



TERM PROJECT

CSD 2206
Group 5

Prepared and submitted by:

ANDI, Mufida Omar (C0864756)
ESPINA, Sylvia De La Pena (C0866311)
LU, Tich Vu (C0861736)
SHAH, Jay (C0868053)
REDDY, Ambharapu Ajay Kumar (C0865533)
VARMA, Jenil Shivamkumar (C0870543)

Submitted to:

Mehrnoush Ashrafi

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COMPANY NAME

LCS IT Consulting Company

COMPANY OVERVIEW

We are a strategic business unit whose aim is to support your company grow and become more adaptable. We utilize technology to produce flexible solutions for your needs.

CASE SCENARIO

The company offers different services that will be used for the client's project.

When there is a new client that will be using the company's service, their record will be added to the database.

Once a record is created, they can now discuss the project details with the service that will be used for it.

After finalizing the project and payment details, those details will be stored in the database.

Once a project is created, the company will assign employees who will work on the project.

In this project, client has many options on how they can pay the services it can be wire transfer, direct deposit, cheque or through credit cards.

LCS Company has multiple branches across Canada, each with different departments. With the company's rapid growth, the number of employees in each department in other locations is growing.

Employee records, including employee details, position, job history, and the project they have worked on or are currently working on, are all stored in the database.

When a new employee is hired, all those details are added to the database. And whenever an employee gets a promotion, those are recorded in the job history as well.

PRODUCTS

1. Application Services
2. Artificial Intelligence
3. Automation
4. Business Process Outsourcing
5. Business Strategy
6. Change Management
7. Cloud
8. Data & Analytics
9. Digital Commerce
10. Digital Engineering & Manufacturing
11. Ecosystem Services

- 12. Finance Technology Consulting
- 13. Infrastructure
- 14. IT Security
- 15. Game Development
- 16. Digital Marketing
- 17. Metaverse
- 18. Supply Chain Management
- 19. Sustainability
- 20. Technology Innovation

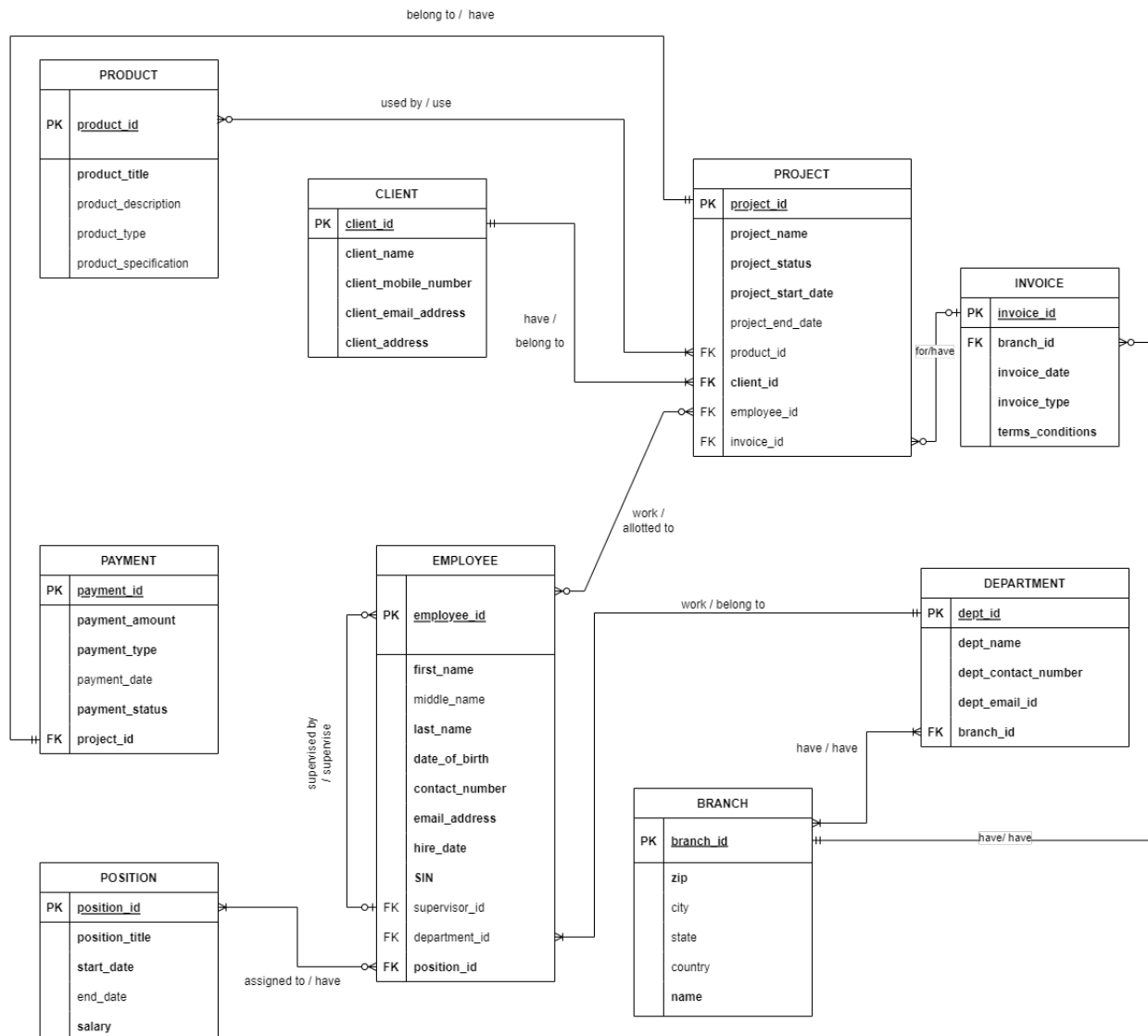
PRODUCT ATTRIBUTES

Services	Description	Specifications	Rate
Application Services	Software solutions that improve the speed, security, and operability of applications	Agile Transformation	\$250 -\$500 per month
Artificial Intelligence	The simulation of human intelligence processes by machines	Solutions.AI, Data-led Transformation, Responsible AI	Custom AI solution \$6000 to \$300,000 / solution Third-party AI software \$0 to \$40,000 / year
Automation	The use of software and systems to perform automated processes and tasks, replacing the manual work of IT professionals.	Handle tasks and processes, Quick responses , Improve workflow	- \$28,000 for a standalone robotic arm to hundreds of thousands of dollars and up for a complete industrial automation system.
Business Process Outsourcing	It is the delegation of one or more IT-intensive business processes to an external provider that, in turn, owns, administrates and manages the selected processes based on defined and measurable performance metrics.	Cost savings, Pricing, Resources and Technology	\$250 -\$500 per weekly
Business Strategy	An organizational master plan	Current state section, Future state section, Strategic plan section, Executive summary	\$250 -\$850 per hour
Change Management	Designed to minimize disruptions to IT services while making changes to critical systems and services	Prepare the Organization for Change	C\$84,795 / year

Cloud	The ability to store and access data and programs over the internet instead of on a hard drive	On-demand self-service	\$400 monthly for one server, to \$15,000 monthly for the entire back-office infrastructure.
Data & Analytics	The management of data for all uses (operational and analytical)	Data cleaning and preparation, Data analysis and exploration	\$10,000 to \$100,000 per year
Digital Commerce	The process of buying things online without human intervention	Payment Systems, Mobile,Friendly Website and Storefront	\$330,000 / monthly
Digital Engineering & Manufacturing	Ecosystems provide many of the basic services that make life possible for people.	Product life cycle, smart factory, value chain management, Industrial Internet of Things (IIoT)	\$50,000
Ecosystem Services	Ecosystems provide many of the basic services that make life possible for people.	Energy Flow, Water Cycle, Nutrient Cycle, Community Dynamics.	\$500 -\$900 per weekly
Finance Technology Consulting	Financial consultants provide internally-focused financial advice to corporations.	Advise clients on a range of financial services and decisions	\$500 - \$1000 per session
Infrastructure	System of hardware, software, facilities and service components that support the delivery of business systems and IT-enabled processes	Computing performance, Storage capacity, Networking infrastructure, Security, Keep it cost-effective.	\$400 monthly for one server, to \$15,000 monthly for the entire back-office infrastructure.
IT Security	Cyber Security is a set of techniques that are used to protect internet-connected systems	Authentication and password management	\$500 – \$2,000 per month
Game Development	Offers creation games of different genres	Identify the Target Market, Benefits and Advantages of the Product	\$50,000
Digital Marketing	Marketing is the activity, set of institutions, and processes for creating, communicating	Identify the Target Market, Benefits and Advantages of the Product	\$250 -\$500 / ad

Metaverse	A hypothetical iteration of the Internet as a single, universal and immersive virtual world	Storage: SSD Only, Graphics Card: 4 GB graphic card, CPU: Min 3.5 GHz, File Size: 8 GB, 144 GHz	On average the development cost of Metaverse games lies between \$30,000-\$300,000
Supply Chain Management	Management of the flow of goods, data, and finances related to a product or service	Monitoring and Planning	\$800 monthly for one server, to \$30,000 monthly for the entire back-office infrastructure.
Sustainability	In the broadest sense, sustainability refers to the ability to maintain or support a process continuously over time	Sustainable design, durability, energy efficiency, waste reduction,	\$5000 – \$10,000 per month
Technology Innovation	A technological innovation is a new or improved product or process whose technological characteristics are significantly different from before	Objectives and goals of the new design	\$10,000 to \$50,000 per year

ENTITY RELATIONSHIP DIAGRAMS



Each EMPLOYEE MAY work on zero or one or many PROJECTs
 Each PROJECT MAY be allotted to zero or one or many EMPLOYEEs

Each EMPLOYEE MAY be supervised by zero or one SUPERVISOR
 Each SUPERVISOR MAY supervise zero or one or many EMPLOYEEs

Each EMPLOYEE MUST work in one and only one DEPARTMENT
 Each DEPARTMENT MUST have one or many EMPLOYEEs

Each DEPARTMENT MUST have one or many BRANCHes
 Each BRANCH MUST have one or many DEPARTMENTS

Each EMPLOYEE MUST have one or many POSITIONs
 Each POSITION MAY be assigned to zero or one or many EMPLOYEEs

Each CLIENT MUST have one or many PROJECTs
 Each PROJECT MUST be assigned to one and only one CLIENT

Each PRODUCT MUST be used by one or many PROJECTs
 Each PROJECT MAY use zero or one or many PRODUCTS

Each PROJECT MUST have one and only one PAYMENT
 Each PAYMENT MUST belong to one and only one PROJECT

Each INVOICE MUST have one and only one BRANCH
 Each BRANCH MAY have zero or one or many INVOICEs



Each EMPLOYEE_PROJECT MUST have one and only one PROJECT
Each PROJECT MAY have zero or one or many EMPLOYEE_PROJECTs

Each CLIENT MUST have one or many PAYMENTs
Each PAYMENT MUST belong to one and only one CLIENT

Each PROJECT MUST have one and only one PAYMENT
Each PAYMENT MUST belong to one and only one PROJECT

Each CLIENT MUST have one or many PROJECTs
Each PROJECT MUST be assigned to one and only one CLIENT

Each PRODUCT MAY have zero or one or many ORDERs
Each ORDER MUST have one and only one PRODUCT

Each PRODUCT_PROJECT MUST have one and only one PROJECT
Each PROJECT MUST have one or many PRODUCT_PROJECTs

Each INVOICE MAY have zero or one or many ORDERs
Each ORDER MAY have zero or one INVOICE

Each INVOICE MUST have one and only one BRANCH
Each BRANCH MAY have zero or one or many INVOICEs

RELATIONAL (PHYSICAL) DIAGRAM

PRODUCT				
Key Type	Optionality	Column Name	Data Type	Length
PK	*	product_id	numeric	(10 , 0)
	*	product_title	varchar	30
	O	product_description	varchar	150
	O	product_type	varchar	10
	O	product_specification	varchar	100

CLIENT				
Key Type	Optionality	Column Name	Data Type	Length
PK	*	client_id	numeric	(10 , 0)
	*	client_name	varchar	25
	*	client_mobile_number	varchar	10
	*	client_email_address	varchar	25
	*	client_address	varchar	150

PROJECT				
Key Type	Optionality	Column Name	Data Type	Length
PK	*	project_id	numeric	(10 , 0)
	*	project_name	varchar	25
	*	project_status	varchar	10
	*	project_start_date	date	
	O	project_end_date	date	
FK	*	client_id	numeric	(10 , 0)

PAYMENT				
Key Type	Optionality	Column Name	Data Type	Length
PK	*	payment_id	numeric	(10 , 0)
	*	payment_amount	decimal	(10, 2)
	*	payment_type	varchar	20
	O	payment_date	date	
	*	payment_status	varchar	10
FK	*	project_id	numeric	(10 , 0)

EMPLOYEE				
Key Type	Optionality	Column Name	Data Type	Length
PK	*	employee_id	numeric	(10 , 0)
	*	first_name	varchar	25
	O	middle_name	varchar	25
	*	last_name	varchar	25
	*	date_of_birth	date	
	*	contact_number	varchar	10
	*	email_address	varchar	25
	*	hire_date	date	
	*	SIN	numeric	15
FK	O	supervisor_id	numeric	(10 , 0)

BRANCH				
Key Type	Optionality	Column Name	Data Type	Length
PK	*	branch_id	numeric	(10 , 0)
	*	zip	varchar	6
	O	city	varchar	25
	O	state	varchar	10
	O	country	varchar	60
	*	name	varchar	50
	*	tax_code	numeric	(9, 0)

DEPARTMENT				
Key Type	Optionality	Column Name	Data Type	Length
PK	*	dept_id	numeric	(10 , 0)
	*	dept_name	varchar	25
	O	dept_description	varchar	100
	*	dept_contact_number	varchar	10
	*	dept_email_id	varchar	25

JOB				
Key Type	Optionality	Column Name	Data Type	Length
PK	*	job_id	numeric	(10 , 0)
	*	job_title	varchar	50
	*	job_description	varchar	100
	O	min_salary	decimal	(10, 2)
	O	max_salary	decimal	(10, 2)

ORDER				
Key Type	Optionality	Column Name	Data Type	Length
PK, FK	*	product_id	numeric	(10 , 0)
PK, FK	*	project_id	numeric	(10 , 0)
	*	price	decimal	(10, 2)
	O	discount	decimal	(10, 2)
	O	feedback	varchar	50
	*	invoice_id	numeric	(10,0)

EMPLOYEE_PROJECT				
Key Type	Optionality	Column Name	Data Type	Length
PK, FK	*	employee_id	numeric	(10 , 0)
PK, FK	*	project_id	numeric	(10 , 0)
	O	hours_allocated	decimal	(10, 2)
	*	start_date	date	
	O	end_date	date	

BRANCH_DEPARTMENT				
Key Type	Optionality	Column Name	Data Type	Length
PK, FK	*	branch_id	numeric	(10 , 0)
PK, FK	*	department_id	numeric	(10 , 0)
PK, FK	*	employee_id	numeric	(10 , 0)
	*	status	varchar	10
	O	remarks	varchar	100

POSITION				
Key Type	Optionality	Column Name	Data Type	Length
PK, FK	*	employee_id	numeric	(10 , 0)
PK, FK	*	position_id	numeric	(10 , 0)
	*	start_date	date	
	O	end_date	date	
	O	remarks	varchar	100

JOB_HISTORY				
Key Type	Optionality	Column Name	Data Type	Length
PK, FK	*	employee_id	numeric	(10 , 0)
PK	*	start_date	date	
	*	salary	decimal	(10, 2)
	O	end_date	date	
FK	*	position_id	numeric	(10 , 0)

INVOICE				
Key Type	Optionality	Column Name	Data Type	Length
PK	*	invoice_id	numeric	(10 , 0)
FK	*	branch_id	numeric	(10 , 0)
	*	invoice_date	date	
	*	invoice type	varchar	150
	*	terms_conditions	varchar	150

- In payment, payment amount should be more than equal to 1000 and default 1000
- In product, product_title should be unique
- In product_project, price default is 0.00
- In payment, project id is unique as each project will have only one payment
- In branch_department, department id and employee id combination should be unique as employee must work in one and only one department.

DDL CREATE STATEMENTS

```
USE [master]
GO
```

```
CREATE DATABASE [LCS_DB]
GO
```

```
USE [LCS_DB]
GO
```

```
CREATE TABLE [dbo].[Branch](
    [branch_id] [NUMERIC](10, 0) IDENTITY(1,1) NOT NULL,
    [zip] [VARCHAR](6) NOT NULL,
    [city] [VARCHAR](25) NULL,
    [state] [VARCHAR](10) NULL,
    [country] [VARCHAR](60) NULL,
    [name] [VARCHAR](50) NOT NULL,
    [tax_code] [VARCHAR](50) NULL,
```

```
CONSTRAINT [PK_Branch] PRIMARY KEY CLUSTERED
(
    [branch_id] ASC
),
CONSTRAINT [AK_zip] UNIQUE NONCLUSTERED
(
    [zip] ASC
)
) ON [PRIMARY]
GO
```

```
CREATE TABLE [dbo].[Branch_Department](
    [branch_id] [NUMERIC](10, 0) NOT NULL,
    [department_id] [NUMERIC](10, 0) NOT NULL,
    [employee_id] [NUMERIC](10, 0) NOT NULL,
    [STATUS] [VARCHAR](10) NOT NULL,
    [remarks] [VARCHAR](100) NULL,
```

```
CONSTRAINT [PK_Branch_Department] PRIMARY KEY CLUSTERED
(
    [branch_id] ASC,
    [department_id] ASC,
    [employee_id] ASC
),
CONSTRAINT [UK_emp_dep] UNIQUE NONCLUSTERED
(
    [department_id] ASC,
    [employee_id] ASC
)
) ON [PRIMARY]
GO
```

```
CREATE TABLE [dbo].[Client](
    [client_id] [NUMERIC](10, 0) IDENTITY(1,1) NOT NULL,
    [client_name] [VARCHAR](25) NOT NULL,
    [client_mobile_number] [VARCHAR](10) NOT NULL,
    [client_email_address] [VARCHAR](25) NOT NULL,
    [client_address] [VARCHAR](150) NOT NULL,
```

```
CONSTRAINT [PK_Client] PRIMARY KEY CLUSTERED
(
    [client_id] ASC
)
) ON [PRIMARY]
GO
```

```

CREATE TABLE [dbo].[Department](
    [dept_id] [NUMERIC](10, 0) IDENTITY(1,1) NOT NULL,
    [dept_name] [VARCHAR](25) NOT NULL,
    [dept_description] [VARCHAR](100) NULL,
    [dept_contact_number] [VARCHAR](25) NOT NULL,
    [dept_email_id] [VARCHAR](25) NOT NULL,
    CONSTRAINT [PK_Department] PRIMARY KEY CLUSTERED
(
    [dept_id] ASC
)
) ON [PRIMARY]
GO

CREATE TABLE [dbo].[Employee](
    [employee_id] [NUMERIC](10, 0) IDENTITY(1,1) NOT NULL,
    [first_name] [VARCHAR](25) NOT NULL,
    [middle_name] [VARCHAR](25) NULL,
    [last_name] [VARCHAR](25) NOT NULL,
    [date_of_birth] [DATE] NOT NULL,
    [contact_number] [VARCHAR](10) NOT NULL,
    [email_address] [VARCHAR](25) NOT NULL,
    [hire_date] [DATE] NOT NULL,
    [sin] [NUMERIC](15, 0) NOT NULL,
    [supervisor_id] [NUMERIC](10, 0) NULL,
    CONSTRAINT [PK_Employee] PRIMARY KEY CLUSTERED
(
    [employee_id] ASC
),
    CONSTRAINT [AK_sin] UNIQUE NONCLUSTERED
(
    [sin] ASC
)
) ON [PRIMARY]
GO

CREATE TABLE [dbo].[Employee_Project](
    [employee_id] [NUMERIC](10, 0) NOT NULL,
    [project_id] [NUMERIC](10, 0) NOT NULL,
    [hours_allocated] [DECIMAL](10, 2) NULL,
    [start_date] [DATE] NOT NULL,
    [end_date] [DATE] NULL,
    CONSTRAINT [PK_Employee_Project] PRIMARY KEY CLUSTERED
(
    [employee_id] ASC,
    [project_id] ASC
)
) ON [PRIMARY]
GO

CREATE TABLE [dbo].[Invoice](
    [invoice_id] [NUMERIC](10, 0) IDENTITY(1,1) NOT NULL,
    [branch_id] [NUMERIC](10, 0) NOT NULL,
    [invoice_date] [DATE] NOT NULL,
    [invoice_type] [VARCHAR](150) NOT NULL,
    [terms_conditions] [VARCHAR](150) NOT NULL,
    CONSTRAINT [PK_Invoice] PRIMARY KEY CLUSTERED
(
    [invoice_id] ASC
)WITH (PAD_INDEX = OFF, STATISTICS_NORECOMPUTE = OFF, IGNORE_DUP_KEY = OFF,
    ALLOW_ROW_LOCKS = ON, ALLOW_PAGE_LOCKS = ON) ON [PRIMARY]
) ON [PRIMARY]
GO

CREATE TABLE [dbo].[Job](
    [job_id] [NUMERIC](10, 0) IDENTITY(1,1) NOT NULL,
    [job_title] [VARCHAR](50) NOT NULL,
    [job_description] [VARCHAR](100) NOT NULL,
    [min_salary] [DECIMAL](10, 2) NULL,
    [max_salary] [DECIMAL](10, 2) NULL,
    CONSTRAINT [PK_Job] PRIMARY KEY CLUSTERED
(
    [job_id] ASC
),
    CONSTRAINT [AK_job_title] UNIQUE NONCLUSTERED
(

```

```
[job_title] ASC
)
) ON [PRIMARY]
GO

CREATE TABLE [dbo].[Job_History](
    [employee_id] [NUMERIC](10, 0) NOT NULL,
    [start_date] [DATE] NOT NULL,
    [salary] [DECIMAL](10, 2) NOT NULL,
    [end_date] [DATE] NULL,
    [position_id] [NUMERIC](10, 0) NOT NULL,
    CONSTRAINT [PK_Job_History] PRIMARY KEY CLUSTERED
(
    [employee_id] ASC,
    [start_date] ASC
)
) ON [PRIMARY]
GO

CREATE TABLE [dbo].[Payment](
    [payment_id] [NUMERIC](10, 0) IDENTITY(1,1) NOT NULL,
    [payment_amount] [DECIMAL](10, 2) NOT NULL,
    [payment_type] [VARCHAR](20) NOT NULL,
    [payment_date] [DATE] NULL,
    [payment_status] [VARCHAR](10) NOT NULL,
    [project_id] [NUMERIC](10, 0) NOT NULL,
    CONSTRAINT [PK_Payment] PRIMARY KEY CLUSTERED
(
    [payment_id] ASC
),
    CONSTRAINT [AK_project_id] UNIQUE NONCLUSTERED
(
    [project_id] ASC
)
) ON [PRIMARY]
GO

CREATE TABLE [dbo].[POSITION](
    [employee_id] [NUMERIC](10, 0) NOT NULL,
    [position_id] [NUMERIC](10, 0) NOT NULL,
    [start_date] [DATE] NOT NULL,
    [end_date] [DATE] NULL,
    [remarks] [VARCHAR](100) NULL,
    CONSTRAINT [PK_Employee_Position] PRIMARY KEY CLUSTERED
(
    [employee_id] ASC,
    [position_id] ASC
)
) ON [PRIMARY]
GO

CREATE TABLE [dbo].[Product](
    [product_id] [NUMERIC](10, 0) IDENTITY(1,1) NOT NULL,
    [product_title] [VARCHAR](30) NOT NULL,
    [product_description] [VARCHAR](150) NULL,
    [product_type] [VARCHAR](10) NULL,
    [product_specification] [VARCHAR](100) NULL,
    CONSTRAINT [PK_Product] PRIMARY KEY CLUSTERED
(
    [product_id] ASC
),
    CONSTRAINT [AK_product_title] UNIQUE NONCLUSTERED
(
    [product_title] ASC
)
) ON [PRIMARY]
GO

CREATE TABLE [dbo].[Orders](
    [product_id] [NUMERIC](10, 0) NOT NULL,
    [project_id] [NUMERIC](10, 0) NOT NULL,
    [price] [DECIMAL](10, 2) NOT NULL,
    [discount] [DECIMAL](10, 2) NULL,
    [feedback] [VARCHAR](50) NULL,
    [invoice_id] [NUMERIC](10, 0) NULL
```



```
CONSTRAINT [PK_Orders] PRIMARY KEY CLUSTERED
(
    [product_id] ASC,
    [project_id] ASC
)
ON [PRIMARY]
GO

CREATE TABLE [dbo].[Project](
    [project_id] [NUMERIC](10, 0) IDENTITY(1,1) NOT NULL,
    [project_name] [VARCHAR](25) NOT NULL,
    [project_status] [VARCHAR](10) NOT NULL,
    [start_date] [DATE] NOT NULL,
    [end_date] [DATE] NULL,
    [client_id] [NUMERIC](10, 0) NOT NULL,
    CONSTRAINT [PK_Project] PRIMARY KEY CLUSTERED
(
    [project_id] ASC
)
ON [PRIMARY]
GO
```

DDL DATABASE CONSTRAINT STATEMENTS

```
ALTER TABLE [dbo].[Employee_Project] ADD CONSTRAINT
[DF_Employee_Project_hours_allocated] DEFAULT ((0.00)) FOR [hours_allocated]
GO
```

```
ALTER TABLE [dbo].[Job] ADD CONSTRAINT [DF_Job_min_salary] DEFAULT ((0.00)) FOR
[min_salary]
GO
```

```
ALTER TABLE [dbo].[Job_History] ADD CONSTRAINT [DF_Job_History_salary] DEFAULT
((2500.00)) FOR [salary]
GO
```

```
ALTER TABLE [dbo].[Payment] ADD CONSTRAINT [DF_Payment_payment_amount] DEFAULT
((1000.00)) FOR [payment_amount]
GO
```

```
ALTER TABLE [dbo].[Orders] ADD CONSTRAINT [DF_Orders_price] DEFAULT ((0.00)) FOR
[price]
GO
```

```
ALTER TABLE [dbo].[Branch_Department] WITH CHECK ADD CONSTRAINT
[FK_Branch_Department_Branch] FOREIGN KEY([branch_id])
REFERENCES [dbo].[Branch] ([branch_id])
GO
```

```
ALTER TABLE [dbo].[Branch_Department] CHECK CONSTRAINT [FK_Branch_Department_Branch]
GO
```

```
ALTER TABLE [dbo].[Branch_Department] WITH CHECK ADD CONSTRAINT
[FK_Branch_Department_Department] FOREIGN KEY([department_id])
REFERENCES [dbo].[Department] ([dept_id])
GO
```

```
ALTER TABLE [dbo].[Branch_Department] CHECK CONSTRAINT [FK_Branch_Department_Department]
GO
```

```
ALTER TABLE [dbo].[Branch_Department] WITH CHECK ADD CONSTRAINT
[FK_Branch_Department_Employee] FOREIGN KEY([employee_id])
REFERENCES [dbo].[Employee] ([employee_id])
GO
```

```
ALTER TABLE [dbo].[Branch_Department] CHECK CONSTRAINT [FK_Branch_Department_Employee]
GO
```

```
ALTER TABLE [dbo].[Employee] WITH CHECK ADD CONSTRAINT [FK_Employee_Employee] FOREIGN
KEY([supervisor_id])
REFERENCES [dbo].[Employee] ([employee_id])
GO
```

```
ALTER TABLE [dbo].[Employee] CHECK CONSTRAINT [FK_Employee_Employee]
GO

ALTER TABLE [dbo].[Employee_Project] WITH CHECK ADD CONSTRAINT
[FK_Employee_Project_Employee] FOREIGN KEY([employee_id])
REFERENCES [dbo].[Employee] ([employee_id])
GO

ALTER TABLE [dbo].[Employee_Project] CHECK CONSTRAINT [FK_Employee_Project_Employee]
GO

ALTER TABLE [dbo].[Employee_Project] WITH CHECK ADD CONSTRAINT
[FK_Employee_Project_Project] FOREIGN KEY([project_id])
REFERENCES [dbo].[Project] ([project_id])
GO

ALTER TABLE [dbo].[Employee_Project] CHECK CONSTRAINT [FK_Employee_Project_Project]
GO

ALTER TABLE [dbo].[Invoice] WITH CHECK ADD CONSTRAINT [FK_Invoice_Branch] FOREIGN
KEY([branch_id])
REFERENCES [dbo].[Branch] ([branch_id])
GO

ALTER TABLE [dbo].[Invoice] CHECK CONSTRAINT [FK_Invoice_Branch]
GO

ALTER TABLE [dbo].[Job_History] WITH CHECK ADD CONSTRAINT [FK_Job_History_Employee]
FOREIGN KEY([employee_id])
REFERENCES [dbo].[Employee] ([employee_id])
GO

ALTER TABLE [dbo].[Job_History] CHECK CONSTRAINT [FK_Job_History_Employee]
GO

ALTER TABLE [dbo].[Job_History] WITH CHECK ADD CONSTRAINT [FK_Job_History_Job] FOREIGN
KEY([position_id])
REFERENCES [dbo].[Job] ([job_id])
GO

ALTER TABLE [dbo].[Job_History] CHECK CONSTRAINT [FK_Job_History_Job]
GO

ALTER TABLE [dbo].[Payment] WITH CHECK ADD CONSTRAINT [FK_Payment_Project] FOREIGN
KEY([project_id])
REFERENCES [dbo].[Project] ([project_id])
GO

ALTER TABLE [dbo].[Payment] CHECK CONSTRAINT [FK_Payment_Project]
GO

ALTER TABLE [dbo].[POSITION] WITH CHECK ADD CONSTRAINT [FK_Employee_Position_Employee]
FOREIGN KEY([employee_id])
REFERENCES [dbo].[Employee] ([employee_id])
GO

ALTER TABLE [dbo].[POSITION] CHECK CONSTRAINT [FK_Employee_Position_Employee]
GO

ALTER TABLE [dbo].[POSITION] WITH CHECK ADD CONSTRAINT [FK_Employee_Position_Job]
FOREIGN KEY([position_id])
REFERENCES [dbo].[Job] ([job_id])
GO

ALTER TABLE [dbo].[POSITION] CHECK CONSTRAINT [FK_Employee_Position_Job]
GO

ALTER TABLE [dbo].[Orders] WITH CHECK ADD CONSTRAINT [FK_Orders_Invoice] FOREIGN
KEY([invoice_id])
REFERENCES [dbo].[Invoice] ([invoice_id])
GO

ALTER TABLE [dbo].[Orders] CHECK CONSTRAINT [FK_Orders_Invoice]
GO
```

```
ALTER TABLE [dbo].[Orders] WITH CHECK ADD CONSTRAINT [FK_Orders_Product] FOREIGN
KEY([product_id])
REFERENCES [dbo].[Product] ([product_id])
GO

ALTER TABLE [dbo].[Orders] CHECK CONSTRAINT [FK_Orders_Product]
GO

ALTER TABLE [dbo].[Orders] WITH CHECK ADD CONSTRAINT [FK_Orders_Project] FOREIGN
KEY([project_id])
REFERENCES [dbo].[Project] ([project_id])
GO

ALTER TABLE [dbo].[Orders] CHECK CONSTRAINT [FK_Orders_Project]
GO

ALTER TABLE [dbo].[Client] WITH CHECK ADD CONSTRAINT [Client_CK_email_address] CHECK
(([client_email_address] LIKE '%@%.____%'))
GO

ALTER TABLE [dbo].[Client] CHECK CONSTRAINT [Client_CK_email_address]
GO

ALTER TABLE [dbo].[Client] WITH CHECK ADD CONSTRAINT [Client_CK_Mobile_Number] CHECK
((NOT [client_mobile_number] LIKE '%[^0-9]%'))
GO

ALTER TABLE [dbo].[Client] CHECK CONSTRAINT [Client_CK_Mobile_Number]
GO

ALTER TABLE [dbo].[Department] WITH CHECK ADD CONSTRAINT [Department_CK_contact_number]
CHECK ((NOT [dept_contact_number] LIKE '%[^0-9]%'))
GO

ALTER TABLE [dbo].[Department] CHECK CONSTRAINT [Department_CK_contact_number]
GO

ALTER TABLE [dbo].[Department] WITH CHECK ADD CONSTRAINT [Department_CK_email_id] CHECK
(([dept_email_id] LIKE '%@%.____%'))
GO

ALTER TABLE [dbo].[Department] CHECK CONSTRAINT [Department_CK_email_id]
GO

ALTER TABLE [dbo].[Employee] WITH CHECK ADD CONSTRAINT [Employee_CK_contact_number]
CHECK ((NOT [contact_number] LIKE '%[^0-9]%'))
GO

ALTER TABLE [dbo].[Employee] CHECK CONSTRAINT [Employee_CK_contact_number]
GO

ALTER TABLE [dbo].[Employee] WITH CHECK ADD CONSTRAINT [Employee_CK_email_address]
CHECK (([email_address] LIKE '%@%.____%'))
GO

ALTER TABLE [dbo].[Employee] CHECK CONSTRAINT [Employee_CK_email_address]
GO

ALTER TABLE [dbo].[Employee] WITH CHECK ADD CONSTRAINT [Employee_CK_hire_date] CHECK
(([hire_date]>[date_of_birth]))
GO

ALTER TABLE [dbo].[Employee] CHECK CONSTRAINT [Employee_CK_hire_date]
GO

ALTER TABLE [dbo].[Employee_Project] WITH CHECK ADD CONSTRAINT
[Employee_Project_CK_start_date] CHECK (([start_date]<=[end_date]))
GO

ALTER TABLE [dbo].[Employee_Project] CHECK CONSTRAINT [Employee_Project_CK_start_date]
GO

ALTER TABLE [dbo].[Employee_Project] WITH CHECK ADD CONSTRAINT
[Employee_ProjectCK_hours_allocated] CHECK (([hours_allocated]<=(8.00)))
GO
```

```
ALTER TABLE [dbo].[Employee_Project] CHECK CONSTRAINT
[Employee_ProjectCK_hours_allocated]
GO

ALTER TABLE [dbo].[Job] WITH CHECK ADD CONSTRAINT [Job_CK_min_salary] CHECK
((([min_salary]<=[max_salary]))
GO

ALTER TABLE [dbo].[Job] CHECK CONSTRAINT [Job_CK_min_salary]
GO

ALTER TABLE [dbo].[Job_History] WITH CHECK ADD CONSTRAINT [Job_History_CK_start_date]
CHECK (([start_date]<=[end_date]))
GO

ALTER TABLE [dbo].[Job_History] CHECK CONSTRAINT [Job_History_CK_start_date]
GO

ALTER TABLE [dbo].[Payment] WITH CHECK ADD CONSTRAINT [Payment_CK_payment_amount] CHECK
(([payment_amount]>=(1000)))
GO

ALTER TABLE [dbo].[Payment] CHECK CONSTRAINT [Payment_CK_payment_amount]
GO

ALTER TABLE [dbo].[POSITION] WITH CHECK ADD CONSTRAINT
[Employee_Position_CK_start_date] CHECK (([start_date]<=[end_date]))
GO

ALTER TABLE [dbo].[POSITION] CHECK CONSTRAINT [Employee_Position_CK_start_date]
GO

ALTER TABLE [dbo].[Project] WITH CHECK ADD CONSTRAINT [CK_start_date] CHECK
(([start_date]<=[end_date]))
GO

ALTER TABLE [dbo].[Project] CHECK CONSTRAINT [CK_start_date]
GO

USE [master]
GO

ALTER DATABASE [LCS_DB] SET READ_WRITE
GO
```

DDL INSERT STATEMENTS

```
USE LCS_DB;

-- Insertion of Branch Data --

INSERT INTO BRANCH VALUES ('S9H3W4','Toronto','ON','Canada', 'LCS Company','552195155');

INSERT INTO BRANCH VALUES ('M1B0A1','Scarborough','ON','Canada', 'LCS
Company','552195156');

INSERT INTO BRANCH VALUES ('G2Z9Z9','Quebec','ON','Canada', 'LCS Company','552195157');

INSERT INTO BRANCH VALUES ('L3P0A1','Markham','ON','Canada', 'LCS Company','552195158');

INSERT INTO BRANCH VALUES ('L2L2L2','Mississauga','ON','Canada', 'LCS
Company','552195159');

-- Insertion of Department Data --

INSERT INTO DEPARTMENT VALUES ('Admin Department ','Maintains office services by
organizing office operations and procedures','4174482839','admindepartment@lcs.com')

INSERT INTO DEPARTMENT VALUES ('Asset Management','Manages company
assets','4174482840','assetmanagement@lcs.com')
```

```
INSERT INTO DEPARTMENT VALUES ('Board of Directors ', 'Establish the mission, goals and policies of the organization', '4174482841', 'boardofdirectors@lcs.com')
```

```
INSERT INTO DEPARTMENT VALUES ('Customer Service ', 'The first person most customers communicate with when they have a problem', '4174482842', 'customerservice@lcs.com')
```

```
INSERT INTO DEPARTMENT VALUES ('Finance / Accounting ', 'Conducts cost and revenues analyses', '4174482843', 'financeaccounting@lcs.com')
```

```
INSERT INTO DEPARTMENT VALUES ('Human Resources ', 'Develop and manage a range of activities for a company.', '4174482844', 'humanresources@lcs.com')
```

```
INSERT INTO DEPARTMENT VALUES ('Operations ', 'Oversee operational activities at every level of an organization', '4174482845', 'operations@lcs.com')
```

```
INSERT INTO DEPARTMENT VALUES ('Quality Assurance ', 'Responsible for monitoring, inspecting and proposing measures to correct', '4174482846', 'qualityassurance@lcs.com')
```

```
INSERT INTO DEPARTMENT VALUES ('Sales and Marketing ', 'Demonstrates products and services as deemed necessary by clients and management.', '4174482847', 'salesandmarketing@lcs.com')
```

```
INSERT INTO DEPARTMENT VALUES ('Technology ', 'Responsible for developing codes and architecture designs for the respective clients', '4174482848', 'technology@lcs.com')
```

-- Insertion of JOB Data --

```
INSERT INTO JOB VALUES ('Chief Executive Officer' , 'Responsible for managing a company''s overall operations', 250, 300)
```

```
INSERT INTO JOB VALUES ('HR Manager' , 'Lead and direct the routine functions of the Human Resources (HR) department', 60, 75)
```

```
INSERT INTO JOB VALUES ('HR Analyst' , 'Collects, compile, and analyze HR data', 45, 55)
```

```
INSERT INTO JOB VALUES ('Finance Manager' , 'Distributes the financial resources of a company', 60, 75)
```

```
INSERT INTO JOB VALUES ('Finance Analyst', 'Analyzes current and past financial data and performance', 45, 55)
```

```
INSERT INTO JOB VALUES ('Team Lead' , 'Provides guidance and instruction to a working group about a project or portfolio of projects', 70, 80)
```

```
INSERT INTO JOB VALUES ('Solutions Architect' , 'Solves complex problems in an organization by designing or modifying technology architecture', 55, 60)
```

```
INSERT INTO JOB VALUES ('Software Developer' , 'Designs and builds computer programs', 30, 35)
```

```
INSERT INTO JOB VALUES ('Senior Developer' , 'Designs and implements new and updated software programs. Guides other developers in the team', 48, 53)
```

```
INSERT INTO JOB VALUES ('QA Automation Tester' , 'Write scripts and create automation environments for repeated tests', 48, 53)
```

```
INSERT INTO JOB VALUES ('QA Manual Tester' , 'Manual testing of new software in both the pre-and post-release stage of the development lifecycle', 30, 35)
```

```
INSERT INTO JOB VALUES ('IT' , 'Managing and storing data using computers, software, databases, networks, and servers', 30, 35)
```

```
INSERT INTO JOB VALUES ('System Administrator' , 'Organize, install and support an organization''s computer systems', 45, 50)
```

```
INSERT INTO JOB VALUES ('Customer Service Associate' , 'Manages customer concerns', 35, 45)
```

```
INSERT INTO JOB VALUES ('Customer Service Analyst' , 'Responsible for gathering data and doing research', 45, 50)
```

-- Insertion of Employee Data --

```
INSERT INTO EMPLOYEE VALUES ('Jaiden','Mark','Abbott
','10/09/1997','2048211896','jaiden.abott@lcs.com','08/13/2018',463612515,NULL);

INSERT INTO EMPLOYEE VALUES (' Zackary',NULL,'Archer
','09/06/1998','2042343348','zackary.archer@lcs.com','12/23/2021',958792376,1);

INSERT INTO EMPLOYEE VALUES ('Jessie',NULL,'Avila
','11/15/1987','7052295233','jessie.avila@lcs.com','02/19/2018',645885971,2);

INSERT INTO EMPLOYEE VALUES ('Royce','Curt','Beasley
','01/09/1991','8194347708','royce.beott@lcs.com','08/15/2018',524196409,1);

INSERT INTO EMPLOYEE VALUES ('Rowan','Claire','Beasley
','10/11/1991','3066092070','rowan.beott@lcs.com','09/03/2022',383970480,2);

INSERT INTO EMPLOYEE VALUES ('Annalise','Anne','Benitez
','10/09/1991','7809966759','annalise.beott@lcs.com','05/18/2021',662672401,5);

INSERT INTO EMPLOYEE VALUES ('Kristin',NULL,'Conner
','05/23/1976','5142158844','kristin.conner@lcs.com','02/01/2018',738740703,5);

INSERT INTO EMPLOYEE VALUES ('Madden
','Claire','Conrad','10/09/1976','5875907459','madden.coott@lcs.com','06/13/2019',9893207
67,5);

INSERT INTO EMPLOYEE VALUES ('Carleigh',NULL,'Durham
','10/09/1997','4185324945','carleigh.durham@lcs.com','04/20/2018',198059396,5);

INSERT INTO EMPLOYEE VALUES ('Azaria',NULL,'Golden
','10/09/1976','2044718557','azaria.golden@lcs.com','02/22/2018',205241854,5);

INSERT INTO EMPLOYEE VALUES ('Charlize',NULL,'Hubbard
','12/11/1995','2262218316','charlize.hubbard@lcs.com','11/30/2019',365857390,2);

INSERT INTO EMPLOYEE VALUES ('Beckett','Mae','Horn
','10/09/1988','2507988447','beckett.hoott@lcs.com','12/09/2018',641244223,11);

INSERT INTO EMPLOYEE VALUES ('Emery',NULL,'Suarez
','12/09/1988','4035462534','emery.suarez@lcs.com','06/12/2021',944999515,5);

INSERT INTO EMPLOYEE VALUES ('Ansley',NULL,'Valentine
','10/09/1990','8673742851','ansley.valentine@lcs.com','08/02/2019',673984761,2);

INSERT INTO EMPLOYEE VALUES ('Ell',NULL,'Malone
','10/25/1997','7805974968','ell.malone@lcs.com','03/16/2020',415302850,2);

INSERT INTO EMPLOYEE VALUES ('Reynaldo',NULL,'Jordan
','10/09/1995','9025661047','reynaldo.jordan@lcs.com','08/10/2019',431102946,15);

INSERT INTO EMPLOYEE VALUES ('Jamal',NULL,'Mcknight
','08/26/1999','5817048259','jamal.mcknight@lcs.com','06/09/2022',906348131,14);

INSERT INTO EMPLOYEE VALUES ('Adriel',NULL,'Park
','04/28/1997','4039399761','adriel.park@lcs.com','12/11/2018',640320214,14);

INSERT INTO EMPLOYEE VALUES ('Dalia',NULL,'Paul
','10/09/1988','7803722289','dalia.paul@lcs.com','11/01/2019',447989781,14);

INSERT INTO EMPLOYEE VALUES ('Johanna',NULL,'Rich
','06/11/1995','4162677795','johanna.rich@lcs.com','06/24/2021',479532962,14);

INSERT INTO EMPLOYEE VALUES
('Lark','Eldon','Travis','11/17/1992','9053252915','lark.travis@lcs.com','11/26/2018',733
257091,2);

INSERT INTO EMPLOYEE VALUES
('Alaia','Wiley','Thorne','10/07/1987','2892141179','alaia.thorne@lcs.com','08/15/2018',5
66142436,21);

INSERT INTO EMPLOYEE VALUES
('Justice','Kathryn','Rivers','08/14/1979','9054617674','justice.rivers@lcs.com','09/04/2
019',213985112,21);

INSERT INTO EMPLOYEE VALUES
('Chester','Ollie','Parris','08/07/1978','4505721042','chester.parris@lcs.com','07/08/201
9',193290293,21);
```

```
INSERT INTO EMPLOYEE VALUES
('Irma',NULL,'Carver','07/10/1986','6043538923','irma.carver@lcs.com','06/07/2018',377381
280,21);

INSERT INTO EMPLOYEE VALUES
('Luvenia','Lenora','Alfredson','07/16/1983','4186266452','luvenia.alfredso@lcs.com','08/
03/2019',483150363,21);

INSERT INTO EMPLOYEE VALUES
('Webster',NULL,'Marylyn','07/12/1998','5875372061','webster.marylyn@lcs.com','01/11/2018
',679548198,2);

INSERT INTO EMPLOYEE VALUES
('Kennard','Gale','Morin','07/22/1991','5814236520','Kennard.Gale@lcs.com','02/01/2019',1
39424865,27);

INSERT INTO EMPLOYEE VALUES
('Bertie','Nevaeh','Walter','12/14/1990','5143468513','Bertie.Nevaeh@lcs.com','02/13/2019
',686733916,27);

INSERT INTO EMPLOYEE VALUES
('Milton','Jean','Kersey','07/12/1994','4032751194','Milton.Jean@lcs.com','03/04/2019',39
1874963,27);

INSERT INTO EMPLOYEE VALUES
('Ross','Rosalie','Booth','06/01/1994','4502496319','Ross.Rosalie@lcs.com','03/08/2019',5
97028661,27);

INSERT INTO EMPLOYEE VALUES
('Serenity','Jaslyn','Monk','12/17/1996','4189474245','Serenity.Jaslyn@lcs.com','03/22/20
19',145158648,27);

INSERT INTO EMPLOYEE VALUES
('Raelene','Wynne','Parrish','06/28/1992','5197451073','Raelene.Wynne@lcs.com','04/04/201
9',227133204,27);

INSERT INTO EMPLOYEE VALUES
('Jazmin','Ariel','Morrish','11/18/1994','7783509914','Jazmin.Ariel@lcs.com','05/02/2019'
,530033976,27);

INSERT INTO EMPLOYEE VALUES
('Carlyle','Whitney','Sweet','09/27/1994','2047844610','Carlyle.Whitney@lcs.com','05/03/2
019',396052789,27);

INSERT INTO EMPLOYEE VALUES
('Zane','Carina','Milford','03/27/1994','7806906461','Zane.Carina@lcs.com','05/30/2019',3
47315111,27);

INSERT INTO EMPLOYEE VALUES
('Piety','Mervyn','Pryor','12/26/1996','4185449742','Piety.Mervyn@lcs.com','06/07/2019',4
85669402,27);

INSERT INTO EMPLOYEE VALUES
('Johnie','Clanc','Little','09/01/1991','7804153589','Johnie.Clanc@lcs.com','07/16/2019',
715480778,27);

INSERT INTO EMPLOYEE VALUES
('Kailyn','Krystelle','Samuel','01/30/1990','2042626604','Kailyn.Krystelle@lcs.com','08/2
1/2019',346550585,27);

INSERT INTO EMPLOYEE VALUES
('Gunner','Honey','Tate','02/27/1991','4165136380','Gunner.Honey@lcs.com','09/02/2019',99
6799193,27);

INSERT INTO EMPLOYEE VALUES
('Sefton','Royale','Snell','10/06/1998','4162149418','Sefton.Royale@lcs.com','09/23/2019'
,744747635,27);

INSERT INTO EMPLOYEE VALUES
('Chantell','Tel','Mercer','11/30/1999','4502913134','Chantell.Tel@lcs.com','10/07/2019',
926251687,27);
```

-- Insertion of Branch Department Data --


```
INSERT INTO BRANCH_DEPARTMENT VALUES (1, 3,1,'Onboarded', 'Employee is currently
onboarded in this branch and department');

INSERT INTO BRANCH_DEPARTMENT VALUES (1, 6,2,'Onboarded', 'Employee is currently
onboarded in this branch and department');

INSERT INTO BRANCH_DEPARTMENT VALUES (1, 6,3,'Onboarded', 'Employee is currently
onboarded in this branch and department');

INSERT INTO BRANCH_DEPARTMENT VALUES (1, 5,4,'Onboarded', 'Employee is currently
onboarded in this branch and department');

INSERT INTO BRANCH_DEPARTMENT VALUES (2, 10,5,'Onboarded', 'Employee is currently
onboarded in this branch and department');

INSERT INTO BRANCH_DEPARTMENT VALUES (2, 10,6,'Onboarded', 'Employee is currently
onboarded in this branch and department');

INSERT INTO BRANCH_DEPARTMENT VALUES (2, 10,7,'Onboarded', 'Employee is currently
onboarded in this branch and department');

INSERT INTO BRANCH_DEPARTMENT VALUES (2, 10,8,'Onboarded', 'Employee is currently
onboarded in this branch and department');

INSERT INTO BRANCH_DEPARTMENT VALUES (1, 8,9,'Onboarded', 'Employee is currently
onboarded in this branch and department');

INSERT INTO BRANCH_DEPARTMENT VALUES (3, 8,10,'Onboarded', 'Employee is currently
onboarded in this branch and department');

INSERT INTO BRANCH_DEPARTMENT VALUES (3, 2,11,'Onboarded', 'Employee is currently
onboarded in this branch and department');

INSERT INTO BRANCH_DEPARTMENT VALUES (3, 2,12,'Onboarded', 'Employee is currently
onboarded in this branch and department');

INSERT INTO BRANCH_DEPARTMENT VALUES (1, 10,13,'Onboarded', 'Employee is currently
onboarded in this branch and department');

INSERT INTO BRANCH_DEPARTMENT VALUES (2, 10,14,'Onboarded', 'Employee is currently
onboarded in this branch and department');

INSERT INTO BRANCH_DEPARTMENT VALUES (3, 4,15,'Onboarded', 'Employee is currently
onboarded in this branch and department');

INSERT INTO BRANCH_DEPARTMENT VALUES (3, 4,16,'Onboarded', 'Employee is currently
onboarded in this branch and department');

INSERT INTO BRANCH_DEPARTMENT VALUES (2, 10,17,'Onboarded', 'Employee is currently
onboarded in this branch and department');

INSERT INTO BRANCH_DEPARTMENT VALUES (2, 8,18,'Onboarded', 'Employee is currently
onboarded in this branch and department');

INSERT INTO BRANCH_DEPARTMENT VALUES (1, 10,19,'Offboarded', 'Employee is all cleared
out');

INSERT INTO BRANCH_DEPARTMENT VALUES (1, 10,20,'Offboarded', 'Employee is all cleared
out');

INSERT INTO BRANCH_DEPARTMENT VALUES (1, 10,21,'Onboarded', 'Employee is currently
onboarded in this branch and department');

INSERT INTO BRANCH_DEPARTMENT VALUES (1, 10,22,'Onboarded', 'Employee is currently
onboarded in this branch and department');

INSERT INTO BRANCH_DEPARTMENT VALUES (1, 10,23,'Onboarded', 'Employee is currently
onboarded in this branch and department');

INSERT INTO BRANCH_DEPARTMENT VALUES (2, 10,24,'Onboarded', 'Employee is currently
onboarded in this branch and department');

INSERT INTO BRANCH_DEPARTMENT VALUES (1, 8,25,'Onboarded', 'Employee is currently
onboarded in this branch and department');

INSERT INTO BRANCH_DEPARTMENT VALUES (2, 8,26,'Onboarded', 'Employee is currently
onboarded in this branch and department');
```



```
INSERT INTO BRANCH_DEPARTMENT VALUES (1, 10,27,'Onboarded', 'Employee is currently onboarded in this branch and department');
```

```
INSERT INTO BRANCH_DEPARTMENT VALUES (4, 10,28,'Onboarded', 'Employee is currently onboarded in this branch and department');
```

```
INSERT INTO BRANCH_DEPARTMENT VALUES (4, 10,29,'Onboarded', 'Employee is currently onboarded in this branch and department');
```

```
INSERT INTO BRANCH_DEPARTMENT VALUES (4, 8,30,'Onboarded', 'Employee is currently onboarded in this branch and department');
```

```
INSERT INTO BRANCH_DEPARTMENT VALUES (4, 10,31,'Onboarded', 'Employee is currently onboarded in this branch and department');
```

```
INSERT INTO BRANCH_DEPARTMENT VALUES (4, 10,32,'Onboarded', 'Employee is currently onboarded in this branch and department');
```

```
INSERT INTO BRANCH_DEPARTMENT VALUES (4, 8,33,'Onboarded', 'Employee is currently onboarded in this branch and department');
```

```
INSERT INTO BRANCH_DEPARTMENT VALUES (5, 10,34,'Onboarded', 'Employee is currently onboarded in this branch and department');
```

```
INSERT INTO BRANCH_DEPARTMENT VALUES (5, 10,35,'Onboarded', 'Employee is currently onboarded in this branch and department');
```

```
INSERT INTO BRANCH_DEPARTMENT VALUES (5, 8,36,'Onboarded', 'Employee is currently onboarded in this branch and department');
```

```
INSERT INTO BRANCH_DEPARTMENT VALUES (5, 10,37,'Onboarded', 'Employee is currently onboarded in this branch and department');
```

```
INSERT INTO BRANCH_DEPARTMENT VALUES (5, 10,38,'Onboarded', 'Employee is currently onboarded in this branch and department');
```

```
INSERT INTO BRANCH_DEPARTMENT VALUES (5, 8,39,'Onboarded', 'Employee is currently onboarded in this branch and department');
```

```
INSERT INTO BRANCH_DEPARTMENT VALUES (5, 10,40,'Onboarded', 'Employee is currently onboarded in this branch and department');
```

```
INSERT INTO BRANCH_DEPARTMENT VALUES (5, 10,41,'Onboarded', 'Employee is currently onboarded in this branch and department');
```

```
INSERT INTO BRANCH_DEPARTMENT VALUES (5, 8,42,'Onboarded', 'Employee is currently onboarded in this branch and department');
```

-- Insertion of Employee Position Data --

```
INSERT INTO POSITION VALUES (1,1,'08/13/2018',NULL,'Full Time');
```

```
INSERT INTO POSITION VALUES (2,3,'12/23/2021',NULL,'Full Time');
```

```
INSERT INTO POSITION VALUES (2,2,'08/26/2022',NULL,'Full Time');
```

```
INSERT INTO POSITION VALUES (3,3,'02/19/2018',NULL,'Full Time');
```

```
INSERT INTO POSITION VALUES (4,4,'06/29/2022',NULL,'Full Time');
```

```
INSERT INTO POSITION VALUES (5,6,'08/15/2018',NULL,'Full Time');
```

```
INSERT INTO POSITION VALUES (6,7,'05/18/2021',NULL,'Full Time');
```

```
INSERT INTO POSITION VALUES (7,8,'01/02/2018',NULL,'Contract');
```

```
INSERT INTO POSITION VALUES (8,9,'06/13/2019',NULL,'Full Time');
```

```
INSERT INTO POSITION VALUES (9,10,'04/20/2018',NULL,'Full Time');
```

```
INSERT INTO POSITION VALUES (10,11,'02/22/2018',NULL,'Full Time');
```

```
INSERT INTO POSITION VALUES (12,12,'09/12/2018',NULL,'Full Time');
```

```
INSERT INTO POSITION VALUES (11,13,'11/30/2019',NULL,'Full Time');
```

```
INSERT INTO POSITION VALUES (16,14,'10/08/2019',NULL,'Full Time');
```

```

INSERT INTO POSITION VALUES (15,15,'03/16/2020',NULL,'Full Time');
INSERT INTO POSITION VALUES (17,8,'09/06/2022',NULL,'Contract');
INSERT INTO POSITION VALUES (13,8,'11/12/2018','10/09/2020','Contract');
INSERT INTO POSITION VALUES (19,8,'01/11/2019','03/11/2022','Contract');
INSERT INTO POSITION VALUES (20,8,'06/24/2021',NULL,'Contract');
INSERT INTO POSITION VALUES (13,11,'12/06/2021',NULL,'Full Time');
INSERT INTO POSITION VALUES (14,10,'02/08/2019',NULL,'Full Time');
INSERT INTO POSITION VALUES (14,6,'10/01/2021',NULL,'Full Time');
INSERT INTO POSITION VALUES (21,6,'08/15/2018',NULL,'Full Time');
INSERT INTO POSITION VALUES (22,9,'08/15/2018',NULL,'Full Time');
INSERT INTO POSITION VALUES (23,8,'09/04/2019',NULL,'Contract');
INSERT INTO POSITION VALUES (24,8,'07/08/2019',NULL,'Contract');
INSERT INTO POSITION VALUES (25,10,'06/07/2018',NULL,'Contract');
INSERT INTO POSITION VALUES (26,10,'08/03/2019',NULL,'Contract');
INSERT INTO POSITION VALUES (27,6,'01/11/2018',NULL,'Full Time');
INSERT INTO POSITION VALUES (28,7,'02/01/2019',NULL,'Full Time');
INSERT INTO POSITION VALUES (29,9,'02/13/2019',NULL,'Full Time');
INSERT INTO POSITION VALUES (30,10,'03/04/2019',NULL,'Full Time');
INSERT INTO POSITION VALUES (31,7,'03/08/2019',NULL,'Full Time');
INSERT INTO POSITION VALUES (32,9,'03/22/2019',NULL,'Full Time');
INSERT INTO POSITION VALUES (33,10,'04/04/2019',NULL,'Full Time');
INSERT INTO POSITION VALUES (34,7,'05/02/2019',NULL,'Full Time');
INSERT INTO POSITION VALUES (35,9,'05/03/2019',NULL,'Full Time');
INSERT INTO POSITION VALUES (36,10,'05/30/2019',NULL,'Full Time');
INSERT INTO POSITION VALUES (37,7,'06/07/2019',NULL,'Full Time');
INSERT INTO POSITION VALUES (38,9,'07/16/2019',NULL,'Full Time');
INSERT INTO POSITION VALUES (39,10,'08/21/2019',NULL,'Full Time');
INSERT INTO POSITION VALUES (40,7,'09/02/2019',NULL,'Full Time');
INSERT INTO POSITION VALUES (41,9,'09/23/2019',NULL,'Full Time');
INSERT INTO POSITION VALUES (42,10,'10/07/2019',NULL,'Full Time');

-- Insertion of Client Data --
INSERT INTO CLIENT VALUES ('Bell','8663102355','contactus@bell.ca','1383 Wilson Rd N #8')
INSERT INTO CLIENT VALUES ('Air Canada','8882472262','contactus@aircanada.ca','1273 Air Canada Centre')
INSERT INTO CLIENT VALUES ('People's Group','8006630324','contactus@peoplesgroup.ca','95 Wellington St W Suite 1310, Toronto, ON M5J 2N7')
INSERT INTO CLIENT VALUES ('Tim Hortons','8886011616','contactus@timhortons.ca','4150 Tuller Road, Suite 236, Dublin')
INSERT INTO CLIENT VALUES ('President's Choice','8662467262','contactus@pchoice.ca','500 Lake Shore Blvd W Suite 600 Toronto, ON')
INSERT INTO CLIENT VALUES ('Scotiabank ','4167017200','contactus@scotiabank.ca','44 King Street West, Scotia Plaza 8th Floor, Toronto, ON')

```

```
INSERT INTO CLIENT VALUES ('Hudson''s Bay Company
','8005212364','contactus@hbaycompany.ca','Brampton, 8925 Torbram Rd. HQ')

INSERT INTO CLIENT VALUES ('Walmart','8003280402','contactus@walmart.ca','1940 Argentia
Rd, Mississauga, ON L5N 1P9, Canada')

INSERT INTO CLIENT VALUES ('Dollarama ','8883654266','contactus@dollarama.ca','5805
Royalmount Avenue Montreal, Quebec H4P 0A1')

INSERT INTO CLIENT VALUES ('Winners','8006469466','contactus@winners.ca',' 60 Standish
Court Mississauga, ON L5R 0G1')

INSERT INTO CLIENT VALUES ('Canadian Tire','8003878803','contactus@canadiantire.ca','2180
Yonge Street, Toronto, ON M4P 2V8, Canada')

INSERT INTO CLIENT VALUES ('CTV 2','4163845000','contactus@ctv2.ca','33 Beacon Road
Barrie, ON L4N 9J9')

INSERT INTO CLIENT VALUES ('Bath & Body Works','8886846412','contactus@b&bworks.ca','
4875 Marc-Blain, Suite 201. Saint-Laurent, Québec. H4R 3B2')

INSERT INTO CLIENT VALUES ('Chipotle','8338600467','contactus@chipotle.ca','610 Newport
Center Drive, Suite 1100. Newport Beach, CA 92660')

INSERT INTO CLIENT VALUES ('Circle K','8002685574','contactus@circlek.ca','7749 Kennedy
Rd Markham, ON, L3R 0L7 Canada')

INSERT INTO CLIENT VALUES ('Shopify','8886463579','contactus@shopify.ca','150 Elgin
Street 8th Floor Ottawa, ON K2P 1L4 Canada')

INSERT INTO CLIENT VALUES ('Amazon','8772235127','contactus@amazon.ca',' 410 Terry Ave N,
Seattle 98109, WA')

INSERT INTO CLIENT VALUES ('Ali Express','5222155100','contactus@aliexpress.ca','Hangzhou
Shi, 1818-2 Wenyi W Rd, Yuhang Qu')

INSERT INTO CLIENT VALUES ('Evernorth','8008532713','contactus@evernorth.ca',' Express
Way Saint Louis, MO 63121')

INSERT INTO CLIENT VALUES ('Best Buy','8662378289','contactus@bestbuy.ca','7601 Penn Ave
S. Richfield, MN 55423')

-- Insertion of Product Data --

INSERT INTO PRODUCT VALUES ('Application Services','Software solutions that improve the
speed, security, and operability of applications','TECH','Agile Transformation');

INSERT INTO PRODUCT VALUES ('Artificial Intelligence','The simulation of human
intelligence processes by machines','TECH','Solutions.AI, Data-led Transformation,
Responsible AI');

INSERT INTO PRODUCT VALUES ('Automation','The use of software and systems to perform
automated processes and tasks, replacing the manual work of IT
professionals.','TECH','Handle tasks and processes, Quick responses , Improve workflow');

INSERT INTO PRODUCT VALUES ('Business Process Outsourcing','It is the delegation of one
or more IT-intensive business processes','INNOV','Cost savings, Pricing, Resources and
Technology');

INSERT INTO PRODUCT VALUES ('Business Strategy','An organizational master
plan','INNOV','Current state section, Future state section, Strategic plan section,
Executive summary');

INSERT INTO PRODUCT VALUES ('Change Management','Designed to minimize disruptions to IT
services while making changes to critical systems and services','INNOV','Prepare the
Organization for Change');

INSERT INTO PRODUCT VALUES ('Cloud','The ability to store and access data and programs
over the internet instead of on a hard drive','TECH','On-demand self-service');

INSERT INTO PRODUCT VALUES ('Data & Analytics','The management of data for all uses
(operational and analytical)','TECH','Data cleaning and preparation, Data analysis and
exploration');
```

```
INSERT INTO PRODUCT VALUES ('Digital Commerce','The process of buying things online
without human intervention','INNOV','Payment Systems, Mobile,Friendly Website and
Storefront');

INSERT INTO PRODUCT VALUES ('Digital Engineering & Manuf','Technology-based approach to
production that links different data silos','INNOV','Product life cycle, smart factory,
value chain management');

INSERT INTO PRODUCT VALUES ('Ecosystem Services','Ecosystems provide many of the basic
services that make life possible for people.','INNOV','Energy Flow, Water Cycle, Nutrient
Cycle, Community Dynamics.');
```

```
INSERT INTO PRODUCT VALUES ('Finance Technology Consulting','Financial consultants
provide internally-focused financial advice to corporations.','INNOV','Advise clients on
a range of financial services and decisions');

INSERT INTO PRODUCT VALUES ('Infrastructure','System of hardware, software, facilities
and service components that support the delivery of business systems and IT-enabled
processes','TECH','Computing performance, Storage capacity');

INSERT INTO PRODUCT VALUES ('IT Security','Cyber Security is a set of techniques that are
used to protect internet-connected systems','TECH','Authentication and password
management');

INSERT INTO PRODUCT VALUES ('Game Development','Offers creation games of different
genres','INNOV','Develop new games');

INSERT INTO PRODUCT VALUES ('Digital Marketing','Marketing is the activity, set of
institutions, and processes for creating, communicating','CUST_EXP','Identify the Target
Market, Benefits and Advantages of the Product');

INSERT INTO PRODUCT VALUES ('Metaverse ','A hypothetical iteration of the Internet as a
single, universal and immersive virtual world','INNOV','Storage: SSD Only, Graphics Card:
4 GB graphic card, CPU: Min 3.5 GHz, File Size: 8 GB, 144 GHz');

INSERT INTO PRODUCT VALUES ('Supply Chain Management','Management of the flow of goods,
data, and finances related to a product or service','INNOV','Monitoring and Planning');

INSERT INTO PRODUCT VALUES ('Sustainability','In the broadest sense, sustainability
refers to the ability to maintain or support a process continuously over
time','INNOV','Sustainable design, durability, energy efficiency, waste reduction, ');

INSERT INTO PRODUCT VALUES ('Technology Innovation','A technological innovation is a new
or improved product or process whose technological characteristics are significantly
different from before.','TECH','Objectives and goals of the new design');
```

```
-- Insertion of Project Data --

INSERT INTO PROJECT VALUES ('Rubic','Completed','09/10/2018','06/13/2019',3);

INSERT INTO PROJECT VALUES ('Bullet Train','Completed','09/23/2018','08/02/2019',16);

INSERT INTO PROJECT VALUES ('Gonna Bell!','Completed','10/22/2018','11/11/2018',1);

INSERT INTO PROJECT VALUES ('HRIS','Completed','11/15/2018','11/30/2019',6);

INSERT INTO PROJECT VALUES ('Novartis','Completed','05/06/2019','03/16/2020',19);

INSERT INTO PROJECT VALUES ('HOPE','Completed','05/16/2019','08/10/2019',19);

INSERT INTO PROJECT VALUES ('B&B Customer
Feedback','Completed','11/16/2020','05/18/2021',13);

INSERT INTO PROJECT VALUES ('Next Gen Bell','Completed','07/21/2021','05/11/2022',1);

INSERT INTO PROJECT VALUES ('HIMMS','Ongoing','10/13/2021',NULL,19);

INSERT INTO PROJECT VALUES ('Reinvent Bell','Ongoing','10/18/2021',NULL,1);

INSERT INTO PROJECT VALUES ('Medical Hope Solution','Ongoing','01/03/2022',NULL,19);

INSERT INTO PROJECT VALUES ('Self-Checkout','Completed','02/07/2022','06/29/2022',4);

INSERT INTO PROJECT VALUES ('Tims Customer
Feedback','Completed','02/21/2022','09/03/2022',4);

INSERT INTO PROJECT VALUES ('Reinvent Tim Horton's App','Ongoing','03/21/2022',NULL,4);
```

```
INSERT INTO PROJECT VALUES ('Air Chat Automation','Ongoing','05/09/2022',NULL,2);
INSERT INTO PROJECT VALUES ('Air CA Web Feedback','Ongoing','10/03/2022',NULL,2);
INSERT INTO PROJECT VALUES ('Kokoda','NotStarted','7/5/2023',NULL,5);
INSERT INTO PROJECT VALUES ('Kazamm','NotStarted','7/5/2023',NULL,6);
INSERT INTO PROJECT VALUES ('Zydus','NotStarted','7/5/2023',NULL,9);
INSERT INTO PROJECT VALUES ('E-Node','NotStarted','7/5/2023',NULL,10);
INSERT INTO PROJECT VALUES ('Constraint Test','NotStarted','7/5/2023',NULL,10);
INSERT INTO PROJECT VALUES ('Constraint Test2','NotStarted','7/5/2023',NULL,10);
```

-- Insertion of Payment Data --

```
INSERT INTO PAYMENT VALUES (45000,'wire_transfer','06/13/2019','Success',1);
INSERT INTO PAYMENT VALUES (90000,'wire_transfer','08/02/2019','Success',2);
INSERT INTO PAYMENT VALUES (34000,'direct_deposite','11/11/2018','Success',3);
INSERT INTO PAYMENT VALUES (30000,'credit_card','11/30/2019','Success',4);
INSERT INTO PAYMENT VALUES (34000,'credit_card','03/16/2020','Success',5);
INSERT INTO PAYMENT VALUES (25000,'cheque','08/10/2019','Success',6);
INSERT INTO PAYMENT VALUES (30000,'cheque','05/18/2021','Success',7);
INSERT INTO PAYMENT VALUES (50000,'direct_deposite','05/11/2022','Success',8);
INSERT INTO PAYMENT VALUES (36000,'credit_card',NULL,'Ongoing',9);
INSERT INTO PAYMENT VALUES (45000,'cheque',NULL,'Ongoing',10);
INSERT INTO PAYMENT VALUES (50000,'wire_transfer',NULL,'Ongoing',11);
INSERT INTO PAYMENT VALUES (20000,'cheque','06/29/2022','Success',12);
INSERT INTO PAYMENT VALUES (35000,'credit_card','09/03/2022','Success',13);
INSERT INTO PAYMENT VALUES (40000,'direct_deposite',NULL,'Ongoing',14);
INSERT INTO PAYMENT VALUES (30000,'credit_card',NULL,'Ongoing',15);
INSERT INTO PAYMENT VALUES (28000,'cheque',NULL,'Ongoing',16);
INSERT INTO PAYMENT VALUES (44000,'credit_card',NULL,'NotStarted',17);
INSERT INTO PAYMENT VALUES (37000,'credit_card',NULL,'NotStarted',18);
INSERT INTO PAYMENT VALUES (60000,'wire_transfer',NULL,'NotStarted',19);
INSERT INTO PAYMENT VALUES (36000,'direct_deposite',NULL,'NotStarted',20);
```

-- Insertion of Job History Data --

```
INSERT INTO JOB_HISTORY VALUES (1,'08/13/2018',50000,NULL,1);
INSERT INTO JOB_HISTORY VALUES (2,'12/23/2021',8333.33,'08/25/2022',3);
INSERT INTO JOB_HISTORY VALUES (2,'08/26/2022',12166.67,NULL,2);
INSERT INTO JOB_HISTORY VALUES (3,'02/19/2018',8000,NULL,3);
INSERT INTO JOB_HISTORY VALUES (4,'08/15/2018',12500,NULL,4);
INSERT INTO JOB_HISTORY VALUES (5,'03/09/2022',12833.33,NULL,6);
INSERT INTO JOB_HISTORY VALUES (6,'05/18/2021',9166.67,NULL,7);
INSERT INTO JOB_HISTORY VALUES (7,'01/02/2018',5833.33,NULL,8);
INSERT INTO JOB_HISTORY VALUES (8,'06/13/2019',8333.33,NULL,9);
INSERT INTO JOB_HISTORY VALUES (9,'04/20/2018',8833.33,NULL,10);
```

```
INSERT INTO JOB_HISTORY VALUES (10, '02/22/2018', 5833.33, NULL, 11);
INSERT INTO JOB_HISTORY VALUES (12, '09/12/2018', 5833.33, NULL, 12);
INSERT INTO JOB_HISTORY VALUES (11, '11/30/2019', 7500, NULL, 13);
INSERT INTO JOB_HISTORY VALUES (16, '10/08/2019', 7500, NULL, 14);
INSERT INTO JOB_HISTORY VALUES (15, '03/16/2020', 7500, NULL, 15);
INSERT INTO JOB_HISTORY VALUES (17, '09/06/2022', 5833.33, NULL, 8);
INSERT INTO JOB_HISTORY VALUES (13, '11/12/2018', 5833.33, '10/09/2020', 8);
INSERT INTO JOB_HISTORY VALUES (19, '01/11/2019', 5833.33, '03/11/2022', 8);
INSERT INTO JOB_HISTORY VALUES (20, '06/24/2021', 5833.33, NULL, 8);
INSERT INTO JOB_HISTORY VALUES (13, '12/06/2021', 5833.33, NULL, 11);
INSERT INTO JOB_HISTORY VALUES (14, '02/08/2019', 8000, '10/08/2021', 10);
INSERT INTO JOB_HISTORY VALUES (14, '10/01/2021', 13000, NULL, 6);
INSERT INTO JOB_HISTORY VALUES (21, '08/15/2018', 12833.33, NULL, 6);
INSERT INTO JOB_HISTORY VALUES (22, '08/15/2018', 8333.33, NULL, 9);
INSERT INTO JOB_HISTORY VALUES (23, '09/04/2019', 5833.33, NULL, 8);
INSERT INTO JOB_HISTORY VALUES (24, '07/08/2019', 5833.33, NULL, 8);
INSERT INTO JOB_HISTORY VALUES (25, '06/07/2018', 5833.33, NULL, 10);
INSERT INTO JOB_HISTORY VALUES (26, '08/03/2019', 5833.33, NULL, 10);
INSERT INTO JOB_HISTORY VALUES (27, '01/11/2018', 12833.33, NULL, 6);
INSERT INTO JOB_HISTORY VALUES (28, '02/01/2019', 9166.67, NULL, 7);
INSERT INTO JOB_HISTORY VALUES (29, '02/13/2019', 8333.33, NULL, 9);
INSERT INTO JOB_HISTORY VALUES (30, '03/04/2019', 8833.33, NULL, 10);
INSERT INTO JOB_HISTORY VALUES (31, '03/08/2019', 9166.67, NULL, 7);
INSERT INTO JOB_HISTORY VALUES (32, '03/22/2019', 8333.33, NULL, 9);
INSERT INTO JOB_HISTORY VALUES (33, '04/04/2019', 8833.33, NULL, 10);
INSERT INTO JOB_HISTORY VALUES (34, '05/02/2019', 9166.67, NULL, 7);
INSERT INTO JOB_HISTORY VALUES (35, '05/03/2019', 8333.33, NULL, 9);
INSERT INTO JOB_HISTORY VALUES (36, '05/30/2019', 8833.33, NULL, 10);
INSERT INTO JOB_HISTORY VALUES (37, '06/07/2019', 9166.67, NULL, 7);
INSERT INTO JOB_HISTORY VALUES (38, '07/16/2019', 8333.33, NULL, 9);
INSERT INTO JOB_HISTORY VALUES (39, '08/21/2019', 8833.33, NULL, 10);
INSERT INTO JOB_HISTORY VALUES (40, '09/02/2019', 9166.67, NULL, 7);
INSERT INTO JOB_HISTORY VALUES (41, '09/23/2019', 8333.33, NULL, 9);
INSERT INTO JOB_HISTORY VALUES (42, '10/07/2019', 8833.33, NULL, 10);
```

-- Insertion of Employee Project Data --

```
INSERT INTO EMPLOYEE_PROJECT VALUES (21, 1, 8, '09/10/2018', '06/13/2019' );
INSERT INTO EMPLOYEE_PROJECT VALUES (9, 1, 8, '09/10/2018', '06/13/2019' );
INSERT INTO EMPLOYEE_PROJECT VALUES (7, 2, 8, '09/23/2018', '08/02/2019' );
INSERT INTO EMPLOYEE_PROJECT VALUES (9, 2, 8, '09/23/2018', '08/02/2019' );
INSERT INTO EMPLOYEE_PROJECT VALUES (22, 3, 8, '10/22/2018', '11/11/2018' );
INSERT INTO EMPLOYEE_PROJECT VALUES (25, 3, 8, '10/22/2018', '11/11/2018' );
```



```
INSERT INTO EMPLOYEE_PROJECT VALUES (22,4,8,'11/15/2018','11/30/2019' );
INSERT INTO EMPLOYEE_PROJECT VALUES (25,4,8,'11/15/2018','11/30/2019' );
INSERT INTO EMPLOYEE_PROJECT VALUES (8,5,8,'05/06/2019','03/16/2020' );
INSERT INTO EMPLOYEE_PROJECT VALUES (25,5,8,'05/06/2019','03/16/2020' );
INSERT INTO EMPLOYEE_PROJECT VALUES (26,5,8,'05/06/2019','03/16/2020' );
INSERT INTO EMPLOYEE_PROJECT VALUES (23,6,8,'05/16/2019','08/10/2019' );
INSERT INTO EMPLOYEE_PROJECT VALUES (19,6,8,'05/16/2019','08/10/2019' );
INSERT INTO EMPLOYEE_PROJECT VALUES (21,7,8,'11/16/2020','05/18/2021' );
INSERT INTO EMPLOYEE_PROJECT VALUES (9,7,8,'11/16/2020','05/18/2021' );
INSERT INTO EMPLOYEE_PROJECT VALUES (7,8,8,'07/21/2021','05/11/2022' );
INSERT INTO EMPLOYEE_PROJECT VALUES (9,8,8,'07/21/2021','05/11/2022' );
INSERT INTO EMPLOYEE_PROJECT VALUES (22,8,8,'07/21/2021','05/11/2022' );
INSERT INTO EMPLOYEE_PROJECT VALUES (6,9,8,'10/13/2021',NULL);
INSERT INTO EMPLOYEE_PROJECT VALUES (25,9,8,'10/13/2021',NULL);
INSERT INTO EMPLOYEE_PROJECT VALUES (28,10,8,'10/18/2021',NULL);
INSERT INTO EMPLOYEE_PROJECT VALUES (29,10,8,'10/18/2021',NULL);
INSERT INTO EMPLOYEE_PROJECT VALUES (30,10,8,'10/18/2021',NULL);
INSERT INTO EMPLOYEE_PROJECT VALUES (31,11,8,'01/03/2022',NULL);
INSERT INTO EMPLOYEE_PROJECT VALUES (32,11,8,'01/03/2022',NULL);
INSERT INTO EMPLOYEE_PROJECT VALUES (33,11,8,'01/03/2022',NULL);
INSERT INTO EMPLOYEE_PROJECT VALUES (23,12,8,'02/07/2022','06/29/2022' );
INSERT INTO EMPLOYEE_PROJECT VALUES (19,12,8,'02/07/2022','06/29/2022' );
INSERT INTO EMPLOYEE_PROJECT VALUES (21,13,8,'02/21/2022','09/03/2022' );
INSERT INTO EMPLOYEE_PROJECT VALUES (34,14,8,'03/21/2022',NULL);
INSERT INTO EMPLOYEE_PROJECT VALUES (35,14,8,'03/21/2022',NULL);
INSERT INTO EMPLOYEE_PROJECT VALUES (36,14,8,'03/21/2022',NULL);
INSERT INTO EMPLOYEE_PROJECT VALUES (37,15,8,'05/09/2022',NULL);
INSERT INTO EMPLOYEE_PROJECT VALUES (38,15,8,'05/09/2022',NULL);
INSERT INTO EMPLOYEE_PROJECT VALUES (39,15,8,'05/09/2022',NULL);
INSERT INTO EMPLOYEE_PROJECT VALUES (40,16,8,'10/03/2022',NULL);
INSERT INTO EMPLOYEE_PROJECT VALUES (41,16,8,'10/03/2022',NULL);
INSERT INTO EMPLOYEE_PROJECT VALUES (42,16,8,'10/03/2022',NULL);
INSERT INTO EMPLOYEE_PROJECT VALUES (1,17,0,'07/05/2023',NULL);
INSERT INTO EMPLOYEE_PROJECT VALUES (1,18,0,'07/05/2023',NULL);
INSERT INTO EMPLOYEE_PROJECT VALUES (1,19,0,'07/05/2023',NULL);

-- Insertion of Invoice Data --
INSERT INTO INVOICE VALUES (1, '06/13/2019', 'Adjustment', 'Due upon receipt');
INSERT INTO INVOICE VALUES (2, '08/02/2019', 'Normal', 'Due upon receipt');
INSERT INTO INVOICE VALUES (1, '11/11/2018', 'Normal', 'Due upon receipt');
INSERT INTO INVOICE VALUES (2, '11/30/2019', 'Normal', 'Due upon receipt');
INSERT INTO INVOICE VALUES (2, '03/16/2020', 'Normal', 'Due upon receipt');
```

```
INSERT INTO INVOICE VALUES (1, '08/10/2019', 'Normal', 'Due upon receipt');
INSERT INTO INVOICE VALUES (2, '05/18/2021', 'Normal', 'Due upon receipt');
INSERT INTO INVOICE VALUES (2, '05/11/2022', 'Normal', 'Due upon receipt');
INSERT INTO INVOICE VALUES (2, '06/29/2022', 'Refund', 'Due upon receipt');
INSERT INTO INVOICE VALUES (4, '09/03/2022', 'Adjustment', 'Due upon receipt');
```

-- Insertion of Product Project Data --

```
INSERT INTO ORDERS VALUES (11,1,45000,NULL,'Satisfied',3);
INSERT INTO ORDERS VALUES (3,2,90000,NULL,'Satisfied',NULL);
INSERT INTO ORDERS VALUES (1,3,34000,NULL,'Satisfied',1);
INSERT INTO ORDERS VALUES (4,4,30300,0.0001,'Satisfied',6);
INSERT INTO ORDERS VALUES (14,5,37400,0.1,'Satisfied',NULL);
INSERT INTO ORDERS VALUES (14,6,26250,0.5,'Satisfied',NULL);
INSERT INTO ORDERS VALUES (5,7,36000,0.2,'Satisfied',NULL);
INSERT INTO ORDERS VALUES (2,8,50000,NULL,'Satisfied',1);
INSERT INTO ORDERS VALUES (4,9,36000,NULL,NULL, NULL);
INSERT INTO ORDERS VALUES (5,10,45000,NULL,NULL, 1);
INSERT INTO ORDERS VALUES (6,11,50000,NULL,NULL, NULL);
INSERT INTO ORDERS VALUES (7,12,20000,NULL,'Satisfied',4);
INSERT INTO ORDERS VALUES (8,13,35000,NULL,'Satisfied', 4);
INSERT INTO ORDERS VALUES (9,14,40000,NULL,NULL, 4);
INSERT INTO ORDERS VALUES (10,15,30000,NULL,NULL, NULL);
INSERT INTO ORDERS VALUES (12,16,28000,NULL,NULL, NULL);
INSERT INTO ORDERS VALUES (15,17,44000,NULL,NULL, 5);
INSERT INTO ORDERS VALUES (16,18,37000,NULL,'Satisfied', 6);
INSERT INTO ORDERS VALUES (17,19,60000,NULL,'Satisfied', 9);
INSERT INTO ORDERS VALUES (18,20,36000,NULL,'Satisfied', 10);
```

DATABASE CONSTRAINT TESTING

-- Constraint Test 1

-- Date : 12/06/2022

-- Description: Inserting a NULL value on a NOT NULL column

-- Expected Result: Insert fails with Cannot insert the value NULL into column 'product_title' Error

-- Action:

```
INSERT INTO PRODUCT VALUES (NULL,'Software solutions that improve the speed,
security, and operability of applications','TECH','Agile Transformation');
```

-- Actual Result: Cannot insert the value NULL into column 'product_title', table 'LCS_DB.dbo.Product'; column does not allow nulls. INSERT fails. The statement has been terminated.

-- Constraint Test 2

-- Date : 12/06/2022

-- Description: Inserting a value on a column with default value

-- Expected Result: Insert fails with An explicit value for the identity column in table 'PRODUCT' can only be specified when a column list is used and IDENTITY_INSERT is ON Error

-- Action:

INSERT INTO PRODUCT VALUES (23, 'Product Name','Software solutions that improve the speed, security, and operability of applications','TECH','Agile Transformation');

-- Actual Result: An explicit value for the identity column in table 'PRODUCT' can only be specified when a column list is used and IDENTITY_INSERT is ON.

-- Constraint Test 3

-- Date : 12/06/2022

-- Description: Inserting an existing Product Title in Product Table

-- Expected Result: Insert fails with Violation of UNIQUE KEY constraint 'AK_product_title' Error

-- Action:

INSERT INTO PRODUCT VALUES ('Application Services','Software solutions that improve the speed, security, and operability of applications','TECH','Agile Transformation');

-- Actual Result: Violation of UNIQUE KEY constraint 'AK_product_title'. Cannot insert duplicate key in object 'dbo.Product'. The duplicate key value is (Application Services). The statement has been terminated.

-- Constraint Test 4

-- Date : 12/06/2022

-- Description: Inserting a unique Product Title in Product Table

-- Expected Result: Insert is successful. Message (1 row affected) is displayed

-- Action:

-- Inserting a unique Product Title in Product Table

-- Action:

INSERT INTO PRODUCT VALUES ('UniqueXX123','Software solutions that improve the speed, security, and operability of applications','TECH','Agile Transformation');

-- Actual Result: Insert is successful. Message (1 row affected) is displayed

-- Constraint Test 5

-- Date : 12/06/2022

-- Description: Inserting an existing zip in Branch Table

-- Expected Result: Insert fails with Violation of UNIQUE KEY constraint 'AK_zip' Error

-- Action:

INSERT INTO BRANCH VALUES ('S9H3W4','Toronto','ON','Canada', 'LCS Company');

-- Actual Result: Violation of UNIQUE KEY constraint 'AK_zip'. Cannot insert duplicate key in object 'dbo.Branch'. The duplicate key value is (S9H3W4). The statement has been terminated.

-- Constraint Test 6

-- Date : 12/06/2022

-- Description: Inserting a unique zip in Branch Table

-- Expected Result: Insert is successful. Message (1 row affected) is displayed

-- Action:

```
INSERT INTO BRANCH VALUES ('SX1234','Toronto','ON','Canada', 'LCS Company');
```

-- Actual Result: Insert is successful. Message (1 row affected) is displayed

-- Constraint Test 7

-- Date : 12/06/2022

-- Description: Inserting a non digit client mobile number in Client Table

-- Expected Result: Insert fails. The INSERT statement conflicted with the CHECK constraint "Client_CK_Mobile_Number"

-- Action:

```
INSERT INTO CLIENT VALUES ('Constraint Test','8663number','contactus@bell.ca','1383 Wilson Rd N #8')
```

-- Actual Result: The INSERT statement conflicted with the CHECK constraint "Client_CK_Mobile_Number". The conflict occurred in database "LCS_DB", table "dbo.Client", column 'client_mobile_number'.The statement has been terminated.

-- Constraint Test 8

-- Date : 12/06/2022

-- Description: Inserting a valid digit client mobile number in Client Table

-- Expected Result: Insert is successful. Message (1 row affected) is displayed

-- Action:

```
INSERT INTO CLIENT VALUES ('Constraint Test','4382903784','contactus@bell.ca','1383 Wilson Rd N #8')
```

-- Actual Result: Insert is successful. Message (1 row affected) is displayed

-- Constraint Test 9

-- Date : 12/06/2022

-- Description: Inserting an email without @ in Client Table

-- Expected Result: Insert fails. The INSERT statement conflicted with the CHECK constraint "Client_CK_email_address"

-- Action:

```
INSERT INTO CLIENT VALUES ('Constraint Test','4372602569','contactusbell.ca','1383 Wilson Rd N #8')
```

-- Actual Result: The INSERT statement conflicted with the CHECK constraint "Client_CK_email_address". The conflict occurred in database "LCS_DB", table "dbo.Client", column 'client_email_address'. The statement has been terminated.

-- Constraint Test 10

-- Date : 12/06/2022

-- Description: Inserting an email with @ in Client Table

-- Expected Result: Insert is successful. Message (1 row affected) is displayed

-- Action:

```
INSERT INTO CLIENT VALUES ('Constraint Test','4372602569','constraint@test.ca','1383 Wilson Rd N #8')
```

-- Actual Result: Insert is successful. Message (1 row affected) is displayed

```
-----  
-- Constraint Test 11  
-- Date : 12/06/2022  
-- Description: Inserting a project with end date older than start date  
-- Expected Result: Insert fails. The INSERT statement conflicted with the CHECK  
constraint "CK_start_date"  
-- Action:  
    INSERT INTO PROJECT VALUES ('Project  
Constraint','Completed','09/10/2020','06/13/2019',3);  
-- Actual Result: The INSERT statement conflicted with the CHECK constraint  
"CK_start_date". The conflict occurred in database "LCS_DB", table "dbo.Project". The  
statement has been terminated.  
  
-- Constraint Test 12  
-- Date : 12/06/2022  
-- Description: Inserting a project with start date older than end date  
-- Expected Result: Insert is successful. Message (1 row affected) is displayed  
-- Action:  
    INSERT INTO PROJECT VALUES ('Project  
Constraint','Completed','09/10/2019','06/13/2029',3);  
-- Actual Result: Insert is successful. Message (1 row affected) is displayed  
-----  
-- Constraint Test 13  
-- Date : 12/06/2022  
-- Description: Inserting a non digit department mobile number in Department Table  
-- Expected Result: Insert fails. The INSERT statement conflicted with the CHECK  
constraint "Department_CK_contact_number"  
-- Action:  
    INSERT INTO DEPARTMENT VALUES ('Constraint Department','Constraint  
Testing','417448abc','admindepartment@lcs.com')  
-- Actual Result: The INSERT statement conflicted with the CHECK constraint  
"Department_CK_contact_number". The conflict occurred in database "LCS_DB", table  
"dbo.Department", column 'dept_contact_number'.The statement has been terminated.  
  
-- Constraint Test 14  
-- Date : 12/06/2022  
-- Description: Inserting a valid digit department mobile number in Department Table  
-- Expected Result: Insert is successful. Message (1 row affected) is displayed  
-- Action:  
    INSERT INTO DEPARTMENT VALUES ('Constraint Department','Constraint  
Testing','4372605483','admindepartment@lcs.com')  
-- Actual Result: Insert is successful. Message (1 row affected) is displayed  
-----  
-- Constraint Test 15  
-- Date : 12/06/2022  
-- Description: Inserting an email without @ in Department Table
```

-- Expected Result: Insert fails. The INSERT statement conflicted with the CHECK constraint "Department_CK_email_id"

-- Action:

INSERT INTO DEPARTMENT VALUES ('Constraint Department ', 'Constraint Testing', '4174482839', 'admindepartmentlcs.com')

-- Actual Results: The INSERT statement conflicted with the CHECK constraint "Department_CK_email_id". The conflict occurred in database "LCS_DB", table "dbo.Department", column 'dept_email_id'. The statement has been terminated.

-- Constraint Test 16

-- Date : 12/06/2022

-- Description: Inserting an email with @ in Department Table

-- Expected Result: Insert is successful. Message (1 row affected) is displayed

-- Action:

INSERT INTO DEPARTMENT VALUES ('Constraint Department ', 'Constraint Testing', '4174482839', 'constraint@department.com')

-- Actual Result: Insert is successful. Message (1 row affected) is displayed

-- Constraint Test 17

-- Date : 12/06/2022

-- Description: Inserting an employee with hire date older than date of birth

-- Expected Result: Insert fails. The INSERT statement conflicted with the CHECK constraint "Employee_CK_hire_date"

-- Action:

INSERT INTO EMPLOYEE VALUES
('Leonard', NULL, 'Cooper', '10/09/1997', '2048211896', 'jaiden.abott@lcs.com', '08/13/1996', 463612901, NULL);

-- Actual Result: The INSERT statement conflicted with the CHECK constraint "Employee_CK_hire_date". The conflict occurred in database "LCS_DB", table "dbo.Employee". The statement has been terminated.

-- Constraint Test 18

-- Date : 12/06/2022

-- Description: Inserting an employee with date of birth older than hire date

-- Expected Result: Insert is successful. Message (1 row affected) is displayed

-- Action:

INSERT INTO EMPLOYEE VALUES
('Leonard', NULL, 'Cooper', '10/09/1996', '2048211896', 'jaiden.abott@lcs.com', '08/13/1997', 463612901, NULL);

-- Actual Result: Insert is successful. Message (1 row affected) is displayed

-- Constraint Test 19

-- Date : 12/06/2022

-- Description: Inserting a non digit employee mobile number in Employee Table

-- Expected Result: Insert fails. The INSERT statement conflicted with the CHECK constraint "Employee_CK_contact_number"

-- Action:

```
INSERT INTO EMPLOYEE VALUES
('Leonard','Mark','Cooper','10/09/1997','20482asdcg','jaiden.abott@lcs.com','08/13/2018',
463612590,NULL);
```

```
-- Actual Result: The INSERT statement conflicted with the CHECK constraint
"Employee_CK_contact_number". The conflict occurred in database "LCS_DB", table
"dbo.Employee", column 'contact_number'. The statement has been terminated.
```

```
-- Constraint Test 20
```

```
-- Date : 12/06/2022
```

```
-- Description: Inserting a valid digit employee mobile number in Employee Table
```

```
-- Expected Result: Insert is successful. Message (1 row affected) is displayed
```

```
-- Action:
```

```
INSERT INTO EMPLOYEE VALUES
('Leonard','Mark','Cooper','10/09/1997','4372605483','jaiden.abott@lcs.com','08/13/2018',
463612590,NULL);
```

```
-- Actual Result: Insert is successful. Message (1 row affected) is displayed
```

```
-- Constraint Test 21
```

```
-- Date : 12/06/2022
```

```
-- Description: Inserting an email without @ in Employee Table
```

```
-- Expected Result: Insert fails. The INSERT statement conflicted with the CHECK
constraint "Employee_CK_email_address"
```

```
-- Action:
```

```
INSERT INTO EMPLOYEE VALUES ('Leonard','Mark','Cooper
','10/09/1997','2048211896','jaiden.abottlcs.com','08/13/2018',463645590,NULL);
```

```
-- Actual Result: The INSERT statement conflicted with the CHECK constraint
"Employee_CK_email_address". The conflict occurred in database "LCS_DB", table
"dbo.Employee", column 'email_address'. The statement has been terminated.
```

```
-- Constraint Test 22
```

```
-- Date : 12/06/2022
```

```
-- Description: Inserting an email with @ in Employee Table
```

```
-- Expected Result: Insert is successful. Message (1 row affected) is displayed
```

```
-- Action:
```

```
INSERT INTO EMPLOYEE VALUES ('Leonard','Mark','Cooper
','10/09/1997','2048211896','leonardcooper@lcs.com','08/13/2018',463612523,NULL);
```

```
-- Actual Result: Insert is successful. Message (1 row affected) is displayed
```

```
-- Constraint Test 23
```

```
-- Date : 12/06/2022
```

```
-- Description: Inserting an existing SIN number in Employee Table
```

```
-- Expected Result: Insert fails. Violation of UNIQUE KEY constraint 'AK_sin'
```

```
-- Action:
```

```
INSERT INTO EMPLOYEE VALUES
('Leonard','Mark','Cooper','10/09/1997','2048211896','jaiden.abott@lcs.com','08/13/2018',
463612515,NULL);
```

-- Actual Result: Violation of UNIQUE KEY constraint 'AK_sin'. Cannot insert duplicate key in object 'dbo.Employee'. The duplicate key value is (463612515). The statement has been terminated.

-- Constraint Test 24

-- Date : 12/06/2022

-- Description: Inserting a unique SIN number in Employee Table

-- Expected Result: Insert is successful. Message (1 row affected) is displayed

-- Action:

```
INSERT INTO EMPLOYEE VALUES
('Leonard','Mark','Cooper','10/09/1997','2048211896','jaiden.abott@lcs.com','08/13/2018',
463612580,NULL);
```

-- Actual Result: Insert is successful. Message (1 row affected) is displayed

-- Constraint Test 25

-- Date : 12/06/2022

-- Description: Inserting greater than 8 hours allocated in Employee_Project Table

-- Expected Result: Insert fails.The INSERT statement conflicted with the CHECK constraint "Employee_ProjectCK_hours_allocated"

-- Action:

```
INSERT INTO EMPLOYEE_PROJECT VALUES (21,3,9,'09/10/2018','06/13/2019' );
```

-- Actual Result: The INSERT statement conflicted with the CHECK constraint "Employee_ProjectCK_hours_allocated". The conflict occurred in database "LCS_DB", table "dbo.Employee_Project", column 'hours_allocated'. The statement has been terminated.

-- Constraint Test 26

-- Date : 12/06/2022

-- Description: Inserting less than 8 hours allocated in Employee_Project Table

-- Expected Result: Insert is successful. Message (1 row affected) is displayed

-- Action:

```
INSERT INTO EMPLOYEE_PROJECT VALUES (21,2,6,'09/10/2018','06/13/2019' );
```

-- Actual Result: Insert is successful. Message (1 row affected) is displayed

-- Constraint Test 27

-- Date : 12/06/2022

-- Description: Inserting 8 hours allocated in Employee_Project Table

-- Expected Result: Insert is successful. Message (1 row affected) is displayed

-- Action:

```
INSERT INTO EMPLOYEE_PROJECT VALUES (21,4,8,'09/10/2018','06/13/2019' );
```

-- Actual Result: Insert is successful. Message (1 row affected) is displayed

-- Constraint Test 28

-- Date : 12/06/2022

-- Description: Inserting an existing job title in Job Table

-- Expected Result: Insert fails. Violation of UNIQUE KEY constraint 'AK_job_title'

-- Action:

```
INSERT INTO JOB VALUES ('Chief Executive Officer' , 'Responsible for managing a company's overall operations', 250, 300)
```

-- Actual Result: Violation of UNIQUE KEY constraint 'AK_job_title'. Cannot insert duplicate key in object 'dbo.Job'. The duplicate key value is (Chief Executive Officer). The statement has been terminated

-- Constraint Test 29

-- Date : 12/06/2022

-- Description: Inserting a unique job title in Job Table

-- Expected Result: Insert is successful. Message (1 row affected) is displayed

-- Action:

```
INSERT INTO JOB VALUES ('Secretary' , 'Assist the CEO', 250, 300)
```

-- Actual Result: Insert is successful. Message (1 row affected) is displayed

-- Constraint Test 30

-- Date : 12/06/2022

-- Description: Inserting a a job with min salary greater than max salary in Job Table

-- Expected Result: Insert fails. The INSERT statement conflicted with the CHECK constraint "Job_CK_min_salary"

-- Action:

```
INSERT INTO JOB VALUES ('Senior Associate' , 'Constraint Test', 350, 300)
```

-- Actual Result: The INSERT statement conflicted with the CHECK constraint "Job_CK_min_salary". The conflict occurred in database "LCS_DB", table "dbo.Job". The statement has been terminated

-- Constraint Test 31

-- Date : 12/06/2022

-- Description: Inserting a a job with min salary less than max salary in Job Table

-- Expected Result: Insert is successful. Message (1 row affected) is displayed

-- Action:

```
INSERT INTO JOB VALUES ('Junior Associate' , 'Constraint Test', 260, 500)
```

-- Actual Result: Insert is successful. Message (1 row affected) is displayed

-- Constraint Test 32

-- Date : 12/06/2022

-- Description: Inserting a job history with start date older than end date

-- Expected Result: Insert fails. The INSERT statement conflicted with the CHECK constraint "Job_History_CK_start_date"

-- Action:

```
INSERT INTO JOB_HISTORY VALUES (1, '08/13/2019', 50000, '05/13/2019', 1);
```

-- Actual Result: The INSERT statement conflicted with the CHECK constraint "Job_History_CK_start_date". The conflict occurred in database "LCS_DB", table "dbo.Job_History". The statement has been terminated.

-- Constraint Test 33

```
-- Date : 12/06/2022
-- Description: Inserting a job history with end date older than start date
-- Expected Result: Insert is successful. Message (1 row affected) is displayed
-- Action:
    INSERT INTO JOB_HISTORY VALUES (1,'05/13/2019',50000,'08/13/2019',1);
-- Actual Result: Insert is successful. Message (1 row affected) is displayed
-----

-- Constraint Test 34
-- Date : 12/06/2022
-- Description: Inserting payment amount that is less than 1000
-- Expected Result: Insert fails. The INSERT statement conflicted with the CHECK
constraint "Payment_CK_payment_amount"
-- Action:
    INSERT INTO PAYMENT VALUES (999,'wire_transfer','06/13/2019','Success',21);
-- Actual Result: The INSERT statement conflicted with the CHECK constraint
"Payment_CK_payment_amount". The conflict occurred in database "LCS_DB", table
"dbo.Payment", column 'payment_amount'. The statement has been terminated.

-- Constraint Test 35
-- Date : 12/06/2022
-- Description: Inserting payment amount that is greater than 1000
-- Expected Result: Insert is successful. Message (1 row affected) is displayed
-- Action:
    INSERT INTO PAYMENT VALUES (1001,'wire_transfer','06/13/2019','Success',21);
-- Actual Result: Insert is successful. Message (1 row affected) is displayed
-----

-- Constraint Test 36
-- Date : 12/06/2022
-- Description: Inserting payment to a project who already has a payment record
-- Expected Result: Insert fails. Violation of UNIQUE KEY constraint 'AK_project_id'
-- Action:
    INSERT INTO PAYMENT VALUES (5000,'wire_transfer','06/13/2019','Success',21);
-- Actual Result: Violation of UNIQUE KEY constraint 'AK_project_id'. Cannot insert
duplicate key in object 'dbo.Payment'. The duplicate key value is (21). The statement has
been terminated.

-- Constraint Test 37
-- Date : 12/06/2022
-- Description: Inserting payment to a project who don't have a payment record
-- Expected Result: Insert is successful. Message (1 row affected) is displayed
-- Action:
    INSERT INTO PAYMENT VALUES (5000,'wire_transfer','06/13/2019','Success',22);
-- Actual Result: Insert is successful. Message (1 row affected) is displayed
-----
```



```
-- Constraint Test 38

-- Date : 12/06/2022

-- Description: Inserting a branch department record for an employee that already has a
branch and department in Branch_Department Table

-- Expected Result: Insert fails. Violation of UNIQUE KEY constraint 'UK_emp_dep

-- Action:

INSERT INTO BRANCH_DEPARTMENT VALUES (2, 3,1,'Onboarded', 'Employee is currently
onboarded in this branch and department');

-- Actual Result: Violation of UNIQUE KEY constraint 'UK_emp_dep'. Cannot insert
duplicate key in object 'dbo.Branch_Department'. The duplicate key value is (3, 1). The
statement has been terminated.
```

```
-- Constraint Test 39

-- Date : 12/06/2022

-- Description: Inserting a branch department record for an employee that doesn't have a
branch and department in Branch_Department Table

-- Expected Result: Insert is successful. Message (1 row affected) is displayed

-- Action:

INSERT INTO BRANCH_DEPARTMENT VALUES (2, 3,42,'Onboarded', 'Employee is currently
onboarded in this branch and department');

-- Actual Result: Insert is successful. Message (1 row affected) is displayed
```

REPORTS

1. Report on all products

Description:

Column Name	Description
Product_id	Product identify
Product_title	Product title
Product_description	Product description
Product_type	Product type
Product_specification	Product specification

Result:

product_id	product_title	product_description	product_type	product_specification
1	Application Services	Software solutions that improve the speed, security...	TECH	Agile Transformation
2	Artificial Intelligence	The simulation of human intelligence processes b...	TECH	Solutions.AI, Data-led Transformation, Responsible AI
3	Automation	The use of software and systems to perform autom...	TECH	Handle tasks and processes, Quick responses , Improve workflow
4	Business Process Outsourcing	It is the delegation of one or more IT-intensive busi...	INNOV	Cost savings, Pricing, Resources and Technology
5	Business Strategy	An organizational master plan	INNOV	Current state section, Future state section, Strategic plan section, Executive summary
6	Change Management	Designed to minimize disruptions to IT services w...	INNOV	Prepare the Organization for Change
7	Cloud	The ability to store and access data and programs ...	TECH	On-demand self-service
8	Data & Analytics	The management of data for all uses (operational ...	TECH	Data cleaning and preparation, Data analysis and exploration
9	Digital Commerce	The process of buying things online without huma...	INNOV	Payment Systems, Mobile,Friendly Website and Storefront
10	Digital Engineering & Manuf	Technology-based approach to production that lin...	INNOV	Product life cycle, smart factory, value chain management
11	Ecosystem Services	Ecosystems provide many of the basic services th...	INNOV	Energy Flow, Water Cycle, Nutrient Cycle, Community Dynamics.
12	Finance Technology Consulting	Financial consultants provide internally-focused fin...	INNOV	Advise clients on a range of financial services and decisions
13	Infrastructure	System of hardware, software, facilities and service...	TECH	Computing performance, Storage capacity
14	IT Security	Cyber Security is a set of techniques that are used ...	TECH	Authentication and password management
15	Game Development	Offers creation games of different genres	INNOV	Develop new games
16	Digital Marketing	Marketing is the activity, set of institutions, and proc...	CUST_EXP	Identify the Target Market, Benefits and Advantages of the Product
17	Metaverse	A hypothetical iteration of the Internet as a single, u...	INNOV	Storage: SSD Only, Graphics Card: 4 GB graphic card, CPU: Min 3.5 GHz, File Size: 8 GB, 144 Ghz
18	Supply Chain Management	Management of the flow of goods, data, and financ...	INNOV	Monitoring and Planning
19	Sustainability	In the broadest sense, sustainability refers to the a...	INNOV	Sustainable design, durability, energy efficiency, waste reduction,
20	Technology Innovation	A technological innovation is a new or improved p...	TECH	Objectives and goals of the new design

SQL:

```
SELECT product_id, product_title, product_description, product_type,
product_specification FROM Product;
```

2. Report on all Clients

Description:

Column Name	Description
Client_id	Client identify
Client_name	Client name
Client_mobile_number	Client mobile number
Client_email_address	Client email address

Result:

100 %

Results

Messages

	client_id	client_name	client_mobile_number	client_email_address
1	1	Bell	8663102355	contactus@bell.ca
2	2	Air Canada	8882472262	contactus@aircanada.ca
3	3	People's Group	8006630324	contactus@peoplesgroup.ca
4	4	Tim Hortons	8886011616	contactus@timhortons.ca
5	5	President's Choice	8662467262	contactus@pchoice.ca
6	6	Scotiabank	4167017200	contactus@scotiabank.ca
7	7	Hudson's Bay Company	8005212364	contactus@hbaycompany.ca
8	8	Walmart	8003280402	contactus@walmart.ca
9	9	Dollarama	8883654266	contactus@dollarama.ca
10	10	Winners	8006469466	contactus@winners.ca
11	11	Canadian Tire	8003878803	contactus@canadiantire.ca
12	12	CTV 2	4163845000	contactus@ctv2.ca
13	13	Bath & Body Works	8886846412	contactus@b&bworks.ca
14	14	Chipotle	8338600467	contactus@chipotle.ca
15	15	Circle K	8002685574	contactus@circlek.ca
16	16	Shopify	8886463579	contactus@shopify.ca
17	17	Amazon	8772235127	contactus@amazon.ca
18	18	Ali Express	5222155100	contactus@aliexpress.ca
19	19	Evernorth	8008532713	contactus@evernorth.ca
20	20	Best Buy	8662378289	contactus@bestbuy.ca

SQL

SELECT client_id, client_name, client_mobile_number, client_email_address FROM Client;

3. Report on all Projects

Description:

Column Name	Description
Project_id	Project identify
Project_name	Project name
Project_status	Project status
Start_date	Start date
End_date	End date
Client_id	Client identify

Result:

100 %

	project_id	project_name	project_status	start_date	end_date	client_id
1	1	Rubic	Completed	2018-09-10	2019-06-13	3
2	2	Bullet Train	Completed	2018-09-23	2019-08-02	16
3	3	Gonna Bell!	Completed	2018-10-22	2018-11-11	1
4	4	HRIS	Completed	2018-11-15	2019-11-30	6
5	5	Novartis	Completed	2019-05-06	2020-03-16	19
6	6	HOPE	Completed	2019-05-16	2019-08-10	19
7	7	B&B Customer Feedback	Completed	2020-11-16	2021-05-18	13
8	8	Next Gen Bell	Completed	2021-07-21	2022-05-11	1
9	9	HIMMS	Ongoing	2021-10-13	NULL	19
10	10	Reinvent Bell	Ongoing	2021-10-18	NULL	1
11	11	Medical Hope Solution	Ongoing	2022-01-03	NULL	19
12	12	Self-Checkout	Completed	2022-02-07	2022-06-29	4
13	13	Tims Customer Feedback	Completed	2022-02-21	2022-09-03	4
14	14	Reinvent Tim Horton's App	Ongoing	2022-03-21	NULL	4
15	15	Air Chat Automation	Ongoing	2022-05-09	NULL	2
16	16	Air CA Web Feedback	Ongoing	2022-10-03	NULL	2
17	17	Kokoda	NotStarted	2023-07-05	NULL	5
18	18	Kazamm	NotStarted	2023-07-05	NULL	6
19	19	Zydus	NotStarted	2023-07-05	NULL	9
20	20	E-Node	NotStarted	2023-07-05	NULL	10
21	21	Constraint Test	NotStarted	2023-07-05	NULL	10
22	22	Constraint Test2	NotStarted	2023-07-05	NULL	10

SQL

SELECT project_id, project_name, project_status, start_date, end_date, client_id FROM Project;

4. Report on all Employees

Description:

Column Name	Description
Employee_id	Employee identify
First_name	First name
Middle_name	Middle name
Last_name	Last name
Date_of_birth	Date of birth
Contact_number	Contact number
Email_Address	Email
Hire_date	Hire date
Sin	SIN
supervisor_name	Supervisor name
job_title	Job title
Salary	Salary
dept_name	Department name
city	Working city
country	Working country

Result:

Results Messages															
	employee_id	first_name	middle_name	last_name	date_of_birth	contact_number	email_address	hire_date	sin	supervisor_name	job_title	salary	dept_name	city	country
1	1	Jaiden	Mark	Abott	1997-10-09	2048211896	jaiden.abott@lcs.com	2018-08-13	463812515	NULL	Chief Executive Officer	50000.00	Board of Directors	Toronto	Canada
2	4	Royce	Curt	Beasley	1991-01-09	8194347708	royce.beott@lcs.com	2018-08-15	524196409	Jaiden	Finance Manager	12500.00	Finance / Accounting	Toronto	Canada
3	2	Zackary	NULL	Archer	1998-09-06	2042343348	zackary.archer@lcs.com	2021-12-23	958792376	Jaiden	HR Manager	12166.67	Human Resources	Toronto	Canada
4	3	Jessie	NULL	Avila	1987-11-15	7052295233	jessie.avila@lcs.com	2018-02-19	645885971	Zackary	HR Analyst	8000.00	Human Resources	Toronto	Canada
5	9	Carleigh	NULL	Durham	1997-10-09	4185324945	carleigh.durham@lcs.com	2018-04-20	198059396	Rowan	QA Automation Tester	8833.33	Quality Assurance	Toronto	Canada
6	25	Irma	NULL	Carver	1986-07-10	6043538923	irma.carver@lcs.com	2018-06-07	377381280	Lark	QA Automation Tester	5833.33	Quality Assurance	Toronto	Canada
7	13	Emery	NULL	Suarez	1988-12-09	4035462534	emery.suarez@lcs.com	2021-06-12	944999515	Rowan	QA Manual Tester	5833.33	Technology	Toronto	Canada
8	20	Johanna	NULL	Rich	1995-06-11	4162677795	johanna.rich@lcs.com	2021-06-24	479532962	Ansley	Software Developer	5833.33	Technology	Toronto	Canada
9	21	Lark	Eldon	Travis	1992-11-17	9053252915	lark.travis@lcs.com	2018-11-26	733257091	Zackary	Team Lead	12833.33	Technology	Toronto	Canada
10	22	Alaia	Wiley	Thorne	1987-10-07	2892141179	alaia.thorne@lcs.com	2018-08-15	566142436	Lark	Senior Developer	8333.33	Technology	Toronto	Canada
11	23	Justice	Kathryn	Rivers	1979-08-14	9054617674	justice.rivers@lcs.com	2019-09-04	213985112	Lark	Software Developer	5833.33	Technology	Toronto	Canada
12	27	Webster	NULL	Marylyn	1998-07-12	5875372061	webster.marylyn@lcs.com	2018-01-11	679548198	Zackary	Team Lead	12833.33	Technology	Toronto	Canada
13	26	Luvenia	Lenora	Alfredson	1983-07-16	4186266452	luvenia.alfredso@lcs.com	2019-08-03	483150363	Lark	QA Automation Tester	5833.33	Quality Assurance	Scarborough	Canada
14	5	Rowan	Claire	Beasley	1991-10-11	3066092070	rowan.beott@lcs.com	2022-09-03	383970480	Zackary	Team Lead	12833.33	Technology	Scarborough	Canada
15	6	Annalise	Anne	Benitez	1991-10-09	7809966759	annalise.beott@lcs.com	2021-05-18	662672401	Rowan	Solutions Architect	9166.67	Technology	Scarborough	Canada
16	7	Kristin	NULL	Conner	1976-05-23	5142158844	kristin.conner@lcs.com	2018-02-01	738740703	Rowan	Software Developer	5833.33	Technology	Scarborough	Canada
17	8	Madden	Claire	Conrad	1976-10-09	5875907459	madden.coot@lcs.com	2019-06-13	989320767	Rowan	Senior Developer	8333.33	Technology	Scarborough	Canada
18	14	Ansley	NULL	Valentine	1990-10-09	8673742851	ansley.valentine@lcs.com	2019-08-02	673984761	Zackary	Team Lead	13000.00	Technology	Scarborough	Canada
19	17	Jamal	NULL	Mcknight	1999-08-26	5817048259	jamal.mcknight@lcs.com	2022-06-09	906348131	Ansley	Software Developer	5833.33	Technology	Scarborough	Canada
20	24	Chester	Ollie	Parris	1978-08-07	450521042	chester.parris@lcs.com	2019-07-08	193290293	Lark	Software Developer	5833.33	Technology	Scarborough	Canada
21	11	Charlize	NULL	Hubbard	1995-12-11	2262218316	charlize.hubbard@lcs.c...	2019-11-30	365857390	Zackary	System Administrator	7500.00	Asset Management	Quebec	Canada
22	12	Beckett	Mae	Horn	1988-10-09	2507988447	beckett.hoott@lcs.com	2018-12-09	641244223	Charlize	IT	5833.33	Asset Management	Quebec	Canada
23	15	Eil	NULL	Malone	1997-10-25	7805974968	eil.malone@lcs.com	2020-03-16	415302850	Zackary	Customer Service A...	7500.00	Customer Service	Quebec	Canada
24	16	Reynaldo	NULL	Jordan	1995-10-09	9025661047	reynaldo.jordan@lcs.com	2019-08-10	431102946	Eil	Customer Service As...	7500.00	Customer Service	Quebec	Canada
25	10	Azaria	NULL	Golden	1976-10-09	2044718557	azaria.golden@lcs.com	2018-02-22	205241854	Rowan	QA Manual Tester	5833.33	Quality Assurance	Quebec	Canada
26	30	Milton	Jean	Kersey	1994-07-12	4032751194	Milton.Jean@lcs.com	2019-03-04	391874963	Webster	QA Automation Tester	8833.33	Quality Assurance	Markham	Canada
27	33	Raelene	Wynne	Parrish	1992-06-28	5197451073	Raelene.Wynne@lcs.com	2019-04-04	227133204	Webster	QA Automation Tester	8833.33	Quality Assurance	Markham	Canada
28	28	Kennard	Gale	Morin	1991-07-22	5814236520	Kennard.Gale@lcs.com	2019-02-01	139424865	Webster	Solutions Architect	9166.67	Technology	Markham	Canada
29	29	Bertie	Nevaeh	Walter	1990-12-14	5143468513	Bertie.Nevaeh@lcs.com	2019-02-13	686733916	Webster	Senior Developer	8333.33	Technology	Markham	Canada
30	31	Ross	Rosalie	Booth	1994-06-01	4502496319	Ross.Rosalie@lcs.com	2019-03-08	597028661	Webster	Solutions Architect	9166.67	Technology	Markham	Canada
31	32	Serenity	Jaslyn	Monk	1996-12-17	4189474245	Serenity.Jaslyn@lcs.com	2019-03-22	145158648	Webster	Senior Developer	8333.33	Technology	Markham	Canada
32	36	Zane	Carina	Milford	1994-03-27	7806906461	Zane.Carina@lcs.com	2019-05-30	347315111	Webster	QA Automation Tester	8833.33	Quality Assurance	Mississauga	Canada
33	39	Kailyn	Krystalle	Samuel	1990-01-30	2042626604	Kailyn.Krystalle@lcs.com	2019-08-21	346550585	Webster	QA Automation Tester	8833.33	Quality Assurance	Mississauga	Canada
34	42	Chantell	Tel	Mercer	1999-11-30	4502913134	Chantell.Tel@lcs.com	2019-10-07	926251687	Webster	QA Automation Tester	8833.33	Quality Assurance	Mississauga	Canada
35	34	Jazmin	Ariel	Morish	1994-11-18	7783509914	Jazmin.Ariel@lcs.com	2019-05-02	530033976	Webster	Solutions Architect	9166.67	Technology	Mississauga	Canada
36	35	Carlyle	Whitney	Sweet	1994-09-27	2047844610	Carlyle.Whitney@lcs.com	2019-05-03	396052789	Webster	Senior Developer	8333.33	Technology	Mississauga	Canada
37	37	Piety	Mervyn	Priyor	1996-12-26	4185449742	Piety.Mervyn@lcs.com	2019-06-07	485669402	Webster	Solutions Architect	9166.67	Technology	Mississauga	Canada
38	38	Johnie	Clanc	Little	1991-09-01	7804153589	Johnie.Clanc@lcs.com	2019-07-16	715480778	Webster	Senior Developer	8333.33	Technology	Mississauga	Canada
39	40	Gunner	Honey	Tate	1991-02-27	4165136380	Gunner.Honey@lcs.com	2019-09-02	996799193	Webster	Solutions Architect	9166.67	Technology	Mississauga	Canada
40	41	Seton	Royale	Snell	1998-10-06	4162149418	Seton.Royale@lcs.com	2019-09-23	744747635	Webster	Senior Developer	8333.33	Technology	Mississauga	Canada

SQL

```
SELECT EMP.employee_id, first_name, middle_name, last_name, date_of_birth,
contact_number, email_address, hire_date, sin,
(SELECT first_name FROM Employee WHERE employee_id = EMP.supervisor_id) AS
'supervisor_name',
JOB.job_title, JH.salary,
dep.dept_name, BRA.city, BRA.country
FROM Employee EMP INNER JOIN Branch_Department BRA_DEP ON EMP.employee_id
= BRA_DEP.employee_id
INNER JOIN Branch BRA ON BRA_DEP.branch_id = BRA.branch_id
INNER JOIN Department DEP ON BRA_DEP.department_id = DEP.dept_id
INNER JOIN Job_History JH ON EMP.employee_id = JH.employee_id
INNER JOIN Job ON Job.job_id = JH.position_id
WHERE JH.end_date IS NULL
;
```

5. Report on all Departments

Description:

Column Name	Description
Dept_id	Department identify
Dept_name	Department name
Dept_description	Department description
Dept_contact_number	Department contact number
Dept_email_id	Department email

Result:

100 % Results Messages					
	dept_id	dept_name	dept_description	dept_contact_number	dept_email_id
1	1	Admin Department	Maintains office services by organizing office operatio...	4174482839	admindepartment@lcs.com
2	2	Asset Management	Manages company assets	4174482840	assetmanagement@lcs.com
3	3	Board of Directors	Establish the mission, goals and policies of the organi...	4174482841	boardofdirectors@lcs.com
4	4	Customer Service	The first person most customers communicate with w...	4174482842	customerservice@lcs.com
5	5	Finance / Accounting	Conducts cost and revenues analyses	4174482843	financeaccounting@lcs.com
6	6	Human Resources	Develop and manage a range of activities for a comp...	4174482844	humanresources@lcs.com
7	7	Operations	Oversee operational activities at every level of an orga...	4174482845	operations@lcs.com
8	8	Quality Assurance	Responsible for monitoring, inspecting and proposin...	4174482846	qualityassurance@lcs.com
9	9	Sales and Marketing	Demonstrates products and services as deemed nec...	4174482847	salesandmarketing@lcs.com
10	10	Technology	Responsible for developing codes and architecture d...	4174482848	technology@lcs.com

SQL

```
SELECT dept_id, dept_name, dept_description, dept_contact_number, dept_email_id FROM
Department;
```

6. Report on all Branches

Description:

Column Name	Description
Branch_id	Branch identify
Zip	Zip code
City	City name
State	State name
Country	Country name

Result:

	branch_id	zip	city	state	country	name	tax_code
1	1	S9H3W4	Toronto	ON	Canada	LCS Company	552195155
2	2	M1B0A1	Scarborough	ON	Canada	LCS Company	552195156
3	3	G2Z9Z9	Quebec	ON	Canada	LCS Company	552195157
4	4	L3P0A1	Markham	ON	Canada	LCS Company	552195158
5	5	L2L2L2	Mississauga	ON	Canada	LCS Company	552195159

SQL

SELECT branch_id, zip, city, state, country, name, tax_code FROM Branch;

7. Report on all Jobs

Description:

Column Name	Description
Job_id	Job identify
Job_title	Job title
job_description	Job description
Min_salary	Min salary
Max_salary	Max salary

Result:

	job_id	job_title	job_description	min_salary	max_salary
1	1	Chief Executive Officer	Responsible for managing a company's overall oper...	250.00	300.00
2	2	HR Manager	Lead and direct the routine functions of the Human R...	60.00	75.00
3	3	HR Analyst	Collects, compile, and analyze HR data	45.00	55.00
4	4	Finance Manager	Distributes the financial resources of a company	60.00	75.00
5	5	Finance Analyst	Analyzes current and past financial data and perform...	45.00	55.00
6	6	Team Lead	Provides guidance and instruction to a working grou...	70.00	80.00
7	7	Solutions Architect	Solves complex problems in an organization by desi...	55.00	60.00
8	8	Software Developer	Designs and builds computer programs	30.00	35.00
9	9	Senior Developer	Designs and implements new and updated software ...	48.00	53.00
10	10	QA Automation Tester	Write scripts and create automation environments for...	48.00	53.00
11	11	QA Manual Tester	Manual testing of new software in both the pre-and p...	30.00	35.00
12	12	IT	Managing and storing data using computers, softwar...	30.00	35.00
13	13	System Administrator	Organize, install and support an organization's comp...	45.00	50.00
14	14	Customer Service Associate	Manages customer concerns	35.00	45.00
15	15	Customer Service Analyst	Responsible for gathering data and doing research	45.00	50.00

SQL

SELECT job_id, job_title, job_description, min_salary, max_salary FROM Job;

8. Report on all Orders

Description:

Column Name	Description
Product_id	Product identify
Product_title	Product title
Product_description	Product description
Product_type	Product type
Product_specification	Product specification

Result:

	product_id	project_id	price	discount	feedback	invoice_id
1	1	3	34000.00	NULL	Satisfied	1
2	2	8	50000.00	NULL	Satisfied	1
3	3	2	90000.00	NULL	Satisfied	NULL
4	4	4	30300.00	0.00	Satisfied	6
5	4	9	36000.00	NULL	NULL	NULL
6	5	7	36000.00	0.20	Satisfied	NULL
7	5	10	45000.00	NULL	NULL	1
8	6	11	50000.00	NULL	NULL	NULL
9	7	12	20000.00	NULL	Satisfied	4
10	8	13	35000.00	NULL	Satisfied	4
11	9	14	40000.00	NULL	NULL	4
12	10	15	30000.00	NULL	NULL	NULL
13	11	1	45000.00	NULL	Satisfied	3
14	12	16	28000.00	NULL	NULL	NULL
15	14	5	37400.00	0.10	Satisfied	NULL
16	14	6	26250.00	0.50	Satisfied	NULL
17	15	17	44000.00	NULL	NULL	5
18	16	18	37000.00	NULL	Satisfied	6
19	17	19	60000.00	NULL	Satisfied	9
20	18	20	36000.00	NULL	Satisfied	10

SQL

select product_id, project_id, price, discount, feedback, invoice_id from Orders;

9. Count project for each client

Description:

Column Name	Description
client_id	Client identify
client_name	Client name
Number_of_projects	Number of projects

Result:

	client_id	client_name	number_of_projects
1	1	Bell	3
2	2	Air Canada	2
3	3	People's Group	1
4	4	Tim Hortons	3
5	5	President's Choice	1
6	6	Scotiabank	2
7	7	Hudson's Bay Company	1
8	8	Walmart	1
9	9	Dollarama	1
10	10	Winners	3
11	11	Canadian Tire	1
12	12	CTV 2	1
13	13	Bath & Body Works	1
14	14	Chipotle	1
15	15	Circle K	1
16	16	Shopify	1
17	17	Amazon	1
18	18	Ali Express	1
19	19	Evernorth	4
20	20	Best Buy	1

SQL

SELECT A.client_id, A.client_name, COUNT(*) AS 'number_of_projects' FROM Client A LEFT JOIN Project B ON A.client_id = B.client_id GROUP BY A.client_id, A.client_name;

10. Count number of project per product

Description:

Column Name	Description
Product_id	Product identify
Product_title	Product title

Product_description	Product description
Number_of_projects	Number of projects

Result:

Results Messages				
	product_id	product_title	product_specification	number_of_projects
1	1	Application Services	Agile Transformation	1
2	2	Artificial Intelligence	Solutions.AI, Data-led Transformation, Responsible AI	1
3	3	Automation	Handle tasks and processes, Quick responses , Im...	1
4	4	Business Process Outsourcing	Cost savings, Pricing, Resources and Technology	2
5	5	Business Strategy	Current state section, Future state section, Strategic ...	2
6	6	Change Management	Prepare the Organization for Change	1
7	7	Cloud	On-demand self-service	1
8	8	Data & Analytics	Data cleaning and preparation, Data analysis and ex...	1
9	9	Digital Commerce	Payment Systems, Mobile,Friendly Website and Sto...	1
10	10	Digital Engineering & Manuf	Product life cycle, smart factory, value chain manag...	1
11	11	Ecosystem Services	Energy Flow, Water Cycle, Nutrient Cycle, Commun...	1
12	12	Finance Technology Consulting	Advise clients on a range of financial services and d...	1
13	13	Infrastructure	Computing performance, Storage capacity	1
14	14	IT Security	Authentication and password management	2
15	15	Game Development	Develop new games	1
16	16	Digital Marketing	Identify the Target Market, Benefits and Advantages ...	1
17	17	Metaverse	Storage: SSD Only, Graphics Card: 4 GB graphic ca...	1
18	18	Supply Chain Management	Monitoring and Planning	1
19	19	Sustainability	Sustainable design, durability, energy efficiency, wa...	1
20	20	Technology Innovation	Objectives and goals of the new design	1

SQL

```
SELECT A.product_id, A.product_title, A.product_specification, COUNT(*) AS
'number_of_projects'
FROM Product A LEFT JOIN Orders B ON A.product_id = B.product_id
GROUP BY A.product_id, A.product_title, A.product_specification;
```

11. Report on number of departments per branch

Description:

Column Name	Description
Branch_id	Branch identify
City	City name
Country	Country name
State	State
Zip	Zip code
Number_of_departments	Number of departments

Result:

Results Messages						
	branch_id	city	country	state	zip	number_of_departments
1	1	Toronto	Canada	ON	S9H3W4	5
2	2	Scarborough	Canada	ON	M1B0A1	2
3	3	Quebec	Canada	ON	G2Z9Z9	3
4	4	Markham	Canada	ON	L3P0A1	2
5	5	Mississauga	Canada	ON	L2L2L2	2

SQL

```
SELECT B.branch_id, a.city, a.country, a.state, a.zip, COUNT(distinct B.department_id) AS
'number_of_departments' FROM Branch A INNER JOIN Branch_Department B ON A.branch_id =
B.branch_id
GROUP BY B.branch_id, a.city, a.country, a.state, a.zip;
```

12.Report on employees that has certain pay range

Description:

Column Name	Description
employee_id	Employee identify
first_name	First name
last_name	Last name
contact_number	Contact number

email_address	Email address
salary	salary

Result:

	employee_id	first_name	last_name	contact_number	email_address	salary
1	3	Jessie	Avila	7052295233	jessie.avila@lcs.com	8000.00
2	7	Kristin	Conner	5142158844	kristin.conner@lcs.com	5833.33
3	8	Madden	Conrad	5875907459	madden.coot@lcs.com	8333.33
4	9	Carleigh	Durham	4185324945	carleigh.durham@lcs.com	8833.33
5	10	Azaria	Golden	2044718557	azaria.golden@lcs.com	5833.33
6	11	Charlize	Hubbard	2262218316	charlize.hubbard@lcs.com	7500.00
7	12	Beckett	Horn	2507988447	beckett.hoot@lcs.com	5833.33
8	13	Emery	Suarez	4035462534	emery.suarez@lcs.com	5833.33
9	15	Ell	Malone	7805974968	ell.malone@lcs.com	7500.00
10	16	Reynaldo	Jordan	9025661047	reynaldo.jordan@lcs.com	7500.00
11	17	Jamal	Mcknight	5817048259	jamal.mcknight@lcs.com	5833.33
12	20	Johanna	Rich	4162677795	johanna.rich@lcs.com	5833.33
13	22	Alaia	Thorne	2892141179	alaia.thorne@lcs.com	8333.33
14	23	Justice	Rivers	9054617674	justice.rivers@lcs.com	5833.33
15	24	Chester	Parris	4505721042	chester.parris@lcs.com	5833.33
16	25	Irma	Carver	6043538923	irma.carver@lcs.com	5833.33
17	26	Luvenia	Alfredson	4186266452	luvenia.alfredso@lcs.com	5833.33
18	29	Bertie	Walter	5143468513	Bertie.Nevaeh@lcs.com	8333.33
19	30	Milton	Kersey	4032751194	Milton.Jean@lcs.com	8833.33
20	32	Serenity	Monk	4189474245	Serenity.Jaslyn@lcs.com	8333.33
21	33	Raelene	Parrish	5197451073	Raelene.Wynne@lcs.com	8833.33
22	35	Carlyle	Sweet	2047844610	Carlyle.Whitney@lcs.com	8333.33
23	36	Zane	Milford	7806906461	Zane.Carina@lcs.com	8833.33
24	38	Johnie	Little	7804153589	Johnie.Clanc@lcs.com	8333.33
25	39	Kailyn	Samuel	2042626604	Kailyn.Krystelle@lcs.com	8833.33
26	41	Sefton	Snell	4162149418	Sefton.Royale@lcs.com	8333.33
27	42	Chantell	Mercer	4502913134	Chantell.Tel@lcs.com	8833.33

SQL

SELECT A.employee_id, A.first_name, A.last_name, A.contact_number, A.email_address, B.salary FROM Employee A INNER JOIN Job_History B ON A.employee_id = B.employee_id WHERE B.salary BETWEEN 1000 and 9000 AND B.end_date IS NULL;

SELECT A.employee_id, A.first_name, A.last_name, A.contact_number, A.email_address, B.salary FROM Employee A INNER JOIN Job_History B ON A.employee_id = B.employee_id WHERE B.salary BETWEEN <from_Salary, DECIMAL, 0> and <to_Salary, DECIMAL, 0> AND B.end_date IS NULL;

13.Report on Employees that started on a specific date range

Description:

Column Name	Description
employee_id	Employee identify
first_name	First name
last_name	Last name
contact_number	Contact number
email_address	Email
salary	salary

Result:

	employee_id	first_name	last_name	contact_number	email_address	salary
1	8	Madden	Conrad	5875907459	madden.coott@lcs.com	8333.33
2	11	Charlize	Hubbard	2262218316	charlize.hubbard@lcs.com	7500.00
3	14	Ansley	Valentine	8673742851	ansley.valentine@lcs.com	8000.00
4	16	Reynaldo	Jordan	9025661047	reynaldo.jordan@lcs.com	7500.00
5	19	Dalia	Paul	7803722289	dalia.paul@lcs.com	5833.33
6	23	Justice	Rivers	9054617674	justice.rivers@lcs.com	5833.33
7	24	Chester	Parris	4505721042	chester.parris@lcs.com	5833.33
8	26	Luvenia	Alfredson	4186266452	luvenia.alfredo@lcs.com	5833.33
9	28	Kennard	Morin	5814236520	Kennard.Gale@lcs.com	9166.67
10	29	Bertie	Walter	5143468513	Bertie.Nevaeh@lcs.com	8333.33
11	30	Milton	Kersey	4032751194	Milton.Jean@lcs.com	8833.33
12	31	Ross	Booth	4502496319	Ross.Rosalie@lcs.com	9166.67
13	32	Serenity	Monk	4189474245	Serenity.Jaslyn@lcs.com	8333.33
14	33	Raelene	Parrish	5197451073	Raelene.Wynne@lcs.com	8833.33
15	34	Jazmin	Morrish	7783509914	Jazmin.Ariel@lcs.com	9166.67
16	35	Carlyle	Sweet	2047844610	Carlyle.Whitney@lcs.com	8333.33
17	36	Zane	Milford	7806906461	Zane.Carina@lcs.com	8833.33
18	37	Piety	Pryor	4185449742	Piety.Mervyn@lcs.com	9166.67
19	38	Johnie	Little	7804153589	Johnie.Clanc@lcs.com	8333.33
20	39	Kailyn	Samuel	2042626604	Kailyn.Krystelle@lcs.com	8833.33
21	40	Gunner	Tate	4165136380	Gunner.Honey@lcs.com	9166.67
22	41	Sefton	Snell	4162149418	Sefton.Royale@lcs.com	8333.33
23	42	Chantell	Mercer	4502913134	Chantell.Tel@lcs.com	8833.33

SQL

```
SELECT A.employee_id, A.first_name, A.last_name, A.contact_number, A.email_address,
B.salary FROM Employee A INNER JOIN Job_History B ON A.employee_id = B.employee_id
WHERE B.start_date BETWEEN CONVERT(DATETIME, '20/12/2018',103) and
CONVERT(DATETIME, '20/12/2019',103);
```

```
SELECT A.employee_id, A.first_name, A.last_name, A.contact_number, A.email_address,
B.salary FROM Employee A INNER JOIN Job_History B ON A.employee_id = B.employee_id
WHERE B.start_date BETWEEN CONVERT(DATETIME,<from_date, DATE, '20/12/2018'>,103) and
CONVERT(DATETIME,<to_date, DATE, '20/12/2019'>,103);
```

14.Report on number of departments for specific location

Description:

Column Name	Description
branch_id	Branch identify
city	City name
country	Country name
state	state
Zip	Zip code
number_of_departments	Number of departments

Result:

Results

Messages

	branch_id	city	country	state	zip	number_of_departments
1	1	Toronto	Canada	ON	S9H3W4	5

SQL

```
SELECT B.branch_id, a.city, a.country, a.state, a.zip, COUNT(distinct B.department_id) AS
'number_of_departments' FROM Branch A INNER JOIN Branch_Department B ON A.branch_id =
B.branch_id
WHERE UPPER(A.city) = UPPER('Toronto')
GROUP BY B.branch_id, a.city, a.country, a.state, a.zip;
```

```
SELECT B.branch_id, a.city, a.country, a.state, a.zip, COUNT(distinct B.department_id) AS
'number_of_departments' FROM Branch A INNER JOIN Branch_Department B ON A.branch_id =
B.branch_id
WHERE UPPER(A.city) = UPPER(<city, VARCHAR(50), 'Toronto'>)
GROUP BY B.branch_id, a.city, a.country, a.state, a.zip;
```

15.Report on number of employees per project

Description:

Column Name	Description
project_id	Project identify
project_name	Project name
number_of_employees	Number of employees

Result:

	project_id	project_name	number_of_employees
1	1	Rubic	0
2	2	Bullet Train	0
3	3	Gonna Bell!	3
4	4	HRIS	1
5	5	Novartis	2
6	6	HOPE	2
7	7	B&B Customer Feedback	0
8	8	Next Gen Bell	3
9	9	HIMMS	2
10	10	Reinvent Bell	3
11	11	Medical Hope Solution	2
12	12	Self-Checkout	0
13	13	Tims Customer Feedback	0
14	14	Reinvent Tim Horton's App	0
15	15	Air Chat Automation	0
16	16	Air CA Web Feedback	0
17	17	Kokoda	0
18	18	Kazamm	1
19	19	Zydus	4
20	20	E-Node	0
21	21	Constraint Test	0
22	22	Constraint Test2	0

SQL

```
SELECT A.project_id, A.project_name, COUNT(B.employee_id) as 'number_of_employees' FROM
Project A LEFT JOIN Employee_Project B ON A.client_id = B.employee_id GROUP BY
A.project_id, A.project_name;
```

16.Report on calculate discount price that will be received of specific clients

Description:

Column Name	Description
client_id	Client identify
client_name	Client name
project_id	Project identify
project_name	Project name
discount	discount

Result:

	client_id	client_name	project_id	project_name	discount
1	19	Evernorth	6	HOPE	0.50
2	13	Bath & Body Works	7	B&B Customer Feedback	0.20
3	19	Evernorth	5	Novartis	0.10
4	6	Scotiabank	4	HRIS	0.00
5	19	Evernorth	9	HIMMS	NULL
6	1	Bell	3	Gonna Bell!	NULL
7	1	Bell	8	Next Gen Bell	NULL
8	16	Shopify	2	Bullet Train	NULL
9	5	President's Choice	17	Kokoda	NULL
10	6	Scotiabank	18	Kazamm	NULL
11	9	Dollarama	19	Zydus	NULL
12	10	Winners	20	E-Node	NULL
13	1	Bell	10	Reinvent Bell	NULL
14	19	Evernorth	11	Medical Hope Solution	NULL
15	4	Tim Hortons	12	Self-Checkout	NULL
16	4	Tim Hortons	13	Tims Customer Feedback	NULL
17	4	Tim Hortons	14	Reinvent Tim Horton's App	NULL
18	2	Air Canada	15	Air Chat Automation	NULL
19	3	People's Group	1	Rubic	NULL
20	2	Air Canada	16	Air CA Web Feedback	NULL

SQL

```
SELECT A.client_id, A.client_name, B.project_id, B.project_name, C.discount FROM Client A
INNER JOIN Project B ON A.client_id = B.client_id INNER JOIN Product_Project C ON
B.project_id = C.project_id ORDER BY C.discount DESC;
```

17.Report on shows the classification of clients based on the profit earned from them

Description:

Column Name	Description
client_id	Client identify
client_name	Client name
total_of_amount	Total of amount

Result:

	client_id	client_name	total_of_amount
1	19	Evernorth	145000.00
2	1	Bell	129000.00
3	4	Tim Hortons	95000.00
4	16	Shopify	90000.00
5	6	Scotiabank	67000.00
6	9	Dollarama	60000.00
7	2	Air Canada	58000.00
8	3	People's Group	45000.00
9	5	President's Choice	44000.00
10	10	Winners	36000.00
11	13	Bath & Body Works	30000.00

SQL

```
SELECT A.client_id, A.client_name, SUM(C.payment_amount) AS 'total_of_amount'
FROM Client A INNER JOIN Project B ON A.client_id = B.client_id
INNER JOIN Payment C ON B.project_id = C.project_id
GROUP BY A.client_id, A.client_name
ORDER BY SUM(C.payment_amount) DESC;
```

18.Report on annual revenue reports

Description:

Column Name	Description
year	Year
Total_of_amount	Total of amount

Result:

	Year	total_of_amount
1	2022	105000.00
2	2021	30000.00
3	2020	34000.00
4	2019	190000.00
5	2018	34000.00

SQL

```
SELECT YEAR(payment_date) AS 'Year', SUM(payment_amount) AS 'total_of_amount' FROM
Payment
WHERE payment_date IS NOT NULL
GROUP BY YEAR(payment_date)
ORDER BY YEAR(payment_date) DESC;
```

19.Report on the number of employers of each branch

Description:

Column Name	Description
branch_id	Branch identify
city	City
number_of_employees	Number of employees

Result:

	branch_id	city	number_of_employees
1	1	Toronto	11
2	2	Scarborough	11
3	3	Quebec	5
4	4	Markham	6
5	5	Mississauga	9

SQL

```
SELECT A.branch_id, A.city, COUNT(*) AS 'number_of_employees' FROM Branch A LEFT JOIN
Branch_Department B ON A.branch_id = B.branch_id
GROUP BY A.branch_id, A.city;
```

20. Report on which products bring in the most revenue

Description:

Column Name	Description
Product_id	Product identify
Product_title	Product title
Product_specification	Product specification
total_of_amount	Total of amount

Result:

	product_id	product_title	product_specification	total_of_amount
1	3	Automation	Handle tasks and processes, Quick responses , Im...	90000.00
2	14	Infrastructure	Computing performance, Storage capacity	59000.00
3	2	Artificial Intelligence	Solutions.AI, Data-led Transformation, Responsible...	50000.00
4	11	Digital Engineering & Manuf	Product life cycle, smart factory, value chain manag...	45000.00
5	8	Customer Experience	Friendliness, Empathy, Fairness, Control, Alternativ...	35000.00
6	1	Application Services	Agile Transformation	34000.00
7	4	Business Process Outsourcing	Cost savings, Pricing, Resources and Technology	30000.00
8	5	Business Strategy	Current state section, Future state section, Strategic...	30000.00
9	7	Cloud	On-demand self-service	20000.00

SQL

```
SELECT A.product_id, A.product_title, A.product_specification, SUM(D.payment_amount) AS
'total_of_amount'
FROM Product A INNER JOIN Product_Project B ON A.product_id = B.product_id
INNER JOIN PROJECT C ON B.project_id = C.project_id INNER JOIN Payment D ON C.project_id
= D.project_id
WHERE D.payment_status='Success'
GROUP BY A.product_id, A.product_title, A.product_specification
ORDER BY SUM(D.payment_amount) DESC;
```

21.Report on employee with lowest salary

Description:

Column Name	Description
employee_id	Employee identify
first_name	First name
salary	salary

Result:

	employee_id	first_name	salary
1	7	Kristin	5833.33
2	10	Azaria	5833.33
3	12	Beckett	5833.33
4	13	Emery	5833.33
5	13	Emery	5833.33
6	17	Jamal	5833.33
7	19	Dalia	5833.33
8	20	Johanna	5833.33
9	23	Justice	5833.33
10	24	Chester	5833.33
11	25	Irma	5833.33
12	26	Luvenia	5833.33

SQL

```
SELECT A.employee_id, A.first_name, B.salary FROM Employee A INNER JOIN Job_History B ON
A.employee_id = B.employee_id
WHERE B.salary = (SELECT MIN(SALARY) FROM Job_History
WHERE end_date IS Null);
```

22. Report on employees have a salary higher than the average salary for their branch

Description:

Column Name	Description
employee_id	Employee identify
first_name	First name
branch_id	Branch identify
City	City name
salary	Salary

Result:

	employee_id	first_name	branch_id	city	salary
1	1	Jaiden	1	Toronto	50000.00
2	9	Carleigh	2	Scarborough	8833.33
3	5	Rowan	2	Scarborough	12833.33
4	6	Annalise	2	Scarborough	9166.67
5	8	Madden	2	Scarborough	8333.33
6	14	Ansley	2	Scarborough	13000.00
7	11	Charlize	3	Quebec	7500.00
8	15	Ell	3	Quebec	7500.00
9	16	Reynaldo	3	Quebec	7500.00
10	30	Milton	4	Markham	8833.33
11	33	Raelene	4	Markham	8833.33
12	28	Kennard	4	Markham	9166.67
13	31	Ross	4	Markham	9166.67
14	36	Zane	5	Mississauga	8833.33
15	39	Kailyn	5	Mississauga	8833.33
16	42	Chantell	5	Mississauga	8833.33
17	34	Jazmin	5	Mississauga	9166.67
18	37	Piety	5	Mississauga	9166.67
19	40	Gunner	5	Mississauga	9166.67

SQL

```
SELECT EMP.employee_id, EMP.first_name, DP.branch_id, BR.city, JH.salary FROM Employee
EMP INNER JOIN Job_History JH ON EMP.employee_id = JH.employee_id
INNER JOIN Branch_Department DP ON EMP.employee_id = DP.employee_id
INNER JOIN Branch BR ON DP.branch_id = BR.branch_id
WHERE JH.salary >=( SELECT AVG(C.salary) AS 'average_salary' FROM Employee A INNER JOIN
Branch_Department B ON A.employee_id = B.employee_id
INNER JOIN Job_History C ON A.employee_id = C.employee_id
WHERE C.end_date IS NULL AND B.branch_id= DP.branch_id )
;
```

23. View Invoice General Information

Description:

Column Name	Description
invoice_id	Invoice identify
branch_id	Branch identify
Name	Branch name
tax_code	Branch Tax code
invoice_type	Invoice type
invoice_date	Invoice date
terms_conditions	Terms conditions
Total_amount	Invoice total amount

Result:

Results Messages								
	invoice_id	branch_id	name	tax_code	invoice_type	invoice_date	terms_conditions	total_amount
1	1	1	LCS Company	552195155	Adjustment	2019-06-13	Due upon reciept	129000.00

SQL

```
SELECT A.invoice_id, A.branch_id, B.name, B.tax_code, A.invoice_type, A.invoice_date,
A.terms_conditions, SUM(E.payment_amount) AS 'total_amount'
FROM Invoice A INNER JOIN Branch B ON A.branch_id = B.branch_id
INNER JOIN Orders C ON A.invoice_id = C.invoice_id
INNER JOIN Project D ON C.project_id = D.project_id
INNER JOIN Payment E ON D.project_id = E.project_id
WHERE A.invoice_id =1
GROUP BY A.invoice_id, A.branch_id, B.name, B.tax_code, A.invoice_type, A.invoice_date,
A.terms_conditions
;
```

24. View Invoice Detail

Description:

Column Name	Description
product_title	Product title
product_description	Product description
project_name	Project name
start_date	Project start date
end_date	Project end date
payment_amount	Amount
client_name	Client name
client_address	Client address

Result:

Results Messages								
	product_title	product_description	project_name	start_date	end_date	payment_amount	client_name	client_address
1	Application Services	Software solutions that improve the speed, securi...	Gonna Bell!	2018-10-22	2018-11-11	34000.00	Bell	1383 Wilson Rd N #8
2	Artificial Intelligence	The simulation of human intelligence processes ...	Next Gen Bell	2021-07-21	2022-05-11	50000.00	Bell	1383 Wilson Rd N #8
3	Business Strategy	An organizational master plan	Reinvent Bell	2021-10-18	NULL	45000.00	Bell	1383 Wilson Rd N #8

SQL

```
SELECT B.product_title, B.product_description, C.project_name, C.start_date, C.end_date,
E.payment_amount, F.client_name, F.client_address
FROM Orders A INNER JOIN Product B ON A.product_id = B.product_id
INNER JOIN Project C ON A.project_id = C.project_id
INNER JOIN Invoice D ON A.invoice_id = D.invoice_id
INNER JOIN Payment E ON C.project_id = E.project_id
INNER JOIN Client F ON c.client_id = f.client_id
WHERE D.invoice_id = 1;
```