

# Practice over the analytics database

see: <https://claude.ai/chat/adb8af65-4644-44e1-82bd-1c3b21ebe207>

Requests over sample\_analytics, ordered by complexity:

1. Find the total number of transactions per account
2. List all customers with their account balances
3. Find accounts with transactions over \$10,000
4. Calculate the average transaction amount by product type
5. Identify customers who have multiple accounts
6. Find the top 3 accounts with highest transaction volume in each product category
7. List customers who made transactions in foreign currencies, showing their home currency
8. Calculate monthly transaction totals per account, showing account type and customer name
9. Identify accounts with unusual transaction patterns (frequency or amount significantly above average)
10. Generate a customer activity report showing: total accounts, transaction volume, average transaction size, and most used transaction types - grouped by customer organization

Let's do the first 3 queries:

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## Total transactions per account:

```
db.transactions.aggregate([
  {
    $group: {
      _id: "$account_id",
      total_transactions: { $count: {} }
    }
  }
])
```

Bash

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## Customers with account balances:

Bash

```
db.accounts.aggregate([
  {
    $lookup: {
      from: "customers",
      localField: "account_id",
      foreignField: "account_id",
      as: "customer_info"
    }
  },
  {
    $project: {
      account_id: 1,
      balance: 1,
      "customer_info.name": 1
    }
  }
])
```

## Accounts with large transactions:

Bash

```
db.transactions.aggregate([
  {
    $match: {
      transaction_amount: { $gt: 10000 }
    }
  },
  {
    $lookup: {
      from: "accounts",
      localField: "account_id",
      foreignField: "account_id",
      as: "account_info"
    }
  },
  {
    $project: {
      account_id: 1,
      transaction_amount: 1,
      "account_info.account_type": 1
    }
  }
])
```

