

```
C:\Users\saranyap\PycharmProjects\pythonProject\venv\Script\
WARNING: An illegal reflective access operation has occurred
WARNING: Illegal reflective access by org.apache.spark.unsafe
WARNING: Please consider reporting this to the maintainer or
WARNING: Use --illegal-access=warn to enable warnings of
WARNING: All illegal access operations will be denied in
23/12/24 23:29:51 WARN NativeCodeLoader: Unable to load native
Using Spark's default log4j profile: org/apache/spark/log4j-core
Setting default log level to "WARN".
```

To adjust logging level use `sc.setLogLevel(newLevel)`. For

```
+-----+-----+-----+-----+
|customer_id|first_name|last_name|date_of_birth|
+-----+-----+-----+-----+
|          1|      John|      Doe| 1980-05-15|
|          2|      Jane|    Smith| 1992-08-21|
|          3|     Alice|  Jhonson| 1975-02-10|
|          4|     Sarah|    Jones| 1988-12-03|
|          5|     David|   Brown| 1995-04-18|
|          6|      Emma|   Miller| 1982-07-25|
+-----+-----+-----+-----+
```

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+-----+-----+-----+-----+-----+
|account_id|customer_id|employee_id|account_type|balance|
+-----+-----+-----+-----+-----+
|          1|          1|          2|    Savings|    5000|
|          2|          1|          3|    Checking|    1000|
|          3|          2|          4|    Savings|    8000|
|          4|          3|          1|    Checking|    3000|
|          5|          2|          2|    Checking|    2500|
|          6|          3|          3|    Savings|    6000|
|          7|          4|          4|    Checking|   12000|
|          8|          5|          2|    Savings|    3000|
+-----+-----+-----+-----+-----+
```

```
+-----+-----+-----+-----+-----+
|transaction_id|account_id|transaction_type|amount|transaction_date|
+-----+-----+-----+-----+-----+
|          1|          1|      Deposit|    1000|2023-01-01|
|          2|          1|    Withdrawal|     500|2023-01-05|
|          3|          2|      Deposit|    2000|2023-02-01|
|          4|          3|    Withdrawal|    1000|2023-02-10|
```

	5	4	Deposit	1500 2023-0
	6	5	Deposit	2000 2023-0
	7	3	Withdrawal	800 2023-0
	8	2	Deposit	3000 2023-0
	9	4	Withdrawal	1500 2023-0
	10	1	Deposit	1200 2023-1
+-----+-----+-----+-----+-----+				

23/12/24 23:30:09 WARN ProcfsMetricsGetter: Exception whe

+-----+-----+-----+-----+-----+					
	employee_id	branch_id	first_name	last_name	position
+-----+-----+-----+-----+-----+					
	1	2	Mike	Johnson	Manager
	2	3	Emily	Williams	Teller
	3	2	Robert	Davis	Teller
	4	3	Olivia	Wilson	Teller
	5	2	Daniel	Johnson	Analyst
	6	3	Sophia	Clark	Manager
	7	2	Mike	Johnson	Manager
	8	3	Emily	Williams	Teller
	9	2	Robert	Davis	Teller
	10	3	Olivia	Wilson	Teller
	11	2	Daniel	Johnson	Analyst
	12	3	Sophia	Clark	Manager
+-----+-----+-----+-----+-----+					

+-----+-----+-----+-----+-----+					
	loan_id	customer_id	loan_amount	interest_rate	start_date
+-----+-----+-----+-----+-----+					
	1	1	10000	0.05	2023-01-01
	2	1	15000	0.04	2023-02-15
	3	2	8000	0.03	2023-03-20
	4	3	20000	0.05	2023-01-10
+-----+-----+-----+-----+-----+					

+-----+-----+-----+-----+-----+					
	payment_id	loan_id	payment_date	amount_paid	
+-----+-----+-----+-----+-----+					
	null	1	2023-03-01	2000	
	null	1	2023-04-01	1500	
	null	2	2023-04-10	1000	

	null	3	2023-02-20	3000
	null	3	2023-03-15	2500

branch_id	branch_name	location
1	Main Branch	Downtown City
2	Suburban Branch	Suburbville
3	Regional Branch	Regional City

show the balance amount for an account_id = 1:

balance
5000

List Transactions for an account_id = 1:

transaction_id	account_id	transaction_type	amount	tra
1	1	Deposit	1000	2023-0
2	1	Withdrawal	500	2023-0
10	1	Deposit	1200	2023-1

List Accounts with a zero balance:

account_id	customer_id	employee_id	account_type	balance
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Find the Oldest Customer:

customer_id	first_name	last_name	date_of_birth
3	Alice	Jhonson	1975-02-10

only showing top 1 row

Calculate the Total Interest Earned Across All Accounts:

loan_id	customer_id	loan_amount	interest_rate	start_date
1	1	10000	0.05	2023-01-01
2	1	15000	0.04	2023-02-15
3	2	8000	0.03	2023-03-20
4	3	20000	0.05	2023-01-10

List All Accounts with Customer Information:

customer_id	account_id	employee_id	account_type	balance
1	2	3	Checking	1000
1	1	2	Savings	5000
2	5	2	Checking	2500
2	3	4	Savings	8000
3	6	3	Savings	6000
3	4	1	Checking	3000
4	7	4	Checking	12000
5	8	2	Savings	3000

Calculate Total Balance for Each Customer:

customer_id	first_name	last_name	total_balance
5	David	Brown	3000
4	Sarah	Jones	12000
2	Jane	Smith	10500
1	John	Doe	6000
3	Alice	Jhonson	9000

Find Customers with Multiple Accounts:

customer_id	num_of_accounts
3	2

	5	1
	1	2
	4	1
	2	2
+-----+		

List Transactions with Account and Customer Information

+-----+					
	account_id	transaction_id	transaction_type	amount	tra
+-----+					
	2	8	Deposit	3000	2023-0
	2	3	Deposit	2000	2023-0
	1	10	Deposit	1200	2023-1
	1	2	Withdrawal	500	2023-0
	1	1	Deposit	1000	2023-0
	5	6	Deposit	2000	2023-0
	3	7	Withdrawal	800	2023-0
	3	4	Withdrawal	1000	2023-0
	4	9	Withdrawal	1500	2023-0
	4	5	Deposit	1500	2023-0
+-----+					

Calculate Average Transaction Amount

+-----+	
	avg_transaction_amount
+-----+	
	1450.0
+-----+	

Identify High-Value Customers with Total Balance

+-----+				
	customer_id	first_name	last_name	total_balance
+-----+				
	2	Jane	Smith	18500
	1	John	Doe	17000
	3	Alice	Jhonson	6000
+-----+				

List Employees and Their Assigned Customers:

+-----+				
	employee_id	customer_id	account_id	account_type
+-----+				
	balance			

3	1	2	Checking	1000
2	1	1	Savings	5000
2	2	5	Checking	2500
4	2	3	Savings	8000
3	3	6	Savings	6000
1	3	4	Checking	3000
4	4	7	Checking	12000
2	5	8	Savings	3000

Calculate the Total Number of Transactions for Each Account

account_type	total_no_of_transactions
Savings	5
Checking	5

Find Customers with No Transactions:

account_id	customer_id	employee_id	account_type	balance
6	3	3	Savings	6000
7	4	4	Checking	12000
8	5	2	Savings	3000

Find Customers with No Accounts:

customer_id	first_name	last_name	date_of_birth	account_id
6	Emma	Miller	1982-07-25	null

List the Latest Transaction for Each Account:

account_id	latest_transaction_date
1	2023-10-01 10:00:00
2	2023-08-22 16:45:00

File - capstone

```
|          3|      2023-07-08 14:15:00|
|          4|      2023-09-14 09:30:00|
|          5|      2023-06-12 11:30:00|
+-----+-----+
```

Calculate the Total Withdrawals for Each Customer:

```
+-----+-----+-----+-----+-----+
|customer_id|first_name|last_name|transaction_type|total_|
+-----+-----+-----+-----+-----+
|          1|      John|      Doe|      Withdrawal|
|          3|      Alice|  Jhonson|      Withdrawal|
|          2|      Jane|      Smith|      Withdrawal|
+-----+-----+-----+-----+-----+
```

Find Duplicate Transactions:

```
+-----+-----+
|transaction_id|count|
+-----+-----+
+-----+-----+
```

SUCCESS: The process with PID 34248 (child process of PID
SUCCESS: The process with PID 27776 (child process of PID
SUCCESS: The process with PID 23040 (child process of PID

Process finished with exit code 0