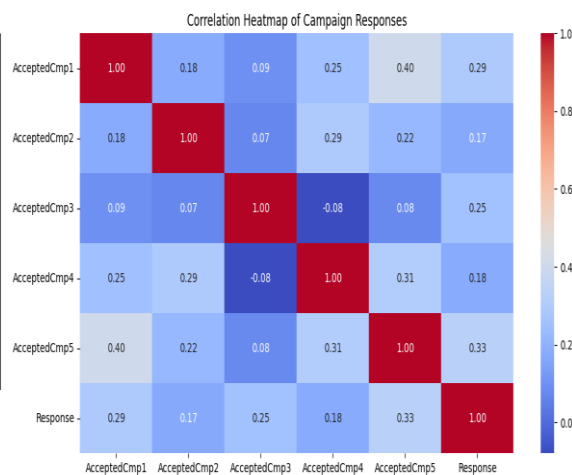
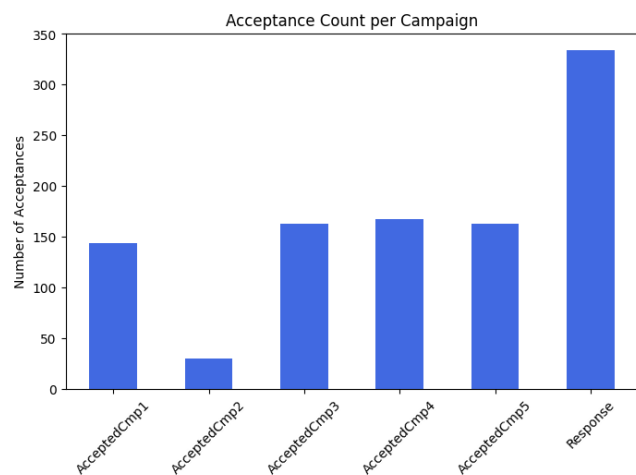
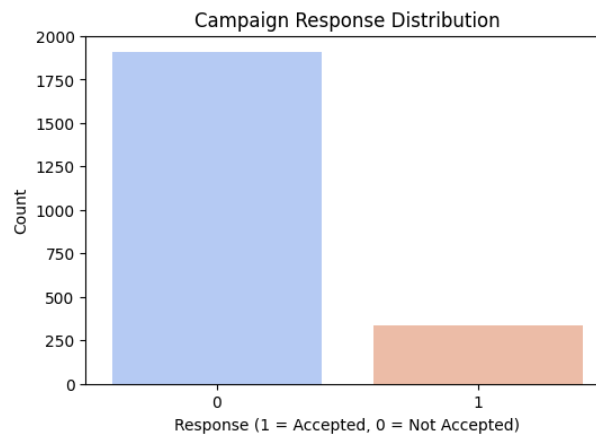
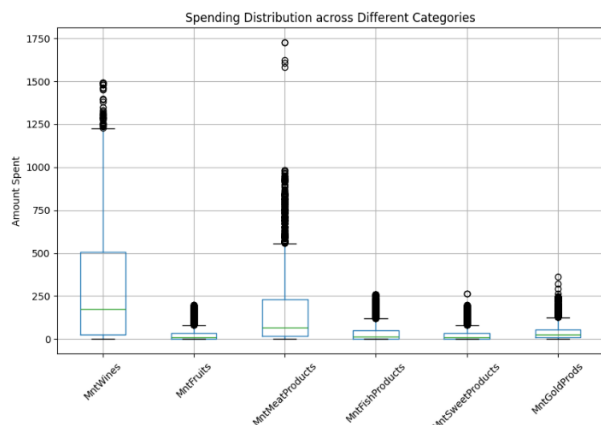
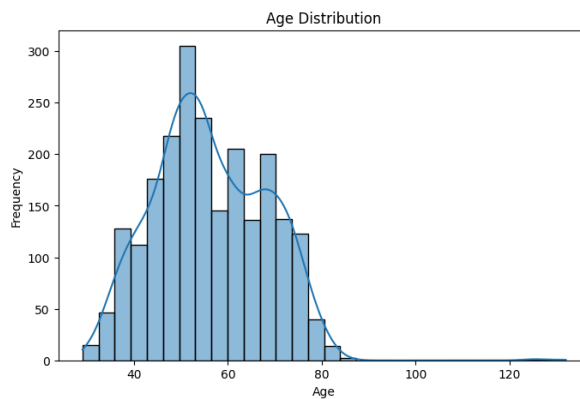
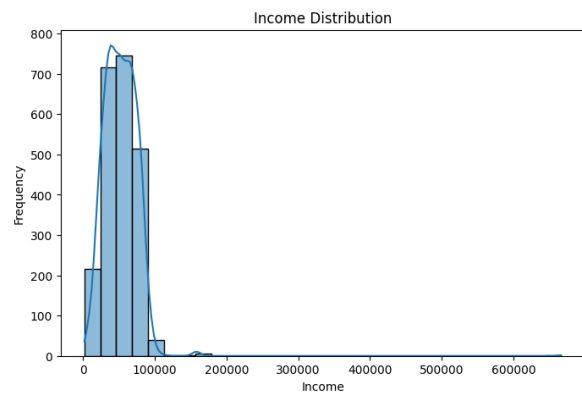
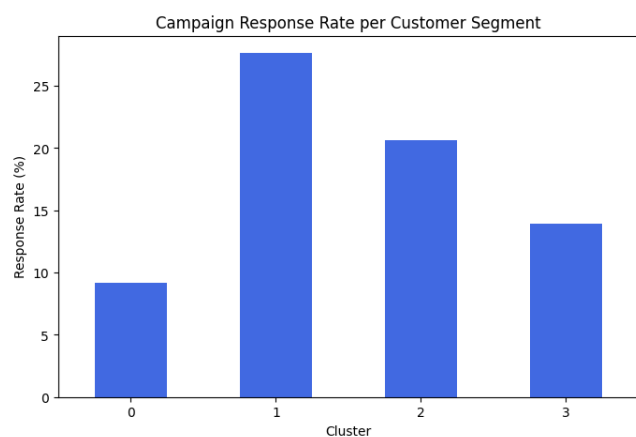


TASK 1:



TASK 2:



TASK 3:

Random Forest Model Performance:	XGBoost Model Performance:
Accuracy: 0.8705357142857143	Accuracy: 0.8827160493827161
Precision: 0.6551724137931034	Precision: 0.8374558303886925
Recall: 0.2835820895522388	Recall: 0.8876404494382022
F1 Score: 0.3958333333333333	F1 Score: 0.8618181818181818
ROC-AUC: 0.6286676851960669	ROC-AUC: 0.8834527706508597

Model Performance Comparison:	Accuracy	Precision	Recall	F1 Score	ROC-AUC
Logistic Regression	0.857143	0.565217	0.194030	0.288889	0.583892
Decision Tree	0.816964	0.391304	0.402985	0.397059	0.646374
Random Forest	0.861607	0.571429	0.298507	0.392157	0.629569
Gradient Boosting	0.857143	0.548387	0.253731	0.346939	0.608493

Optimized Model Performance:
Accuracy: 0.8571428571428571
Precision: 0.5555555555555556
Recall: 0.22388059701492538
F1 Score: 0.3191489361702128
ROC-AUC: 0.5961922670113997

TASK 4:

