

Final Project Delivery
G1 Financial (Bank) ERD and Data Dictionary

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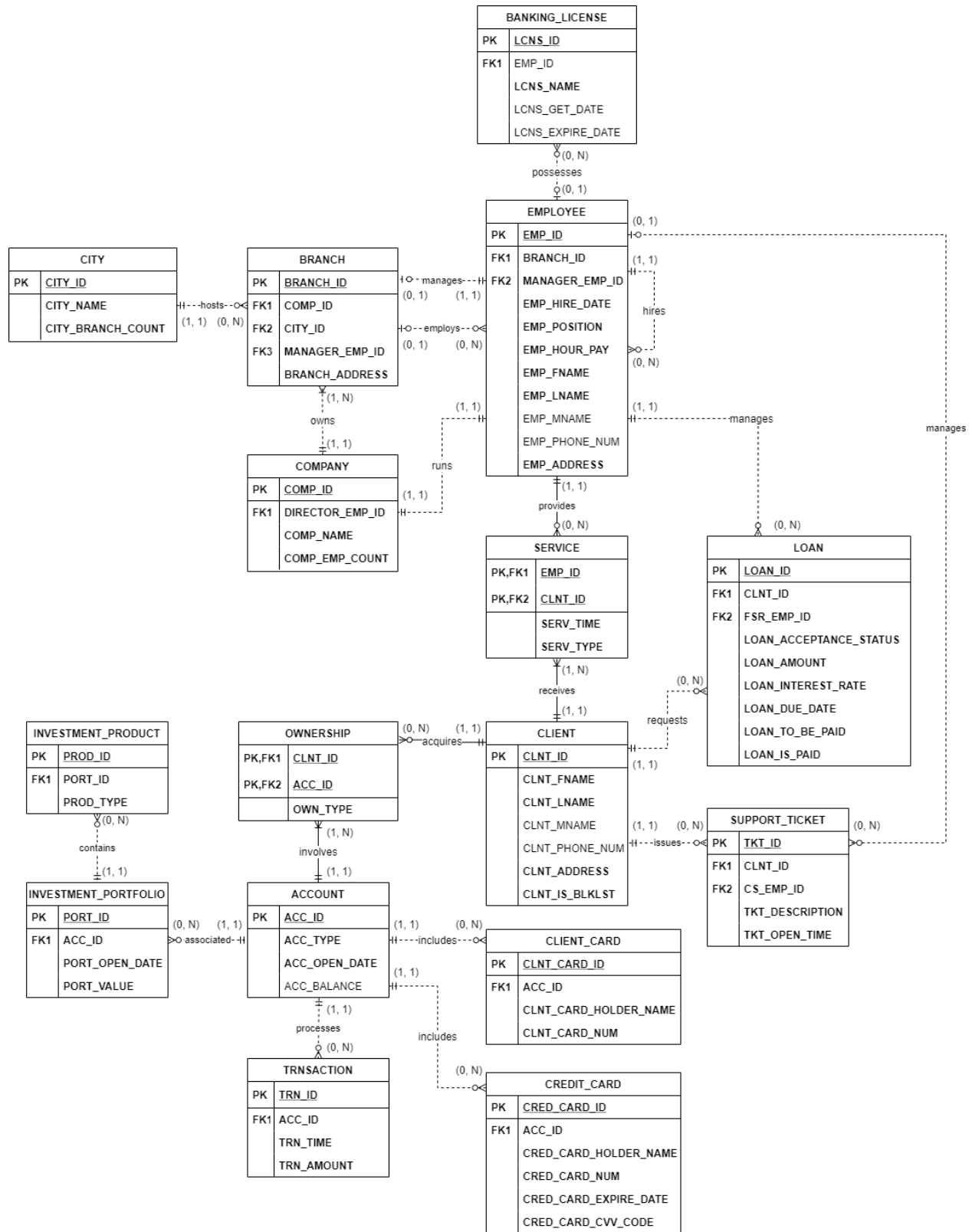
BCIT
COMP 1630: Relational Database Design and SQL
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Business Rules

- Each branch is owned by the company
- Each city can have none or more branches
- Each branch can employ none or more employees
- Some employees are freelance and do not work for a branch
- Each branch has one manager
- The manager hires none or more new employees
- The company is run by one director
- Some employees have one or more banking licenses
- Not all employees have a banking license (e.g. janitor)
- An employee provides none or some customer service
- A client receives service at least once
- A client can request for as many loans as they like
- A financial service representative manages none or many loans
- A client can issue support tickets
- Support tickets are managed by one employee
- A client may be blacklisted by the bank
- A client does not have to own an account
- A client can own multiple accounts
- Ownership comes in different types (sole ownership, joint ownership, etc)
- An account is owned by one or more clients
- There are multiple types of accounts (checking, savings, etc)
- Some accounts have an account balance
- A client with an account can make as many transactions as they like
- An account might be linked to one or more investment portfolios
- An investment portfolio may be empty or contains one or more investment products (bonds, stocks, mutual funds, etc)
- An account could be associated with one or more client cards
- An account could be associated with one or more credit cards

Entity Relationship Diagram



Data Dictionary

TABLE NAME	ATTRIBUTE NAME	CONTENTS	TYPE	FORMAT	RANGE	REQUIRED	PK OR FK	FK REFERENCED TABLE
CITY	CITY_ID	City code	int	00000	10000-99999	Y	PK	
	CITY_NAME	City name	varchar(50)	Xxxxxxxxxxxxxx	NA	Y		
	CITY_BRANCH_COUNT	City branch count	int	####0	0-99999	Y		
BRANCH	BRANCH_ID	Branch code	int	00000	10000-99999	Y	PK	
	COMP_ID	Company code	int	00000	10000-99999	Y	FK	COMPANY
	CITY_ID	City code	int	00000	10000-99999	Y	FK	CITY
	MANAGER_EMP_ID	Manager employee code	int	00000	10000-99999	Y	FK	EMPLOYEE
	BRANCH_ADDRESS	Branch address	varchar(70)	xxxxxxxxxxxxxxx	NA	Y		
COMPANY	COMP_ID	Company code	int	00000	10000-99999	Y	PK	
	DIRECTOR_EMP_ID	Director employee code	int	00000	10000-99999	Y	FK	EMPLOYEE
	COMP_NAME	Company name	varchar(50)	Xxxxxxxxxxxxxx	NA	Y		
	COMP_EMP_COUNT	Company employee count	int	####0	0-99999	Y		
EMPLOYEE	EMP_ID	Employee code	int	00000	10000-99999	Y	PK	
	BRANCH_ID	Branch code	int	00000	10000-99999	Y	FK	BRANCH
	MANAGER_EMP_ID	Manager employee code	int	00000	10000-99999	Y	FK	EMPLOYEE
	EMP_HIRE_DATE	Hire date	date	YYYY-MM-DD	NA	Y		
	EMP_POSITION	Job title	varchar(30)	Xxxxxxxxxxxxxx	NA	Y		
	EMP_HOUR_PAY	Employee hourly wage	numeric(6, 2)	####0.##	0-9999.99	Y		
	EMP_FNAME	First name	varchar(50)	Xxxxxxxxxxxxxx	NA	Y		
	EMP_LNAME	Last name	varchar(50)	Xxxxxxxxxxxxxx	NA	Y		
	EMP_MNAME	Middle name	varchar(50)	Xxxxxxxxxxxxxx	NA	N		
	EMP_PHONE_NUM	Phone number	char(10)	999-999-9999	NA	N		
	EMP_ADDRESS	Employee address	varchar(70)	xxxxxxxxxxxxxxx	NA	Y		
BANKING_LICENSE	LCNS_ID	License code	int	00000	10000-99999	Y	PK	
	EMP_ID	Employee code	int	00000	10000-99999	N	FK	EMPLOYEE
	LCNS_NAME	License name	varchar(50)	Xxxxxxxxxxxxxx	NA	Y		
	LCNS_GET_DATE	Acquired date	date	YYYY-MM-DD	NA	N		
	LCNS_EXPIRE_DATE	Expiry date	date	YYYY-MM-DD	NA	N		
SERVICE	EMP_ID	Employee code	int	00000	10000-99999	Y	PK FK	EMPLOYEE
	CLNT_ID	Client code	int	00000	10000-99999	Y	PK FK	CLIENT
	SERV_TIME	Served date	datetime	HH:MM:SS	NA	Y		
	SERV_TYPE	Type of service	varchar(20)	Xxxxxxxxxxxxxx	NA	Y		
CLIENT	CLNT_ID	Client code	int	00000	10000-99999	Y	PK	
	CLNT_FNAME	First name	varchar(50)	Xxxxxxxxxxxxxx	NA	Y		
	CLNT_LNAME	Last name	varchar(50)	Xxxxxxxxxxxxxx	NA	Y		
	CLNT_MNAME	Middle name	varchar(50)	Xxxxxxxxxxxxxx	NA	N		
	CLNT_PHONE_NUM	Phone number	char(10)	999-999-9999	NA	N		
	CLNT_ADDRESS	Client address	varchar(70)	xxxxxxxxxxxxxxx	NA	Y		
	CLNT_IS_BLKLIST	Is the client blacklisted	int	0	0-1	Y		
LOAN	LOAN_ID	Loan code	int	00000	10000-99999	Y	PK	
	CLNT_ID	Client code	int	00000	10000-99999	Y	FK	CLIENT
		Financial Service Representative employee code						
	FSR_EMP_ID	Loan acceptance status	int	00000	10000-99999	Y	FK	EMPLOYEE
	LOAN_ACCEPTANCE_STATUS	Loan amount	int	0	0-1	Y		
	LOAN_AMOUNT	Interest rate	numeric(10, 2)	#####0.##	0-99999999.99	Y		
	LOAN_INTEREST_RATE	Due date	numeric(5, 4)	0.####	0-9.9999	Y		
	LOAN_DUE_DATE	Amount owed	date	YYYY-MM-DD	NA	Y		
	LOAN_TO_BE_PAID	Is the loan paid	numeric(10, 2)	#####0.##	0-99999999.99	Y		
	LOAN_IS_PAID		int	0	0-1	Y		
SUPPORT_TICKET	TKT_ID	Ticket code	int	00000	10000-99999	Y	PK	
	CLNT_ID	Client code	int	00000	10000-99999	Y	FK	CLIENT
		Customer Service employee code						
	CS_EMP_ID	Ticket description	int	00000	10000-99999	Y	FK	EMPLOYEE
	TKT_DESCRIPTION		varchar(250)	xxxxxxxxxxxxxxx	NA	Y		

	TKT_OPEN_TIME	Ticket issue date	datetime	YYYY-MM-DD HH:MM:SS	NA	Y		
OWNERSHIP	CLNT_ID	Client code	int	00000	10000-99999	Y	PK FK	CLIENT
	ACC_ID	Account code	int	00000	10000-99999	Y	PK FK	ACCOUNT
	OWN_TYPE	Account ownership type	varchar(20)	Xxxxxxxxxxxxxx	NA	Y		
ACCOUNT	ACC_ID	Account code	int	00000	10000-99999	Y	PK	
	ACC_TYPE	Type of account	varchar(10)	Xxxxxxxxxxxxxx	NA	Y		
	ACC_OPEN_DATE	Opened date	date	YYYY-MM-DD	NA	Y		
	ACC_BALANCE	Account balance	numeric(10, 2)	#####0.##	0-99999999.99	N		
TRANSACTION	TRN_ID	Transaction code	int	00000	10000-99999	Y	PK	
	ACC_ID	Account code	int	00000	10000-99999	Y	FK	ACCOUNT
	TRN_TIME	Time of transaction	datetime	YYYY-MM-DD HH:MM:SS	NA	Y		
	TRN_AMOUNT	Transaction amount	numeric(10, 2)	#####0.##	(-99999999.99)-99999999.99	Y		
CLIENT_CARD	CLNT_CARD_ID	Client card code	int	00000	10000-99999	Y	PK	
	ACC_ID	Account code	int	00000	10000-99999	Y	FK	ACCOUNT
	CLNT_CARD_HOLDER_NAME	Name of card owner	varchar(50)	Xxxxxxxxxxxxxx	NA	Y		
	CLNT_CARD_NUM	Card number	char(16)	xxxxxxxxxxxxxx	NA	Y		
CREDIT_CARD	CRED_CARD_ID	Credit card code	int	00000	10000-99999	Y	PK	
	ACC_ID	Account code	int	00000	10000-99999	Y	FK	ACCOUNT
	CRED_CARD_HOLDER_NAME	Name of card owner	varchar(50)	Xxxxxxxxxxxxxx	NA	Y		
	CRED_CARD_NUM	Card number	char(16)	xxxxxxxxxxxxxx	NA	Y		
	CRED_CARD_EXPIRE_DATE	Expiry date	date	YYYY-MM-DD	NA	Y		
	CRED_CARD_CVV_CODE	CVV code	char(3)	xxx	NA	Y		
INVESTMENT_PORTFOLIO	PORT_ID	Portfolio code	int	00000	10000-99999	Y	PK	
	ACC_ID	Account code	int	00000	10000-99999	Y	FK	ACCOUNT
	PORT_OPEN_DATE	Opened date	date	YYYY-MM-DD	NA	Y		
	PORT_VALUE	Total portfolio value	numeric(10, 2)	#####0.##	0-99999999.99	Y		
INVESTMENT_PRODUCT	PROD_ID	Investment product code	int	00000	10000-99999	Y	PK	
	PORT_ID	Portfolio code	int	00000	10000-99999	Y	FK	INVESTMENT_PORTFOLIO
	PROD_TYPE	Type of investment product	varchar(30)	Xxxxxxxxxxxxxx	NA	Y		