智产智融
Smart P&L

Smart P&L

Database Design Specification

Directory

1. Introduction

1.1 Writing purpose

This article analyzes and designs the database of "Smart p & l" platform server for the operation and maintenance personnel and application development personnel reference.

1.2 Project overview

With the rapid development of China's economy, the number of small and medium-sized enterprises is also growing rapidly, and they are playing more and more important roles in the country's economic aspect. According to the statistics data from the National Administration for Industry and Commerce of China, in 2013 the total amount of China's small and medium enterprises and individual industrial and commercial households registered has more than 15 million. By the end of 2016 the number will be more than 70 million. With the annual growth rate of more than 10%, it is estimated that by 2020, China's small and medium enterprises and individual industrial and commercial households will be more than 90 million. SMEs have accounted for more than 99% of the total number of enterprises. According to the guiding spirit of the 18th National People 's Congress, it is important to "promote public entrepreneurship innovation, and constantly cultivate new, new kinetic energy to promote sustained and healthy development of small and medium enterprises". With the implement of the next 5 year plan and the in-depth development of China's market economy, the number and size of small and medium enterprises will continue to develop.

While small and medium enterprises are booming, the financing environment for small and medium-sized enterprises is very bad. According to the data from Bank of China released in 2014, we found that by June 2013, the total number of small and medium

enterprises has reached 56.51 million yet less than 10% of them could obtain credit support from the bank. China's SME is currently facing problems in difficult financing processes, limited financing channels, high financing costs, and the problem is becoming increasing hard.

Based on this development background, "Smart p & l" SME financing platform firmly grasp the market development opportunities and access to SME financing market. We are committed to improving the financing of small and medium enterprises, reducing the financing costs of small and medium enterprises, and to provide convenient and standardized services in credit audit and risk assessment for SMEs financing.

1.3 Definition

For the simplicity of development, the table of the database and the field name of the document are used in Chinese corresponding to the English expression, preventing the different circumstances from leading to distortion problems, and making it easy to develop and read.

1.4 Reference material

1. MongoDb official documents: https: //docs.mongodb.com/manual/reference/
2. Mongoose official documents: http://mongoosejs.com/docs/api.html

2. External design

2.1 Database selection

We chose mongoDb 3.4 as the database and used the third-party library mongoose as the object modeling tool on the server.

2.2 The scope of application

The database is used by the server for the "Smart p&l" platform.

2.3 Precautions

If you need to bypass the server to operate the document on the database directly, the process must be careful. Since the database layer does not have a check on the legitimacy of the data and the consistency of the data (which is done on the server side in the form of api), be careful not to violate the legitimacy and consistency of the data in direct operation.

2.4 Platform support

You can run the database instances on all platforms that support mongoDb 3.4, including Windows, Linux and OS X. Recommended Ubuntu 16.04 x64.

3. Structural design

3.1 Definitions and abbreviations

None.

3.2 Data table description

Name	Description
users	User table
sessions	User session table
timelineitems	Friends circle information
friendrequests	Request from friends
messages	Notification
borrows	Loan request
lends	Loan information
loantransactions	Information about borrowing process
guranteeseeks	Request of seeking a guarantee

3.3 Logical structure design

3.3.1 User table (users)

Field	Type	Remarks
_id	ObjectId	document Unique Identifier
userEmail	String	Email
userPass	String	Password
comName	String	Company name
comCode	String	Organization Code
comCapital	String	Registered capital
comTime	Date	Established time
comPerson	String	Legal representative

comEmail	String	Company email
comPhone	String	Company phone
comManager	String	General manager
comRegistAddresss	String	Registered address
comWorkAddresss	String	Office address
comField	String	Industry
comProduct	String	Main products
comIntro	String	Company profile
contactName	String	Contact name
contactJob	String	Contact position
contactMobile	String	Contact phone number
contactEmail	String	Contact E-mail
contactQQ	String	Contact QQ number
contactPhone	String	Company personal phone
comIntegrityScore	Number	Enterprise information integrity
comAttributeScore	Number	Enterprise inherent attribute score
comHistoryScore	Number	Business history score
comCreditScore	Number	Corporate Credit Score

3.3.2 User session table (sessions)

Field	Type	Remarks
_id	String	Identifier
session	String	Session data
expires	Date	Session expiration time

3.3.3 Friends circle information (timelineitems)

Field	Type	Remarks
_id	ObjectId	Document Unique Identifier
from	ObjectId	Announcer
type	String	Type of friends circle
info	Object	Extra information
date	Date	Release time

3.3.4 Request from friends (friendrequests)

Field	Type	Remarks
_id	ObjectId	Document Unique Identifier
from	ObjectId	The requester
to	ObjectId	Request target
date	Date	Request data

3.3.5 Message notification (messages)

Field	Type	Remarks
_id	ObjectId	Document Unique Identifier
from	ObjectId	Source user
type	String	Message type
info	Object	Extra information
read	Boolean	Whether it has been read
date	Date	Notification time

3.3.6 Borrowing requests (borrows)

Field	Type	Remarks
_id	ObjectId	Document Unique Identifier
from	ObjectId	The main body of the loan
project	String	Project name
max_amount	Number	Amount of financing
max_rate	Number	Can bear the maximum interest
loan_ddl	Number	Expected repayment time
city	String	Where the city is
reason	String	Reasons for borrowing
other_detail	String	Project Overview
mortgage_value	Number	Mortgage Market Value
guarentee_amount	Number	Guarantee amount
supportSales	Boolean	Repayment Source - Sales Back
supportOther	Boolean	Source of repayment - other sources
risk_factor	Number	Single loan amount risk factor
total_risk_factor	Number	Total risk coefficient of single loan
mortgage	Boolean	Can provide wind control - mortgage
guarentee	Boolean	Can provide wind control - guarantee
mortgage_fixed	Boolean	Collateral Type - Fixed Assets

mortgage_other	Boolean	Collateral Type - Other Assets
date	Date	Request time

3.3.7 Loan Information (lends)

Field	Type	Remarks
_id	ObjectId	Document Unique Identifier
from	ObjectId	The requester of the loan
max_amount	Number	Available investment funds
loan_ddl	Number	Capital recovery period
date	Date	Request time

3.3.8 Loan process information (loantranscations)

Field	Type	Remarks
_id	ObjectId	Document Unique Identifier
from	ObjectId	Start the user
lend	ObjectId	Borrower Document Identifier
borrow	ObjectId	Loan document identifier
date	Date	The starting time
status	String	The current stage of the process

3.3.9 Warranty (guranteeoffers)

Field	Type	Remarks
_id	ObjectId	Document Unique Identifier
from	ObjectId	Sponsor
amount_gurantee	Number	Willing to guarantee the amount of the loan
loan_ddl	Number	Willing to guarantee the duration of the loan
min_rate	Number	Acceptable minimum guaranteed rates
neither	Boolean	Acceptable Type of Guarantee - No Credit, Pledge Guarantee
mortgage	Boolean	Acceptable Type of Guarantee - Mortgage Guarantee
pledge	Boolean	Acceptable Type of Guarantee - Pledge Guarantee
both	Boolean	Acceptable type of guarantee - yes, pledge guarantee can be
date	Date	Create time

3.3.10 Warranty Process Information (guranteetransactions)

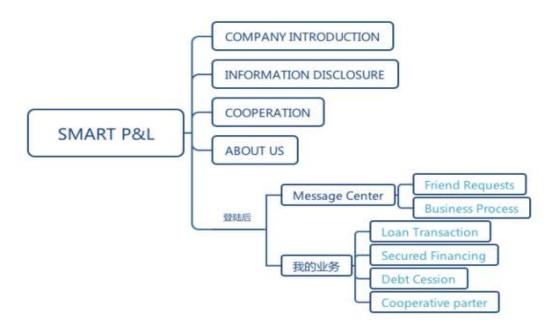| Field	Type	Remarks
_id	ObjectId	Document Unique Identifier
from	ObjectId	Start the user
offer	ObjectId	Warranty document identifier
seek	ObjectId	Guaranteed request document identifier
date	Date	The starting time
status	String	The current stage of the process

3.3.11 Bond Transactions (bonds)

Field	Type	Remarks
_id	ObjectId	Document Unique Identifier
company_lend	String	Borrower

company_borrow	String	The lender
amount	Number	accounts receivable
loan_owner	String	Name of the debtor
loan_amount	Number	The amount of the claim
loan_ddl	Number	Period of creditor 's rights
loan_source	String	The origin of the creditor's rights
situation_borrower	String	Corresponding to the debtor's situation
loan_price	Number	Debt pricing
date	Date	the starting time

3.4 Conceptual structure design

4、Physical structure design

4.1 Database name

Database name is：”citi”

4.2 Storage location

Database storage location:　the cloud server of Tencent Cloud