



Big Data for Managers & Analytics

Topic: Database Project Report on Driving License Form

Submitted To

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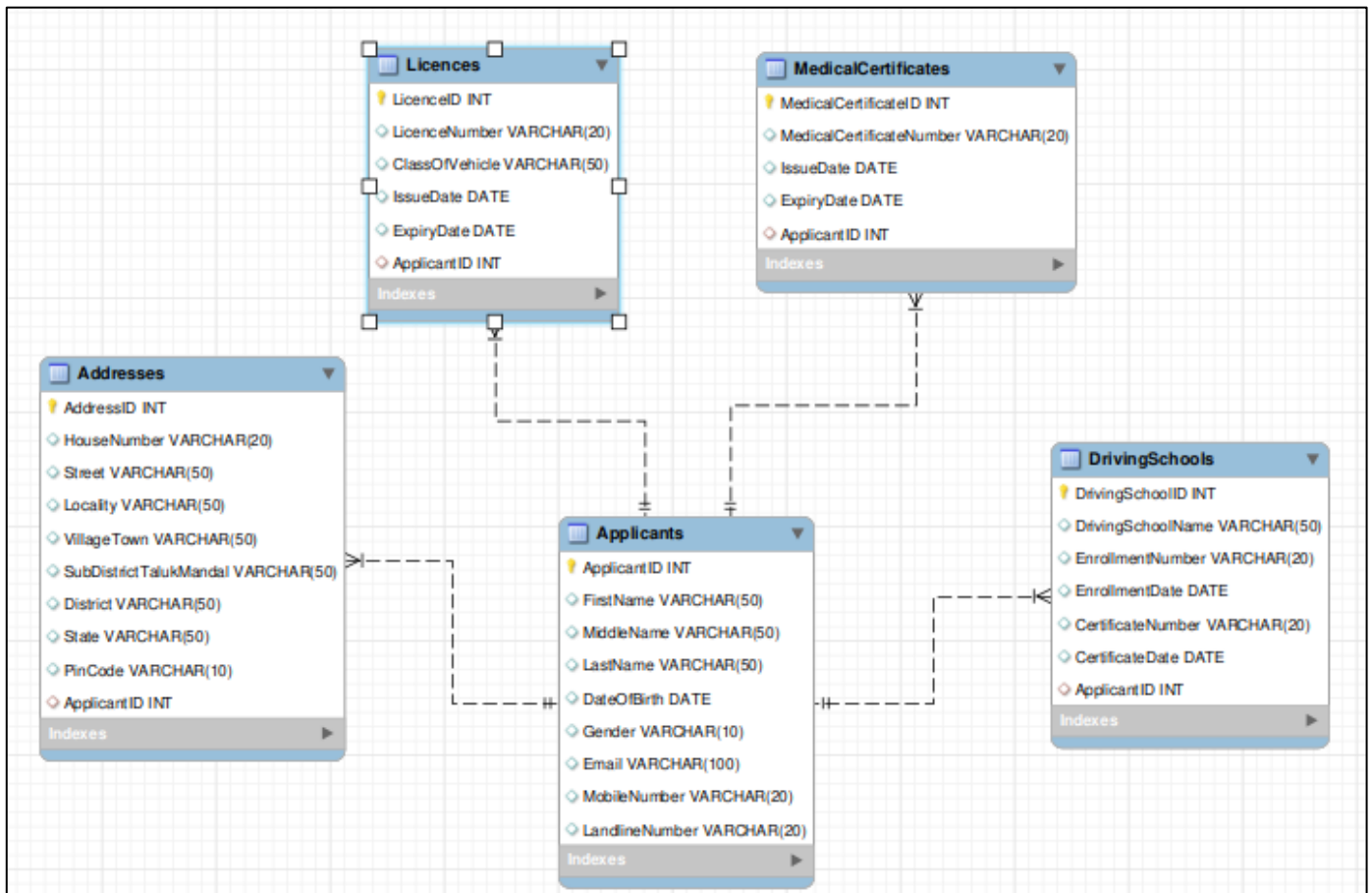
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ERD Diagram



Field	Type	Null	Key	Default	Extra
ApplicantID	int	NO	PRI	NULL	auto_increment
FirstName	varchar(50)	YES		NULL	
MiddleName	varchar(50)	YES		NULL	
LastName	varchar(50)	YES		NULL	
DateOfBirth	date	YES		NULL	
Gender	varchar(10)	YES		NULL	
Email	varchar(100)	YES		NULL	
MobileNumber	varchar(20)	YES		NULL	
LandlineNumber	varchar(20)	YES		NULL	

Field	Type	Null	Key	Default	Extra
DrivingSchoolID	int	NO	PRI	NULL	auto_increment
DrivingSchoolName	varchar(50)	YES		NULL	
EnrollmentNumber	varchar(20)	YES		NULL	
EnrollmentDate	date	YES		NULL	
CertificateNumber	varchar(20)	YES		NULL	
CertificateDate	date	YES		NULL	
ApplicantID	int	YES	MUL	NULL	

Field	Type	Null	Key	Default	Extra
LicenceID	int	NO	PRI	NULL	auto_increment
LicenceNumber	varchar(20)	YES		NULL	
ClassOfVehicle	varchar(50)	YES		NULL	
IssueDate	date	YES		NULL	
ExpiryDate	date	YES		NULL	
ApplicantID	int	YES	MUL	NULL	

Field	Type	Null	Key	Default	Extra
MedicalCertificateID	int	NO	PRI	NULL	auto_increment
MedicalCertificateNumber	varchar(20)	YES		NULL	
IssueDate	date	YES		NULL	
ExpiryDate	date	YES		NULL	
ApplicantID	int	YES	MUL	NULL	

Field	Type	Null	Key	Default	Extra
AddressID	int	NO	PRI	NULL	auto_increment
HouseNumber	varchar(20)	YES		NULL	
Street	varchar(50)	YES		NULL	
Locality	varchar(50)	YES		NULL	
VillageTown	varchar(50)	YES		NULL	
SubDistrictTalukMandal	varchar(50)	YES		NULL	
District	varchar(50)	YES		NULL	
State	varchar(50)	YES		NULL	
PinCode	varchar(10)	YES		NULL	
ApplicantID	int	YES	MUL	NULL	

mySql - Select From Applicants

ApplicantID	FirstName	MiddleName	LastName	DateOfBirth	Gender	Email	MobileNumber	LandlineNumber
1	John	Michael	Doe	1990-01-01	Male	john.doe@example.com	1234567890	0123456789
2	Jane	Elizabeth	Smith	1992-02-02	Female	jane.smith@example.com	9876543210	0987654321
3	Bob	Robert	Johnson	1985-03-03	Male	bob.johnson@example.com	5551234567	5559876543
4	Alice	Mary	Williams	1995-04-04	Female	alice.williams@example.com	7771234567	7779876543
5	Mike	David	Brown	1980-05-05	Male	mike.brown@example.com	3331234567	3339876543

DrivingSchoolID	DrivingSchoolName	EnrollmentNumber	EnrollmentDate	CertificateNumber	CertificateDate	ApplicantID
1	ABC Driving School	ENR123456	2019-12-01	CERT123456	2020-01-01	1
2	XYZ Driving Institute	ENR789012	2019-11-15	CERT789012	2020-02-02	2
3	Speedway Driving School	ENR345678	2019-10-20	CERT345678	2020-03-03	3
4	City Driving Academy	ENR567890	2019-09-25	CERT567890	2020-04-04	4
5	DriveSafe Driving School	ENR901234	2019-08-30	CERT901234	2020-05-05	5

MedicalCertificateID	MedicalCertificateNumber	IssueDate	ExpiryDate	ApplicantID
1	MC123456	2020-01-01	2021-01-01	1
2	MC789012	2020-02-02	2021-02-02	2
3	MC345678	2020-03-03	2021-03-03	3
4	MC567890	2020-04-04	2021-04-04	4
5	MC901234	2020-05-05	2021-05-05	5

AddressID	HouseNumber	Street	Locality	VillageTown	SubDistrictTalukMandal	District	State	PinCode	ApplicantID
1	123	Main Street	City Centre	City	SubDistrict	District	State	123456	1
2	456	Second Street	Suburb	Town	SubDistrict	District	State	456789	2
3	789	Third Street	Rural	Village	SubDistrict	District	State	789012	3
4	901	Fourth Street	Urban	City	SubDistrict	District	State	901234	4
5	234	Fifth Street	SemiUrban	Town	SubDistrict	District	State	234567	5

LicenceID	LicenceNumber	ClassOfVehicle	IssueDate	ExpiryDate	ApplicantID
1	DL123456	Light Motor Vehicle	2020-01-01	2025-01-01	1
2	DL789012	Medium Goods Vehicle	2020-02-02	2025-02-02	2
3	DL345678	Heavy Goods Vehicle	2020-03-03	2025-03-03	3
4	DL567890	E-Rickshaw	2020-04-04	2025-04-04	4
5	DL901234	Motor Cycle With Gear	2020-05-05	2025-05-05	5

1.1 Codes for designing a SQL schema where all tables (Employees, Stores, Customers, Products, Orders, and Order Details)

Create Database

```
CREATE DATABASE DrivingLicenceDBS;
```

Use the Database

```
USE DrivingLicenceDBS;
```

Create Tables

```
1. CREATE TABLE Applicants (
```

```
    ApplicantID INT PRIMARY KEY AUTO_INCREMENT,
```

```
    FirstName VARCHAR(50),
```

```
    MiddleName VARCHAR(50),
```

```
    LastName VARCHAR(50),
```

```
    DateOfBirth DATE,
```

```
    Gender VARCHAR(10),
```

```
    Email VARCHAR(100),
```

```
    MobileNumber VARCHAR(20),
```

```
    LandlineNumber VARCHAR(20));
```

```
2. CREATE TABLE Addresses (
```

```
    AddressID INT PRIMARY KEY AUTO_INCREMENT,
```

```
    HouseNumber VARCHAR(20),
```

```
    Street VARCHAR(50),
```

```
    Locality VARCHAR(50),
```

```
    VillageTown VARCHAR(50),
```

```
    SubDistrictTalukMandal VARCHAR(50),
```

```
    District VARCHAR(50),
```

```
    State VARCHAR(50),
```

```
    PinCode VARCHAR(10),
```

```
    ApplicantID INT,
```

```
    FOREIGN KEY (ApplicantID) REFERENCES Applicants(ApplicantID)
```

```
);
```

3. CREATE TABLE Licences (

LicenceID INT PRIMARY KEY AUTO_INCREMENT,

LicenceNumber VARCHAR(20),

ClassOfVehicle VARCHAR(50),

IssueDate DATE,

ExpiryDate DATE,

ApplicantID INT,

FOREIGN KEY (ApplicantID) REFERENCES Applicants(ApplicantID)

);

4. CREATE TABLE MedicalCertificates (

MedicalCertificateID INT PRIMARY KEY AUTO_INCREMENT,

MedicalCertificateNumber VARCHAR(20),

IssueDate DATE,

ExpiryDate DATE,

ApplicantID INT,

FOREIGN KEY (ApplicantID) REFERENCES Applicants(ApplicantID)

);

5. CREATE TABLE DrivingSchools (

DrivingSchoolID INT PRIMARY KEY AUTO_INCREMENT,

DrivingSchoolName VARCHAR(50),

EnrollmentNumber VARCHAR(20),

EnrollmentDate DATE,

CertificateNumber VARCHAR(20),

CertificateDate DATE,

ApplicantID INT,

FOREIGN KEY (ApplicantID) REFERENCES Applicants(ApplicantID)

);

Insert data into Applicants table

INSERT INTO Applicants (FirstName, MiddleName, LastName, DateOfBirth, Gender, Email,
MobileNumber, LandlineNumber)

VALUES

```
('John', 'Michael', 'Doe', '1990-01-01', 'Male', 'john.doe@example.com', '1234567890',  
'0123456789'),  
  
('Jane', 'Elizabeth', 'Smith', '1992-02-02', 'Female', 'jane.smith@example.com', '9876543210',  
'0987654321'),  
  
('Bob', 'Robert', 'Johnson', '1985-03-03', 'Male', 'bob.johnson@example.com', '5551234567',  
'5559876543'),  
  
('Alice', 'Mary', 'Williams', '1995-04-04', 'Female', 'alice.williams@example.com', '7771234567',  
'7779876543'),  
  
('Mike', 'David', 'Brown', '1980-05-05', 'Male', 'mike.brown@example.com', '3331234567',  
'3339876543');
```

Insert data into Addresses table

```
INSERT INTO Addresses (HouseNumber, Street, Locality, VillageTown, SubDistrictTalukMandal,  
District, State, PinCode, ApplicantID)
```

```
VALUES
```

```
('123', 'Main Street', 'City Centre', 'City', 'SubDistrict', 'District', 'State', '123456', 1),  
('456', 'Second Street', 'Suburb', 'Town', 'SubDistrict', 'District', 'State', '456789', 2),  
('789', 'Third Street', 'Rural', 'Village', 'SubDistrict', 'District', 'State', '789012', 3),  
('901', 'Fourth Street', 'Urban', 'City', 'SubDistrict', 'District', 'State', '901234', 4),  
('234', 'Fifth Street', 'SemiUrban', 'Town', 'SubDistrict', 'District', 'State', '234567', 5);
```

Insert data into Licences table

```
INSERT INTO Licences (LicenceNumber, ClassOfVehicle, IssueDate, ExpiryDate, ApplicantID)
```

```
VALUES
```

```
('DL123456', 'Light Motor Vehicle', '2020-01-01', '2025-01-01', 1),  
('DL789012', 'Medium Goods Vehicle', '2020-02-02', '2025-02-02', 2),  
('DL345678', 'Heavy Goods Vehicle', '2020-03-03', '2025-03-03', 3),  
('DL567890', 'E-Rickshaw', '2020-04-04', '2025-04-04', 4),  
('DL901234', 'Motor Cycle With Gear', '2020-05-05', '2025-05-05', 5);
```

Insert data into MedicalCertificates table

```
INSERT INTO MedicalCertificates (MedicalCertificateNumber, IssueDate, ExpiryDate, ApplicantID)
```

```
VALUES
```

```
('MC123456', '2020-01-01', '2021-01-01', 1),  
('MC789012', '2020-02-02', '2021-02-02', 2),
```

```
('MC345678', '2020-03-03', '2021-03-03', 3),  
( 'MC567890', '2020-04-04', '2021-04-04', 4),  
( 'MC901234', '2020-05-05', '2021-05-05', 5);
```

Insert data into DrivingSchools table

```
INSERT INTO DrivingSchools (DrivingSchoolName, EnrollmentNumber, EnrollmentDate,  
CertificateNumber, CertificateDate, ApplicantID)
```

```
VALUES
```

```
('ABC Driving School', 'ENR123456', '2019-12-01', 'CERT123456', '2020-01-01', 1),  
( 'XYZ Driving Institute', 'ENR789012', '2019-11-15', 'CERT789012', '2020-02-02', 2),  
( 'Speedway Driving School', 'ENR345678', '2019-10-20', 'CERT345678', '2020-03-03', 3),  
( 'City Driving Academy', 'ENR567890', '2019-09-25', 'CERT567890', '2020-04-04', 4),  
( 'DriveSafe Driving School', 'ENR901234', '2019-08-30', 'CERT901234', '2020-05-05', 5);
```

1.2 Privilege Codes

Create users with their respective roles

```
CREATE USER 'AdminUser'@'localhost' IDENTIFIED BY 'AdminPassword';  
CREATE USER 'DataEntryUser'@'localhost' IDENTIFIED BY 'DataEntryPassword';  
CREATE USER 'ViewerUser'@'localhost' IDENTIFIED BY 'ViewerPassword';
```

Granting permissions to AdminUser

```
GRANT ALL PRIVILEGES ON DrivingLicenceDB.* TO 'AdminUser'@'localhost';
```

Granting permissions to DataEntryUser

```
GRANT INSERT, UPDATE ON DrivingLicenceDB.ApplicantDetails TO 'DataEntryUser'@'localhost';  
GRANT INSERT, UPDATE ON DrivingLicenceDB.AddressDetails TO 'DataEntryUser'@'localhost';  
GRANT INSERT, UPDATE ON DrivingLicenceDB.LicenceDetails TO 'DataEntryUser'@'localhost';  
GRANT INSERT, UPDATE ON DrivingLicenceDB.MedicalCertificateDetails TO  
'DataEntryUser'@'localhost';  
GRANT INSERT, UPDATE ON DrivingLicenceDB.DrivingSchoolDetails TO 'DataEntryUser'@'localhost';
```

Granting permissions to ViewerUser

```
GRANT SELECT ON DrivingLicenceDB.* TO 'ViewerUser'@'localhost';
```