Intermediate Assignment

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Link Google Colab

Objective

In the **second week of October**, the company is set to **expand into government bond investment products**, in addition to its existing mutual fund products. The marketing and sales team would like to run a thematic communication campaign for the upcoming product.

Exploratory Data Analysis (EDA)

Descriptive Statistic

	Saham_AUM	Saham_invested_amount	Pasar_Uang_AUM	Pasar_Uang_invested_amount	Pendapatan_Tetap_AUM	P
count	5.453000e+03	5.453000e+03	6.808000e+03	6.808000e+03	5.449000e+03	
mean	5.272648e+05	5.106874e+05	9.551138e+05	9.523759e+05	1.919636e+06	
std	2.570258e+06	2.488666e+06	1.501036e+07	1.495981e+07	2.274341e+07	
min	0.000000e+00	0.000000e+00	0.000000e+00	0.000000e+00	0.000000e+00	
25%	6.490000e+02	0.000000e+00	0.000000e+00	0.000000e+00	9.980000e+03	
50%	5.258900e+04	5.000000e+04	2.000900e+04	2.000000e+04	6.487400e+04	
75%	2.167930e+05	2.100000e+05	1.102350e+05	1.100000e+05	2.516380e+05	
max	6.445433e+07	6.184000e+07	1.016171e+09	1.012200e+09	9.797670e+08	

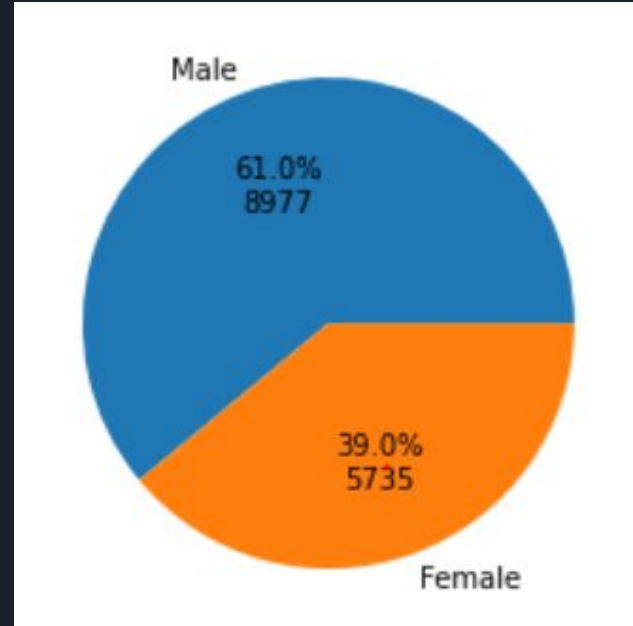|	user_id	user_income_range
count	8277	8277
unique	8277	6
top	50701	< 10 Juta
freq	1	3527

User Data

	user_id	registration_import_datetime	user_gender	user_age	user_occupation	user_income_range	referral_code_used	user_income_source
0	162882	2021-09-17 14:10:44	Female	51	Swasta	> Rp 500 Juta - 1 Miliar	NaN	Gaji
1	3485491	2021-10-09 11:11:34	Female	55	Others	> Rp 50 Juta - 100 Juta	NaN	Gaji
2	1071649	2021-10-08 01:27:30	Male	50	Swasta	Rp 10 Juta - 50 Juta	NaN	Gaji
3	3816789	2021-08-12 07:19:32	Female	53	IRT	> Rp 50 Juta - 100 Juta	NaN	Gaji
4	3802293	2021-08-15 09:31:24	Female	47	PNS	> Rp 500 Juta - 1 Miliar	used referral	Gaji

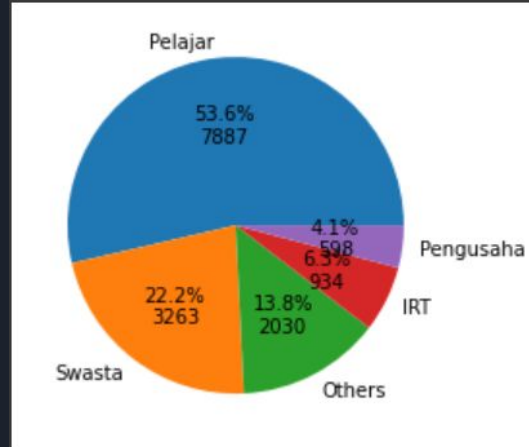# User Data (User_Gender)

```
user_gender
Male       8977
Female     5735
Name: user_gender,
```

61% of users are Male
39% of users are Female

User Data (User_Occupation)

```
user_occupation
Pelajar          7887
Swasta           3263
Others           1683
IRT               934
Pengusaha         598
PNS               191
Guru              106
TNI/Polisi         45
Pensiunan           5
Name: user_occupation,
```
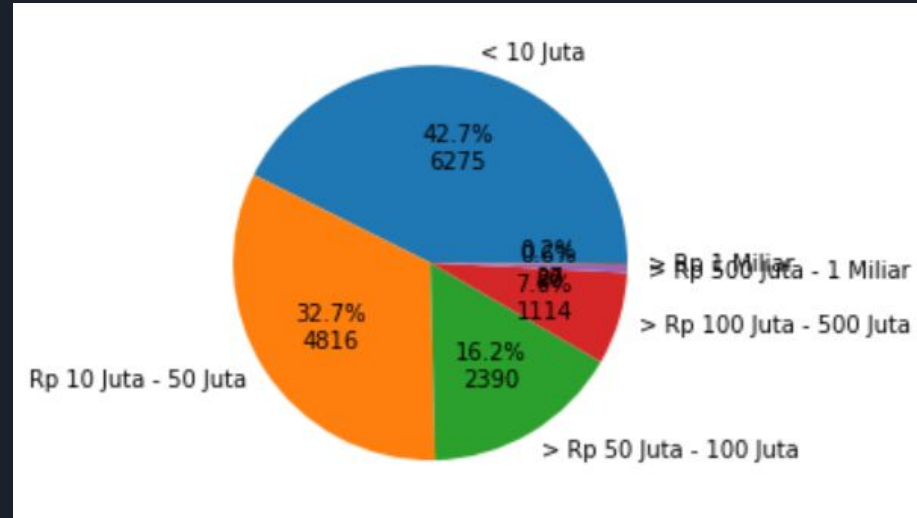
Summary
53.6% of our users are Pelajar, which mean :
1. Doesn't have fixed income per month
2. Limited resources of money
3. Marketing sales should focus on the campaigns on campus or university

User Data (User_Income_Range)

```
user_income_range
< 10 Juta                      6275
Rp 10 Juta - 50 Juta           4816
> Rp 50 Juta - 100 Juta        2390
> Rp 100 Juta - 500 Juta       1114
> Rp 500 Juta - 1 Miliar         90
> Rp 1 Miliar                    27
Name: user_income_range, dtype: int64
```


Summary
-42.7% of our users income are <10 Juta and 32.7% in range are 10 - 50 Juta
-Our products are **affordable** by users income <10 juta

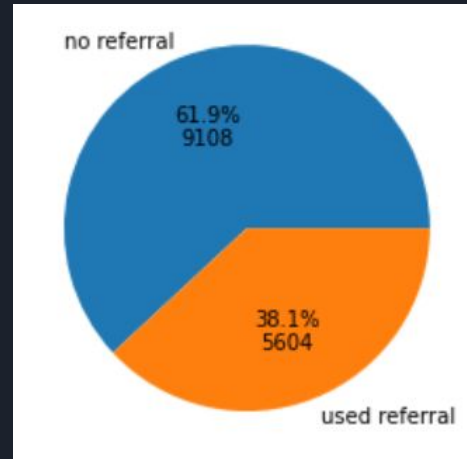# User Data (referral_code_used)

```
user_id                         0
registration_import_datetime    0
user_gender                     0
user_age                        0
user_occupation                 0
user_income_range               0
referral_code_used           9108
user_income_source              0
dtype: int64
```

```
len(df_user)
```

```
14712
```


no referral — 61.9% 9108
used referral — 38.1% 5604

There are 9108 users (62%) doesn't use referral_code_used (9108 users join independently without interference from other users)

Daily User Balanced

	user_id	date	Saham_AUM	Saham_invested_amount	Saham_transaction_amount	Pasar_Uang_AUM	Pasar_Uang_invested_amount	Pasar_Uang_transaction_amount
0	50701	2021-08-30	0.0	0.0	0.0	0.0	0.0	0.0
1	50701	2021-08-31	0.0	0.0	0.0	0.0	0.0	0.0
2	50701	2021-09-01	0.0	0.0	0.0	0.0	0.0	0.0
3	50701	2021-09-02	0.0	0.0	0.0	0.0	0.0	0.0
4	50701	2021-09-03	0.0	0.0	0.0	0.0	0.0	0.0
...								

Pendapatan_Tetap_AUM	Pendapatan_Tetap_invested_amount	Pendapatan_Tetap_transaction_amount	Campuran_AUM	Campuran_invested_amount	Campuran_transaction_amount
0.0	0.0	0.0	10132277.0	10000000.0	0.0
0.0	0.0	0.0	10206945.0	10000000.0	0.0
0.0	0.0	0.0	9956556.0	10000000.0	0.0
0.0	0.0	0.0	9914858.0	10000000.0	0.0
0.0	0.0	0.0	10016360.0	10000000.0	0.0

AUM per Mutual Funds

Average AUM Per User

```
Saham_AUM               5.272648e+05
Pasar_Uang_AUM          9.551138e+05
Pendapatan_Tetap_AUM    1.919636e+06
Campuran_AUM            6.468854e+06
dtype: float64
```
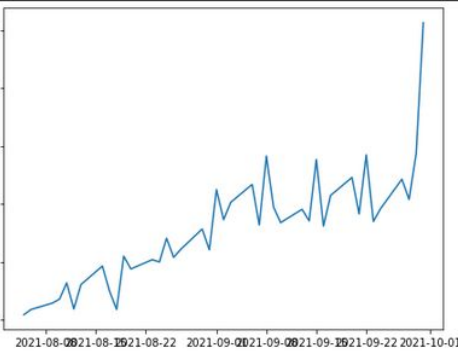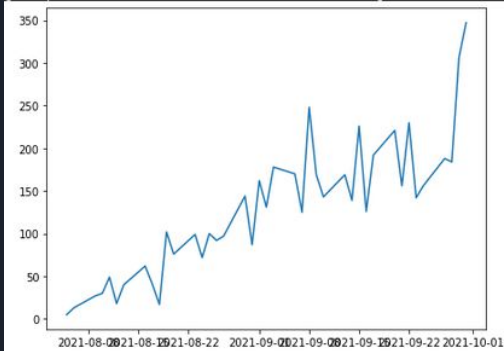
AUM Share per Mutual Funds

```
Saham_AUM               0.134619
Pasar_Uang_AUM          0.304451
Pendapatan_Tetap_AUM    0.489754
Campuran_AUM            0.071177
dtype: float64
```
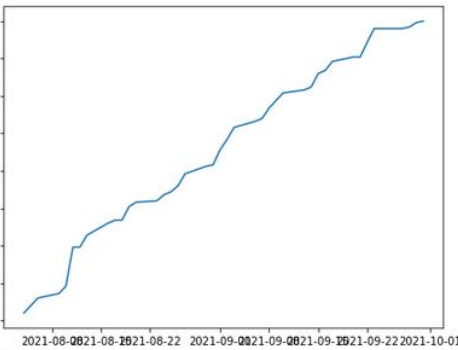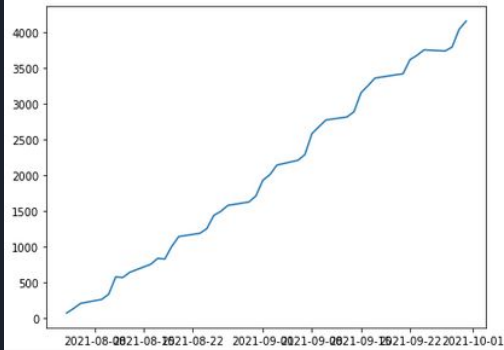
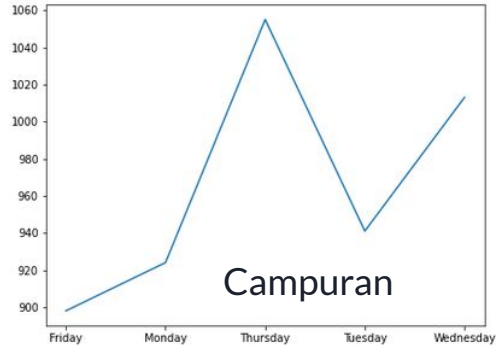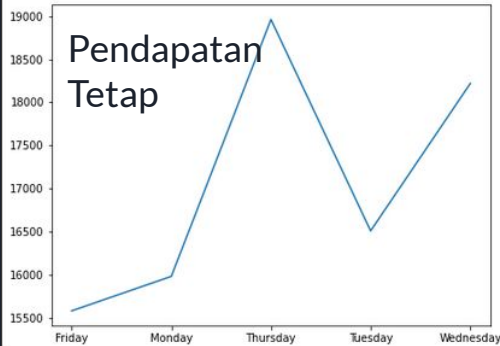# Time Series of transaction count (daily) each mutual funds
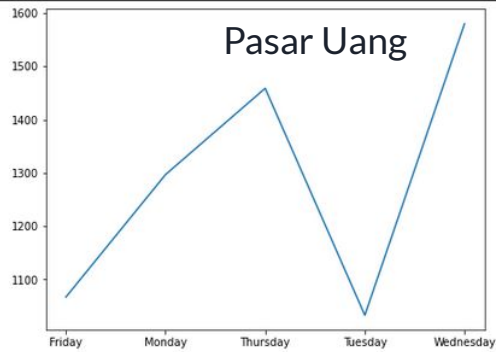

Saham

Pasar Uang

Pendapatan Tetap

Campuran

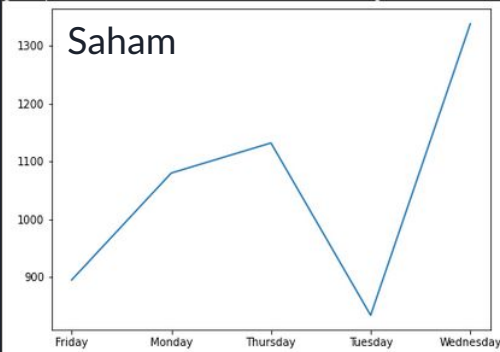All of kind Mutual Funds transaction are increasing, that mean the company is growing (more transaction mean more user)
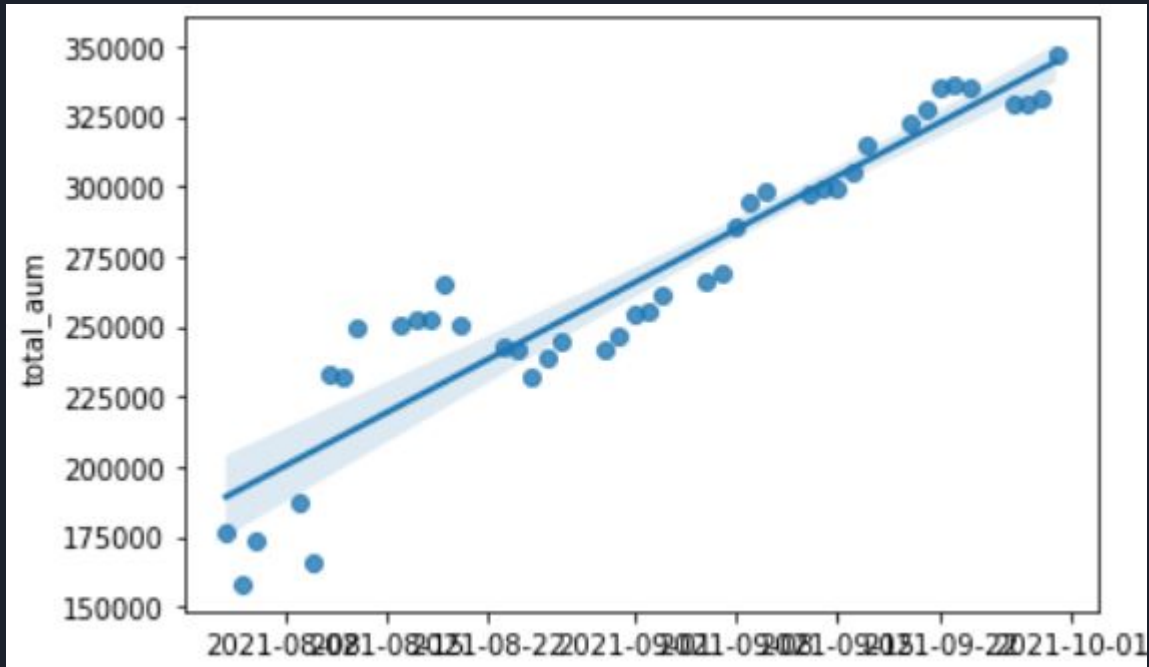
Transaction in any given day

Summary

1. The lowest saham transaction occurred on Tuesday

2. The highest saham transaction occurred on Wednesday

3. The lowest pasar uang transaction occurred on Tuesday

4. The highest pasar uang transaction occurred on Wednesday

5. The lowest pendapatan tetap transaction occurred on Friday

6. The highest pendapatan tetap transaction occurred on Thursday

7. The lowest campuran transaction occurred on Friday

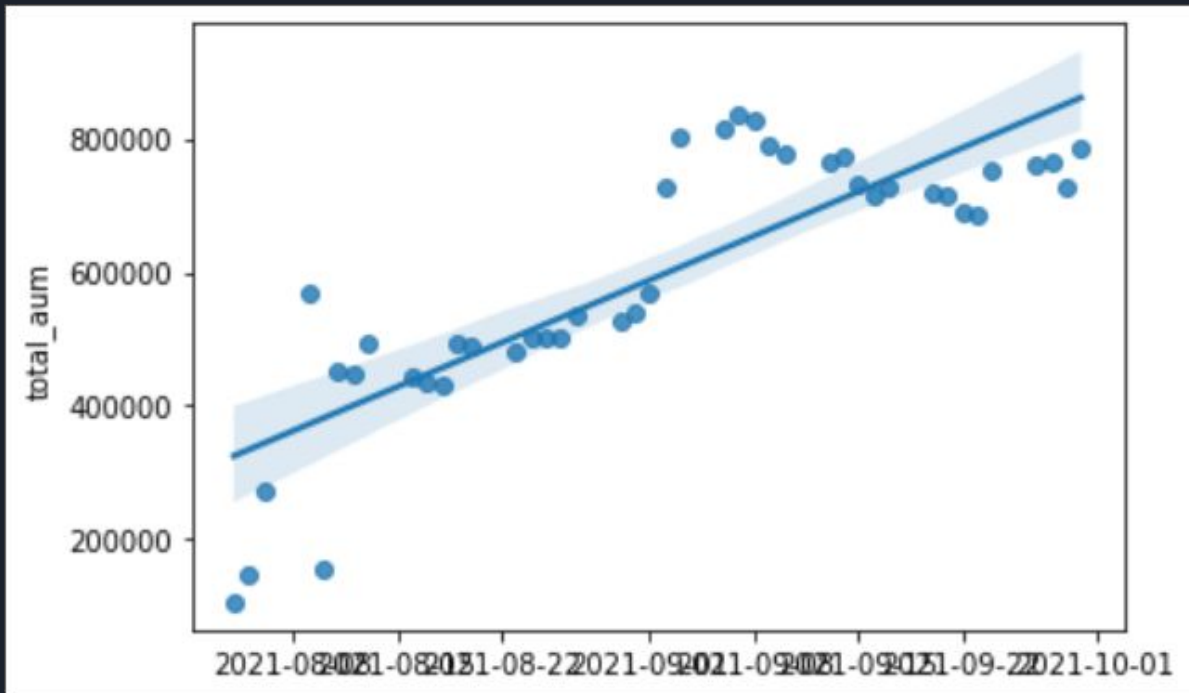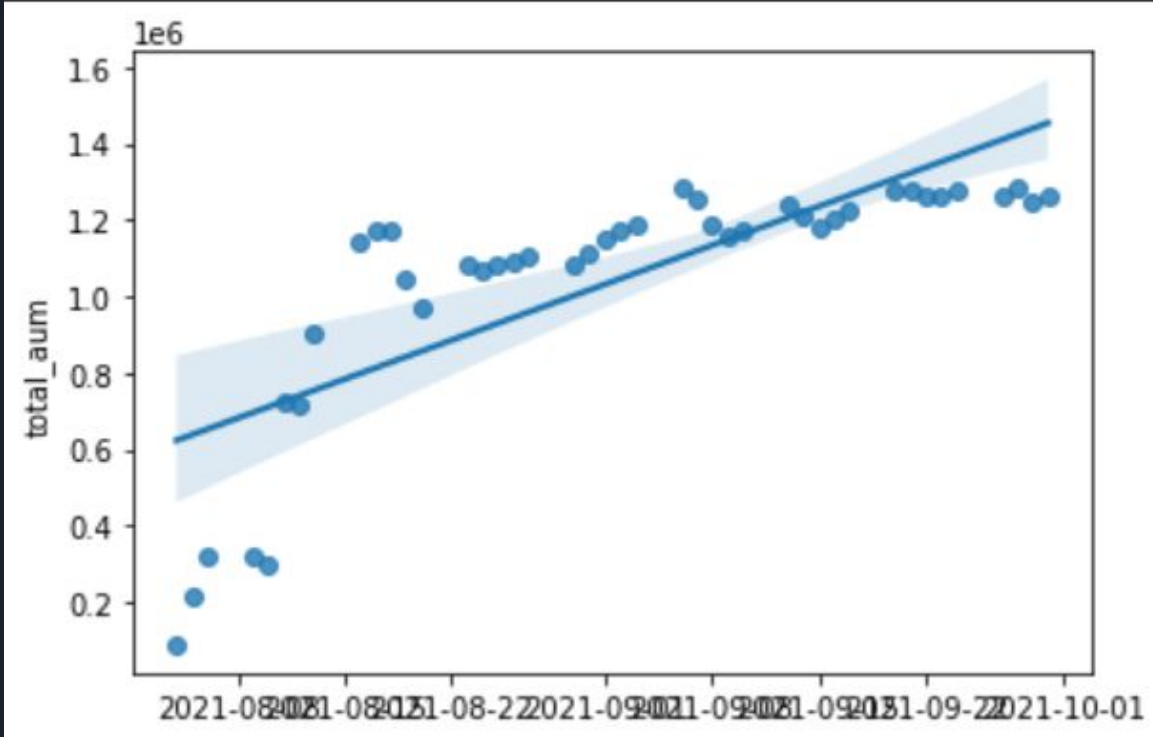8. The highest campuran transaction occurred on Thursday

Trend Saham

Summary
Trend AUM Saham is
increasing up to 200%
in 2 months and from
slide transaction in
any given day in saham
before also increasing,
that's mean saham
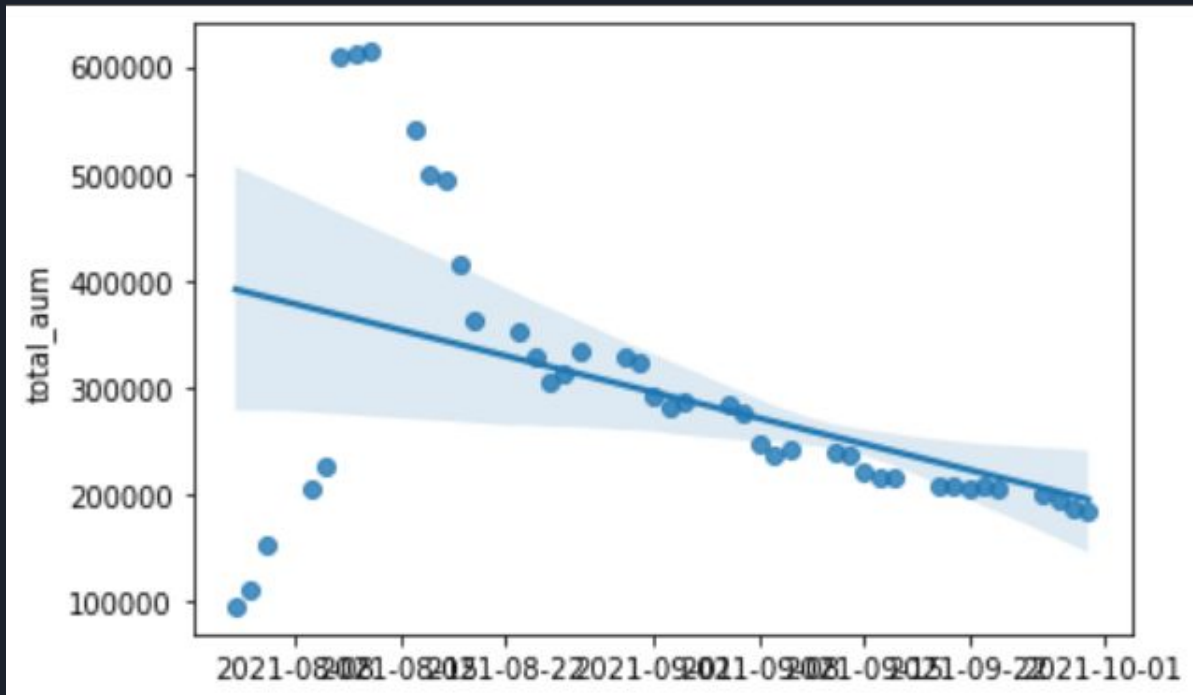really perform well in
our

Trend Pasar Uang

Trend Pendapatan Tetap

Trend Campuran

EDA

	Saham_AUM	Saham_invested_amount	Saham_transaction_amount	Pasar_Uang_AUM	Pasar_Uang_invested_amount	Pasar_Uang_transaction_amount	Pendapatan_Tetap_AUM
count	9.622000e+03	9.622000e+03	9.622000e+03	9.622000e+03	9.622000e+03	9.622000e+03	9.622000e+03
mean	2.532023e+06	2.517582e+06	9.180100e+04	3.171107e+06	3.163481e+06	1.345649e+05	4.720253e+06
std	5.361210e+06	5.320563e+06	8.266767e+05	1.610492e+07	1.605562e+07	2.513973e+06	1.804902e+07
min	7.808700e+04	8.000000e+04	0.000000e+00	7.515600e+04	7.500000e+04	0.000000e+00	8.830100e+04
25%	3.674278e+05	3.700000e+05	0.000000e+00	2.003990e+05	2.000000e+05	0.000000e+00	4.631030e+05
50%	7.769295e+05	7.700000e+05	0.000000e+00	5.023630e+05	5.000000e+05	0.000000e+00	1.033768e+06
75%	2.393700e+06	2.350000e+06	0.000000e+00	1.222314e+06	1.220000e+06	0.000000e+00	2.711606e+06
max	6.445433e+07	6.184000e+07	3.280000e+07	2.415361e+08	2.400760e+08	1.850760e+08	3.065517e+08

	user_id	user_income_range
count	9622	9622
unique	676	6
top	3737731	< 10 Juta
freq	42	3564

1. Saham AUM = 2532023 (23.8%)
2. Pasar Uang AUM = 3171107 (29.8%)
3. Pendapatan Tetap AUM = 4720252 (44.4%)
4. Campuran AUM = 198673 (1.8%)