DBMS Normalization Assignment

1. Employee Information

1NF (each column has atomic values)

EmployeeID	EmployeeName	Department	ManagerID	Salary	HireDate
1	John Smith	HR	101	50000	2022-01-15
2	Alice Brown	IT	102	60000	2022-02-20
3	Mark Johnson	Sales	101	55000	2022-03-10

2NF (remove partial dependency)

Employee table

EmployeeID	EmployeeName	Salary	HireDate
1	John Smith	50000	2022-01-15
2	Alice Brown	60000	2022-02-20
3	Mark Johnson	55000	2022-03-10

Department table

DepartmentID	Department
01	HR
02	IT
03	Sales

Employee department Mapping

EmployeeID	DepartmentID	ManagerID
1	01	101
2	02	102
3	03	101

Manager Table

ManagerID	ManagerName
101	Simon

102	Anil

2. Training Programs

1NF

ProgramID	ProgramName	Trainer	Department	EmployeeID	EmployeeName	Date
1	Java Fundamentals	John Smith	IT	101	Alice Brown	2022-03-01
2	Project Management	Sarah White	HR	102	Bob Green	2022-03-10
3	Sales Techniques	Mark Johnson	Sales	103	Charlie Black	2022-03-20

2NF

Program table

ProgramID	ProgramName	Trainer
1	Java Fundamentals	John Smith
2	Project Management	Sarah White
3	Sales Techniques	Mark Johnson

ProgramID	EmployeeID	EmployeeName	Department	Date
1	101	Alice Brown	IT	2022-03-01
2	102	Bob Green	HR	2022-03-10
3	103	Charlie Black	Sales	2022-03-20

3NF

ProgramID	ProgramName	Trainer
1	Java Fundamentals	John Smith
2	Project Management	Sarah White
3	Sales Techniques	Mark Johnson

EmployeeID	EmployeeName
101	Alice Brown

102	Bob Green
103	Charlie Black

ProgramID	EmployeeID	Department	Date
1	101	IT	2022-03-01
2	102	HR	2022-03-10
3	103	Sales	2022-03-20

3. Customer Orders

1NF

OrderID	CustomerName	ProductID	ProductName	Qty	UnitPrice	TotalAmount	OrderDate
1	John Doe	101	Laptop	2	800	1600	2022-01-15
2	Jane Smith	102	Smartphone	1	500	500	2022-02-20
3	John Doe	103	Printer	1	200	200	2022-03-10

2NF

OrderID	CustomerName
1	John Doe
2	Jane Smith
3	John Doe

OrderID	ProductID	ProductName	Qty	UnitPrice	TotalAmount	OrderDate
1	101	Laptop	2	800	1600	2022-01-15
2	102	Smartphone	1	500	500	2022-02-20
3	103	Printer	1	200	200	2022-03-10

3NF

CustomerID	CustomerName

1	John Doe
2	Jane Smith

OrderID	CustomerID	ProductID
1	1	101
2	2	102
3	1	103

OrderID	Qty	TotalAmount	OrderDate
1	2	1600	2022-01-15
2	1	500	2022-02-20
3	1	200	2022-03-10

ProductID	ProductName	UnitPrice
101	Laptop	800
102	Smartphone	500
103	Printer	200

4. Stress management

1NF

EmployeeID	FirstName	LastName	StressLevel	HoursOfWork	BreaksTaken	PhysicalActivity	CounselingSessions
101	Sarah	White	Moderate	45	3	Yoga	2
102	Bob	Green	High	50	2	Jogging	1
103	Charlie	Black	Low	40	4	Meditation	3
104	David	Miller	High	48	1	Gym	2
105	Jane	Doe	Moderate	42	3	Walking	1

2NF

Employee ID	FirstName	LastName	HoursOfWork	BreaksTaken
101	Sarah	White	45	3
102	Bob	Green	50	2
103	Charlie	Black	40	4
104	David	Miller	48	1
105	Jane	Doe	42	3

Employee ID	StressLevel	PhysicalActivity	CounselingSessions
101	Moderate	Yoga	2
102	High	Jogging	1
103	Low	Meditation	3
104	High	Gym	2
105	Moderate	Walking	1

5. Flee Market

1NF

ItemID	SellerName	ItemName	Category	Price	Quantity	Description	Condition	Location	DateListed
101	John's Treasures	Vintage Chair	Furniture	50.00	2	Beautiful vintage chair, excellent condition	Like New	Booth 15, Section A	2022-01-15
102	Alice's Finds	Antique Clock	Home Decor	80.00	1	Authentic antique clock with Roman numerals	Good	Stall 8, Section B	2022-02-20
103	Mark's Collectibles	Vinyl Records	Music	15.00	10	Various artists and genres, in good condition	Used	Booth 20, Section C	2022-03-10
104	Emma's Treasures	Vintage Jewelry	Accessories	35.00	5	Assorted vintage jewelry pieces,	Excellent	Stall 12, Section D	2022-04-05

105	Robert's Finds	Retro Camera	Electronics	60.00	1	Vintage Polaroid camera with original case	Good	Booth 5, Section A	2022-05-15

2NF

ItemID	ItemName	Category	Price	Quantity	Description	Condition
101	Vintage Chair	Furniture	50.00	2	Beautiful vintage chair, excellent condition	Like New
102	Antique Clock	Home Decor	80.00	1	Authentic antique clock with Roman numerals	Good
103	Vinyl Records	Music	15.00	10	Various artists and genres, in good condition	Used
104	Vintage Jewelry	Accessories	35.00	5	Assorted vintage jewelry pieces, unique designs	Excellent
105	Retro Camera	Electronics	60.00	1	Vintage Polaroid camera with original case	Good

SellerID	SellerName	Location
1	John's Treasures	Booth 15, Section A
2	Alice's Finds	Stall 8, Section B
3	Mark's Collectibles	Booth 20, Section C
4	Emma's Treasures	Stall 12, Section D
5	Robert's Finds	Booth 5, Section A

SellerID	ItemID	DateListed
1	101	2022-01-15
2	102	2022-02-20
3	103	2022-03-10
4	104	2022-04-05
5	105	2022-05-15

6. Learning Management System

1NF

CID	CourseName	Instructor	Department	Credits	Enrolled Students	StartDate	EndDate	Location	Availability
101	Introduction to Biology	Prof. Smith	Science	3	25	2022-01-15	2022-05-10	Room 101	Open
102	Programming in Python	Prof. Brown	Computer Science	4	30	2022-02-20	2022-06-15	Lab 3, Building B	Closed
103	Financial Accounting	Prof. Green	Finance	3	20	2022-03-10	2022-07-05	Room 201	Open
104	English Literature	Prof. White	Humanities	3	22	2022-04-05	2022-08-20	Room 301	Open
105	Web Development Fundamentals	Prof. Black	IT	4	28	2022-05-15	2022-09-25	Lab 2,	Closed

								Buildi ng A	

2NF

CID	CourseName	Credits	Department
101	Introduction to Biology	3	Science
102	Programming in Python	4	Computer Science
103	Financial Accounting	3	Finance
104	English Literature	3	Humanities
105	Web Development Fundamentals	4	IT

InstructorID	Instructor
1	Prof. Smith
2	Prof. Brown
3	Prof. Green
4	Prof. White
5	Prof. Black

CID	InstructorID	Enrolled Students	StartDate	EndDate	Location	Availa bility
101	1	25	2022-01-15	2022-05-10	Room 101	Open
102	2	30	2022-02-20	2022-06-15	Lab 3, Building B	Close d
103	3	20	2022-03-10	2022-07-05	Room 201	Open
104	4	22	2022-04-05	2022-08-20	Room 301	Open
105	5	28	2022-05-15	2022-09-25	Lab 2, Building A	Close d