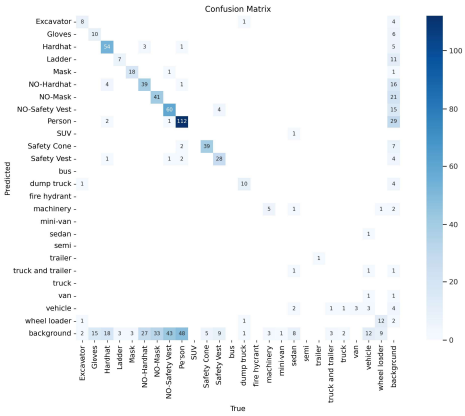
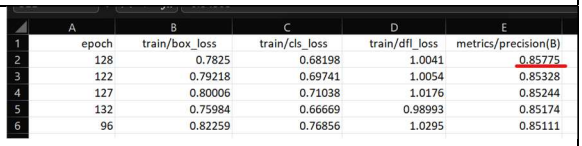
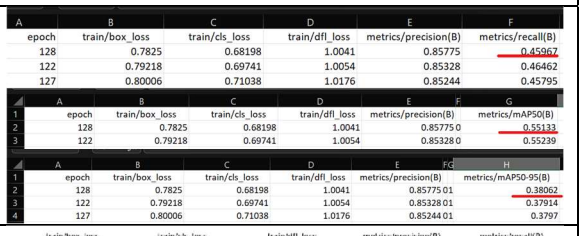
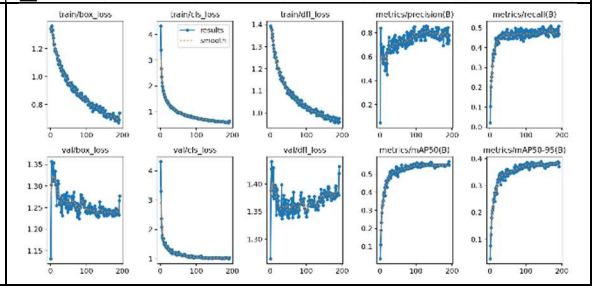
Project Development Phase
Model Performance Test

Date	8 November 2023
Team ID	Team-592995
Project Name	ConstructGuard_YOLO-Based Safety Gear Surveillance
Maximum Marks	10 Marks

Model Performance Testing:

Project team shall fill the following information in model performance testing template.

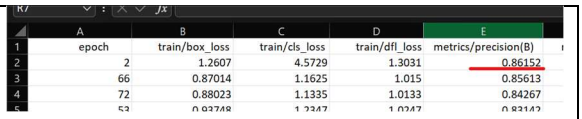
S.No.	Parameter	Values	Screenshot
1.	Metrics	**Classification Model:** Confusion Matrix -	
		Precision(best.pt)-0.85775	
		Classification Report: - 1) Recall- 0.45967 2) mAP50(B)- 0.55133 3) mAP50-95(B)- 0.38062	
		Overall Results Graph	

epoch	train/box_loss	train/cls_loss	train/dfl_loss	metrics/precision(B)
128	0.7825	0.68198	1.0041	0.85775
122	0.79218	0.69741	1.0054	0.85328
127	0.80006	0.71038	1.0176	0.85244
132	0.75984	0.66669	0.98993	0.85174
96	0.82259	0.76856	1.0295	0.85111

epoch	train/box_loss	train/cls_loss	train/dfl_loss	metrics/precision(B)	metrics/recall(B)
128	0.7825	0.68198	1.0041	0.85775	0.45967
122	0.79218	0.69741	1.0054	0.85328	0.46462
127	0.80006	0.71038	1.0176	0.85244	0.45795

epoch	train/box_loss	train/cls_loss	train/dfl_loss	metrics/precision(B)	metrics/mAP50(B)
128	0.7825	0.68198	1.0041	0.85775	0.55133
122	0.79218	0.69741	1.0054	0.85328	0.55239

epoch	train/box_loss	train/cls_loss	train/dfl_loss	metrics/precision(B)	metrics/mAP50-95(B)
128	0.7825	0.68198	1.0041	0.85775	0.38062
122	0.79218	0.69741	1.0054	0.85328	0.37914
127	0.80006	0.71038	1.0176	0.85244	0.3797

2.	Tune the Model	Hyperparameter Tuning – Parameters are- lr0: 0.00831 lrf: 0.01599 momentum: 0.84835 weight_decay:0.00062 warmup_epochs:4.34527 warmup_momentum:0.4022 box: 7.20145 cls: 0.65509 dfl: 1.41471 hsv_h: 0.02425 hsv_s: 0.9 hsv_v: 0.22693 degrees: 0.0 translate: 0.09851 scale: 0.60903 shear: 0.0 perspective: 0.0 flipud: 0.0 fliplr: 0.19578 mosaic: 1.0 mixup: 0.0 copy_paste: 0.0 Validation Method – Precision (0.86152)	

	A	B	C	D	E
1	epoch	train/box_loss	train/cls_loss	train/dfl_loss	metrics/precision(B)
2	2	1.2607	4.5729	1.3031	0.86152
3	66	0.87014	1.1625	1.015	0.85613
4	72	0.88023	1.1335	1.0133	0.84267
5	53	0.93748	1.2347	1.0247	0.83142