MARKS

CO2: / 50

CO3: / 50

CO4: / 25

اونيۏرسيتي مليسيا ڤهڠ السلطان عبد الله

UNIVERSITI MALAYSIA PAHANG
AL-SULTAN ABDULLAH

BCI2023 Database Systems
Semester 1 2023/2024

Group No: 1

Lecturer: Dr Liew Siau Chuin

Project Title: Professional Entrepreneur Development Financing System

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<u>PROJECT BACKGROUND</u>

Malaysia is witnessing a surge in entrepreneurship, driven by government backing and a wave of tech-centric startups. The nation is quickly transforming into a global hub for innovative ventures, making it an ideal destination for ambitious entrepreneurs to bring their business visions to life. For every entrepreneur, especially young adults who are still inexperienced in the industry, will commonly face issues in terms of financial management. The problem turns imminent when an entrepreneur has to operate several businesses, where a substantial quantity of data is being produced all the time.

Any competent entrepreneur will understand the importance of storing and managing their financial data using a reliable database management system (DBMS). A DBMS for the finance department should have the capability to handle diverse financial data sets, including revenue, profit margins, product and service details, and transaction details. It must provide a structured framework for categorizing and organizing this information, facilitating efficient retrieval and analysis. For the assessment of financial development, entrepreneurs will require a DBMS that embodies features such as data integrity, scalability, and versatility. Therefore, it is obvious that entrepreneurs always aim to leverage their financial data effectively, steering their businesses toward sustained success and resilience in a dynamic marketplace.

<u>OBJECTIVE</u>

The objective of this project 'Professional Entrepreneur Development Financing System' is to establish an efficient and effective system for providing financial support and resources to those who want to pursue entrepreneurship. By attending to the specific financial need of the entrepreneurs, the goal is to promote their growth, sustainability, and success

1. To assist and support the existing or any new entrepreneurs in growing their businesses by offering a system to enter new markets or launching new products line.
2. To facilitate access to capital for aspiring entrepreneurs to launch and establish their startups.
3. To provide funding options that can cater to diverse needs of entrepreneurs.

SCOPE OF THE PROJECT

System Scope

1. Professional Entrepreneur Development Financing System is a system where work distribution can be managed effectively with stored all data and information of employees to provide an ease understanding system.
2. The system conducts a comprehensive analysis of relevant requirements related to the company, entrepreneurs, and finance.
3. By storing all the data such as company, service, product, and project profile make the system easy to update and modification can be implemented without causing disruption.

User Scope

User scope for a system refers to the range and uniqueness of functionalities, features, and interactions that are designed to meet the needs and expectations of the system's user.

1. The management can manage and record all the entrepreneur and company information.
2. The company can access their finance and project information.
3. The company can access their products, services, product buyer and service buyer.
4. The system can regularly review and refine processes, based on the feedback.

CASE STUDY

Database System 1: Computer Service Database System
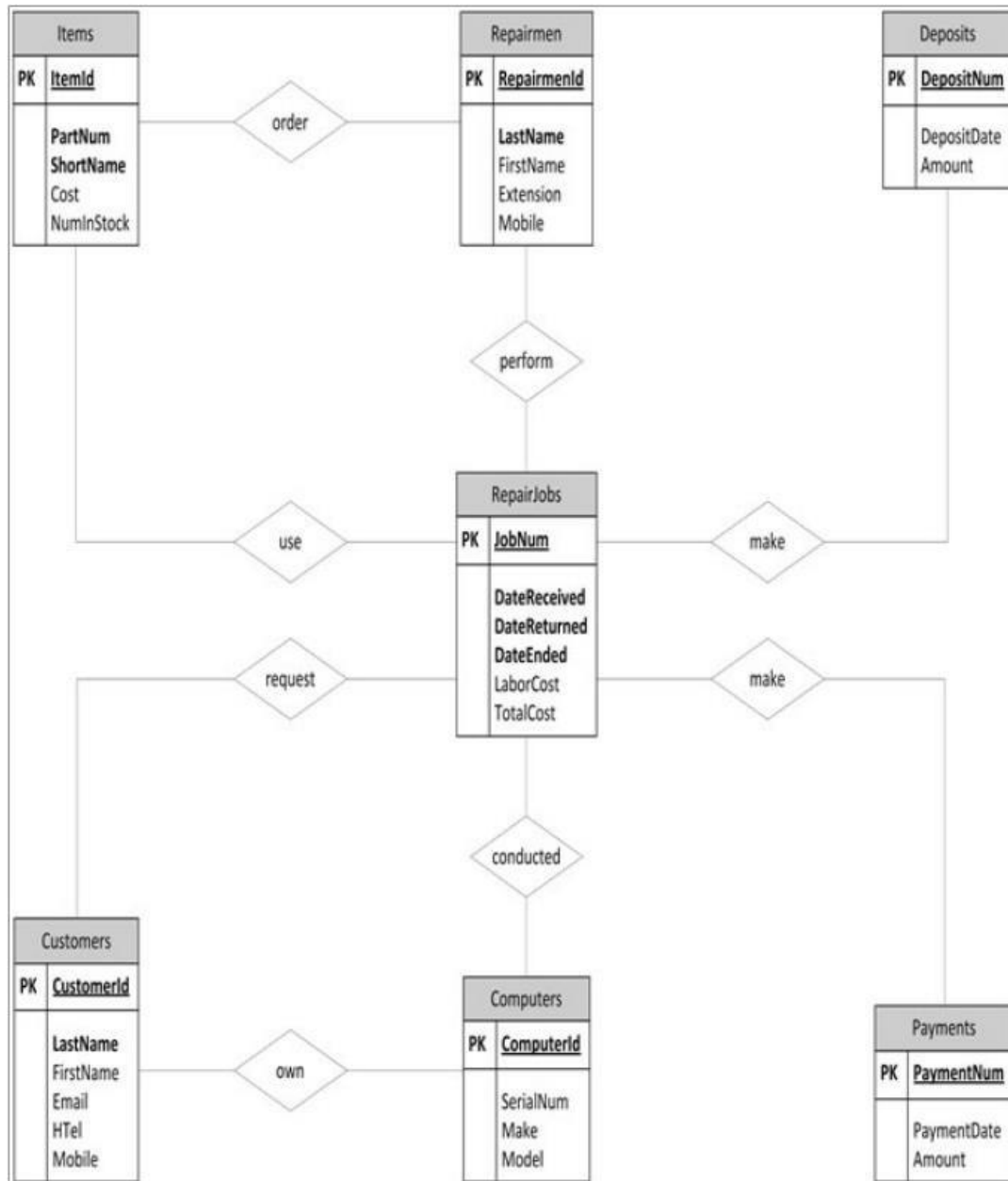
Database System 2: Bank Transaction Database System

regions	
region_id	INTEGER
region_name	VARCHAR(9)

customer_nodes	
customer_id	INTEGER
region_id	INTEGER
node_id	INTEGER
start_date	DATE
end_date	DATE

customer_transactions	
customer_id	INTEGER
txn_date	DATE
txn_type	VARCHAR(10)
txn_amount	INTEGER
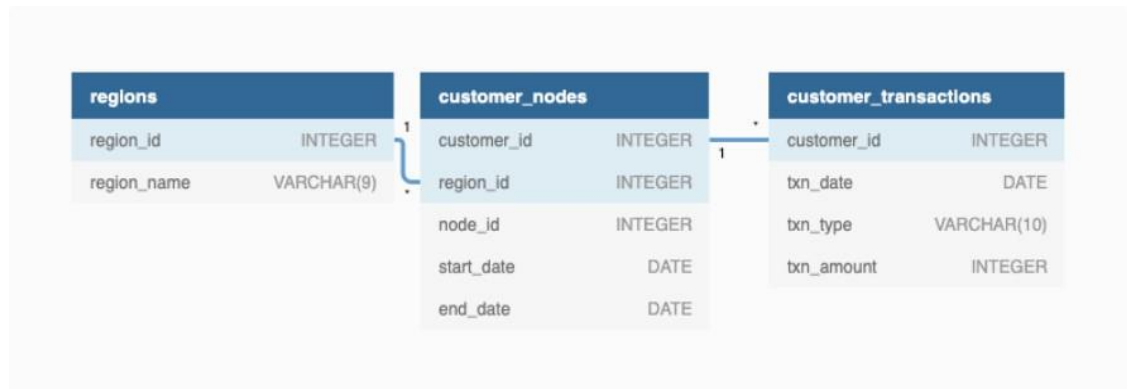
	Manual Process	**Database System 1**	**Database System 2**
Process/ entities	Flowchart	Entities: • Items • Repairmen • Deposits • RepairJobs • Customers • Computers • Payments	Entities: • regions • customer_nodes • customer_transactions
Attributes	• Entrepreneur_ID • Entrepreneur_Name • Company_ID • Company_Name • Company_Add • Company_Age • Product_ID • Product_Name • Product_Price • P_Processing_Fees • P_Delivery_Fees • P_Trans_Date • P_Buyer_ID • P_Buyer_Name • Service_ID • Service_Name • Service_Price • S_Transaction_Fees • S_Date	• ItemID • PartNum • ShortName • Cost • NumInStock • RepairmenID • LastName • FirstName • Extension • Mobile • DepositNum • DepositDate • Amount • JobNum • DateReceived • DateReturned • DateEnded • LaborCost • TotalCost • CustomerID • LastName	• region_id • region_name • customer_id • node_id • start_date • end_date • txn_date • txn_type • txn_amount

|			
	• S_Buyer_ID • S_Buyer_Name • Finance_ID • Revenue • Profit • Operating_Cost • Finance_Date • Project_ID • Project_Title • Project_Description • Start_Date • End_Date • Funding_ID • Funding_Date • Amount • Project_ID • Funding_Type • Browser_Name • Interest_Rate • Loan_Term_Year • Investor_Name • Equity_Stake	• FirstName • Email • HTel • Mobile • ComputerID • SerialNum • Make • Model • PaymentNum • PaymentDate • Amount	
Primary keys	• Entreperneur_ID • Company_ID • Product_ID • P_Buyer_ID • Service_ID • S_Buyer_ID • Finance_ID • Project_ID • Funding_ID	• ItemID • RepairmenID • DepositNum • JobNum • CustomerID • ComputerID • PaymentNum	• region_id • customer_id

| Other features	-	-	-
References	-	Fidel A. Captain, Case Study 2, https://fidelcaptain.com/sixstep/casestudies/casestudy2.html, 5 January 2024.	Danny Ma, Case Study #4 – Data Bank, https://8weeksqlchallenge.com/case-study-4/, 5 January 2024.

BUSINESS RULES AND RELATIONSHIP

ENTITY	RELATION	ENTITY	BUSINESS RULES
Entrepreneur PK : Entrepreneur_ID	1:M	Company PK : Company_ID FK : Entrepreneur_ID	• Each entrepreneur can have one or many companies. • Each company can have one entrepreneur only.
Company PK : Company_ID	1: M	Product PK : Product_ID FK : Company_ID	• Each company can have zero or more products. • Each product belongs to one company only.
Company PK : Company_ID	1: M	Service PK : Service_ID FK : Company_ID	• Each company offers zero or more services. • Each service is provided by one company only.
Company PK : Company_ID	1: M	Finance PK : Finance_ID FK : Company_ID	• Each company has one or many finances. • Each finance is only from one company.
Company PK : Company_ID	1 : M	Project PK : Project_ID FK : Company_ID	• Each company can have zero or many projects. • Each project only belongs to one company.
Project PK : Project_ID FK : Company_ID	1 : M	Funding PK : Funding_ID FK: Project_ID	• Each project can have one or more funding. • Each funding can only have one project.
Product PK : Product_ID	1: M	Product_Transaction PK,FK1 : Product_ID PK,FK2 : P_Buyer_ID	• Each product can have one or many transactions. • Each transaction can only have one product.
Product_Transaction PK,FK1 : Product_ID PK,FK2 : P_Buyer_ID	M:1	Product_Buyer PK : P_Buyer_ID	• Each product transaction can only have one product buyer.

			• Each product buyer can have zero or many product transactions.
Service PK : Service_ID	1 : M	Service_Transaction PK,FK1 : Service_ID PK,FK2 : S_Buyer_ID	• Each service can have one or many service transactions. • Each service transaction can only have one service.
Service_Transaction PK,FK1 : Service_ID PK,FK2 : S_Buyer_ID	M : 1	Service_Buyer PK : S_Buyer_ID	• Each service transaction can only have one service buyer. • Each service buyer can have zero or many service transactions.

ENTITY RELATIONSHIP DIAGRAM (ERD)
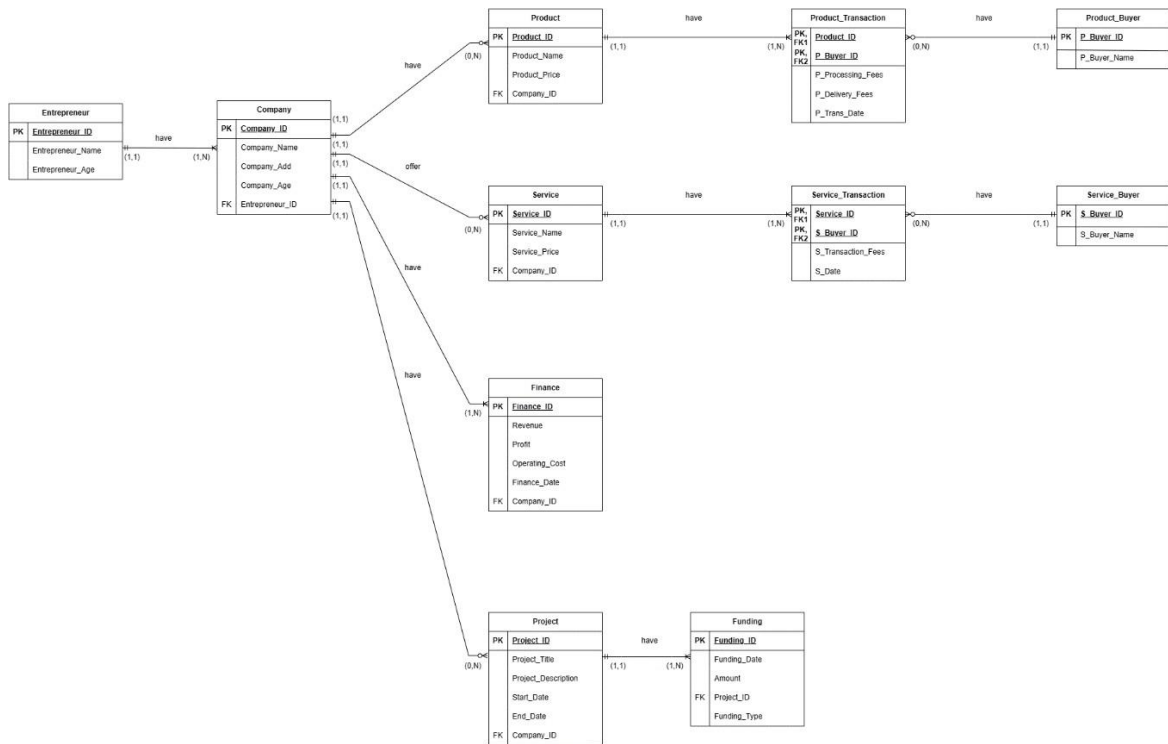
EXTENDED ENTITY RELATIONSHIP DIAGRAM (EERD)
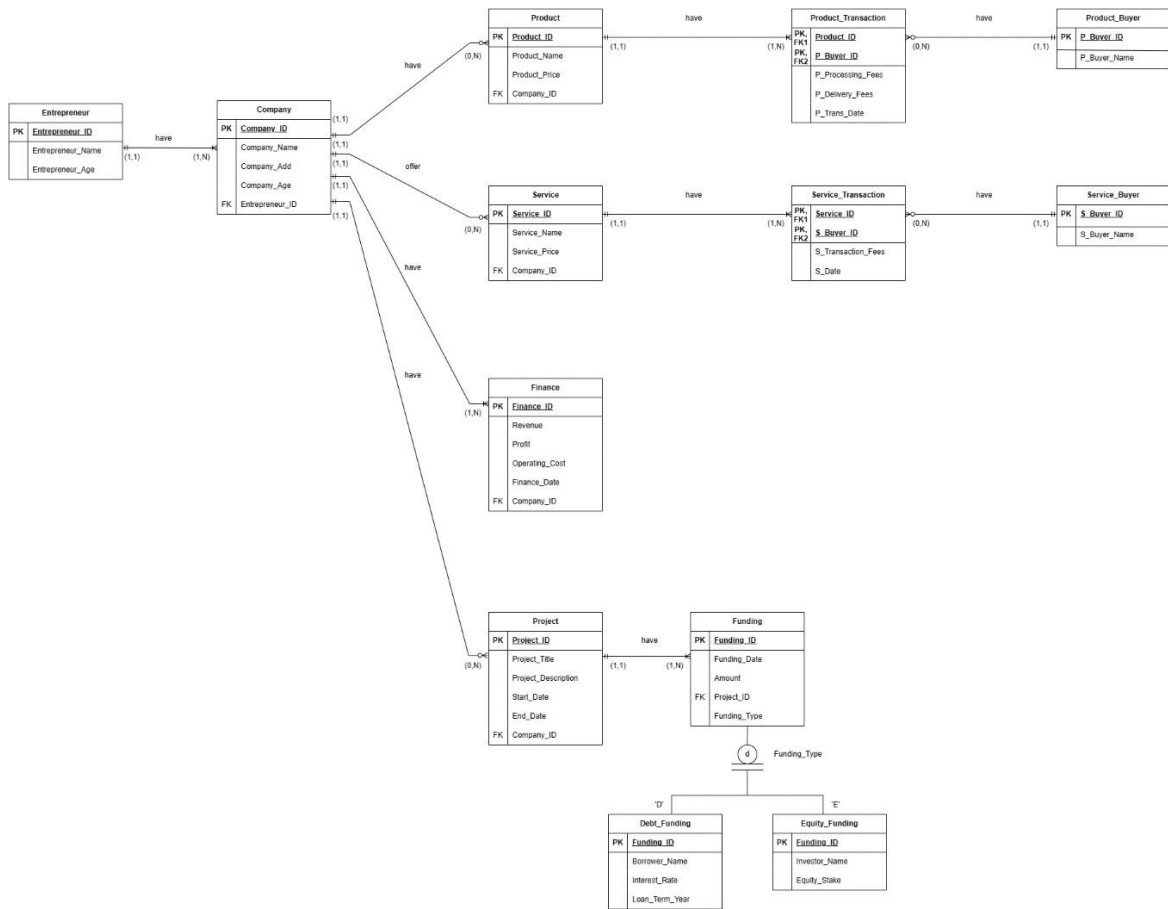
SQL STATEMENT USING DATA DEFINITION LANGUAGE (DDL)

→ CREATE DATABASE

CREATE DATABASE DB_PROJECT;

SHOW DATABASES;

USE DB_PROJECT;

→ CREATE TABLES

```
CREATE TABLE Entrepreneur(
   Entrepreneur_ID VARCHAR(50) NOT NULL,
   Entrepreneur_Name VARCHAR(50),
   Entrepreneur_Age INT,
   PRIMARY KEY(Entrepreneur_ID)
);
```

```
CREATE TABLE Company(
   Company_ID VARCHAR(20) NOT NULL,
   Entrepreneur_ID VARCHAR(50),
   Company_Name VARCHAR(50),
   Company_Add VARCHAR(50),
   Company_Age INT,
   PRIMARY KEY(Company_ID),
   FOREIGN KEY(Entrepreneur_ID) REFERENCES Entrepreneur(Entrepreneur_ID)
);
```

```
CREATE TABLE Staff(
   Staff_ID VARCHAR(20) NOT NULL,
   Company_ID VARCHAR(50),
   Staff_Name VARCHAR(50),
   Staff_Job VARCHAR(50),
   Staff_Salary DECIMAL(7,2),
   PRIMARY KEY(Staff_ID),
   FOREIGN KEY(Company_ID) REFERENCES Company(Company_ID)
);
```

```sql
CREATE TABLE Product(
    Product_ID VARCHAR(50) NOT NULL,
    Company_ID VARCHAR(20),
    Product_Name VARCHAR(50),
    Product_Price DECIMAL(7,2),
    PRIMARY KEY(Product_ID),
    FOREIGN KEY(Company_ID) REFERENCES Company(Company_ID)
);


CREATE TABLE Product_Buyer(
    P_Buyer_ID VARCHAR(50) NOT NULL,
    P_Buyer_Name VARCHAR(50),
    PRIMARY KEY (P_Buyer_ID)
);


CREATE TABLE Product_Transaction(
    Product_ID VARCHAR(50) NOT NULL,
    P_Buyer_ID VARCHAR(50) NOT NULL,
    P_Processing_Fees DECIMAL(6,2),
    P_Delivery_Fees DECIMAL(6,2),
    P_Trans_Date DATE,
    PRIMARY KEY (Product_ID, P_Buyer_ID),
    FOREIGN KEY (Product_ID) REFERENCES Product(Product_ID),
    FOREIGN KEY (P_Buyer_ID) REFERENCES Product_Buyer(P_Buyer_ID)
);


CREATE TABLE Service(
    Service_ID VARCHAR(20) NOT NULL,
    Service_Name VARCHAR(50),
    Service_Price DECIMAL(7,2),
    Company_ID VARCHAR(20),
    PRIMARY KEY (Service_ID),
    FOREIGN KEY (Company_ID) REFERENCES Company(Company_ID)
);
```

```sql
CREATE TABLE Service_Buyer(
    S_Buyer_ID VARCHAR(20) NOT NULL,
    S_Buyer_Name VARCHAR(50),
    PRIMARY KEY (S_Buyer_ID)
);


CREATE TABLE Service_Transaction(
    Service_ID VARCHAR(20) NOT NULL,
    S_Buyer_ID VARCHAR(20) NOT NULL,
    S_Transaction_Fees DECIMAL(6,2),
    S_Date DATE,
    PRIMARY KEY (Service_ID, S_Buyer_ID),
    FOREIGN KEY (Service_ID) REFERENCES Service(Service_ID),
    FOREIGN KEY (S_Buyer_ID) REFERENCES Service_Buyer(S_Buyer_ID)
);


CREATE TABLE Finance(
    Finance_ID VARCHAR(20) NOT NULL,
    Revenue DECIMAL(15,2),
    Profit DECIMAL(15,2),
    Operating_Cost DECIMAL(15,2),
    Finance_Date DATE,
    Company_ID VARCHAR(20),
    PRIMARY KEY (Finance_ID),
    FOREIGN KEY (Company_ID) REFERENCES Company(Company_ID)
);


CREATE TABLE Project(
    Project_ID VARCHAR(20) NOT NULL,
    Project_Title VARCHAR(100),
    Project_Description VARCHAR(350),
    Start_Date DATE,
    End_Date DATE,
```

```sql
    Company_ID VARCHAR(20),
    PRIMARY KEY (Project_ID),
    FOREIGN KEY (Company_ID) REFERENCES Company(Company_ID)
);

CREATE TABLE Funding(
    Funding_ID VARCHAR(20) NOT NULL,
    Funding_Date DATE,
    Amount DECIMAL(8,2),
    Project_ID VARCHAR(20),
    Funding_Type VARCHAR(20),
    PRIMARY KEY (Funding_ID),
    FOREIGN KEY (Project_ID) REFERENCES Project(Project_ID)
);

CREATE TABLE Debt_Funding(
    Funding_ID VARCHAR(20) NOT NULL,
    Borrower_Name VARCHAR(50),
    Interest_Rate Decimal(4,3),
    Loan_Term_Year INT,
    PRIMARY KEY (Funding_ID)
);

CREATE TABLE Equity_Funding(
    Funding_ID VARCHAR(20) NOT NULL,
    Investor_Name VARCHAR(50),
    Equity_Stake INT,
    PRIMARY KEY (Funding_ID)
);
```

→ DROP TABLE

DROP TABLE Staff ;

SHOW TABLES;

Tables_in_db_project
company
debt_funding
entrepreneur
equity_funding
finance
funding
product
product_buyer
product_transaction
project
service
service_buyer
service_transaction

→ INSERT

INSERT INTO Entrepreneur value

('E001', 'John Smith', 35),

('E002', 'Emily Chen', 32),

('E003', 'Abilashree', 40),

('E004', 'Sophie Martin', 32),

('E005', 'Aishah Abdullah', 15),

('E006', 'Olivia', 25),

('E007', 'Emma Garcia', 30),

('E008', 'Aiden Clark', 32),

('E009', 'Chloe Wilson', 34),

('E010', 'Amelia', 29),

('E011', 'Ryan Gosling', 43);

SELECT * FROM Entrepreneur;

	Entrepreneur_ID	Entrepreneur_Name	Entrepreneur_Age
▶	E001	John Smith	35
	E002	Emily Chen	32
	E003	Abilashree	40
	E004	Sophie Martin	32
	E005	Aishah Abdullah	15
	E006	Olivia	25
	E007	Emma Garcia	30
	E008	Aiden Clark	32
	E009	Chloe Wilson	34
	E010	Amelia	29
	E011	Ryan Gosling	43
*	NULL	NULL	NULL

INSERT INTO Company value

('RS321', 'E001', 'The IBR Asia Group Sdn Bhd', '163, Jalan Ampang, Kuala Lumpur', 3),

('XY654', 'E005', 'Altios Malaysia Sdn Bhd', 'Lot 101, Jalan Sultan Ismail, Johor Bahru', 1),

('ZU982', 'E002', 'SparkLiving', '79, Jalan Tun Razak, Penang', 2),

('CY333', 'E005', 'Nexus', '11A, Jalan Sultan Hishamuddin, Klang', 2),

('EK331', 'E001', 'Titian Kotamas Sdn Bhd', '25, Jalan Merpati, Taiping', 5),

('KT228', 'E004', 'M&T', '19A, Jalan Meru, Klang', 3),

('TE476', 'E002', 'Prime Technology', '45, Jalan Tun Tan Cheng Lock, Melaka', 6),

('JK652', 'E003', 'PureLuxe', '13A, Jalan Telawi, Kuala Lumpur', 4),

('RF187', 'E006','NexGen Technology','2A, Jalan Sultan Idris Shah, Seremban', 2),

('HR124', 'E009', 'StarStruck', '19, Jalan Sungai Chat, Johor Bahru', 4),

('SR265', 'E010', 'Panorama', '81, Jalan Bukit Mata, Kuching', 2),

('WX412', 'E009', 'VivaTech', '11, Jalan Abdul Kadir Adabi, Puchong', 1),

('QJ625', 'E008', 'Pinnacle', '12, Plaza Sentral, Kuala Lumpur', 4),

('FX342', 'E007', 'Synergy', '24, Jalan Tuanku Abdul Rahman, Kuala Lumpur', 3);

SELECT * FROM Company;

	Company_ID	Entrepreneur_ID	Company_Name	Company_Add	Company_Age
▶	CY333	E005	Nexus	11A, Jalan Sultan Hishamuddin, Klang	2
	EK331	E001	Titian Kotamas Sdn Bhd	25, Jalan Merpati, Taiping	5
	FX342	E007	Synergy	24, Jalan Tuanku Abdul Rahman, Kuala Lumpur	3
	HR124	E009	StarStruck	19, Jalan Sungai Chat, Johor Bahru	4
	JK652	E003	PureLuxe	13A, Jalan Telawi, Kuala Lumpur	4
	KT228	E004	M&T	19A, Jalan Meru, Klang	3
	QJ625	E008	Pinnacle	12, Plaza Sentral, Kuala Lumpur	4
	RF187	E006	NexGen Technology	2A, Jalan Sultan Idris Shah, Seremban	2
	RS321	E001	The IBR Asia Group Sdn Bhd	163, Jalan Ampang, Kuala Lumpur	3
	SR265	E010	Panorama	81, Jalan Bukit Mata, Kuching	2
	TE476	E002	Prime Technology	45, Jalan Tun Tan Cheng Lock, Melaka	6
	WX412	E009	VivaTech	11, Jalan Abdul Kadir Adabi, Puchong	1
	XY654	E005	Altios Malaysia Sdn Bhd	Lot 101, Jalan Sultan Ismail, Johor Bahru	1
	ZU982	E002	SparkLiving	79, Jalan Tun Razak, Penang	2
*	NULL	NULL	NULL	NULL	NULL

INSERT INTO Product value

('PMB126-003', 'TE476', 'Power Bank', 70.00),

('OLQ263-457', 'TE476', 'Smartwatch', 3600.00),

('JYT012-611', 'JK652', 'Skincare Serum', 98.20),

('WGF530-233', 'JK652', 'Hair Colour', 35.50),

('TUY341-579', 'ZU982', 'Kitchen Blender', 56.00),

('UTR257-388', 'CY333', 'Massage Chair', 8999.00),

('WVR202-056', 'ZU982', 'Electric Toothbrush', 949.00),

('ARI526-787', 'TE476', 'Laptop', 3999.99),

('FGS639-841', 'KT228', 'Water Bottle', 48.00),

('PJB549-630', 'KT228', 'Outdoor Backpack', 69.99),

('BHS561-284', 'HR124', 'Bicycle', 199.99),

('WJE458-254', 'QJ625', 'Coffee Maker', 540.50),

('KYC258-561', 'SR265', 'Yoga Mat', 49.00),

('BYX301-852', 'HR124', 'Electric Scooter', 350.50);

SELECT * FROM Product;

Product_ID	Company_ID	Product_Name	Product_Price
ARI526-787	TE476	Laptop	3999.99
BHS561-284	HR124	Bicycle	199.99
BYX301-852	HR124	Electric Scooter	350.50
FGS639-841	KT228	Water Bottle	48.00
JYT012-611	JK652	Skincare Serum	98.20
KYC258-561	SR265	Yoga Mat	49.00
OLQ263-457	TE476	Smartwatch	3600.00
PJB549-630	KT228	Outdoor Backpack	69.99
PMB126-003	TE476	Power Bank	70.00
TUY341-579	ZU982	Kitchen Blender	56.00
UTR257-388	CY333	Massage Chair	8999.00
WGF530-233	JK652	Hair Colour	35.50
WJE458-254	QJ625	Coffee Maker	540.50
WVR202-056	ZU982	Electric Toothbrush	949.00
NULL	NULL	NULL	NULL

INSERT INTO Product_Buyer value

('HG49200', 'Rowen'),

('VB12348', 'Zaina'),

('GY93888', 'Yi Sheng'),

('SF34457', 'Amirtha'),

('YX03589', 'Zelda'),

('RD45098', 'Nazra'),

('ZQ17825', 'Diana'),

('QD12596','Calvin'),

('RT56530', 'Dasha'),

('BY37856', 'Yen Yin');

SELECT * FROM Product_Buyer;

	P_Buyer_ID	P_Buyer_Name
▶	BY37856	Yen Yin
	GY93888	Yi Sheng
	HG49200	Rowen
	QD12596	Calvin
	RD45098	Nazra
	RT56530	Dasha
	SF34457	Amirtha
	VB12348	Zaina
	YX03589	Zelda
	ZQ17825	Diana
*	NULL	NULL

INSERT INTO Product_Transaction value

('PJB549-630', 'ZQ17825', 2.30, 5.90, '2022-11-15'),

('FGS639-841', 'SF34457', 1.20, 4.90, '2022-12-19'),

('PMB126-003', 'SF34457', 8.00, 12.00, '2023-02-06'),

('JYT012-611', 'VB12348', 3.50, 8.00, '2023-03-10'),

('ARI526-787', 'RD45098', 100.00, 56.00, '2023-03-26'),

('TUY341-579', 'YX03589', 9.80, 7.60, '2023-04-13'),

('WGF530-233', 'VB12348', 2.50, 5.60, '2023-05-16'),

('OLQ263-457', 'HG49200', 89.00, 54.00, '2023-05-20'),

('ARI526-787', 'GY93888', 100.00, 68.00, '2023-06-04'),

('FGS639-841', 'YX03589', 1.20, 5.60, '2023-07-10'),

('WJE458-254', 'BY37856', 20.00, 3.50, '2023-05-20'),

('KYC258-561', 'QD12596', 6.20, 12.60, '2023-02-15'),

('BHS561-284', 'RT56530', 50.50, 18.30, '2023-03-11'),

('BYX301-852', 'YX03589', 80.00, 20.60, '2023-03-18');

SELECT * FROM Product_Transaction;

	Product_ID	P_Buyer_ID	P_Processing_Fees	P_Delivery_Fees	P_Trans_Date
▶	ARI526-787	GY93888	100.00	68.00	2023-06-04
	ARI526-787	RD45098	100.00	56.00	2023-03-26
	BHS561-284	RT56530	50.50	18.30	2023-03-11
	BYX301-852	YX03589	80.00	20.60	2023-03-18
	FGS639-841	SF34457	1.20	4.90	2022-12-19
	FGS639-841	YX03589	1.20	5.60	2023-07-10
	JYT012-611	VB12348	3.50	8.00	2023-03-10
	KYC258-561	QD12596	6.20	12.60	2023-02-15
	OLQ263-457	HG49200	89.00	54.00	2023-05-20
	PJB549-630	ZQ17825	2.30	5.90	2022-11-15
	PMB126-003	SF34457	8.00	12.00	2023-02-06
	TUY341-579	YX03589	9.80	7.60	2023-04-13
	WGF530-233	VB12348	2.50	5.60	2023-05-16
	WJE458-254	BY37856	20.00	3.50	2023-05-20
✱	NULL	NULL	NULL	NULL	NULL

INSERT INTO Service value

('SRV-IT-027', 'IT Consultation Service', 595.00, 'TE476'),

('SRV-FM-104', 'Financial Management Consulting Service', 420.00, 'XY654'),

('SRV-HC-168', 'Healthcare ', 280.00, 'EK331'),

('SRV-AS-234', 'Advertising Service', 1800.00, 'RS321'),

('SRV-IA-147', 'Insurance Advisory Service', 950.00, 'XY654'),

('SRV-PS-441', 'Publishing Service', 889.00, 'RS321'),

('SRV-BC-110', 'Business Consulting Service', 249.00, 'XY654'),

('SRV-SD-810', 'Software Development Service', 2500.00, 'TE476'),

('SRV-PR-541', 'Printing and Reproduction Service', 59.00, 'RS321'),

('SRV-BP-089', 'Beauty and Physical Well Being Service', 200.00, 'EK331'),

('SRV-WD-421', 'Web Development Service', 230.00, 'RF187'),

('SRV-PC-253', 'Pet Care Service', 150.00, 'FX342'),

('SRV-DM-346', 'Digital Marketing Agency', 250.00, 'WX412');

SELECT * FROM Service;

Service_ID	Service_Name	Service_Price	Company_ID
SRV-AS-234	Advertising Service	1800.00	RS321
SRV-BC-110	Business Consulting Service	249.00	XY654
SRV-BP-089	Beauty and Physical Well Being Service	200.00	EK331
SRV-DM-346	Digital Marketing Agency	250.00	WX412
SRV-FM-104	Financial Management Consulting Service	420.00	XY654
SRV-HC-168	Healthcare	280.00	EK331
SRV-IA-147	Insurance Advisory Service	950.00	XY654
SRV-IT-027	IT Consultation Service	595.00	TE476
SRV-PC-253	Pet Care Service	150.00	FX342
SRV-PR-541	Printing and Reproduction Service	59.00	RS321
SRV-PS-441	Publishing Service	889.00	RS321
SRV-SD-810	Software Development Service	2500.00	TE476
SRV-WD-421	Web Development Service	230.00	RF187
NULL	NULL	NULL	NULL

INSERT INTO Service_Buyer value

('RT23812', 'Tanusha'),

('HD45196', 'Yu Chen'),

('JO142870', 'Vimalan'),

('WQ75012', 'Fatimah'),

('MB12378', 'Andrew'),

('CC36789', 'Raymon'),

('GH82216', 'Rahmah'),

('CS46320', 'Xin Mei'),

('JC78423', 'Ubashini'),

('YH42196', 'Yin Xing');

SELECT * FROM Service_Buyer;

S_Buyer_ID	S_Buyer_Name
CC36789	Raymon
CS46320	Xin Mei
GH82216	Rahmah
HD45196	Yu Chen
JC78423	Ubashini
JO142870	Vimalan
MB12378	Andrew
RT23812	Tanusha
WQ75012	Fatimah
YH42196	Yin Xing
NULL	NULL

INSERT INTO Service_Transaction value

('SRV-HC-168', 'HD45196', 5.50, '2022-10-10'),

('SRV-AS-234', 'RT23812', 12.50, '2022-11-26'),

('SRV-SD-810', 'JO142870', 16.50, '2023-12-12'),

('SRV-IA-147', 'WQ75012', 20.50, '2023-01-20'),

('SRV-BP-089', 'MB12378', 15.50, '2023-02-28'),

('SRV-IA-147', 'CC36789', 5.00, '2023-03-12'),

('SRV-SD-810', 'HD45196', 4.50, '2023-03-23'),

('SRV-SD-810', 'CC36789', 6.50, '2023-04-07'),

('SRV-FM-104', 'MB12378', 3.50, '2023-04-15'),

('SRV-IT-027', 'HD45196', 2.50, '2023-04-30'),

('SRV-DM-346', 'GH82216', 5.40, '2023-05-30'),

('SRV-WD-421', 'CS46320', 8.30, '2023-06-15'),

('SRV-PC-253', 'JC78423', 6.20, '2023-06-18'),

('SRV-DM-346', 'YH42196', 8.00, '2023-07-01');

SELECT * FROM Service_Transaction;

Service_ID	S_Buyer_ID	S_Transaction_Fees	S_Date
SRV-AS-234	RT23812	12.50	2022-11-26
SRV-BP-089	MB12378	15.50	2023-02-28
SRV-DM-346	GH82216	5.40	2023-05-30
SRV-DM-346	YH42196	8.00	2023-07-01
SRV-FM-104	MB12378	3.50	2023-04-15
SRV-HC-168	HD45196	5.50	2022-10-10
SRV-IA-147	CC36789	5.00	2023-03-12
SRV-IA-147	WQ75012	20.50	2023-01-20
SRV-IT-027	HD45196	2.50	2023-04-30
SRV-PC-253	JC78423	6.20	2023-06-18
SRV-SD-810	CC36789	6.50	2023-04-07
SRV-SD-810	HD45196	4.50	2023-03-23
SRV-SD-810	JO142870	16.50	2023-12-12
SRV-WD-421	CS46320	8.30	2023-06-15
NULL	NULL	NULL	NULL

INSERT INTO Finance value

('ZU-NOV-020', 15000.00, 9800.00,5200.00, '2023-11-30', 'ZU982'),

('RS-NOV-030', 17500.00, 10300.00, 7200.00, '2023-11-28', 'RS321'),

('XY-OCT-067', 11000.00, 7500.00, 3500.00, '2023-10-12', 'XY654'),

('KT-AUG-016', 9800.00, 5900.00, 3900.00, '2023-08-25', 'KT228'),

('TE-SEP-123', 29000.00, 20000.00, 9000.00, '2023-09-28', 'TE476'),

('CY-OCT-142', 25000.00, 18000.00, 7000.00, '2023-10-15', 'CY333'),

('TE-NOV-247', 36000.00, 25000.00, 11000.00, '2023-11-23', 'TE476'),

('EK-SEP-117', 24000.00, 18500.00, 5500.00, '2023-09-25', 'EK331'),

('KT-NOV-126', 8900.00, 5320.00, 3580.00, '2023-11-29', 'KT228'),

('JK-OCT-025', 12000.00, 6999.00, 5001.00, '2023-10-24', 'JK652'),

('RF-OCT-524', 10500.00, 6400.00, 4100.00, '2023-10-25', 'RF187'),

('HR-AUG-563', 15300.00, 9600.00, 5700.00, '2023-08-23', 'HR124'),

('SR-SEP-324', 8500.00, 5200.00, 3300.00, '2023-09-24', 'SR265'),

('WX-OCT-362', 10200.00, 6400.00, 3800.00, '2023-10-30', 'WX412'),

('QJ-NOV-321', 12800.00, 8600.00, 4200.00, '2023-11-20', 'QJ625'),

('FX-OCT-401', 11300.00, 8000.00, 3300.00, '2023-10-21', 'FX342');

SELECT * FROM Finance;

Finance_ID	Revenue	Profit	Operating_Cost	Finance_Date	Company_ID
CY-OCT-142	25000.00	18000.00	7000.00	2023-10-15	CY333
EK-SEP-117	24000.00	18500.00	5500.00	2023-09-25	EK331
FX-OCT-401	11300.00	8000.00	3300.00	2023-10-21	FX342
HR-AUG-563	15300.00	9600.00	5700.00	2023-08-23	HR124
JK-OCT-025	12000.00	6999.00	5001.00	2023-10-24	JK652
KT-AUG-016	9800.00	5900.00	3900.00	2023-08-25	KT228
KT-NOV-126	8900.00	5320.00	3580.00	2023-11-29	KT228
QJ-NOV-321	12800.00	8600.00	4200.00	2023-11-20	QJ625
RF-OCT-524	10500.00	6400.00	4100.00	2023-10-25	RF187
RS-NOV-030	17500.00	10300.00	7200.00	2023-11-28	RS321
SR-SEP-324	8500.00	5200.00	3300.00	2023-09-24	SR265
TE-NOV-247	36000.00	25000.00	11000.00	2023-11-23	TE476
TE-SEP-123	29000.00	20000.00	9000.00	2023-09-28	TE476
WX-OCT-362	10200.00	6400.00	3800.00	2023-10-30	WX412
XY-OCT-067	11000.00	7500.00	3500.00	2023-10-12	XY654
ZU-NOV-020	15000.00	9800.00	5200.00	2023-11-30	ZU982
NULL	NULL	NULL	NULL	NULL	NULL

INSERT INTO Project value

('P001', 'VivaVerve Wellness Studio: Nurturing Beauty Inside Out', 'VivaVerve Wellness Studio is dedicated to holistic Beauty

and Physical Well-being Services, promoting self-care and

enhancing natural beauty through a range of rejuvenating treatments.', '2024-06-01', '2024-10-29', 'JK652'),

('P002', 'SmartLife Companion: Fusion of Style and Functionality', 'Our SmartLife Companion project introduces a cutting-edge

smartwatch that seamlessly integrates style and functionality,

keeping you connected and enhancing your lifestyle', '2024-08-25', '2024-11-23', 'TE476'),

('P003', 'FinEdge Advisory: Mastering Financial Excellence', 'FinEdge Advisory provides expert Financial Management

Consulting Services, empowering organizations to navigate

financial landscapes, enhance decision-making, and achieve long-term financial success.', '2025-01-29', '2025-09-30', 'XY654'),

('P004', 'CodeForge Innovations: Crafting Digital Excellence', 'CodeForge Innovations specializes in Software Development

Services, creating bespoke software solutions that drive innovation,

efficiency, and digital transformation.', '2024-07-19', '2024-12-23', 'TE476'),

('P005', 'SerenitySeat:Your Personal Relaxation Oasis', 'SerenitySeat brings the spa experience to your home,

offering a luxurious and customizable massage chair

that becomes your personal relaxation oasis.', '2025-03-15', '2025-07-28', 'CY333'),

('P006', 'BrandVista Media Solutions: Crafting Your Brand Story', 'BrandVista Media Solutions specializes in Advertising Services,

 creating compelling narratives and impactful campaigns that resonate with your audience,

 driving brand awareness and engagement.', '2024-11-22', '2025-02-23', 'RS321'),

 ('P007', 'InsureInsight Advisors: Securing Your Future', 'InsureInsight Advisors offers personalized Insurance Advisory

Services, guiding individuals and businesses to make informed

decisions for a secure and resilient financial future.', '2025-01-26', '2025-06-28', 'XY654'),

('P008', 'SmartCycle Infrastructure Development', 'Propose and implement a project aimed at building smart infrastructure to

support the growing demand for bicycles and electric scooters. This may include the installation of smart bike racks,

charging stations, and IoT devices to monitor usage patterns.', '2024-03-13', '2024-05-27', 'HR124'),

('P009', 'ConnectBrew: Collaborative Coffee Community', 'Build a coffee maker fostering community among enthusiasts.

ConnectBrew integrates social features, allowing users to share recipes, discover blends, and participate in virtual

tasting sessions, enhancing the social aspect of enjoying coffee and encouraging exploration of diverse flavors.',

'2024-12-25', '2025-02-17', 'QJ625'),

('P010', 'FetchTech: Smart Pet Tracking and Wellness', 'Design a comprehensive smart pet tracking system that combines

GPS technology with health monitoring. FetchTech will allow pet owners to track their pets in real-time, receive

health updates, and set wellness goals. The project aims to provide peace of mind to pet owners while promoting the

health and safety of their beloved companions.', '2024-05-23', '2025-06-30', 'FX342');

SELECT * FROM Project;

Project_ID	Project_Title	Project_Description	Start_Date	End_Date	Company_ID
P001	VivaVerve Wellness Studio: Nurturing Beauty Inside Out	VivaVerve Wellness Studio is dedicated to holisti...	2024-06-01	2024-10-29	JK652
P002	SmartLife Companion: Fusion of Style and Functionality	Our SmartLife Companion project introduces a c...	2024-08-25	2024-11-23	TE476
P003	FinEdge Advisory: Mastering Financial Excellence	FinEdge Advisory provides expert Financial Man...	2025-01-29	2025-09-30	XY654
P004	CodeForge Innovations: Crafting Digital Excellence	CodeForge Innovations specializes in Software ...	2024-07-19	2024-12-23	TE476
P005	SerenitySeat:Your Personal Relaxation Oasis	SerenitySeat brings the spa experience to your ...	2025-03-15	2025-07-28	CY333
P006	BrandVista Media Solutions: Crafting Your Brand Story	BrandVista Media Solutions specializes in Adverti...	2024-11-22	2025-02-23	RS321
P007	InsureInsight Advisors: Securing Your Future	InsureInsight Advisors offers personalized Insu...	2025-01-26	2025-06-28	XY654
P008	SmartCycle Infrastructure Development	Propose and implement a project aimed at buildi...	2024-03-13	2024-05-27	HR124
P009	ConnectBrew: Collaborative Coffee Community	Build a coffee maker fostering community amon...	2024-12-25	2025-02-17	QJ625
P010	FetchTech: Smart Pet Tracking and Wellness	Design a comprehensive smart pet tracking syst...	2024-05-23	2025-06-30	FX342
NULL	NULL	NULL	NULL	NULL	NULL

INSERT INTO Funding value

('FD001', '2023-07-21', 13000.00, 'P005', 'debt_funding'),

('FD002', '2023-06-05', 200000.00, 'P005', 'equity_funding'),

('FD003', '2023-02-17', 15000.00, 'P001', 'debt_funding'),

('FD004', '2023-06-24', 250000.00, 'P002', 'equity_funding'),

('FD005', '2023-01-23', 100000.00, 'P007', 'equity_funding'),

('FD006', '2023-02-15', 150000.00, 'P001', 'equity_funding'),

('FD007', '2023-04-26', 20000.00, 'P006', 'debt_funding'),

('FD008', '2023-02-25', 64000.00, 'P004', 'equity_funding'),

('FD009', '2023-09-10', 78000.00, 'P002', 'debt_funding'),

('FD010', '2023-05-15', 34500.00, 'P003', 'debt_funding'),

('FD011', '2023-01-10', 34000.00, 'P003', 'debt_funding'),

('FD012', '2023-06-19', 12300.00, 'P001', 'equity_funding'),

('FD013', '2023-03-17', 23000.00, 'P006', 'equity_funding'),

('FD014', '2023-12-24', 52400.00, 'P004', 'debt_funding'),

('FD015', '2023-01-09', 42100.00, 'P010', 'equity_funding'),

('FD016', '2023-02-15', 22000.00, 'P008', 'debt_funding'),

('FD017', '2023-07-26', 15000.00, 'P005', 'debt_funding'),

('FD018', '2023-02-28', 18000.00, 'P009', 'equity_funding'),

('FD019', '2023-09-16', 44000.00, 'P010', 'equity_funding'),

('FD020', '2023-04-15', 25000.00, 'P010', 'debt_funding');

SELECT * FROM Funding;

Funding_ID	Funding_Date	Amount	Project_ID	Funding_Type
FD001	2023-07-21	13000.00	P005	debt_funding
FD002	2023-06-05	200000.00	P005	equity_funding
FD003	2023-02-17	15000.00	P001	debt_funding
FD004	2023-06-24	250000.00	P002	equity_funding
FD005	2023-01-23	100000.00	P007	equity_funding
FD006	2023-02-15	150000.00	P001	equity_funding
FD007	2023-04-26	20000.00	P006	debt_funding
FD008	2023-02-25	64000.00	P004	equity_funding
FD009	2023-09-10	78000.00	P002	debt_funding
FD010	2023-05-15	34500.00	P003	debt_funding
FD011	2023-01-10	34000.00	P003	debt_funding
FD012	2023-06-19	12300.00	P001	equity_funding
FD013	2023-03-17	23000.00	P006	equity_funding
FD014	2023-12-24	52400.00	P004	debt_funding
FD015	2023-01-09	42100.00	P010	equity_funding
FD016	2023-02-15	22000.00	P008	debt_funding
FD017	2023-07-26	15000.00	P005	debt_funding
FD018	2023-02-28	18000.00	P009	equity_funding
FD019	2023-09-16	44000.00	P010	equity_funding
FD020	2023-04-15	25000.00	P010	debt_funding
NULL	NULL	NULL	NULL	NULL

INSERT INTO Debt_Funding value

('FD001', 'Phoebe', 0.040, 4),

('FD003', 'Quine', 0.035, 7),

('FD007', 'Mikayla', 0.055, 6),

('FD009', 'Xiao Ning', 0.080, 1),

('FD010', 'Melinda', 0.025, 8),

('FD011', 'Alicia', 0.023, 3),

('FD020', 'Pei Qi', 0.03, 2),

('FD014', 'Christina', 0.042, 5),

('FD016', 'Miko', 0.025, 1),

('FD017', 'Dylan', 0.053, 6);

SELECT * FROM Debt_Funding;

Funding_ID	Borrower_Name	Interest_Rate	Loan_Term_Year
FD001	Phoebe	0.040	4
FD003	Quine	0.035	7
FD007	Mikayla	0.055	6
FD009	Xiao Ning	0.080	1
FD010	Melinda	0.025	8
FD011	Alicia	0.023	3
FD014	Christina	0.042	5
FD016	Miko	0.025	1
FD017	Dylan	0.053	6
FD020	Pei Qi	0.030	2
NULL	NULL	NULL	NULL

INSERT INTO Equity_Funding value

('FD002', 'Siow Wei', 10),

('FD004', 'Daniel', 9),

('FD005', 'Sam', 20),

('FD006', 'Ophilia', 5),

('FD008', 'Elly', 15),

('FD018', 'Emily', 20),

('FD013', 'Kelly', 15),

('FD015', 'Romen', 10),

('FD012', 'Oschar', 25),

('FD019', 'Shelly', 10);

SELECT * FROM Equity_Funding;

	Funding_ID	Investor_Name	Equity_Stake
▶	FD002	Siow Wei	10
	FD004	Daniel	9
	FD005	Sam	20
	FD006	Ophilia	5
	FD008	Elly	15
	FD012	Oschar	25
	FD013	Kelly	15
	FD015	Romen	10
	FD018	Emily	20
	FD019	Shelly	10
*	NULL	NULL	NULL

11 SQL QUERIES USING DATA MANIPULATION LANGUAGE (DML)

→ A query that adds a new column name 'Entrepreneur_Nationality' for Entrepreneur table and insert data for the new column.

ALTER TABLE Entrepreneur

ADD Entrepreneur_Nationality VARCHAR(50);

UPDATE Entrepreneur

SET Entrepreneur_Nationality = 'American'

WHERE Entrepreneur_ID = 'E001';

UPDATE Entrepreneur

SET Entrepreneur_Nationality = 'Malaysian'

WHERE Entrepreneur_ID = 'E002';

UPDATE Entrepreneur

SET Entrepreneur_Nationality = 'Indian'

WHERE Entrepreneur_ID = 'E003';

UPDATE Entrepreneur

SET Entrepreneur_Nationality = 'French'

WHERE Entrepreneur_ID = 'E004';

UPDATE Entrepreneur

SET Entrepreneur_Nationality = 'Malaysian'

WHERE Entrepreneur_ID = 'E005';

```
UPDATE Entrepreneur

SET Entrepreneur_Nationality = 'China'

WHERE Entrepreneur_ID = 'E006';


UPDATE Entrepreneur

SET Entrepreneur_Nationality = 'Malaysian'

WHERE Entrepreneur_ID = 'E007';


UPDATE Entrepreneur

SET Entrepreneur_Nationality = 'American'

WHERE Entrepreneur_ID = 'E008';


UPDATE Entrepreneur

SET Entrepreneur_Nationality = 'China'

WHERE Entrepreneur_ID = 'E009';


UPDATE Entrepreneur

SET Entrepreneur_Nationality = 'China'

WHERE Entrepreneur_ID = 'E010';


UPDATE Entrepreneur

SET Entrepreneur_Nationality = 'Canadian'

WHERE Entrepreneur_ID = 'E011';
```

SELECT * FROM Entrepreneur;

Entrepreneur_ID	Entrepreneur_Name	Entrepreneur_Age	Entrepreneur_Nationality
E001	John Smith	35	American
E002	Emily Chen	32	Malaysian
E003	Abilashree	40	Indian
E004	Sophie Martin	32	French
E005	Aishah Abdullah	15	Malaysian
E006	Olivia	25	China
E007	Emma Garcia	30	Malaysian
E008	Aiden Clark	32	American
E009	Chloe Wilson	34	China
E010	Amelia	29	China
E011	Ryan Gosling	43	Canadian
NULL	NULL	NULL	NULL

→ A query that delete entrepreneur detail for Entrepreneur ID E011

DELETE FROM Entrepreneur WHERE Entrepreneur_ID = 'E011';

SELECT * FROM Entrepreneur;

Entrepreneur_ID	Entrepreneur_Name	Entrepreneur_Age	Entrepreneur_Nationality
E001	John Smith	35	American
E002	Emily Chen	32	Malaysian
E003	Abilashree	40	Indian
E004	Sophie Martin	32	French
E005	Aishah Abdullah	15	Malaysian
E006	Olivia	25	China
E007	Emma Garcia	30	Malaysian
E008	Aiden Clark	32	American
E009	Chloe Wilson	34	China
E010	Amelia	29	China
NULL	NULL	NULL	NULL

→ A query that gets the company name and total number of service for total number service more than 2.

SELECT c.Company_Name, COUNT(s.Service_ID) AS ServiceNum

FROM Company c, Service s

WHERE c.Company_ID = s.Company_ID

GROUP BY c.Company_Name

HAVING ServiceNum>2 ;

	Company_Name	ServiceNum
▶	The IBR Asia Group Sdn Bhd	3
	Altios Malaysia Sdn Bhd	3

→ A query that retrieves project title and project duration for project duration more than 100 days and display the query result based on project title where project with the highest project duration is displayed first.

SELECT Project_Title, DATEDIFF(End_Date, Start_Date) AS Project_Duration

FROM Project

WHERE DATEDIFF(End_Date, Start_Date) > 100

ORDER BY Project_Duration DESC;

	Project_Title	Project_Duration
▶	FetchTech: Smart Pet Tracking and Wellness	403
	FinEdge Advisory: Mastering Financial Excellence	244
	CodeForge Innovations: Crafting Digital Excellence	157
	InsureInsight Advisors: Securing Your Future	153
	VivaVerve Wellness Studio: Nurturing Beauty Inside Out	150
	SerenitySeat:Your Personal Relaxation Oasis	135

→ A query that gets Service Buyer ID and Minimum Service Transaction Fees for Service Name of 'IT Consultation Service' and 'Software Development Service' only.

SELECT   s.S_Buyer_ID   AS   Service_Buyer_ID,   MIN(st.S_Transaction_Fees)   AS Min_Service_Transaction_Fees

FROM Service_Buyer s, Service_Transaction st, Service sv

WHERE   s.S_Buyer_ID = st.S_Buyer_ID AND sv.Service_ID = st.Service_ID AND sv.Service_Name IN ('IT Consultation Service','Software Development Service')

GROUP BY s.S_Buyer_ID;

Service_Buyer_ID	Min_Service_Transaction_Fees
HD45196	2.50
CC36789	6.50
JO142870	16.50

→ A query that retrieve Product ID, Product Name, Product Buyer Name and Product Transaction Date between March and April of 2023.

SELECT p.Product_ID, p.Product_Name, pb.P_Buyer_Name, pt.P_Trans_Date

FROM Product p, Product_Buyer pb, Product_Transaction pt

WHERE p.Product_ID = pt.Product_ID

AND pt.P_Buyer_ID = pb.P_Buyer_ID

AND pt.P_Trans_Date BETWEEN '2023-03-01' AND '2023-04-30';

Product_ID	Product_Name	P_Buyer_Name	P_Trans_Date
ARI526-787	Laptop	Nazra	2023-03-26
BHS561-284	Bicycle	Dasha	2023-03-11
BYX301-852	Electric Scooter	Zelda	2023-03-18
JYT012-611	Skincare Serum	Zaina	2023-03-10
TUY341-579	Kitchen Blender	Zelda	2023-04-13

→ A query that gets Project ID and total amount of funding for each project.

SELECT Project_ID, sum(Amount) AS Total_Funding
FROM Funding
GROUP BY Project_ID;

Project_ID	Total_Funding
P001	177300.00
P002	328000.00
P003	68500.00
P004	116400.00
P005	228000.00
P006	43000.00
P007	100000.00
P008	22000.00
P009	18000.00
P010	111100.00

→ A query that get Entrepreneur ID, minimum profit and maximum profit of company for each entrepreneur.

SELECT e.Entrepreneur_ID, min(f.Profit), max(f.Profit)
FROM Entrepreneur e, Company c, Finance f
WHERE e.Entrepreneur_ID = c.Entrepreneur_ID
AND c.Company_ID = f.Company_ID
GROUP BY e.Entrepreneur_ID;

Entrepreneur_ID	min(f.Profit)	max(f.Profit)
E001	10300.00	18500.00
E002	9800.00	25000.00
E003	6999.00	6999.00
E004	5320.00	5900.00
E005	7500.00	18000.00
E006	6400.00	6400.00
E007	8000.00	8000.00
E008	8600.00	8600.00
E009	6400.00	9600.00
E010	5200.00	5200.00

→ A query that gets the name of company, address of company, with revenue more than 10000 and profit more than 10000.

SELECT c.Company_Name, c.Company_Add, f.Revenue, f.Profit

FROM Company c

INNER JOIN Finance f

WHERE c.Company_ID = f.Company_ID

AND f.Revenue > 10000

AND f.Profit > 10000;

	Company_Name	Company_Add	Revenue	Profit
▶	Nexus	11A, Jalan Sultan Hishamuddin, Klang	25000.00	18000.00
	Titian Kotamas Sdn Bhd	25, Jalan Merpati, Taiping	24000.00	18500.00
	The IBR Asia Group Sdn Bhd	163, Jalan Ampang, Kuala Lumpur	17500.00	10300.00
	Prime Technology	45, Jalan Tun Tan Cheng Lock, Melaka	36000.00	25000.00
	Prime Technology	45, Jalan Tun Tan Cheng Lock, Melaka	29000.00	20000.00

→ A query that gets the name of service, service buyer, 'total service fee' which calculates the summation of service price and transaction fees and date. Display the query result only for total service fee more than 1000.

SELECT s.Service_Name, sb.S_Buyer_Name, s.service_price + st.S_Transaction_Fees AS Total_Service_Fee, st.S_Date

FROM Service_Transaction st

INNER JOIN Service s, Service_Buyer sb

WHERE s.Service_ID = st.Service_ID

AND sb.S_Buyer_ID = st.S_Buyer_ID

AND s.service_price + st.S_Transaction_Fees > 1000;

	Service_Name	S_Buyer_Name	Total_Service_Fee	S_Date
▶	Software Development Service	Raymon	2506.50	2023-04-07
	Software Development Service	Yu Chen	2504.50	2023-03-23
	Software Development Service	Vimalan	2516.50	2023-12-12
	Advertising Service	Tanusha	1812.50	2022-11-26

→ A query that gets the Company Name and Company Age for Entrepreneur Age more than 32 years old by using sub-query method.

SELECT c.Company_Name, c.Company_Age

FROM Company c

WHERE c.Entrepreneur_ID IN(

   SELECT e.Entrepreneur_ID

   FROM Entrepreneur e

   WHERE e.Entrepreneur_Age > 32

);

Company_Name	Company_Age
Titian Kotamas Sdn Bhd	5
The IBR Asia Group Sdn Bhd	3
PureLuxe	4
StarStruck	4
VivaTech	1

NORMALIZATION

1NF

Entrepreneur (**Company_ID**, Company_Name, Company_Add, Company_Age, Entrepreneur_ID, Entrepreneur_Name, Entrepreneur_Age, **Product_ID**, Product_Name, Product_Price, P_Processing_Fees, P_Delivery_Fees, P_Trans_Date, P_Buyer_ID, P_Buyer_Name, **Service_ID**, Service_Name, Service_Price, S_Transaction_Fees, S_Date, S_Buyer_ID, S_Buyer_Name, **Finance_ID**, Revenue, Profit, Operating_Cost, Finance_Date, **Project_ID**, Project_Title, Project_Description, Start_Date, End_Date, **Funding_ID**, Funding_Date, Amount, Funding_Type)

Partial Dependencies

Company_ID, Company_Name, Company_Add, Company_Age, Entrepreneur_ID, Entrepreneur_Name, Entrepreneur_Age

Product_ID, Product_Name, Product_Price, P_Processing_Fees, P_Delivery_Fees, P_Trans_Date, P_Buyer_ ID, P_Buyer_Name

Service_ ID, Service_Name, Service_Price, S_Transaction_Fees, S_Date, S_Buyer_ID, S_Buyer_Name

Finance_ID, Revenue, Profit, Operating_Cost, Finance_Date

Project_ID, Project_Title, Project_Description, Start_Date, End_Date

Funding_ID, Funding_Date, Amount, Funding_Type

Transitive Dependencies

Entrepreneur_ID, Entrepreneur_Name, Entrepreneur_Age

P_Buyer_ ID, P_Buyer_Name

S_Buyer_ID, S_Buyer_Name

2NF

Company (**Company_ID**, Company_Name, Company_Add, Company_Age, Entrepreneur_ID, Entrepreneur_Name, Entrepreneur_Age)

Product (**Product_ID**, Product_Name, Product_Price, P_Processing_Fees, P_Delivery_Fees, P_Trans_Date, P_Buyer_ ID, P_Buyer_Name, Company_ID)

Service (**Service_ID**, Service_Name, Service_Price, S_Transaction_Fees, S_Date, S_Buyer_ID, S_Buyer_Name, Company_ID)

Finance (**Finance_ID**, Revenue, Profit, Operating_Cost, Finance_Date, Company_ID)

Project (**Project_ID**, Project_Title, Project_Description, Start_Date, End_Date, Company_ID)

Funding (**Funding_ID**, Funding_Date, Amount, Funding_Type, Project_ID)

3NF

Company (**Company_ID**, Company_Name, Company_Add, Company_Age, Entrepreneur_ID)

Entrepreneur (**Entrepreneur_ID**, Entrepreneur_Name, Entrepreneur_Age)

Product (**Product_ID**, Product_Name, Product_Price, Company_ ID)
Product_Transaction (**Product_ID**, **P_Buyer_ID**, P_Processing_Fees, P_Delivery_Fees, P_Trans_Date)
Product_Buyer (**P_Buyer_ID**, P_Buyer_Name)
Service (**Service_ID**, Service_Name, Service_Price, Company_ID)

Service_Transaction (**Service_ID**, **S_Buyer_ID**, S_Transaction_Fees, S_Date)

Service_Buyer (**S_Buyer_ID**, S_Buyer_Name)

Finance (**Finance_ID**, Revenue, Profit, Operating_Cost, Finance_Date, Company_ID)

Project (**Project_ID**, Project_Title, Project_Description, Start_Date, End_Date, Company_ID)

Funding (**Funding_ID**, Funding_Date, Amount, Project_ID, Funding_Type)

DATA DICTIONARY

No	Data/Variable	Description	Type	Length	PK/FK
1	Entrepreneur_ID	Entrepreneur ID	Varchar	50	PK
2	Entrepreneur_Name	Entrepreneur Name	Varchar	50	
3	Entrepreneur_Age	Entrepreneur Age	Int		

Table 1: Entrepreneur

No	Data/Variable	Description	Type	Length	PK/FK
1	Company_ID	Company ID	Varchar	20	PK
2	Entrepreneur_ID	Entrepreneur ID	Varchar	50	FK
3	Company_Name	Company Name	Varchar	50	
4	Company_Add	Company Address	Varchar	50	
5	Company_Age	Company Age	Int		

Table 2: Company

No	Data/Variable	Description	Type	Length	PK/FK
1	Product_ID	Product ID	Varchar	50	PK
2	Company_ID	Company ID	Varchar	20	FK
3	Product_Name	Product Name	Varchar	50	
4	Product_Price	Product Price	Decimal	(7,2)	

Table 3: Product

No	Data/Variable	Description	Type	Length	PK/FK
1	P_Buyer_ID	Product Buyer ID	Varchar	50	PK
2	P_Buyer_Name	Product Buyer Name	Varchar	50	

Table 4: Product_Buyer

No	Data/Variable	Description	Type	Length	PK/FK
1	Product_ID	Product ID	Varchar	50	PK,FK1
2	P_Buyer_ID	Product Buyer ID	Varchar	50	PK,FK2
3	P_Processing_Fees	Product Processing Fees	Decimal	(6,2)	
4	P_Delivery_Fees	Product Delivery Fees	Decimal	(6,2)	
5	P_Trans_Date	Product Transaction Date	Date		

Table 5: Product_Transaction

No	Data/Variable	Description	Type	Length	PK/FK
1	Service_ID	Service ID	Varchar	20	PK
2	Service_Name	Service Name	Varchar	50	
3	Service_Price	Service Price	Decimal	(7,2)	
4	Company_ID	Company ID	Varchar	20	FK

Table 6: Service

No	Data/Variable	Description	Type	Length	PK/FK
1	S_Buyer_ID	Service Buyer ID	Varchar	20	PK
2	S_Buyer_Name	Service Buyer Name	Varchar	50	

Table 7: Service Buyer

No	Data/Variable	Description	Type	Length	PK/FK
1	Service_ID	Service ID	Varchar	20	PK,FK1
2	S_Buyer_ID	Service Buyer ID	Varchar	20	PK,FK2
3	S_Transaction_Fees	Service Transaction Fees	Decimal	(6,2)	
4	S_Date	Service Date	Date		

Table 8: Service_Transaction

No	Data/Variable	Description	Type	Length	PK/FK
1	Finance_ID	Finance ID	Varchar	50	PK
2	Revenue	Revenue	Decimal	(15,2)	
3	Profit	Profit	Decimal	(15,2)	
4	Operating_Cost	Operating Cost	Decimal	(15,2)	
5	Finance_Date	Finance Date	Date		
6	Company_ID	Company ID	Varchar	20	FK

Table 9: Finance

No	Data/Variable	Description	Type	Length	PK/FK
1	Project_ID	Project ID	Varchar	50	PK
2	Project_Title	Project Title	Varchar	100	
3	Project_Description	Project Description	Varchar	350	
4	Start_Date	Start Date	Date		
5	End_Date	End Date	Date		
6	Company_ID	Company ID	Varchar	20	FK

Table 10: Project

No	Data/Variable	Description	Type	Length	PK/FK
1	Funding_ID	Funding ID	Varchar	20	PK
2	Funding_Date	Funding Date	Date		
3	Amount	Amount	Decimal	(8,2)	
4	Project_ID	Project ID	Varchar	20	FK
5	Funding_Type	Funding Type	Varchar	20	

Table 11: Funding

No	Data/Variable	Description	Type	Length	PK/FK
1	Funding_ID	Funding ID	Varchar	20	PK
2	Borrower_Name	Borrower Name	Varchar	50	
3	Interest_Rate	Interest Rate	Decimal	(4,3)	
4	Loan_Term_Year	Loan Term Year	Int		

Table 12: Debt_Funding

No	Data/Variable	Description	Type	Length	PK/FK
1	Funding_ID	Funding ID	Varchar	20	PK
2	Investor_Name	Investor Name	Varchar	50	
3	Equity_Stake	Equity Stake	Int		

Table 13: Equity_Funding

REFERENCE

5 types of funding for businesses | indeed.com. (2022, July 22). https://www.indeed.com/career-advice/career-development/types-of-funding

Akiko. (2022, December 27). ER diagrams for banking system: A complete tutorial. EdrawMax. https://www.edrawsoft.com/article/er-diagrams-for-banking-system.html

A suite of case studies in Relational Database Design - McMaster University. (n.d.). https://macsphere.mcmaster.ca/bitstream/11375/11862/1/fulltext.pdf

Captain, F. (n.d.). Case study 2. Fidel A. Captain - Welcome. https://fidelcaptain.com/sixstep/casestudies/casestudy2.html

Entity relationship diagram example: Small loan system. Visual Paradigm Community Circle. (2020, June 18). https://circle.visual-paradigm.com/small-loan-system/

Financial Services Industry Data Model ERD: Adobe Experience Platform. Experience League. (2023, January 10). https://experienceleague.adobe.com/docs/experience-platform/xdm/schema/industries/financial.html?lang=en

Hayes, A. (2023, June 8). Financing: What it means and why it matters. Investopedia. https://www.investopedia.com/terms/f/financing.asp

Ma, D. (2021, June 1). Case study #4 - data bank. 8 Week SQL Challenge. https://8weeksqlchallenge.com/case-study-4/

MySQL tutorial. (n.d.). https://www.w3schools.com/MySQL/default.asp

PROJECT PLANNING

Name	Student ID	Task Distribution
CHONG JIN JYE	SD22048	- write Introduction - write Background -find relevant case study -write comparison for 2 study case - create an ERD - determine the entities, relationships, and attributes. - collaborate with the team to finalize the EERD - write MySQL queries - responsible for overall project coordination
ANG MEI YING	SD22061	- find relevant case study - collaborate with the team to finalize the ERD - create an EERD - handle data preparation - write Data Dictionary - write Meeting Report - write MySQL queries -write normalization - ensure deadlines are met and resolve any issues that arise.
LOW ANN GIE	SD22059	
NOR ADLIN SOFEA BINTI NOR HAIRUDIN	SD22024	- write Objective - write Scope - find relevant case study - collaborate with the team to finalize the ERD and EERD - write Business Rule - write MySQL queries - identify and report any bugs or issues

MEETING REPORT

Group Meeting Report [1]			
Date: 13/10/2023	**Venue:** Amphitheatre	**Attendees:** 1. Chong Jin Jye 2. Ang Mei Ying 3. Low Ann Gie 4. Nor Adlin Sofea Binti Nor Hairudin	
Time: 12:00pm – 2:00pm	**SCL Leader:** Ang Mei Ying		
No.	**Task List**	**Progress Task / Table Involves / Remarks**	**Person in Charge (PIC)**
1.	Decide topic for our project	Several ideas were considered before finalising the chosen topic. Finally, we choose the 'Professional Entrepreneur Development Financing System' as our topic.	All team members
2.	Finding relevant information about the chosen topic	Team members are actively involved in researching and gathering information.	All team members
3.	Discuss on the topic	The project plan is drafted.	Chong Jin Jye
4.	Confirm the date, time, and venue for the next meeting.	Reach out to all team members to finalize availability for the next meeting.	Ang Mei Ying

Group Meeting Report [2]			
Date: 19/10/2023	**Venue:** Classroom ZDK04	**Attendees:** 1. Chong Jin Jye 2. Ang Mei Ying 3. Low Ann Gie 4. Nor Adlin Sofea Binti Nor Hairudin	
Time: 8:45am - 10:00am	**SCL Leader:** Nor Adlin Sofea Binti Nor Hairudin		
No.	**Task List**	**Progress Task / Table Involves / Remarks**	**Person in Charge (PIC)**
1.	Collect relevant background information that provides context for the project from each team member and complete the introdruction and background from content that we discuss	Review and compile the collected information to create a comprehensive overview that contributes to the project's introduction and background.	Chong Jin Jye
2.	Collaborate with team members to identify the objective of project	Encouraging team members to share their thoughts and ideas regarding the project's purpose	Nor Adlin Sofea Binti Nor Hairudin
3.	Define the scopes of project	Collaborate with team members to gather insights and perspectives on the scope	Nor Adlin Sofea Binti Nor Hairudin

Group Meeting Report [3]			
Date: 20/10/2023	**Venue:** FSK15	**Attendees:** 1. Chong Jin Jye 2. Ang Mei Ying 3. Low Ann Gie 4. Nor Adlin Sofea Binti Nor Hairudin	
Time: 8:15am - 10:00am	**SCL Leader:** Chong Jin Jye		
No.	**Task List**	**Progress Task / Table Involves / Remarks**	**Person in Charge (PIC)**
1	Discuss ideas for all potential entity	To finalise all the entities	All team members
2.	Create ERD by using draw.io	Identify entities, attributes, primary key, foreign key and the type of relationship for each entity	Chong Jin Jye

Group Meeting Report [4]			
Date: 22/10/2023	**Venue:** Microsoft Teams	**Attendees:** 1. Chong Jin Jye 2. Ang Mei Ying 3. Low Ann Gie 4. Nor Adlin Sofea Binti Nor Hairudin	
Time: 2:30pm – 5:00pm	**SCL Leader:** Chong Jin Jye		
No.	**Task List**	**Progress Task / Table Involves / Remarks**	**Person in Charge (PIC)**
1.	Finding 2 case studies relevant to project title	Through research efforts, two case studies directly relevant to the project title have been identified.	All team members
2.	Discuss and state the comparison between 2 case studies	Summarise key findings and insights from the selected case studies.	Chong Jin Jye

Group Meeting Report [5]			
Date: 26/10/2023	**Venue:** Classroom ZDK04	**Attendees:** 1. Chong Jin Jye 2. Ang Mei Ying 3. Low Ann Gie 4. Nor Adlin Sofea Binti Nor Hairudin	
Time: 9:00am – 10:00am	**SCL Leader:** Low Ann Gie		
No.	**Task List**	**Progress Task / Table Involves / Remarks**	**Person in Charge (PIC)**
1.	Discuss ideas for superclass-subclasses, constraint and subtype discriminator.	Identify the element in EERD	All team member
2.	Create EERD by using draw.io	Identify entities, attributes, primary key, foreign key and the type of relationship for each entity	Low Ann Gie and Ang Mei Ying

Group Meeting Report [6]			
Date: 11/12/2023	**Venue:** Microsoft Teams	**Attendees:** 1. Chong Jin Jye 2. Ang Mei Ying 3. Low Ann Gie 4. Nor Adlin Sofea Binti Nor Hairudin	
Time: 7:30pm – 9:45pm	**SCL Leader:** Ang Mei Ying		
No.	**Task List**	**Progress Task / Table Involves / Remarks**	**Person in Charge (PIC)**
1.	Create data by using excel	Generate data based on the EERD	Ang Mei Ying and Low Ann Gie
2.	Create database and tables by using MySQL	Create the necessary tables within the newly created database, specifying columns, data types, and any constraints.	Ang Mei Ying and Low Ann Gie
3	Insert data into each table by using MySQL	Verifying the successful insertion of data	Chong Jin Jye and Nor Adlin Sofea Binti Nor Hairudin
4	Divide 10 MySQl query part for each team members	Clearly communicate the scope and requirements of each assigned query part.	Chong Jin Jye

Group Meeting Report [7]			
Date: 15/12/2023	**Venue:** Amphitheatre	**Attendees:** 1. Chong Jin Jye 2. Ang Mei Ying 3. Low Ann Gie 4. Nor Adlin Sofea Binti Nor Hairudin	
Time: 12:30pm – 2:15pm	**SCL Leader:** Chong Jin Jye		
No.	**Task List**	**Progress Task / Table Involves / Remarks**	**Person in Charge (PIC)**
1.	Team leader provides an overview of the project's overall status.	Summarise the overall project status	Chong Jin Jye
2.	Each team member briefly reports on their progress.	Make sure the team is on track to meet established goals.	All team members
3.	Team leader assign work to all team member	- Business rules is assigned to Nor Adlin Sofea Binti Nor Hairudin - Data dictionary is assigned to Ang Mei Ying and Low Ann Gie - References are assigned to all team member	Chong Jin Jye

Group Meeting Report [8]			
Date: 30/12/2023	**Venue:** Microsoft Teams	**Attendees:** 1. Chong Jin Jye 2. Ang Mei Ying 3. Low Ann Gie 4. Nor Adlin Sofea Binti Nor Hairudin	
Time: 2:00pm- 4:30pm	**SCL Leader:** Nor Adlin Sofea Binti Nor Hairudin		
No.	**Task List**	**Progress Task / Table Involves / Remarks**	**Person in Charge (PIC)**
1.	Discuss about normalization	Identify the 1NF, 2NF, 3NF, partial dependency and transitive dependency	Ang Mei Ying, Low Ann Gie

Group Meeting Report [9]			
Date: 5/1/2024	**Venue:** Microsoft Teams	**Attendees:** 1. Chong Jin Jye 2. Ang Mei Ying 3. Low Ann Gie 4. Nor Adlin Sofea Binti Nor Hairudin	
Time: 8:00pm- 10:50pm	**SCL Leader:** Low Ann Gie		
No.	**Task List**	**Progress Task / Table Involves / Remarks**	**Person in Charge (PIC)**
1.	Finalize the project report	Update all project documentation and checking for error	All team members
2.	Prepare for presentation part	Distributed the turn for presentation and discuss about what going to present	All team members