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INTRODUCTION

This dataset contains an airline passenger satisfaction survey. What factors are highly correlated to a satisfied (or dissatisfied) passenger? Can you predict passenger satisfaction?

Dataset

25

139K

Columns



Workflow

- **Q** EDA
- **Split Data**
- **Q** Cleaning data
- **Q** Modeling
- Test



Tools

Python, Jupyter notebook

NumPy, Pandas, SKLearn



Matplotlib,
Seaborn,
Tableau





-0.8

-0.6

-0.4

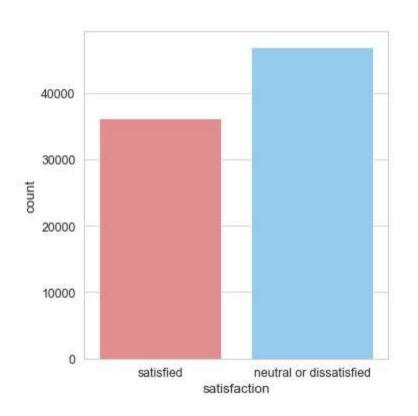
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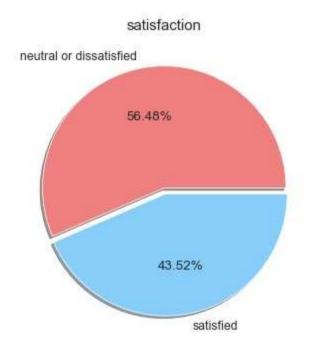
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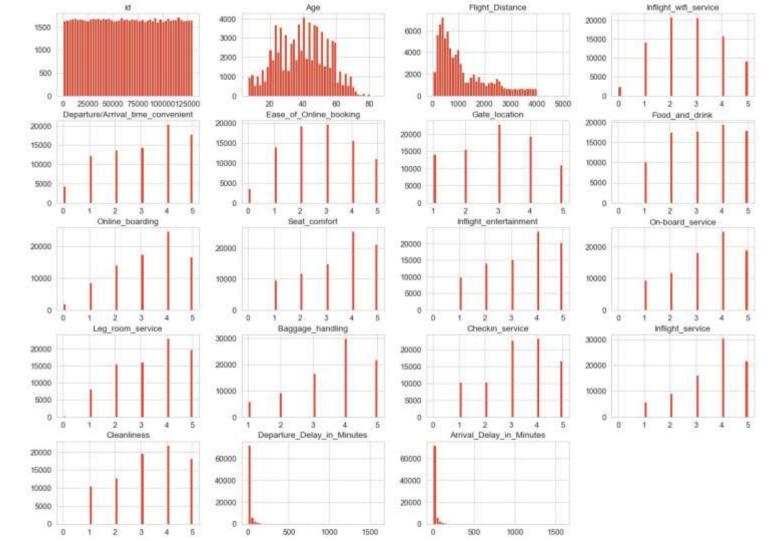
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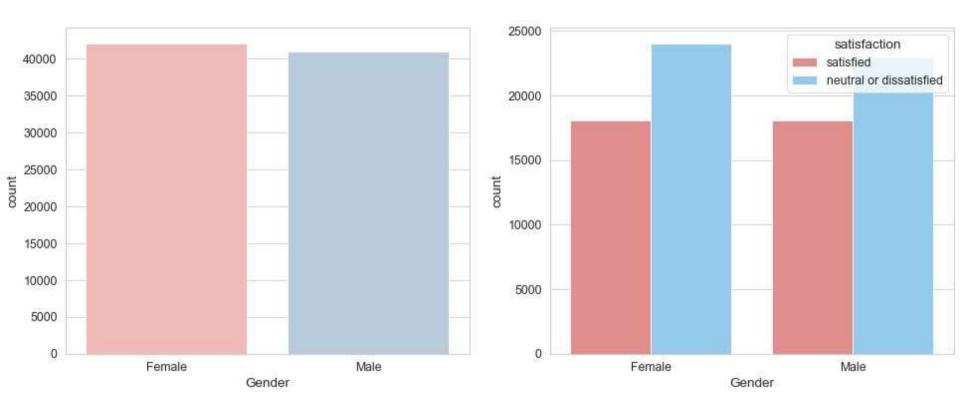
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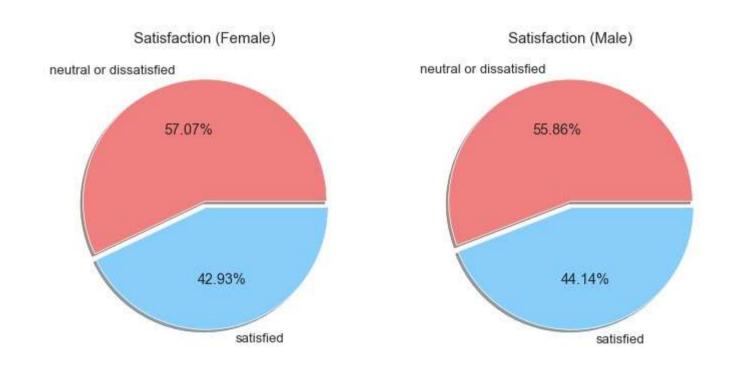
e	4.	0.024	0.007	0.010	0.0034	0.014	0.00030	00022	0.057	0.052	0.0031	0.055	0.044	0.077	0.079	0.08	0.026	0.018	0.008	0.010	0.0013	0.0023	0.0011	0.079	0.04
Age	0.024	1	0.000	0.015	0.036	0.026	0.0012	0.023	0.21	0.16	0.077	0.050	0.042	-0.046	0.037	-0.048	0.052	-0.01	-0.013	40.14	0.0067	-0.25	40.049	-0.13	0.01
Flight_Distance	0.097	0.099	0	0.0046	-0.02	9.065	0.0039	0.056	822	9.18	2.13	Q.TT	0.14	0.063	0.074	0.06	2.093	0.004	0.00019	-03	0.0042	0.23	-0.27	-0.4	40.13
Infight_will_service	0.019	0.018	0.0048	111	0.34	0.72	0.34	0.13	0.46	0.12	0.21	0.12	0.16	0.12	0.044	0.11	0.13	0.017	-0.010	0.28	0.012	0.0060	-0.1	-0.036	0.008
Departure/Arrival_time_convenient	0.0034	0.038	0.02	0.34	1	0.44	0.46	0.0064	0.068	0.011	0.0001	0.067	0.013	0.072	0.004	0.072	0.014	0.0047	0.0028	o ona	0.012	0.2		0.001	0.020
Ease of Online booking	0.014	0.026	0.065	0.72		1	0.44	0.031	94	0.028	0,045	0.039	0.11	0.038	0.012	0.036	0.015	-0.000	0.0049	-0.17	0.0082	0.02	-0.13	-0.097	0.01
Gate_location	0.0003	30.0012	0.0039	0.04		0.00	1	0.0011	0.0005	0.0021	0.0005	-0.028	0.0005	0.000	0.034	0.0011	0.0041	0.0000	0.0063	7.8e-05	0.00068	90,0045	0.029	-0.0016	-0.001
Food_and_drink	0.0022	0.023	0.056	0.13	0.0054	0.831	0.0011	-1	823	0.67	0.62	0.069	0.036	0.034	0.087	0.034	0.06	0.029	0.032	0.21	0.0047	0.059	0.062	0.077	0.01
Online_boarding	0.057	0.21	0.22	0.00	0.008	114	0.0005	1220	-1	1142	n an	f1.76	0.13	0.083	0.21	0.076		0.018	-0.022	-0.5	-0.041	-0.19	-0.22	-0.29	0.07
Seat_comfort	0.052	0.16	0.10	0.13	0.011	0.025	0.0021		0.43	1	0.61	0.12	0.11	0.076	0.10	0.07	0.05	0.028	-0.029	-0.35	-0.028	-0.16	-0.12	-0.21	0.05
intlight_ontertainment	0.0031	0.077	0.13	0.21	0.0061	0.045	0.0035	562	025	281	1	2.42			0.12		0.09	0.028	-0.031	0.4	0.0062	40.11	0.15	41.18	0.04
Ch-board_service	0.055	0.009	0.11	0.12	0.067	0.030	-0.028	0.050	0.16	0.13	0.42	1	0.311	0.52			0.12	0.029	-0.032	-0.32	0.0077	0.059	0.056	-0.18	0.07
Leg_room_service	0.044	0.042	0.14	0.16	nois	0.11	-0 0065	0.036	0.13	0.11				0.37	0.15		0.009	0.014	0.011	-0.32	0.032	0.047	-0.14	40.18	-0.06
Baggage_handing	0.077	0.046	0.063	0.12	0.072	0.038	0.003	0.034	0.083	0.076				11	020	0.63	0.096	0.0054	0.0086	0.25	0.037	0.024	-0.031	-0.14	0.06
Checkin_service	0.079	0.037	0.074	0.044	0.094	0.012	-0.004	0.087	0.21	0.30	0.12		0.15	0.228	1	02#	0.10	0.018	-0.010	-0.23	0.011	-0.005	0.017	49.53	0.08
triigit_service	0.08	40,048	0.06	0.11	0.072	0.036	0.0011	0.034	0.076	0.07	0.4			0.63		1	0.000	40.055	-0.059	0.25	0.038	0.022	-0.023	-0.34	0.05
Cleaniness	0.026	0.002	0.003	0.13	0.014	onts	-0.0061	1166	0.33	0.88	0.89	11.12	0.000	0.000	0.18	0.088	4	0.013	-0.015	-0.3	0.0063	0.082	0.077	40.12	0.03
Departure_Delay_is_Minutes	-0.018	-0.01	0.004	-0.017	0.0047	0.003	0.0063	0.020	0.018	0.028	0.028	0.029	0.014	0.0054	0.018	0.055	0.013	1	0.08	0.05	0.0025	0.0037	0.008	0.0056	6 002
Arrival_Delay_in_Minutes	-0.036	-0.012	0.0001	9-0.019	11.0028	0.0041	0,0063	-0.032	0.022	-0.029	-0.031	-0.032	0.011	-0.0086	-0.019	0.050	-0.015	0.96		0.056	0.00022	0.0048	0.0061	0.0088	0.004
sativfaction	0.013	-0.14	-0.3	-0.28	0.053	-0.17	7.8e-05	-0.21	-0.5	-0.36	-0.4	-0.32	0.32	-0.25	-0.23	-0.25	-0.3	0.06	0.056	1	-0.012	0.18	0.45	9.48	0.11
Gender_Male	0.0012	0.0067	0.0042	0.012	0.012	0.0083	0 0005	0 0047	0,041	-0.028	0.0002	0.0077	0.032	0.007	0.011	0.038	0000	0.0025	0.00022	0.012	1	0.021	0.0058	0.0048	0.01
Customer_Type_disloyal Customer	0.0023	0.28	-0.23	-0.0000	02	-0.02	0,0045	0.050	0.19	0.16	-0.11	-0,000	-0.047	0.024	40,036	0.022	0.082	0.0037	0.0048	0.10	0.001	10	-0.01	0.12	0.00
Type_of_Travel_Personal Travel	0.0011	-0.049	-0.27	0.1		-0.13	-0.029	-0.002	-0.22	49.32	-0.15	-0.056	-0.14	0.001	0.017	-0.023	-0:077	0.000	-0.0081		0.0058	0.31	- (0.5	0.1
Class_Eco	0.079	-0.13	40.4	0.036	0.081	41,097	40.0018	-0:077	0.29	0.21	-0.18	-0.18	0.18	0.14	-0.13	-0.14	0.12	0.0056	0.0088		0.0048	0.12	0.6	1	0.25
Class_Eco Plus	0.049	-0.014	-0.13	0.0081	0.029	-0.019	-0.0015	-cots	4.078	-0.065	-0.046	0.074	0.064	-0.006	-0.066	0.050	-0.032	0.0022	0.0042	0.11	0.01	0.063	0.1	0.25	-1
	20	YGH	Fight_Distance	Infight, will pervice	redrive fine convenient	Ease of Orline booking	Gatte Incabbin	Food and shift	Ordine_boarding	Seat_comfort	Intight entertainment	On board service	sower moor garyee	Beddath haveing	Checking anvice	Intign_service	Charliness	parture Distay in Minutes	Annal Desay in Mindles.	ushitation	Geoder, Male	er 1ype distoyst Customer	of Travel Personal Travel	Chara, Etc.	Class, Eco Plus

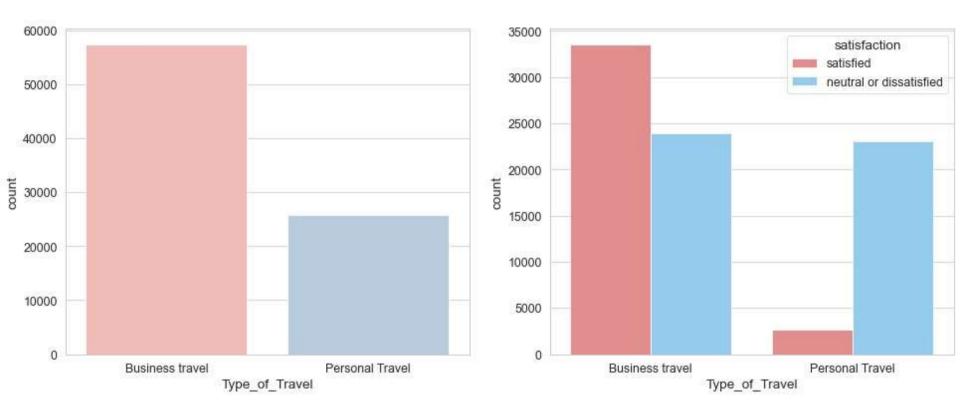


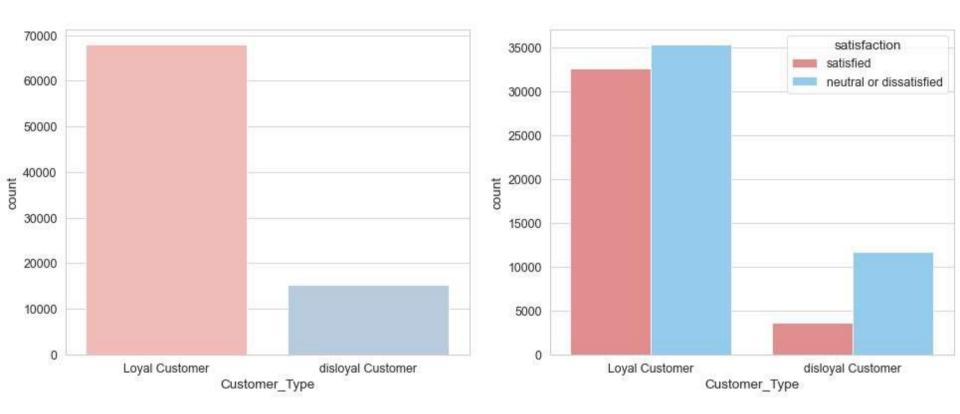


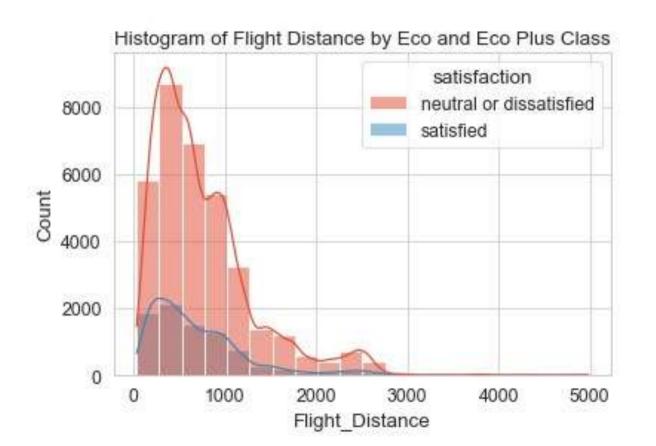


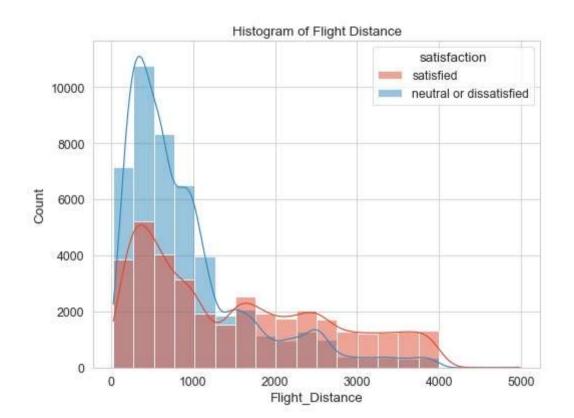


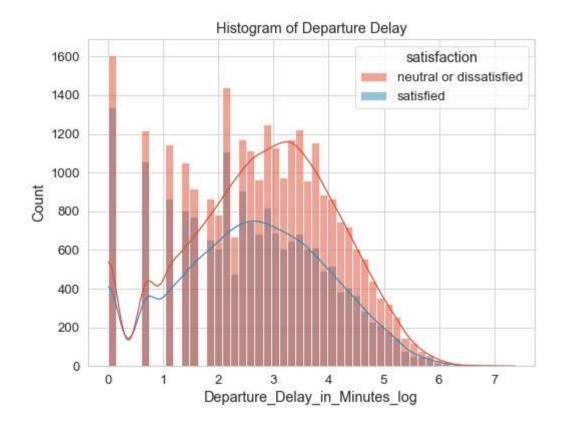


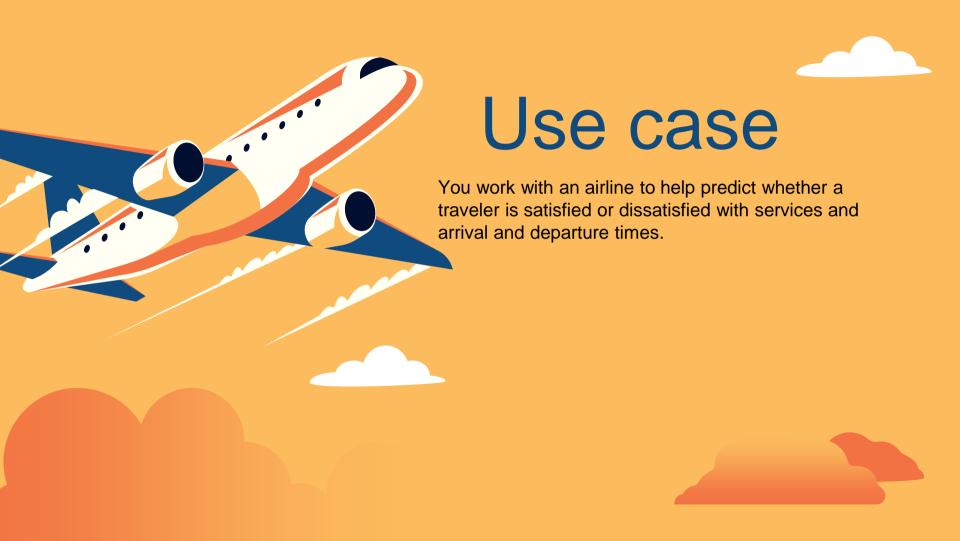










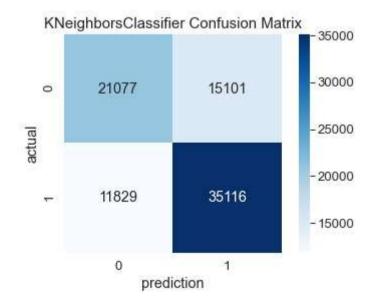




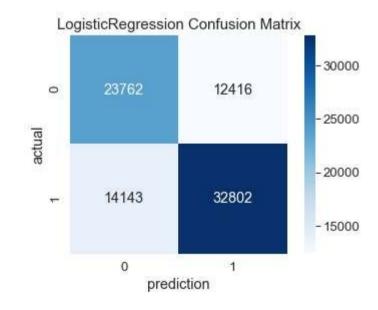


Modeling

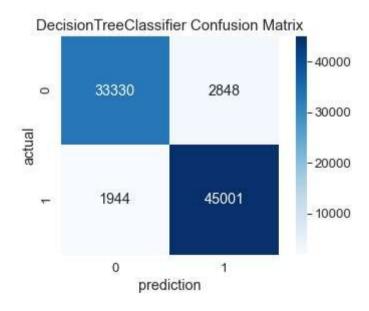
Name of Models	Accuracy	Precision	F1
KNN	0.676	0.699	0.722
KININ	0.676	0.699	0.722

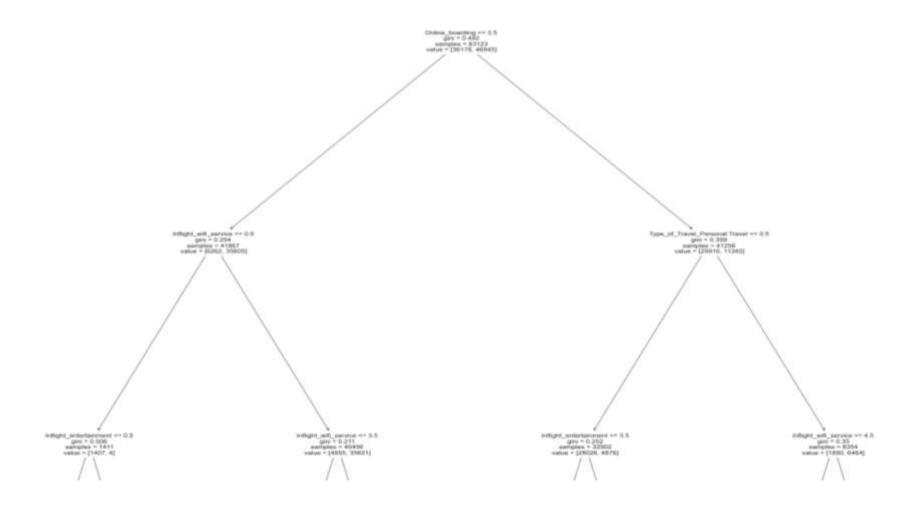


Name of Models	Accuracy	Precision	F1
Logistic Regression	0.680	0.730	0.712

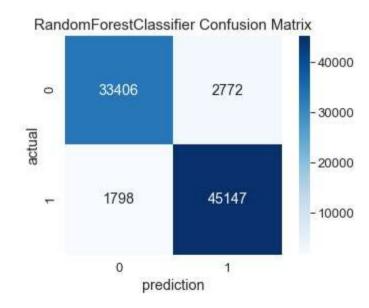


Name of Models	Accuracy	Precision	F1		
Decision Tree	0.942	0.940	0.949		

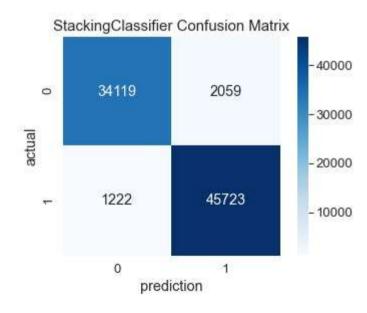




Name of Models	Accuracy	Precision	F1
Random Forest	0.945	0.942	0.951

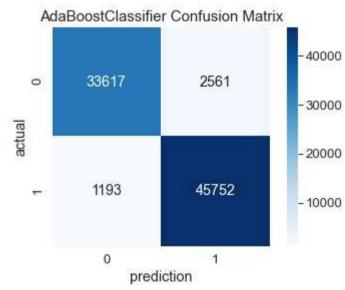


Name of Models	Accuracy	Precision	F1		
Stacking	0.945	0.956	0.965		

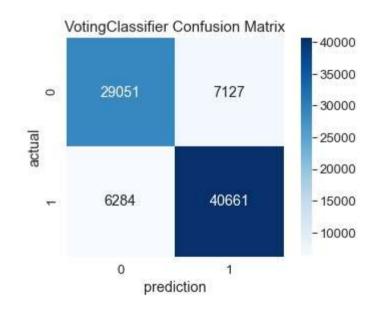


Name of Models	Accuracy	Precision	F1
Bagging	0.769	0.699	0.726
	BaggingClassifie	r Confusion Matrix	
			- 35000
0	20944	15234	- 30000
actual			- 25000
o o			- 20000
-	11447	35498	- 15000
	0	1	
		liction	

Name of Models	Accuracy	Precision	F1		
Adboost	0.954	0.947	0.960		



Name of Models	Accuracy	Precision	F1
Voting	0.838	0.852	0.858

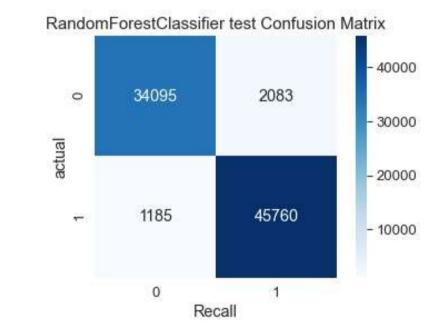






Testing

Accuracy: 0.945 Score:0.954 Precision:0.956 Recall:0.972 F1:0.965







THANKS



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