

Pyspark Case Study 1

ONLINE BANKING ANALYSIS

```
from pyspark.sql import SparkSession
from pyspark.sql.functions import col, regexp_replace, trim, to_date, sum as spark_sum, max as spark_max, min as spark_min

spark = SparkSession.builder.appName("OnlineBankingAnalysis").getOrCreate()

loan_df = spark.read.option("header", "true").csv("/content/loan.csv", inferSchema=True)
credit_df = spark.read.option("header", "true").csv("/content/credit card.csv", inferSchema=True)
txn_df = spark.read.option("header", "true").csv("/content/txn.csv", inferSchema=True)

loan_df = loan_df.selectExpr([f"`{c}` as `{c.strip().replace(' ', '_')}`" for c in loan_df.columns])
credit_df = credit_df.selectExpr([f"`{c}` as `{c.strip().replace(' ', '_')}`" for c in credit_df.columns])
txn_df = txn_df.selectExpr([f"`{c}` as `{c.strip().replace(' ', '_')}`" for c in txn_df.columns])

loan_df = loan_df.withColumn("Loan_Amount_CLEAN", regexp_replace(trim(col("Loan_Amount")), ",", "").cast("double"))

txn_df = txn_df.withColumn("WITHDRAWAL_AMT_CLEAN", regexp_replace(trim(col("WITHDRAWAL_AMT")), ",", "").cast("double"))
txn_df = txn_df.withColumn("DEPOSIT_AMT_CLEAN", regexp_replace(trim(col("DEPOSIT_AMT")), ",", "").cast("double"))
txn_df = txn_df.withColumn("BALANCE_CLEAN", regexp_replace(trim(col("BALANCE_AMT")), ",", "").cast("double"))
txn_df = txn_df.withColumn("DATE", to_date("VALUE_DATE", "dd-MM-yyyy"))
```

1. Number of loans in each category

```
# ----- LOAN DATA -----

print("1.Number of loans in each category")
loan_df.groupBy("Loan_Category").count().show()
```

```
1.Number of loans in each category
+-----+-----+
| Loan_Category | count |
+-----+-----+
| HOUSING       | 67    |
| TRAVELLING    | 53    |
| BOOK STORES   | 7     |
| AGRICULTURE   | 12    |
| GOLD LOAN     | 77    |
| EDUCATIONAL LOAN | 20   |
| AUTOMOBILE    | 60    |
| BUSINESS     | 24    |
| COMPUTER SOFTWARES | 35   |
| DINNING       | 14    |
| SHOPPING      | 35    |
| RESTAURANTS   | 41    |
| ELECTRONICS   | 14    |
| BUILDING      | 7     |
| RESTAURANT    | 20    |
| HOME APPLIANCES | 14   |
+-----+-----+
```

2. Number of people who have taken more than 1 lakh loan

```
print("2.People who took loan > 1 lakh")
filtered_loan_1 = loan_df.filter(col("Loan_Amount_CLEAN") > 100000)
print("Count:", filtered_loan_1.count())
filtered_loan_1.show(truncate=False)
```

```
2.People who took loan > 1 lakh
Count: 450
```

Customer_ID	Age	Gender	Occupation	Marital_Status	Family_Size	Income	Expenditure	Use_Frequency	Loan_Category	Loan_Amount	Overdue	Debt_Record	Returned_Cheque	Dishonour_of_Bill	Loan_Amount_CLEAN
IB14001	30	MALE	BANK MANAGER	SINGLE	4	50000	22199	6	HOUSING	10,00,000	5	42,898	6	9	1000000.0
IB14018	29	MALE	TEACHER	MARRIED	5	45767	12787	3	GOLD LOAN	6,00,000	7	11,000	0	4	600000.0
IB14022	34	MALE	POLICE	SINGLE	4	43521	11999	3	AUTOMOBILE	2,00,000	2	43,898	1	2	200000.0
IB14025	39	FEMALE	TEACHER	MARRIED	6	46619	18675	4	HOUSING	12,09,867	8	29,999	6	8	1209867.0
IB14029	24	FEMALE	TEACHER	SINGLE	3	45008	17454	4	AUTOMOBILE	3,99,435	9	51,907	4	7	399435.0
IB14039	45	MALE	ACCOUNT MANAGER	MARRIED	7	45777	18452	4	GOLD LOAN	9,87,611	7	39,999	8	11	987611.0
IB14041	59	FEMALE	ASSISTANT PROFESSOR	MARRIED	4	50999	22999	5	EDUCATIONAL LOAN	5,99,934	3	9,000	9	9	599934.0
IB14042	25	FEMALE	DOCTOR	SINGLE	4	60111	27111	5	TRAVELLING	12,90,929	4	18,000	1	0	1290929.0
IB14045	31	MALE	STORE KEEPER	SINGLE	5	40999	11999	3	BOOK STORES	1,67,654	1	4,500	0	1	167654.0
IB14050	56	MALE	CIVIL ENGINEER	MARRIED	4	NULL	13999	3	HOUSING	10,65,577	6	19,999	4	2	1065577.0
IB14054	58	FEMALE	DOCTOR	MARRIED	5	60000	25000	5	HOUSING	9,00,000	5	21,000	9	0	900000.0
IB14057	25	MALE	AIRPORT OFFICER	SINGLE	4	40000	18888	3	RESTAURANTS	4,00,000	8	11,111	1	7	400000.0
IB14060	36	FEMALE	CLERK	MARRIED	4	35000	15000	3	HOUSING	3,00,000	2	5,600	4	8	300000.0
IB14070	40	MALE	PUBLIC WORKS	MARRIED	4	38000	20000	3	GOLD LOAN	4,00,000	9	19,954	3	2	400000.0
IB14082	60	FEMALE	TEACHER	MARRIED	5	70000	40000	9	GOLD LOAN	2,57,789	4	10,058	4	3	257789.0
IB14085	30	MALE	ELECTRICIAN	MARRIED	4	30000	15000	5	HOUSING	3,54,789	5	32,154	5	5	354789.0
IB14086	51	FEMALE	TECHNICIAN	MARRIED	5	30000	NULL	5	RESTAURANTS	1,25,463	7	52,634	4	10	125463.0
IB14089	25	MALE	PROFESSOR	SINGLE	5	62145	31254	4	BOOK STORES	12,45,789	6	48,596	6	5	1245789.0
IB14092	47	MALE	SYSTEM ENGINEER	MARRIED	4	52364	45612	3	GOLD LOAN	6,54,725	4	67,451	5	4	654725.0
IB14093	21	FEMALE	MANAGER	SINGLE	3	42516	24567	7	AUTOMOBILE	25,69,874	8	89,652	2	3	2569874.0

only showing top 20 rows

3. Number of people with income greater than 60000 rupees

```
print("\n3. People with income > 60000")
filtered_income = loan_df.filter(col("Income") > 60000)
print("Count:", filtered_income.count())
filtered_income.show()
```

3. People with income > 60000
Count: 198

Customer_ID	Age	Gender	Occupation	Marital_Status	Family_Size	Income	Expenditure	Use_Frequency	Loan_Category	Loan_Amount	Overdue	Debt_Record	Returned_Cheque	Dishonour_of_Bill	Loan_Amount_CLEAN
IB14082	24	MALE	DATA ANALYST	SINGLE	4	60111	28999	6	AUTOMOBILE	35,232	5	33,333	1	2	35232.0
IB14042	25	FEMALE	DOCTOR	SINGLE	4	60111	27111	5	TRAVELLING	12,90,929	4	18,000	1	0	1290929.0
IB14082	60	FEMALE	TEACHER	MARRIED	5	70000	40000	9	GOLD LOAN	2,57,789	4	18,058	4	3	257789.0
IB14089	25	MALE	PROFESSOR	SINGLE	5	62145	31254	4	BOOK STORES	12,45,789	6	48,596	6	5	1245789.0
IB14094	49	MALE	ASSISTANT PROFESSOR	MARRIED	5	65214	42589	5	HOUSING	9,85,412	5	11,254	1	2	985412.0
IB14099	47	FEMALE	DOCTOR	MARRIED	4	72154	45286	4	AUTOMOBILE	7,54,126	2	19,524	5	2	754126.0
IB14104	54	MALE	AIRPORT OFFICER	MARRIED	6	80000	32541	2	AUTOMOBILE	20,45,789	1	16,599	2	3	2045789.0
IB14107	44	FEMALE	ACCOUNT MANAGER	MARRIED	4	800000	15632	8	AUTOMOBILE	23,65,478	5	20,145	3	4	2365478.0
IB14115	41	MALE	BANK MANAGER	MARRIED	6	64125	21246	6	TRAVELLING	6,52,147	5	16,524	3	3	652147.0
IB14121	33	MALE	DOCTOR	MARRIED	6	70000	12541	8	HOUSING	7,45,213	4	19,541	1	3	745213.0
IB14128	46	FEMALE	CLERK	MARRIED	3	750000	25641	5	GOLD LOAN	2,14,569	4	16,324	3	4	214569.0
IB14134	33	MALE	DOCTOR	MARRIED	6	70000	33541	8	BUILDING	7,45,213	4	19,541	1	3	745213.0
IB14146	56	MALE	FIRE DEPARTMENT	MARRIED	6	67890	34567	5	TRAVELLING	6,78,500	5	13,560	3	4	678500.0
IB14153	58	MALE	SYSTEM ENGINEER	MARRIED	6	76800	NULL	5	TRAVELLING	16,59,000	6	29,000	5	3	1659000.0
IB14157	35	MALE	BANK MANAGER	MARRIED	4	930000	35000	6	HOUSING	6,79,040	5	34,000	5	5	679040.0
IB14158	54	MALE	AIRPORT OFFICER	MARRIED	6	80000	62541	2	AUTOMOBILE	20,45,789	1	16,599	2	3	2045789.0
IB14163	44	FEMALE	ACCOUNT MANAGER	MARRIED	4	800000	15632	8	COMPUTER SOFTWARES	23,65,478	5	20,145	3	4	2365478.0
IB14171	47	FEMALE	DOCTOR	MARRIED	4	72154	45286	4	AUTOMOBILE	7,54,126	2	19,524	5	2	754126.0
IB14176	54	MALE	AIRPORT OFFICER	MARRIED	6	80000	62541	2	HOUSING	20,45,789	1	16,599	2	3	2045789.0
IB14184	24	MALE	DATA ANALYST	SINGLE	4	60111	28999	6	RESTAURANTS	35,232	5	33,333	1	2	35232.0

only showing top 20 rows

4. Number of people with 2 or more returned cheques and income less than 50000

```
print("\n4. People with 2+ returned cheques and income < 50000")
filtered_returned_1 = loan_df.filter((col("Returned_Cheque") >= 2) & (col("Income") < 50000))
print("Count:", filtered_returned_1.count())
filtered_returned_1.show()
```

4. People with 2+ returned cheques and income < 50000
Count: 137

Customer_ID	Age	Gender	Occupation	Marital_Status	Family_Size	Income	Expenditure	Use_Frequency	Loan_Category	Loan_Amount	Overdue	Debt_Record	Returned_Cheque	Dishonour_of_Bill	Loan_Amount_CLEAN
IB14025	39	FEMALE	TEACHER	MARRIED	6	46619	18675	4	HOUSING	12,09,867	8	29,999	6	8	1209867.0
IB14027	51	MALE	SYSTEM MANAGER	MARRIED	3	49999	19111	5	RESTAURANTS	60,676	8	13,000	2	5	60676.0
IB14029	24	FEMALE	TEACHER	SINGLE	3	45008	17454	4	AUTOMOBILE	3,99,435	9	51,987	4	7	399435.0
IB14037	54	FEMALE	TEACHER	MARRIED	5	48099	19999	4	RESTAURANTS	30,999	1	12,000	7	5	30999.0
IB14039	45	MALE	ACCOUNT MANAGER	MARRIED	7	45777	18452	4	GOLD LOAN	9,87,611	7	39,999	8	1	987611.0
IB14049	49	MALE	BANK MANAGER	MARRIED	4	45999	14500	4	TRAVELLING	79,999	4	6,700	7	3	79999.0
IB14060	36	FEMALE	CLERK	MARRIED	4	35000	15000	3	HOUSING	3,00,000	2	5,600	4	8	300000.0
IB14070	40	MALE	PUBLIC WORKS	MARRIED	4	30000	20000	3	GOLD LOAN	4,00,000	9	19,954	3	2	400000.0
IB14078	45	FEMALE	FIRE DEPARTMENT	MARRIED	4	40000	18888	4	AUTOMOBILE	70,000	1	0	2	1	70000.0
IB14085	30	MALE	ELECTRICIAN	MARRIED	4	30000	15000	5	HOUSING	3,54,789	5	32,154	5	5	354789.0
IB14086	51	FEMALE	TECHNICIAN	MARRIED	5	30000	NULL	4	RESTAURANTS	1,25,463	7	52,634	4	10	125463.0
IB14093	21	FEMALE	MANAGER	SINGLE	3	42516	24567	7	AUTOMOBILE	25,69,874	8	89,652	2	3	2569874.0
IB14096	33	FEMALE	CLERK	MARRIED	3	35694	15247	3	RESTAURANTS	14,52,637	3	13,547	3	2	1452637.0
IB14106	29	MALE	FIRE DEPARTMENT	MARRIED	5	45213	32457	9	TRAVELLING	15,24,789	7	90,000	2	5	1524789.0
IB14109	56	MALE	DRIVER	MARRIED	5	30000	15426	7	TRAVELLING	9,21,456	6	20,000	4	6	921456.0
IB14113	49	MALE	ASSISTANT MANAGER	MARRIED	7	45612	39542	3	SHOPPING	5,87,412	7	65,412	3	2	587412.0
IB14123	36	MALE	ELECTRICIAN	MARRIED	2	36985	25648	6	AUTOMOBILE	9,85,413	7	20,000	5	3	985413.0
IB14136	36	MALE	ELECTRICIAN	MARRIED	2	36985	25648	6	ELECTRONICS	9,85,413	7	20,000	5	3	985413.0
IB14138	27	FEMALE	SOFTWARE ENGINEER	SINGLE	4	40000	22000	4	GOLD LOAN	4,00,000	4	15,647	5	3	400000.0
IB14143	34	FEMALE	TEACHER	MARRIED	4	45389	NULL	5	HOME APPLIANCES	3,50,050	4	24,000	4	3	350050.0

only showing top 20 rows

5. Number of people with 2 or more returned cheques and are single

```
print("\n5. People with 2+ returned cheques and Single")
filtered_returned_2 = loan_df.filter((col("Returned_Cheque") >= 2) & (col("Marital_Status") == "SINGLE"))
print("Count:", filtered_returned_2.count())
filtered_returned_2.show()
```

5. People with 2+ returned cheques and Single
Count: 111

Customer_ID	Age	Gender	Occupation	Marital_Status	Family_Size	Income	Expenditure	Use_Frequency	Loan_Category	Loan_Amount	Overdue	Debt_Record	Returned_Cheque	Dishonour_of_Bill	Loan_Amount_CLEAN
IB14001	30	MALE	BANK MANAGER	SINGLE	4	50000	22199	6	HOUSING	10,00,000	5	42,000	6	9	1000000.0
IB14012	30	FEMALE	DENTIST	SINGLE	3	58450	27675	5	TRAVELLING	75,000	6	20,876	3	1	75000.0
IB14029	24	FEMALE	TEACHER	SINGLE	3	45008	17454	4	AUTOMOBILE	3,99,435	9	51,987	4	7	399435.0
IB14089	25	MALE	PROFESSOR	SINGLE	5	62145	31254	4	BOOK STORES	12,45,789	6	48,596	6	5	1245789.0
IB14093	21	FEMALE	MANAGER	SINGLE	3	42516	24567	7	AUTOMOBILE	25,69,874	8	89,652	2	3	2569874.0
IB14138	27	FEMALE	SOFTWARE ENGINEER	SINGLE	4	40000	22000	4	GOLD LOAN	4,00,000	4	15,647	5	3	400000.0
IB14155	24	FEMALE	SOFTWARE ENGINEER	SINGLE	4	55680	29000	5	AUTOMOBILE	7,89,000	5	24,000	6	4	789000.0
IB14179	24	FEMALE	TEACHER	SINGLE	3	45008	17454	4	AUTOMOBILE	3,99,435	9	51,987	4	7	399435.0
IB14187	30	FEMALE	DENTIST	SINGLE	3	58450	27675	5	TRAVELLING	75,000	6	20,876	3	1	75000.0
IB14220	30	FEMALE	DENTIST	SINGLE	3	58450	27675	5	TRAVELLING	75,000	6	20,876	3	1	75000.0
IB14231	24	FEMALE	TEACHER	SINGLE	3	45008	17454	4	AUTOMOBILE	3,99,435	9	51,987	4	7	399435.0
IB14294	24	FEMALE	SOFTWARE ENGINEER	SINGLE	4	49680	25000	5	GOLD LOAN	7,89,000	5	24,000	6	4	789000.0
IB14309	25	MALE	PROFESSOR	SINGLE	5	62145	31254	4	AUTOMOBILE	12,45,789	6	48,596	6	5	1245789.0
IB14312	21	FEMALE	MANAGER	SINGLE	3	42516	24567	7	EDUCATIONAL LOAN	25,69,874	8	89,652	2	3	2569874.0
IB14317	26	FEMALE	TEACHER	SINGLE	3	45008	17454	4	AUTOMOBILE	3,99,435	9	51,987	4	7	399435.0
IB14326	37	MALE	DOCTOR	SINGLE	2	56856	23678	7	TRAVELLING	588,690	8	87171	4	3	588690.0
IB14361	37	FEMALE	PRODUCT ENGINEER	SINGLE	6	NULL	28140	5	AUTOMOBILE	819,281	8	27586	6	8	819281.0
IB14436	24	FEMALE	SYSTEM MANAGER	SINGLE	4	38401	27512	7	RESTAURANTS	744,697	4	42166	4	2	744697.0
IB14478	29	MALE	NURSE	SINGLE	6	51199	15753	5	COMPUTER SOFTWARES	331,716	3	57156	3	0	331716.0
IB14476	29	MALE	SOFTWARE ENGINEER	SINGLE	5	38454	22210	4	SHOPPING	763,036	6	37762	7	9	763036.0

only showing top 20 rows

6. Number of people with expenditure over 50000 a month

```
print("\n6. People with monthly expenses > 50000")
filtered_expense = loan_df.filter(col("Expenditure") > 50000)
print("Count:", filtered_expense.count())
filtered_expense.show()
```

6. People with monthly expenses > 50000
Count: 6

Customer_ID	Age	Gender	Occupation	Marital_Status	Family_Size	Income	Expenditure	Use_Frequency	Loan_Category	Loan_Amount	Overdue	Debt_Record	Returned_Cheque	Dishonour_of_Bill	Loan_Amount_CLEAN
IB14158	54	MALE	AIRPORT OFFICER	MARRIED	6	80000	62541	2	AUTOMOBILE	20,45,789	1	16,599	2	3	2045789.0
IB14176	54	MALE	AIRPORT OFFICER	MARRIED	6	80000	62541	2	HOUSING	20,45,789	1	16,599	2	3	2045789.0
IB14204	54	MALE	AIRPORT OFFICER	MARRIED	6	81000	62541	2	DINING	20,45,789	1	16,599	2	3	2045789.0
IB14227	54	MALE	AIRPORT OFFICER	MARRIED	6	80000	62541	2	HOUSING	20,45,789	1	16,599	2	3	2045789.0
IB14278	41	MALE	BANK MANAGER	MARRIED	6	64125	51246	6	TRAVELLING	6,52,147	5	16,524	3	3	652147.0
IB15024	26	MALE	DIETITICIAN	SINGLE	3	95425	53086	2	HOUSING	488,076	4	61227	5	2	488076.0

7. Credit card users in Spain

```
# ----- CREDIT CARD DATA -----

print("7. Credit card users in Spain")
spain_credit_users = credit_df.filter(col("Geography") == "Spain")
print("Count:", spain_credit_users.count())
spain_credit_users.show(truncate=False)
```

7. Credit card users in Spain
Count: 2477

RowNumber	CustomerId	Surname	CreditScore	Geography	Gender	Age	Tenure	Balance	NumOfProducts	IsActiveMember	EstimatedSalary	Exited
2	15647311	Hill	608	Spain	Female	41	1	83807.86	1	1	112542.58	0
5	15737888	Mitchell	850	Spain	Female	43	2	125510.82	1	1	79084.1	0
6	15574012	Chu	645	Spain	Male	44	8	113755.78	2	0	149756.71	1
12	15737173	Andrews	497	Spain	Male	24	3	0.0	2	0	76390.01	0
15	15600882	Scott	635	Spain	Female	35	7	0.0	2	1	65951.65	0
18	15788218	Henderson	549	Spain	Female	24	9	0.0	2	1	14406.41	0
19	15661507	Muldrow	587	Spain	Male	45	6	0.0	1	0	158684.81	0
22	15597945	Dellucci	636	Spain	Female	32	8	0.0	2	0	138555.46	0
23	15699309	Gerasimov	510	Spain	Female	38	4	0.0	1	0	118913.53	1
31	15589475	Azikiwe	591	Spain	Female	39	3	0.0	3	0	140469.38	1
34	15659428	Maggard	520	Spain	Female	42	6	0.0	2	1	34410.55	0
35	15732963	Clements	722	Spain	Female	29	9	0.0	2	1	142033.07	0
37	15788448	Watson	490	Spain	Male	31	3	145260.23	1	1	114066.77	0
38	15729599	Lorenzo	804	Spain	Male	33	7	76548.6	1	1	98453.45	0
41	15619360	Hsiao	472	Spain	Male	40	4	0.0	1	0	70154.22	0
45	15684171	Bianchi	660	Spain	Female	61	5	155931.11	1	1	158338.39	0
59	15623944	T'ien	511	Spain	Female	66	4	0.0	1	0	1643.11	1
63	15702014	Jeffrey	555	Spain	Male	33	1	56084.69	2	0	178798.13	0
64	15751208	Pirozzi	684	Spain	Male	56	8	78707.16	1	1	99398.36	0
73	15812518	Palermo	657	Spain	Female	37	0	163607.18	1	1	44203.55	0

only showing top 20 rows

8. Maximum withdrawal amount in transactions

```
# ----- TRANSACTION DATA -----

print("8.Maximum withdrawal amount")
txn_df.select(spark_max("WITHDRAWAL_AMT_CLEAN").alias("Max-Withdrawal")).show()
```

8.Maximum withdrawal amount

```
+-----+
|Max-Withdrawal|
+-----+
| 4.594475464E8|
+-----+
```

9. Minimum withdrawal amount of an account

```
print("9.Minimum withdrawal amount")
txn_df.select(spark_min("WITHDRAWAL_AMT_CLEAN").alias("Min-Withdrawal")).show()
```

9.Minimum withdrawal amount

```
+-----+
|Min-Withdrawal|
+-----+
|          0.01|
+-----+
```

10. Maximum deposit amount of an account

```
print("10.Maximum deposit amount")
txn_df.select(spark_max("DEPOSIT_AMT_CLEAN").alias("Max_Deposit")).show()
```

10.Maximum deposit amount

Max_Deposit
5.448E8

11. Minimum deposit amount of an account

```
print("11.Minimum deposit amount")
txn_df.select(spark_min("DEPOSIT_AMT_CLEAN").alias("Min_Deposit")).show()
```

11.Minimum deposit amount

Min_Deposit
0.01

12. Total balance amount in every bank account

```
print("12.Total balance in each account")
txn_df.groupBy("Account_No").agg(spark_sum("BALANCE_CLEAN").alias("Total_Balance")).show(truncate = False)
```

12.Total balance in each account

Account_No	Total_Balance
409000438611	-2.4948657706833955E12
1196711	-1.60476498101275E13
1196428	-8.1418498130721E13
409000493210	-3.2758495213209575E12
409000611074	1.615533622E9
409000425051	-3.7721184116499877E9
409000405747	-2.4310804706700016E10
409000362497	-5.2860004792808E13
409000493201	1.0420831829499985E9
409000438620	-7.122918679513586E12

13. Customers with withdrawal amount more than 1 lakh

```
print("\n13. Customers with withdrawal > 1 lakh")
high_withdrawal = txn_df.filter(col("WITHDRAWAL_AMT_CLEAN") > 100000).select("Account_No", "WITHDRAWAL_AMT_CLEAN").distinct()
print("Count:", high_withdrawal.count())
high_withdrawal.show(truncate=False)
```

13. Customers with withdrawal > 1 lakh
Count: 10058

Account_No	WITHDRAWAL_AMT_CLEAN
409000611074	274600.0
409000493201	1500000.0
409000493201	199604.27
409000438620	186604.0
409000438620	3.6675558E7
1196711	7530283.0
1196428	812361.0
1196428	6348768.0
1196428	3043151.63
409000362497	576954.0
409000362497	3423962.0
409000362497	3.144482503E7
1196428	4441827.47
409000611074	145450.0
409000493201	119401.28
1196711	628945.0
1196428	289670.04
409000362497	3.483281361E7
409000362497	4.289763641E7
409000362497	2.678162613E7