97	0.97	0.97	608	
Coat 0.75 0.78 0.76 627 Sandal 0.93 0.94 0.93 621 Shirt 0.65 0.59 0.62 619 Sneaker 0.90 0.93 0.92 550 Bag 0.92 0.90 0.91 590 Ankle boot 0.94 0.92 0.93 590 accuracy	Pullover	0.76	0.73	0.74	611	
Sandal 0.93 0.94 0.93 621 Shirt 0.65 0.59 0.62 619 Sheaker 0.90 0.93 0.92 550 Bag 0.92 0.90 0.91 590 Ankle boot 0.94 0.92 0.93 590 accuracy	Dress	0.83	0.87	0.85	587	
Shirt 0.65 0.59 0.62 619 Sneaker 0.90 0.93 0.92 550 Bag 0.92 0.90 0.91 590 Ankle boot 0.94 0.92 0.93 590 accuracy 0.84 6000 macro avg 0.84 0.84 6000 1 Logistic Regression Iterations= 1000 Random state = 42 Test Classification Report: Test Set Performance: Accuracy: 0.8361 T-shirt/top 0.80 0.80 0.80 1000 Trouser 0.96 0.96 0.96 1000 Pullover 0.73 0.73 0.73 1000 Dress 0.82 0.85 0.84 1000 Coat 0.73 0.75 0.74 1000 Sandal 0.93 0.92 0.93 1000 Shirt 0.62 0.56 0.59 1000 Sneaker 0.91 0.92 0.92 1000 Bag 0.91 0.92 0.92 1000 Bag 0.91 0.92 0.92 1000 Ankle boot 0.93 0.94 0.94 1000	Coat	0.75	0.78	0.76	627	
Sneaker	Sandal	0.93	0.94	0.93	621	
Bag	Shirt	0.65	0.59	0.62	619	
Ankle boot 0.94 0.92 0.93 590 accuracy	Sneaker	0.90	0.93	0.92	550	
accuracy	Bag	0.92	0.90	0.91	590	
macro avg 0.84 0.84 0.84 6000 Weighted avg 0.84 0.84 0.84 6000 1 Logistic Regression Iterations= 1000 Random state = 42 Test Classification Report: Test Set Performance: Accuracy: 0.8361 precision recall fl-score support T-shirt/top 0.80 0.80 0.80 1000 Trouser 0.96 0.96 0.96 1000 Pullover 0.73 0.73 0.73 1000 Pullover 0.73 0.75 0.74 1000 Coat 0.73 0.75 0.74 1000 Sandal 0.93 0.92 0.93 1000 Shirt 0.62 0.56 0.59 1000 Sneaker 0.91 0.93 0.92 1000 Bag 0.91 0.92 0.92 1000 Ankle boot 0.93 0.94 0.94 1000		0.94	0.92	0.93	590	
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Logistic Regression Iterations	macro avg	0.84	0.84	0.84	6000	
Logistic Regression Iterations= 1000 Random state = 42 Test Classification Report: Test Set Performance: Accuracy: 0.8361		0.84	0.84	0.84	6000	
T-shirt/top 0.80 0.80 0.80 1000 Trouser 0.96 0.96 0.96 1000 Pullover 0.73 0.73 0.73 1000 Dress 0.82 0.85 0.84 1000 Coat 0.73 0.75 0.74 1000 Sandal 0.93 0.92 0.93 1000 Shirt 0.62 0.56 0.59 1000 Sneaker 0.91 0.93 0.92 1000 Ankle boot 0.93 0.94 0.94 1000	Test Set Per	formance:	erations=	1000 Randor	m state =	42 Test Classification Report:
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Trouser 0.96 0.96 0.96 1000 Pullover 0.73 0.73 0.73 1000 Dress 0.82 0.85 0.84 1000 Coat 0.73 0.75 0.74 1000 Sandal 0.93 0.92 0.93 1000 Shirt 0.62 0.56 0.59 1000 Sneaker 0.91 0.93 0.92 1000 Bag 0.91 0.92 0.92 1000 Ankle boot 0.93 0.94 0.94 1000	Test Set Per	formance: 8361				42 Test Classification Report:
Dress 0.82 0.85 0.84 1000 Coat 0.73 0.75 0.74 1000 Sandal 0.93 0.92 0.93 1000 Shirt 0.62 0.56 0.59 1000 Sneaker 0.91 0.93 0.92 1000 Bag 0.91 0.92 0.92 1000 Ankle boot 0.93 0.94 0.94 1000	Test Set Per: Accuracy: 0.	formance: 8361 precision	recall	f1-score	support	42 Test Classification Report:
Coat 0.73 0.75 0.74 1000 Sandal 0.93 0.92 0.93 1000 Shirt 0.62 0.56 0.59 1000 Sneaker 0.91 0.93 0.92 1000 Bag 0.91 0.92 0.92 1000 Ankle boot 0.93 0.94 0.94 1000	Test Set Per: Accuracy: 0.	formance: 8361 precision 0.80	recall	f1-score	support	42 Test Classification Report:
Sandal 0.93 0.92 0.93 1000 Shirt 0.62 0.56 0.59 1000 Sneaker 0.91 0.92 1000 Bag 0.91 0.92 0.92 1000 Ankle boot 0.93 0.94 0.94 1000	Test Set Per Accuracy: 0.1 T-shirt/top Trouser	formance: 8361 precision 0.80 0.96	recall 0.80 0.96	f1-score 0.80 0.96	support 1000 1000	42 Test Classification Report:
Shirt 0.62 0.56 0.59 1000 Sneaker 0.91 0.93 0.92 1000 Bag 0.91 0.92 0.92 1000 Ankle boot 0.93 0.94 0.94 1000	Test Set Per Accuracy: 0.4 T-shirt/top Trouser Pullover	formance: 8361 precision 0.80 0.96 0.73	recall 0.80 0.96 0.73	f1-score 0.80 0.96 0.73	support 1000 1000 1000	42 Test Classification Report:
Shirt 0.62 0.56 0.59 1000 Sneaker 0.91 0.93 0.92 1000 Bag 0.91 0.92 0.92 1000 Ankle boot 0.93 0.94 0.94 1000	T-shirt/top Trouser Pullover Dress	formance: 8361 precision 0.80 0.96 0.73 0.82	recall 0.80 0.96 0.73 0.85	f1-score 0.80 0.96 0.73 0.84	support 1000 1000 1000	42 Test Classification Report:
Sneaker 0.91 0.93 0.92 1000 Bag 0.91 0.92 0.92 1000 Ankle boot 0.93 0.94 0.94 1000	Test Set Per: Accuracy: 0.: T-shirt/top Trouser Pullover Dress Coat	formance: 8361 precision 0.80 0.96 0.73 0.82 0.73	recall 0.80 0.96 0.73 0.85 0.75	f1-score 0.80 0.96 0.73 0.84 0.74	support 1000 1000 1000 1000	42 Test Classification Report:
Bag 0.91 0.92 0.92 1000 Ankle boot 0.93 0.94 0.94 1000	Test Set Per: Accuracy: 0.: T-shirt/top Trouser Pullover Dress Coat Sandal	formance: 8361 precision 0.80 0.96 0.73 0.82 0.73 0.93	recall 0.80 0.96 0.73 0.85 0.75	f1-score 0.80 0.96 0.73 0.84 0.74	support 1000 1000 1000 1000 1000	42 Test Classification Report:
Ankle boot 0.93 0.94 0.94 1000	Test Set Per: Accuracy: 0.i T-shirt/top Trouser Pullover Dress Coat Sandal Shirt	formance: 8361 precision 0.80 0.96 0.73 0.82 0.73 0.93 0.62	recall 0.80 0.96 0.73 0.85 0.75 0.92 0.56	f1-score 0.80 0.96 0.73 0.84 0.74 0.93	support 1000 1000 1000 1000 1000	42 Test Classification Report:
	T-shirt/top T-shirt/top Trouser Pullover Dress Coat Sandal Shirt Sneaker	formance: 8361 precision 0.80 0.96 0.73 0.82 0.73 0.93 0.62 0.91	recall 0.80 0.96 0.73 0.85 0.75 0.92 0.56	f1-score 0.80 0.96 0.73 0.84 0.74 0.93 0.59	support 1000 1000 1000 1000 1000 1000	42 Test Classification Report:
accuracy 0.84 10000	Test Set Per Accuracy: 0.1 T-shirt/top Trouser Pullover Dress Coat Sandal Shirt Sneaker Bag	formance: 8361 precision 0.80 0.96 0.73 0.82 0.73 0.92 0.73 0.92	recall 0.80 0.96 0.73 0.85 0.75 0.92 0.56 0.93	f1-score 0.80 0.96 0.73 0.84 0.74 0.93 0.59 0.92	support 1000 1000 1000 1000 1000 1000 1000	42 Test Classification Report:
	Test Set Per Accuracy: 0.1 T-shirt/top Trouser Pullover Dress Coat Sandal Shirt Sneaker Bag	formance: 8361 precision 0.80 0.96 0.73 0.82 0.73 0.92 0.73 0.92	recall 0.80 0.96 0.73 0.85 0.75 0.92 0.56 0.93	f1-score 0.80 0.96 0.73 0.84 0.74 0.93 0.59 0.92	support 1000 1000 1000 1000 1000 1000 1000	42 Test Classification Report:
macro avg 0.83 0.84 0.83 10000	Test Set Per Accuracy: 0.1 T-shirt/top Trouser Pullover Dress Coat Sandal Shirt Sneaker Bag	formance: 8361 precision 0.80 0.96 0.73 0.82 0.73 0.92 0.73 0.92	recall 0.80 0.96 0.73 0.85 0.75 0.92 0.56 0.93	f1-score 0.80 0.96 0.73 0.84 0.74 0.93 0.59 0.92	support 1000 1000 1000 1000 1000 1000 1000	42 Test Classification Report:
weighted avg 0.83 0.84 0.83 10000	Test Set Per Accuracy: 0.0 T-shirt/top Trouser Pullover Coat Sandal Shirt Sneaker Ankle boot accuracy	precision 0.80 0.96 0.73 0.82 0.73 0.93 0.62 0.91	recall 0.80 0.96 0.73 0.85 0.75 0.92 0.56 0.93 0.92	f1-score 0.80 0.96 0.73 0.84 0.74 0.93 0.59 0.92 0.92 0.94	support 1000 1000 1000 1000 1000 1000 1000 10	42 Test Classification Report:

