Article Case Study

On

Business Development Bank of Canada

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♦ ***Introduction***

The Business Development Bank of Canada (BDC) is a special bank that focuses on helping small and medium-sized businesses in Canada. Founded in 1944, BDC plays an important role in supporting entrepreneurs who may have difficulty accessing funds from traditional banks. By offering financial resources and expert advice, BDC helps these businesses grow and succeed, which benefits the entire Canadian economy.

♦ ***Mission Statement***

"Our mission is to support Canadian entrepreneurs by providing financing, capital and advisory services with a focus on small and medium sized enterprises."

BDC is mandated to help create and develop Canadian businesses by providing a range of financial and advisory services.

♦ **Business Objectives**

"BDC aims to support Canadian entrepreneurs to build strong and resilient businesses and, in doing so, contribute to creating a more prosperous, competitive and inclusive Canada."

BDC aims to provide flexible financing solutions, offer expert advisory services, support sustainable business practices.

♦ ***Database Design Overview***

Database design is important for the Business Development Bank of Canada (BDC) because it helps keep data organized and easy to access. It supports better decision-making, ensures compliance with rules, and improves customer service. A good design allows the bank to grow and connect with other systems while saving costs. Overall, it's crucial for helping BDC support Canadian businesses and promote economic growth.

♦ ***Identified Tables***

- Clients Table
- Industries Table
- Loans Table
- Branches Table
- Services Table
- Surveys Table
- Employees Table
- Transaction Table

- ***Clients Table***

Clients	
ClientID	Primary Key,Integer
BusinessName	Varchar (100),Not Null
ContactInfo	Varchar(255)
IndustryType	Varchar(50)
Date Joined	Date

- ***Loans Table***

Loans	
LoanID	*Primary Key, Integer*
LoanAmount	*Decimal (15,2) Not Null*
InterestRate	*Decimal*
Term	*Integer, Not Null*
Status	*ENUM, Not Null*
ClientID	*Foreign Key*

- ***Employees Table***

Employees	
EmployeeID	***Primary Key, Integer***
Name	***Varchar (100) Not Null***
Position	***Varchar (50) Not Null***
DepartmentID	***Foreign Key, Integer***
HireDate	***Date, Not Null***

- ***Services Table***

Services	
ServiceID	***Primary Key, Integer***
ServiceName	***Varchar (100) Not Null***
Description	***Text***
Cost	***Decimal (10,2) Not Null***

Industries	
IndustryID	***Primary Key Integer***
IndustryName	***Varchar (100) Not Null***
Description	***Text***

- ***Branches Table***

Branches	
BranchID	***Primary Key Integer***
Location	***Varchar (255) Not Null***
ContactInfo	***Varchar (255)***
ManagerID	***Foreign Key Integer***

- ***Surveys Table***

Surveys	
SurveyID	**Primary Key,Integer**
ClientID	**Foreign Key,Integer**
DateCompleted	**Date,Not Null**
Responses	**Text**

- ***Transaction Table***

Transaction	
TransactionID	***Primary Key Integer***
ClientID	***Foreign Key Integer***
EmployeeID	***Foreign Key Integer***
BranchID	***Foreign Key Integer***
ServiceID	***Foreign Key Integer***
LoansID	***Foreign Key Integer***
Date	***Date***
Amount	***Integer***
TransactionType	***Varchar(100)***

♦ ***Relationship Between Tables***

1. Clients Table

- Clients (ClientID) → Loans (ClientID): One-to-Many relationship (a client can have multiple loans).
- Clients (ClientID) → Surveys (ClientID): One-to-Many relationship (a client can have multiple surveys).
- Clients (ClientID) → Transactions (ClientID): One-to-Many relationship (a client can have multiple transactions).

2. Loans Table

- Loans (LoanID) → Transactions (LoansID): One-to-Many relationship (a loan can be involved in multiple transactions).

3. Employees Table

- Employees (EmployeeID) → Transactions (EmployeeID): One-to-Many relationship (an employee can handle multiple transactions).
- Employees (EmployeeID) → Branches (ManagerID): One-to-Many relationship (an employee can manage multiple branches).

4. Services Table

- Services (ServiceID) → Transactions (ServiceID): One-to-Many relationship (a service can be linked to multiple transactions).

5. Branches Table

- Branches (BranchID) → Transactions (BranchID): One-to-Many relationship (a branch can handle multiple transactions).
- Branches (BranchID) → Employees (DepartmentID): One-to-Many relationship (a branch can have multiple employees).

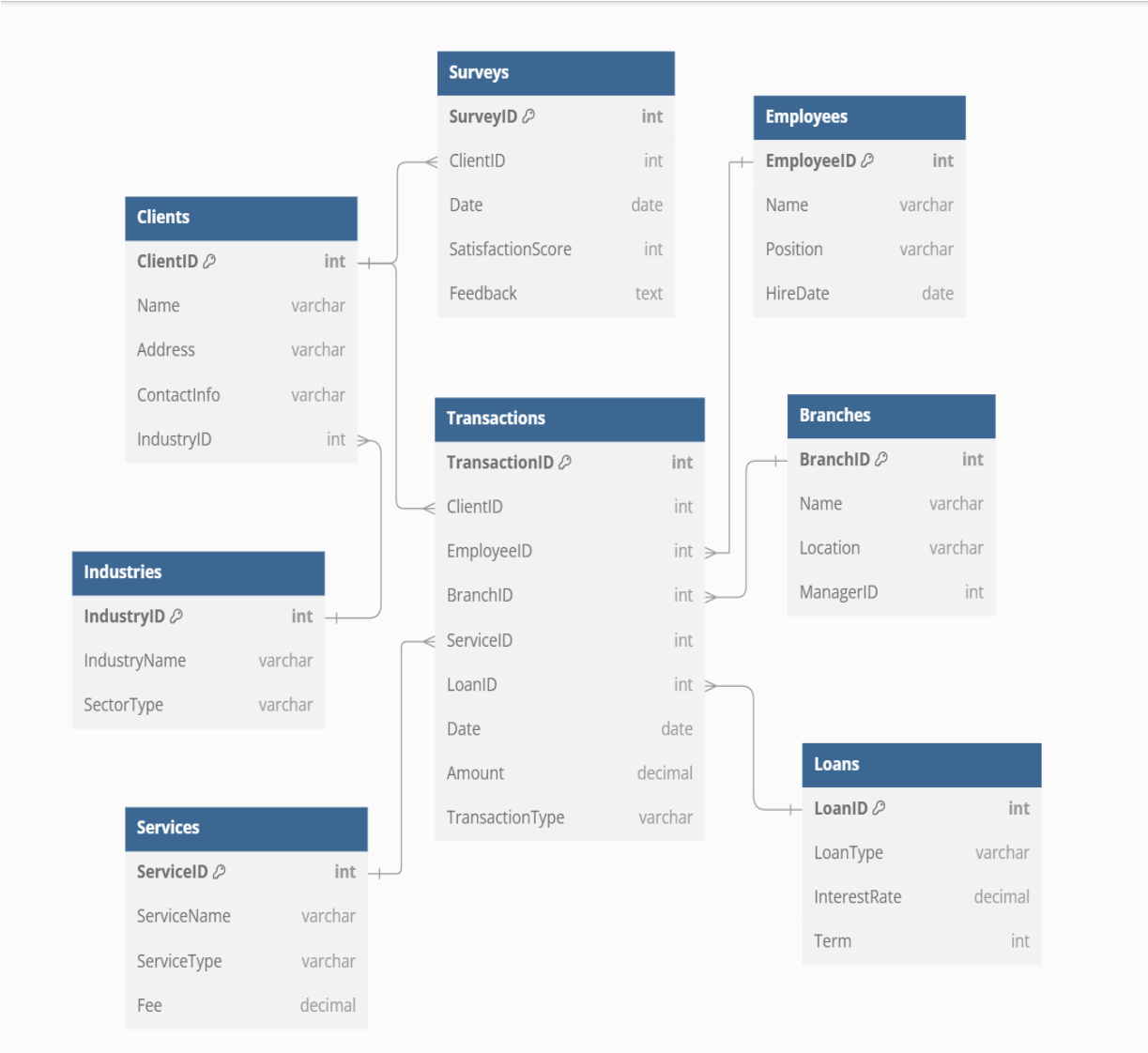
6. Industries Table

- Industries (IndustryID) → Clients (IndustryType): One-to-Many relationship (an industry can have multiple clients).

7. Surveys Table

- Surveys (SurveyID) does not have direct relationships with other tables aside from its connection to Clientsthrough ClientID.

♦ ***Entity Relationship Diagram (ERD)***



♦ ***Overview of ERD***

This design allows for efficient querying of transaction data across various dimensions. The Transactions contains the measurable, quantitative data about each transaction, while the dimension tables provide the descriptive attributes that give context to the transactions.

For example, you can easily analyze:

- Transaction volumes by branch or employee
- Loan performance across different industries
- Client satisfaction in relation to services used
- Employee performance in terms of transaction amounts or loan approvals

♦ ***Conclusion***

The Business Development Bank of Canada is a key player in helping Canadian entrepreneurs succeed. With its focus on financing, expert advice, diversity, and sustainability, BDC empowers businesses to grow and thrive.

For anyone looking to start or grow a business in Canada, BDC offers valuable resources and support. Entrepreneurs are encouraged to reach out and explore the many ways BDC can help them achieve their goals. By working together, we can build a stronger economy and a brighter future for all.

♦ ***Appendix***

ClientID	BusinessName	ContactInfo	IndustryType	DateJoined
1	Acme Corp	contact@acmecorp.com, 555-1234	Technology	2023-01-15
2	Global Foods	info@globalfoods.com, 555-5678	Food & Beverage	2023-02-20
3	City Movers	support@citybank.com, 555-9012	Logistics	2023-03-10
4	Green Energy Co	hello@greenenergy.com, 555-3456	Energy	2023-04-05

LoanID	ClientID	LoanAmount	InterestRate	Term	Status	Application...	ApprovalD...
1	1	100000.00	5.25	60	Approved	2023-05-01	2023-05-15
2	2	250000.00	4.75	120	In Progress	2023-06-10	NULL
3	3	500000.00	4.50	180	Approved	2023-07-05	2023-07-20
4	4	75000.00	5.50	36	Rejected	2023-08-15	2023-08-30

ServiceID	ServiceName	Description	Cost
1	Business Loan Consultation	One-on-one consultation to discuss business loan options	250.00
2	Financial Planning	Comprehensive financial planning for businesses	500.00
3	Credit Analysis	In-depth analysis of business credit history	150.00
4	Loan Application Assistance	Help with preparing and submitting loan applications	300.00

EmployeeID	Name	Position	DepartmentID	HireDate
1	John Doe	Loan Officer	1	2022-03-15
2	Jane Smith	Financial Analyst	2	2021-07-01
3	Mike Johnson	Customer Service Representative	3	2023-01-10
4	Sarah Brown	Branch Manager	4	2020-11-22

IndustryID	IndustryName	Description
1	Technology	Companies involved in research, development, and distribu…
2	Food & Beverage	Businesses that process, package, and distribute edible g…
3	Logistics	Organizations that deal with supply chains and logistics
4	Energy	Companies involved in production and supply of energy, in…

BranchID	Location	ContactInfo	ManagerID
1	123 Main St, Cityville, State 12345	Phone: 555-1234, Email: cityville@bank.com	4
2	456 Oak Ave, Townsburg, State 67890	Phone: 555-5678, Email: townsburg@bank.com	1
3	789 Pine Rd, Villageton, State 13579	Phone: 555-9012, Email: villageton@bank.com	2
4	101 Elm Blvd, Hamletville, State 24680	Phone: 555-3456, Email: hamletville@bank.com	3

SurveyID	ClientID	DateCompleted	Responses
1	1	2023-09-15	{"satisfaction": 5, "recommend": true, "comments": "Great service!"}
2	2	2023-09-16	{"satisfaction": 4, "recommend": true, "comments": "Good experience overall."}
3	3	2023-09-17	{"satisfaction": 3, "recommend": false, "comments": "Service was okay, could be improved."}
4	4	2023-09-18	{"satisfaction": 5, "recommend": true, "comments": "Excellent support and products!"}

♦ ***Views***

Client Overview Query

This query provides a comprehensive overview of each client, including their active loans and transaction activity. It supports:

- *Client relationship management by offering a snapshot of client engagement*
- *Risk assessment by showing the total loan exposure per client.*

```
SELECT c.ClientID, c.BusinessName, c.IndustryType,
COUNT(DISTINCT l.LoanID) AS ActiveLoans,      SUM(l.LoanAmount) AS
TotalLoanAmount,      COUNT(DISTINCT t.TransactionID) AS TransactionCount

FROM Clients c
LEFT JOIN Loans l ON c.ClientID = l.ClientID AND l.Status = 'Active'

LEFT JOIN Transactions t ON c.ClientID = t.ClientID

GROUP BY c.ClientID, c.BusinessName, c.IndustryType;
```

Loan Performance Analysis

This query analyzes loan performance across different industries. It supports:

- *Risk management by identifying high-risk industries*
- *Loan policy adjustments based on industry-specific default rates*
- *Strategic planning for loan product development.*

```
SELECT i.IndustryName,
AVG(l.LoanAmount) AS AvgLoanAmount,
AVG(l.InterestRate) AS AvgInterestRate,
COUNT(CASE WHEN l.Status = 'Defaulted' THEN 1 END) AS DefaultCount,
COUNT(*) AS TotalLoans,
(COUNT(CASE WHEN l.Status = 'Defaulted' THEN 1 END) * 100.0 / COUNT(*)) AS
DefaultRate
FROM Loans l
JOIN Clients c ON l.ClientID = c.ClientID
JOIN Industries i ON c.IndustryType = i.IndustryName
GROUP BY i.IndustryName
ORDER BY DefaultRate DESC;
```