Task

Using the provided excel files or SQL database (your choice) perform the tasks described below. Relevant SQL database tables are listed below; both SQL and excels contain the same data

Please PowerBI desktop project file or create separate excel for each task, leave workings in excel, and in case SQL is used, please copy scripts used to excel.

And format the end result for presentation to company management, so that it is representable and easy to use (in same excel in a separate sheet).

1. Create application approval rate report.

Couple of definitions that will help with the task:

* Applications are approved, if there are in status: 4 or 13
* Each loan can only have one approved application with item type:main, and multiple approved applications with item type: additional
* Each loan item can only have one approved application

In order to complete the task:

* 1. Create approval report showing approval rate (approved application count divided by total application count) grouped by:
* Year
* Month
* Age groups (18-25, 26-65, 66+)
* NEW/REPEATED/Total clients

*Table example (you can propose better format, but it should include the indicated groups/columns) :*



* 1. Present application approval rate graphically (count & types of visualizations up to you)
  2. Provide your hypothesis on the causes for **a single, in your opinion most significant change.** (monthly change in approval rate within the latest 6 available months)
  3. Write down your conclusions and format for presentation to management

1. Management is concerned about clients who delay payment on their 1st issued loans and would like to understand if there’s some relation between delaying payment, taking or not taking additional loans, and loan term. Couple of definitions that will help with the task:

* It is assumed that clients 1st issued loan is the earliest/first loan each client has in the provided database, with any status other than 1, 2 or 3.
* There are two different loan item types: 1) main – 1st/main part of loan, every loan has one loan item of this type 2) additional – item type, which is only present for loans, where client took an additional extra amount on top of the previously taken main part, before repaying the loan
* Loan, for the purpose of this task, is considered to be delayed, if max delay for loan is more than 0

In order to complete the task:

* 1. Understand if there’s a relation between 1.Taking additional amounts, 2.Loan term and client delaying payment
  2. Write down your conclusions and prepare for presentation to management. Focus on providing reasoning from business perspective for what you identified in the data.

1. Management wants to understand the amount of payments received for each issued loan, compared to loan principal amount, and change over time. Couple of definitions that will help with the task:
   * Loan principal equals loan amount for loans issued to the customer
   * Same as previous task, loans are considered to be issued if they are in any status other than 1, 2 or 3
   * For purpose of this task, when summarizing by date, use loan start date, which is the date loan was issued to the customer
   * Payments received otherwise could be defined as invoices paid by the customer
   * Loan amounts should be grouped depending on their principal amount in the following groups: less than 4000; 4000-8000; more than 8000

In order to complete the task:

* 1. Calculate average rate of payments received against respective loan principal amount for each loan for last 12 available months (based on loan start date), summarized by year, month, amount group

*Table example (you can propose better format, but it should include the indicated groups/columns):*



* 1. Show overall weighted rate of payment received against principal amount for last 12 months (total for fulll 12 months)
  2. Provide your hypothesis on reasons for differences of the payment rate between the amount groups, overall weighted rate and changes over time
  3. Show result graphically, including payment rate and principal amount over time and prepare for presentation to management

Rules

1. In SQL data base you are not allowed to adjust the data that is contained in the countryb tables

Considerations

1. Data quality in the files can be flawed in many different ways. Be careful.
2. There could be test entries in the database (not real loans).

Suggestions

1. You can browse SQL data base with SQL server management studio application.
2. Don’t be afraid to be creative or skip forward if you are not able to fulfill any part of the task.

Additional information

|  |  |  |
| --- | --- | --- |
| **Application Statuses** | **Loan Statuses** | **Agreement Statuses** |
| NEW = 1; | STATUS\_DRAFT = 1; | STATUS\_DRAFT = 1; |
| SIGNING\_AGREEMENT = 2; | STATUS\_CANCELLED = 2; | STATUS\_CANCELLED = 2; |
| TRANSFER\_MONEY\_TO\_CLIENT = 3; | STATUS\_CAN\_NOT\_MAKE\_OFFER = 3; | STATUS\_CAN\_NOT\_MAKE\_OFFER = 3; |
| LOAN\_ISSUED = 4; | STATUS\_ACTIVE = 4; | STATUS\_ACTIVE = 4; |
| CANCELLED = 5; | STATUS\_PAID = 5; | STATUS\_PAID = 5; |
| CAN\_NOT\_MAKE\_OFFER = 6; | STATUS\_ON\_HOLD = 6; | STATUS\_ON\_HOLD = 6; |
| CLIENT\_TO\_CHECK = 7; | STATUS\_TERMINATED = 8; | STATUS\_WRITTEN\_OFF = 7; |
| CLIENT\_THINKING = 8; |  | STATUS\_TERMINATED = 8; |
| CLIENT\_NOT\_REACHABLE = 9; |  | STATUS\_ASSIGNMENT = 9; |
| WAITING\_INFORMATION\_FROM\_CLIENT = 10; |  |  |
| WAITING\_FOR\_CLIENT\_IN\_BRANCH = 11; |  |  |
| LACK\_OF\_INFO = 12; |  |  |
| amendment = 13; |  |  |
| Signing amendments = 14; |  |  |
| Transfering money = 15; |  |  |

**Data base connection string (can connect ussing SQL server management studio)**

finko-db-for-test.database.windows.net

Username: FinkoAdminTestUser

Password: 6LzrMhV6Sc5C

**Names of tables in SQL relevant for the task:**

-countryb.agreement\_loans

-countryb.agreement\_loans\_items

-countryb.agreements

-countryb.application\_client\_info

-countryb.applications

-countryb.invoices