



**International Islamic University, Islamabad**  
**Faculty of Basic & Applied Sciences**  
**Department of Computer Science & Software Engineering**

**Introduction to Database Systems**

**Project Report**

**FPSCDB**

**(Federal Public Service Commission Data Base)**

**Submitted By:**

**Muhammad Imtinan Ul Haq**

**4018-BSCS-F18-A**

# Chapter No 1: Introduction

## ▪ **Introduction to FPSCDB:**

This database system is specifically developed for Federal Public Service Commission, Pakistan which is a federal government institution of Pakistan which is responsible for the recruitment of fresh candidates in several federal government institutions and ministries of Pakistan. The institution collects applications from candidates and conduct test and interviews to hire personals for both low and high priority post in the federal government. This requires them to keep record of both applicants and personals hired for the jobs. This makes the requirement for a system that can store/handle this huge amount of data. FPSCDB will fill in this void and enable them to store and manage data efficiently.

## ▪ **Problems:**

From a long time, the FPSC was using Manual Information System to manage the data. This system has huge problems when it comes to store/manage data. In this system data is stored on paper, which in this era is an outdated method to store data. The only advantage this system has that there no limit on storage, there is always more paper. Some major problems posed by this system are:

1. Inefficient
2. Inaccurate
3. Data loss is a huge disadvantage. If the paper is destroyed there is no way to recover the lost data and backing up data in hard form is expensive and silly.
4. Performing basic operations in this system is a headache. Operations like sorting, traversing, modification, retrieval all these operations are very tiring to perform in MIS.

## ▪ **Proposed Solution:**

The Solution to the above-mentioned problems is a database system which will introduce better ways to manage data than the MIS. The sole purpose of this DBS is to eradicate all the problems and to provide user an interface on which user can work tirelessly and efficiently. Data will be kept in a structured form in the DB and the DBMS will provide user functionality like traversal, retrieval, modification, deletion, insertion, sorting of data, which will be easier to perform. Our system will provide some extra benefits like a UI in the shape of Forms, Queries which will provide user options on what kind of data they want to review or retrieve, Reports will give the user options to create hard copies of data. Overall a better system will be provided.

# Chapter No 2: Data Requirement

## ▪ **Entity Class:**

Our DBS have 5 Entity Classes which are as follows,

### **1. Candidate:**

This class will store all the data about candidates who have applied for a position in any ministry through FPSC

### **2. Employee:**

This class will store all the data about candidates who have been employed on a position at any ministry through FPSC.

### **3. Positions:**

This class will store all the data about the positions (both vacant and occupied) present in ministries.

### **4. Divisions:**

This class will store all the data about the divisions in a ministry.

### **5. Ministry:**

This class will store all the data about the ministries themselves.

▪ **Attributes:**

The table contains attributes of each class after Normalization.

Entity Class	Attributes
Candidate	<ol style="list-style-type: none"> <li>1. RollNo</li> <li>2. CandidateName</li> <li>3. CNIC</li> <li>4. DOB</li> <li>5. Contact</li> <li>6. Degree</li> </ol>
Employee	<ol style="list-style-type: none"> <li>1. EmployeeID</li> <li>2. EmployeeName</li> <li>3. CNIC</li> <li>4. DOB</li> <li>5. Contact</li> </ol>
Position	<ol style="list-style-type: none"> <li>1. PosID</li> <li>2. PositionName</li> <li>3. Designation</li> <li>4. Pay</li> <li>5. PostingCity</li> </ol>
Division	<ol style="list-style-type: none"> <li>1. DivisionID</li> <li>2. DivisionName</li> <li>3. Contact</li> <li>4. DivisionManager</li> <li>5. ParentMinistry</li> <li>6. MinistryId</li> </ol>
Ministry	<ol style="list-style-type: none"> <li>1. MinistryID</li> <li>2. MinistryName</li> <li>3. MinistryDivisions</li> <li>4. MinistryHQ</li> <li>5. MinistryResponsible</li> </ol>

▪ **Business Rule / Relationship:**

Our DBS has the following relationships:

**(I) CANDIDATE to POSITION:**

One Candidate can apply for many Positions and One Position can have many Candidates.

**DEGREE:** Binary

**TYPE:** Many to Many



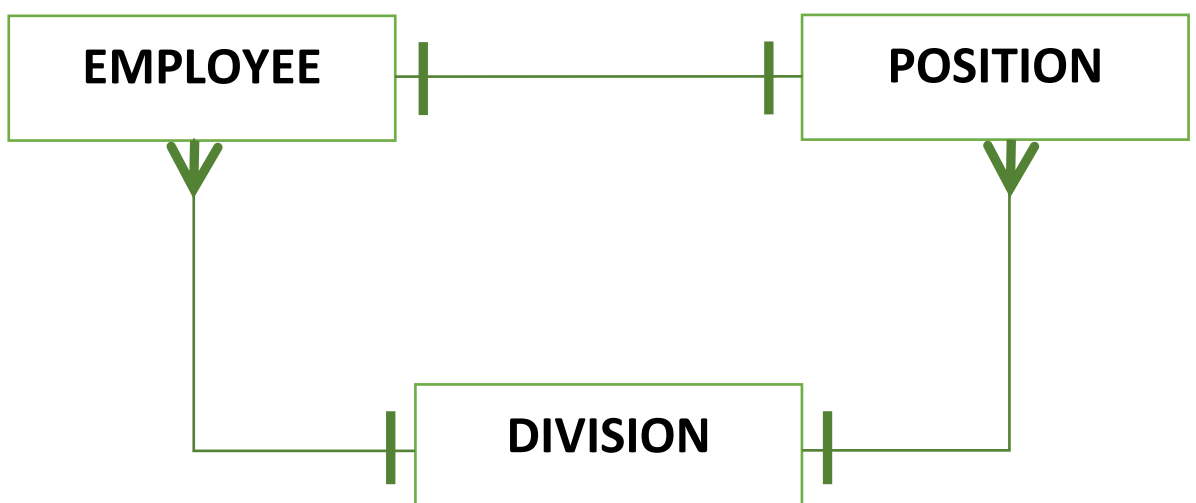
**(II) EMPLOYEE to POSITION to DIVISION:**

One Employee can only be on one Position and one Position can be occupied by one Employee.

One Position can only be in one Division and One Division can have many Positions.

One Employee can only be in one Division and One Division can have many Employees.

**DEGREE:** Ternary



**(III) DIVISION to MINISTRY:**

One Division can only belong to one Ministry and One Ministry can have many Divisions.

**DEGREE:** Binary

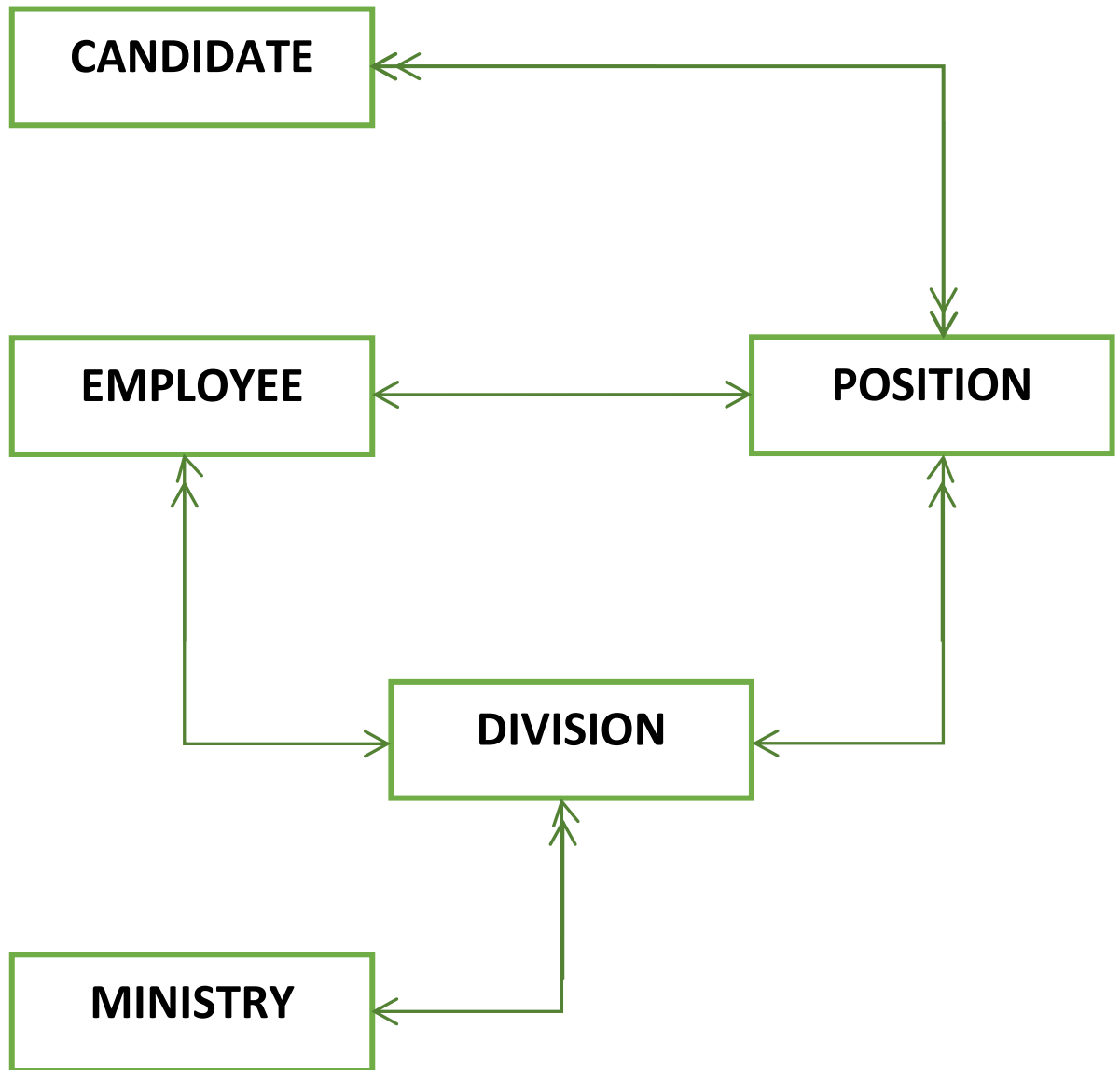
**TYPE:** One to Many



## Chapter No 3: Data Modelling

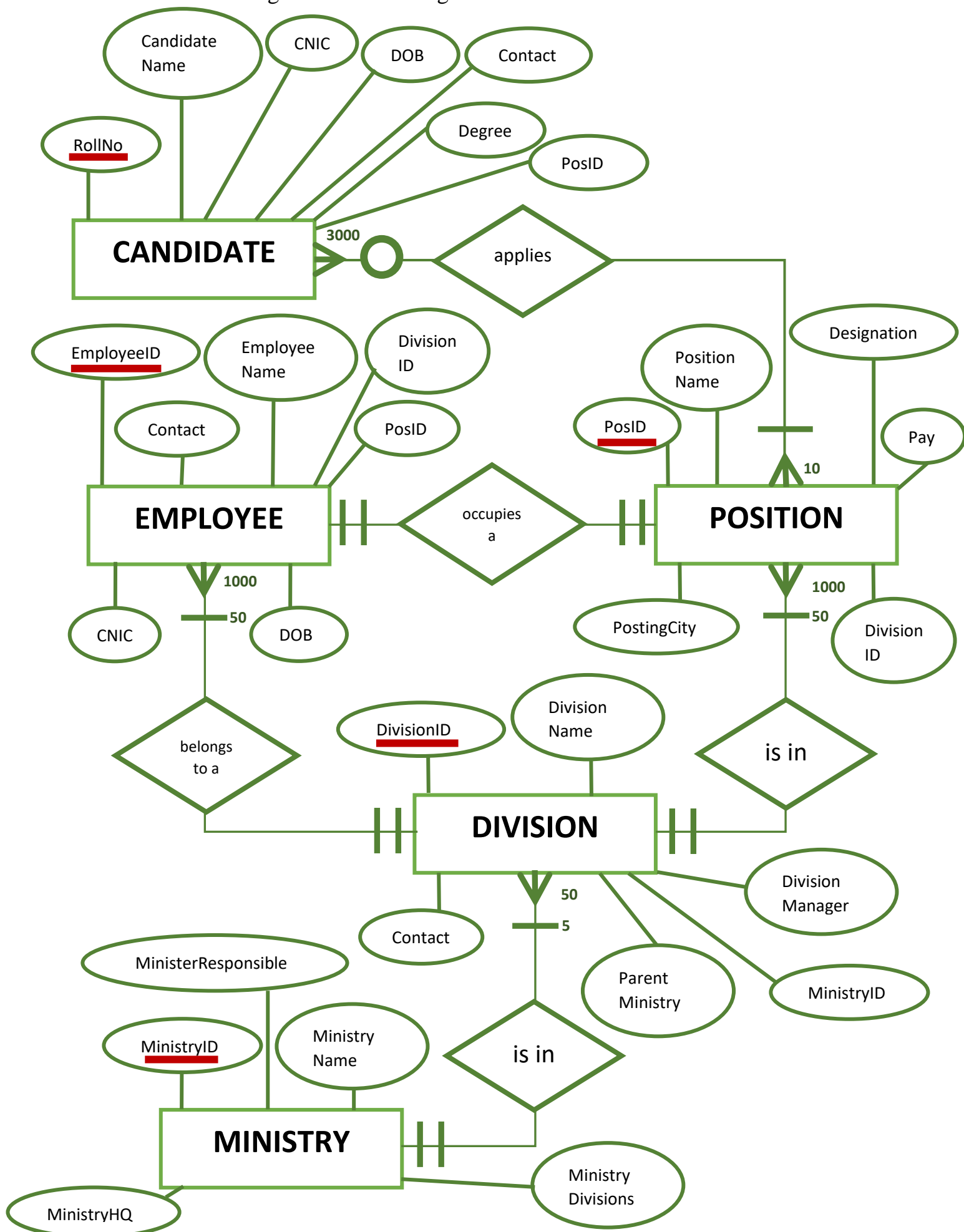
### ▪ Data Structure Diagram:

This diagram will portray brief relationship between all Entity Classes.



## ■ Entity Relationship Diagram (ERD):

This diagram will portray detailed relationship between all Entity Classes. This diagram does not include bridge tables. This diagram is not normalized.

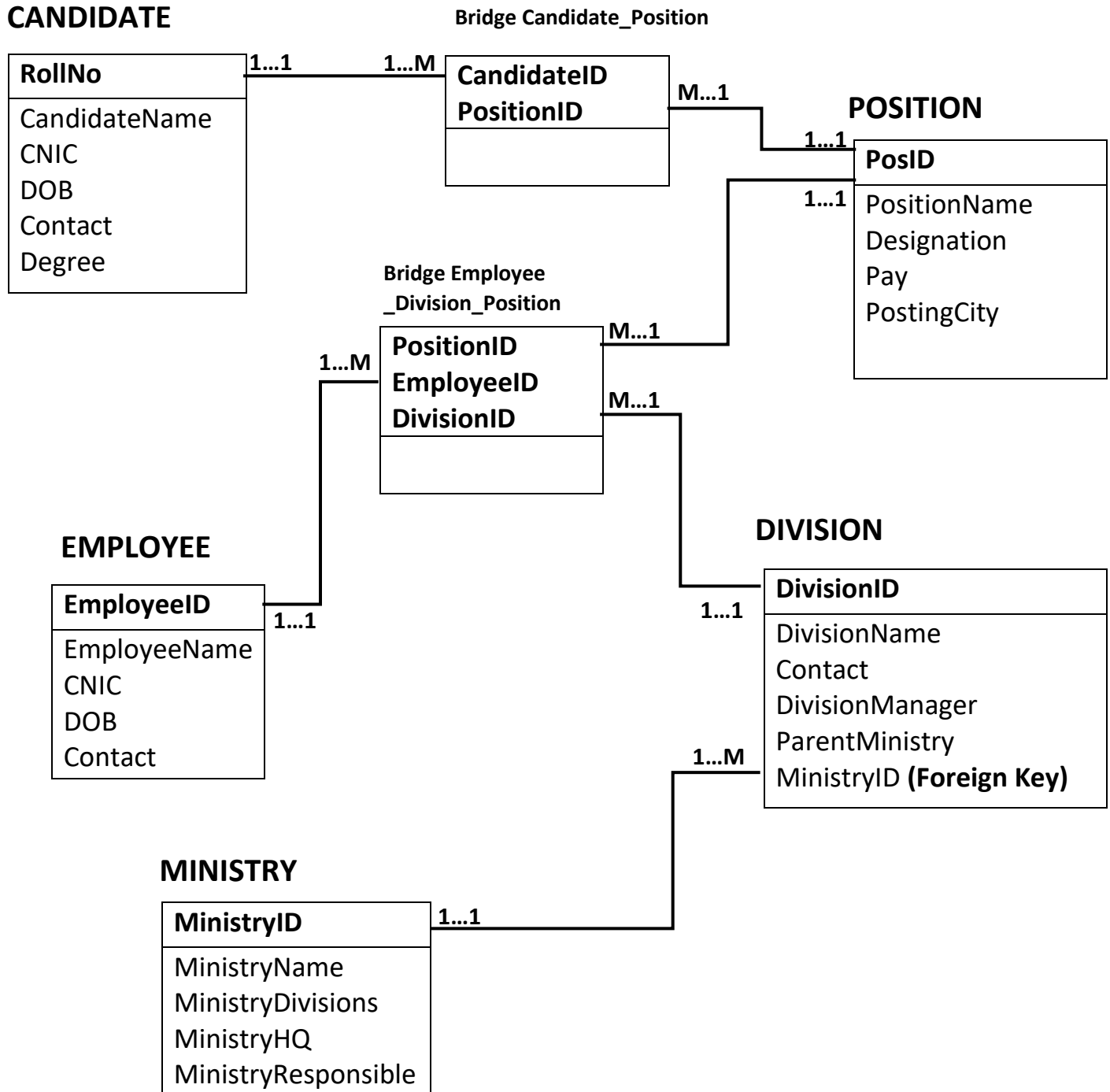




## ■ ERD + CLASS DIAGRAM:

This diagram will portray detailed relationship between all Entity Classes through a hybrid diagram made in the shape of class diagrams. This diagram includes Bridge tables and is in normalized form.

### CANDIDATE



## ■ Chapter No 4: Logical Data Model

Here we will perform 3 steps of LDM:

1. Representing Entity Classes
2. Representing Relationships
3. Normalization

All the give tables are before normalization.

### 1. Representing Entity Classes:

Candidate						
RollNo	CandidateName	CNIC	DOB	Contact	Degree	PosID
3995	Umar Sadiq	43201-6541289-3	01/04/1997	03045052313	BSCS	001
3995	Umar Sadiq	43201-6541289-3	01/04/1997	03045052313	BSCS	002
4018	Muhammad Imtinan Ul Haq	37406-6385419-1	29/11/1998	03035541651	BSCS	001
4018	Muhammad Imtinan Ul Haq	37406-6385419-1	29/11/1998	03035541651	BSCS	002
4018	Muhammad Imtinan Ul Haq	37406-6385419-1	29/11/1998	03035541651	BSCS	004
4021	Ismat Ullah	43120-5489464-9	14/10/1999	03505135462	BSSE	001
4021	Ismat Ullah	43120-5489464-9	14/10/1999	03505135462	BSSE	002

Position					
PosID	PositionName	Desgination	Pay	PostingCity	DivisionID
0001	Software Engineer	BS-17	90000	All Provinces	MCS-001
0002	Network Engineer	BS-18	120000	Islamabad	MCS-007
0003	ML Engineer	BS-16	100000	Lahore	MCT-001
0004	Network Administrator	BS-18	150000	Karachi	MCT-002
0005	Data Scientist	BS-17	250000	Quetta	MD-007
0009	Web Developer	BS-16	50000	Peshawar	MFA-001
0010	General Manager	BS-20	250000	Islamabad	MFR-002
0011	Head Supervisor	BS-19	200000	Karachi	MFR-003

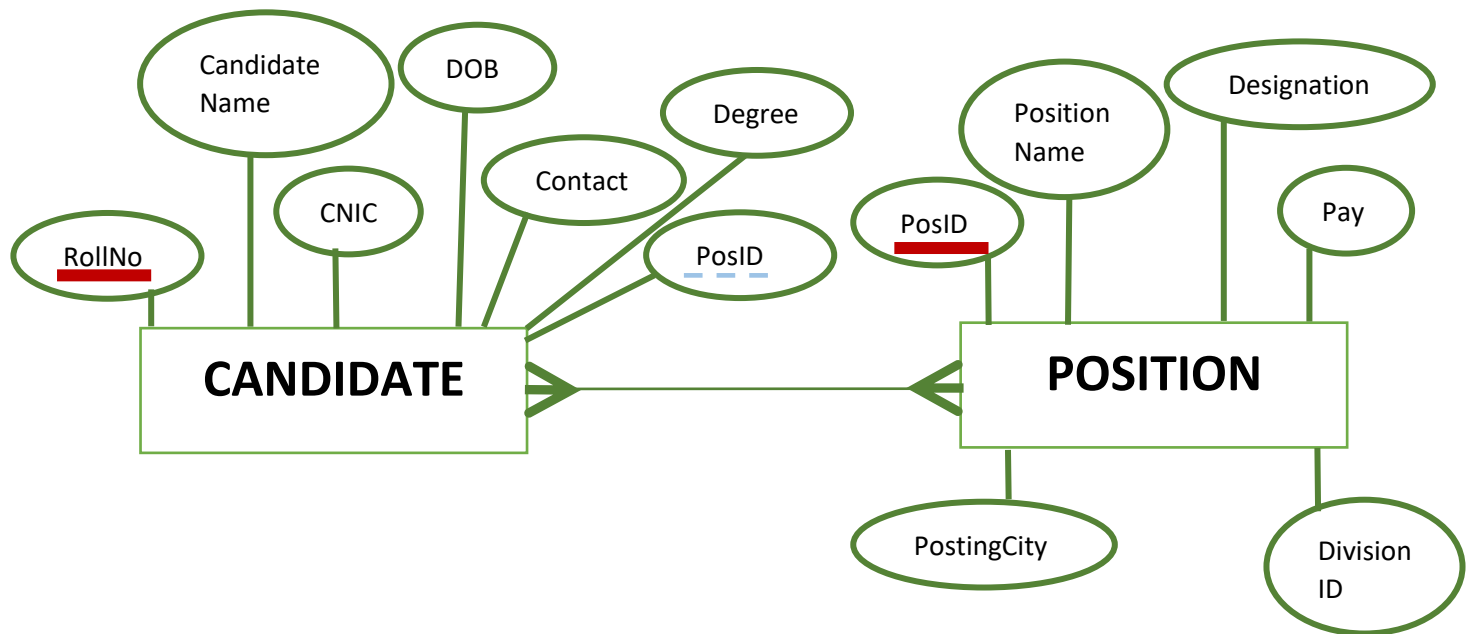
Employee						
EmployeeID	EmployeeName	CNIC	DOB	Contact	DivisionID	PosID
1125	Abdul Rehman	15236-4587553-1	22/01/1986	03125647893	MCS-001	001
2254	Mutahir Sajjad	37406-5896124-5	24/05/2000	03059296660	MCS-007	002
5543	Waqas Khan	15423-6485698-7	30/06/1985	03154862336	MCT-001	003
6512	Muhammad Sarim	15426-7896452-3	15/10/1999	03125648933	MCT-002	004
8897	Ali Ahmad	23601-5462169-7	27/03/1989	03133537568	MD-007	005

Division					
DivisionID	DivisionName	Contact	DivisionManager	ParentMinistry	MinistryID
MCS-001	Aviation Division	0519244140	Jamal Ahmad	Cabinet Secretariat	1
MCS-007	National Security Council	0513266789	Muhammad Nadeem	Cabinet Secretariat	11
MCT-001	Textile Division	0519202619	Iftikhar Ali Khan	Ministry of Commerce and Textile	13
MCT-002	Commerce Division	0519205745	Qamar Abbas	Ministry of Commerce and Textile	14
MD-007	Defence Division	0519272947	Asim Munir	Ministry of Defence	15
MFA-001	Foreign Affairs Division	0519207663	Muhammad Imran Saeed	Ministry of Foreign Affairs	16
MFR-002	Finance Division	0519205637	Fida Hussain	Ministry of Finance, Revenue and Economic Affairs	17
MFR-003	Revenue Division	0511772772	Baba Raiz	Ministry of Finance, Revenue and Economic Affairs	1

Ministry				
MinistryID	MinistryName	MinistryDivisions	MinistryHQ	MinisterResponsible
1	Cabinet Secretariat	3	Constitution Avenue; Islamabad, ICT, Pakistan. 55000	Prime Minister
11	Ministry of Overseas Pakistanis and Human Resource Development	1	Islamabad, Islamabad Capital Territory	Syed Zulfi Bukhari, Special Assistant to PM
13	Ministry of Railways	1	4th Floor, Block D Pak. Secretariat, Islamabad. Islamabad.	Azam Khan Swati, Minister of Railways
14	Ministry of Science and Technology	2	Ministry of Science and Technology, 1 & 2 Constitution Ave, G-5/2 G-5, Islamabad, Islamabad Capital Territory	Fawad Chaudhry, Federal Minister for Science and Technology
15	Ministry of Information Technology and Telecommunication	1	F-5/1 F-5, Islamabad, Islamabad Capital Territory	Syed Aminul Haque
16	Ministry of National Food Security and Research	1	Ministry of National Food Security & Research, Red Zone, Islamabad, Islamabad Capital Territory	Syed Fakhar Imam, Federal Minister For National Food Security & Research
17	Ministry of National Health Services, Regulations and Coordination	1	Local government and rural development complex, G-5, Islamabad, Islamabad Capital Territory	Faisal Sultan, Federal Minister for NHRC, Ministry for National Health Services, Regulation and Coordination

## 2. Representing Entity Classes:

### CANDIDATE to POSITION: BINARY + M:N

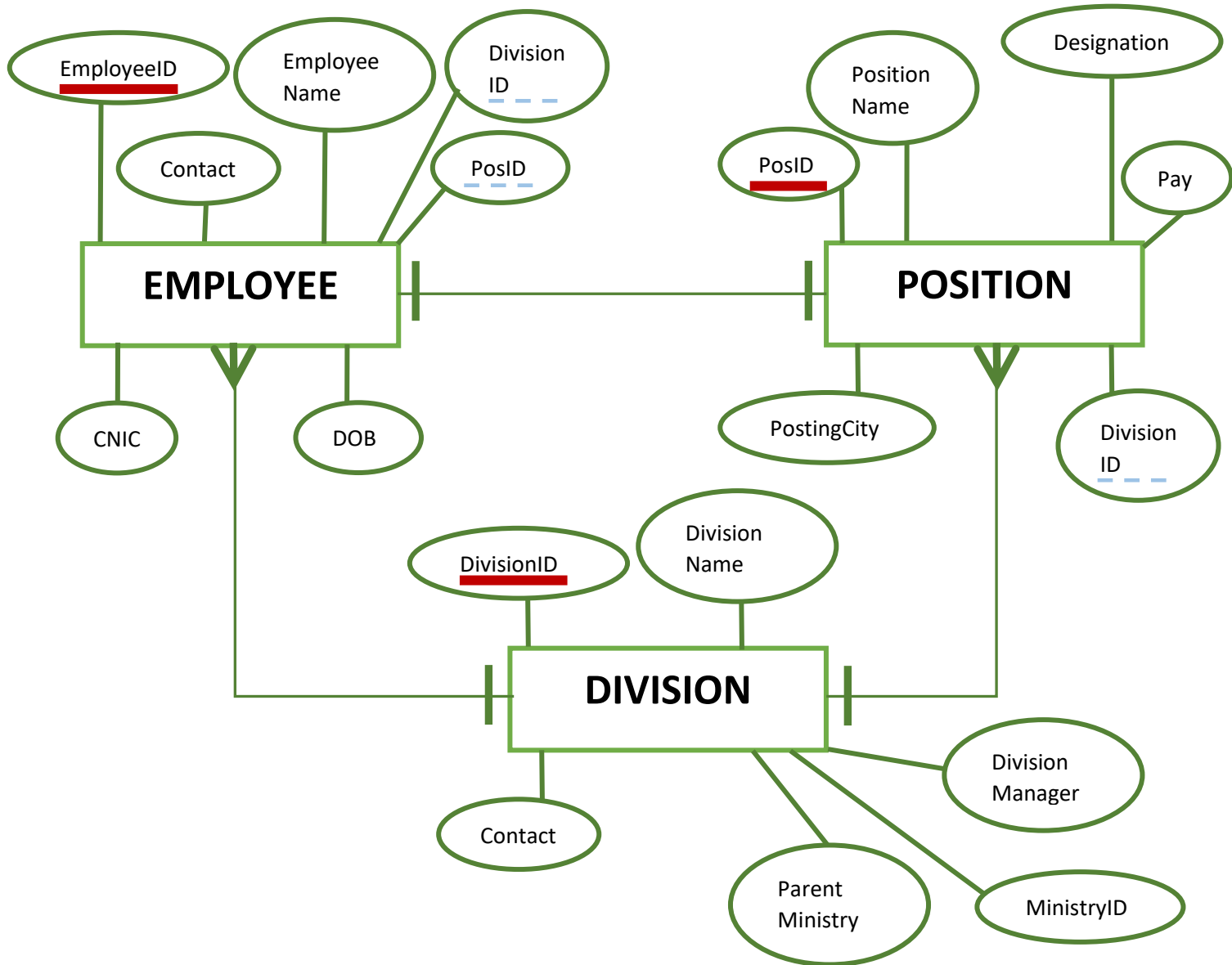


Candidate						
RollNo	CandidateName	CNIC	DOB	Contact	Degree	PosID
3995	Umar Sadiq	43201-6541289-3	01/04/1997	03045052313	BSCS	001
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4021	Ismat Ullah	43120-5489464-9	14/10/1999	03505135462	BSSE	002

Foreign Key

Position					
PosID	PositionName	Designation	Pay	PostingCity	DivisionID
0001	Software Engineer	BS-17	90000	All Provinces	MCS-001
0002	Network Engineer	BS-18	120000	Islamabad	MCS-007
0003	ML Engineer	BS-16	100000	Lahore	MCT-001
0004	Network Administrator	BS-18	150000	Karachi	MCT-002
0005	Data Scientist	BS-17	250000	Quetta	MD-007
0009	Web Developer	BS-16	50000	Peshawar	MFA-001
0010	General Manager	BS-20	250000	Islamabad	MFR-002
0011	Head Supervisor	BS-19	200000	Karachi	MFR-003

## EMPLOYEE to POSITION to DIVISION: TERNARY



# Foreign Keys

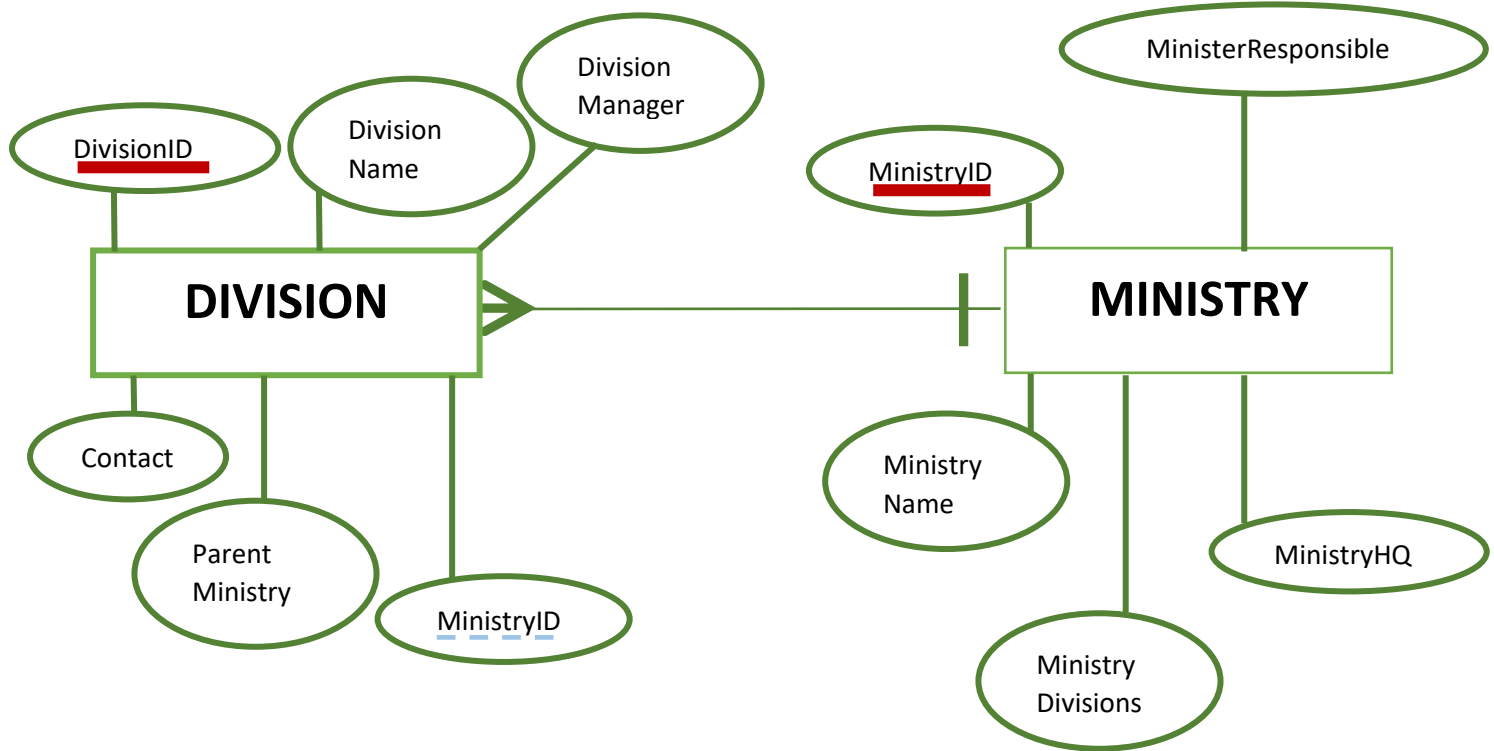
Employee						
<u>EmployeeID</u>	EmployeeName	CNIC	DOB	Contact	DivisionID	PosID
1125	Abdul Rehman	15236-4587553-1	22/01/1986	03125647893	MCS-001	001
2254	Mutahir Sajjad	37406-5896124-5	24/05/2000	03059296660	MCS-007	002
5543	Waqas Khan	15423-6485698-7	30/06/1985	03154862336	MCT-001	003
6512	Muhammad Sarim	15426-7896452-3	15/10/1999	03125648933	MCT-002	004
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## Foreign Key

Division					
<u>DivisionID</u>	DivisionName	Contact	DivisionManager	ParentMinistry	MinistryID
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MFR-002	Finance Division	0519205637	Fida Hussain	Ministry of Finance, Revenue and Economic Affairs	17
MFR-003	Revenue Division	0511772772	Baba Raiz	Ministry of Finance, Revenue and Economic Affairs	1

## DIVISION to MINISTRY: BINARY + 1:M



Division					
DivisionID	DivisionName	Contact	DivisionManager	ParentMinistry	MinistryID
MCS-001	Aviation Division	0519244140	Jamal Ahmad	Cabinet Secretariat	1
MCS-007	National Security Council	0513266789	Muhammad Nadeem	Cabinet Secretariat	11
MCT-001	Textile Division	0519202619	Iftikhar Ali Khan	Ministry of Commerce and Textile	13
MCT-002	Commerce Division	0519205745	Qamar Abbas	Ministry of Commerce and Textile	14
MD-007	Defence Division	0519272947	Asim Munir	Ministry of Defence	15
MFA-001	Foreign Affairs Division	0519207663	Muhammad Imran Saeed	Ministry of Foreign Affairs	16
MFR-002	Finance Division	0519205637	Fida Hussain	Ministry of Finance, Revenue and Economic Affairs	17
MFR-003	Revenue Division	0511772772	Baba Raiz	Ministry of Finance, Revenue and Economic Affairs	1

Ministry				
MinistryID	MinistryName	MinistryDivisions	MinistryHQ	MinisterResponsible
1	Cabinet Secretariat	3	Constitution Avenue; Islamabad, ICT, Pakistan. 55000	Prime Minister
11	Ministry of Overseas Pakistanis and Human Resource Development	1	Islamabad, Islamabad Capital Territory	Syed Zulfi Bukhari, Special Assistant to PM
13	Ministry of Railways	1	4th Floor, Block D Pak. Secretariat, Islamabad. Islamabad.	Azam Khan Swati, Minister of Railways
14	Ministry of Science and Technology	2	Ministry of Science and Technology, 1 & 2 Constitution Ave, G-5/2 G-5, Islamabad, Islamabad Capital Territory	Fawad Chaudhry, Federal Minister for Science and Technology
15	Ministry of Information Technology and Telecommunication	1	F-5/1 F-5, Islamabad, Islamabad Capital Territory	Syed Aminul Haque
16	Ministry of National Food Security and Research	1	Ministry of National Food Security & Research, Red Zone, Islamabad, Islamabad Capital Territory	Syed Fakhar Imam, Federal Minister For National Food Security & Research
17	Ministry of National Health Services, Regulations and Coordination	1	Local government and rural development complex, G-5, Islamabad, Islamabad Capital Territory	Faisal Sultan, Federal Minister for NHRC, Ministry for National Health Services, Regulation and Coordination



### 3. Normalization:

Here we will pass our tables through 3 steps of Normalization and eliminate anomalies.

#### a) 1NF:(Eliminating Repeating Groups)

This table had repeating groups so we have created a **COMPOSITE PRIMARY KEY**

Candidate						
RollNo	CandidateName	CNIC	DOB	Contact	Degree	PosID
3995	Umar Sadiq	43201-6541289-3	01/04/1997	03045052313	BSCS	001
3995	Umar Sadiq	43201-6541289-3	01/04/1997	03045052313	BSCS	002
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4021	Ismat Ullah	43120-5489464-9	14/10/1999	03505135462	BSSE	001
4021	Ismat Ullah	43120-5489464-9	14/10/1999	03505135462	BSSE	002

This table does not have repeating groups it is in 1NF

Position					
PosID	PositionName	Desgination	Pay	PostingCity	DivisionID
0001	Software Engineer	BS-17	90000	All Provinces	MCS-001
0002	Network Engineer	BS-18	120000	Islamabad	MCS-007
0003	ML Engineer	BS-16	100000	Lahore	MCT-001
0004	Network Administrator	BS-18	150000	Karachi	MCT-002
0005	Data Scientist	BS-17	250000	Quetta	MD-007
0009	Web Developer	BS-16	50000	Peshawar	MFA-001
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8897	Ali Ahmad	23601-5462169-7	27/03/1989	03133537568	MD-007	005

This table does not have repeating groups it is in 1NF

Division					
DivisionID	DivisionName	Contact	DivisionManager	ParentMinistry	MinistryID
MCS-001	Aviation Division	0519244140	Jamal Ahmad	Cabinet Secretariat	1
MCS-007	National Security Council	0513266789	Muhammad Nadeem	Cabinet Secretariat	11
MCT-001	Textile Division	0519202619	Iftikhar Ali Khan	Ministry of Commerce and Textile	13
MCT-002	Commerce Division	0519205745	Qamar Abbas	Ministry of Commerce and Textile	14
MD-007	Defence Division	0519272947	Asim Munir	Ministry of Defence	15
MFA-001	Foreign Affairs Division	0519207663	Muhammad Imran Saeed	Ministry of Foreign Affairs	16
MFR-002	Finance Division	0519205637	Fida Hussain	Ministry of Finance, Revenue and Economic Affairs	17
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## b) 2NF:(Eliminating Partial Functional Dependencies)

This table have no Partial Functional Dependencies and is in 1NF now it is in 2NF

Candidate						
RollNo	CandidateName	CNIC	DOB	Contact	Degree	PosID
3995	Umar Sadiq	43201-6541289-3	01/04/1997	03045052313	BSCS	001
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MD-007	Defence Division	0519272947	Asim Munir	Ministry of Defence	15
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15	Ministry of Information Technology and Telecommunication	1	F-5/1 F-5, Islamabad, Islamabad Capital Territory	Syed Aminul Haque
16	Ministry of National Food Security and Research	1	Ministry of National Food Security & Research, Red Zone, Islamabad, Islamabad Capital Territory	Syed Fakhar Imam, Federal Minister For National Food Security & Research
17	Ministry of National Health Services, Regulations and Coordination	1	Local government and rural development complex, G-5, Islamabad, Islamabad Capital Territory	Faisal Sultan, Federal Minister for NHRC, Ministry for National Health Services, Regulation and Coordination

### c) 3NF:(Eliminating Transitive Dependencies)

This table have no Transitive Dependencies and is in 2NF now it is in 3NF

Candidate						
RollNo	CandidateName	CNIC	DOB	Contact	Degree	PosID
3995	Umar Sadiq	43201-6541289-3	01/04/1997	03045052313	BSCS	001
3995	Umar Sadiq	43201-6541289-3	01/04/1997	03045052313	BSCS	002
4018	Muhammad Imtinan Ul Haq	37406-6385419-1	29/11/1998	03035541651	BSCS	001
4018	Muhammad Imtinan Ul Haq	37406-6385419-1	29/11/1998	03035541651	BSCS	002
4018	Muhammad Imtinan Ul Haq	37406-6385419-1	29/11/1998	03035541651	BSCS	004
4021	Ismat Ullah	43120-5489464-9	14/10/1999	03505135462	BSSE	001
4021	Ismat Ullah	43120-5489464-9	14/10/1999	03505135462	BSSE	002

This table have no Transitive Dependencies and is in 2NF now it is in 3NF

Position					
PosID	PositionName	Desgination	Pay	PostingCity	DivisionID
0001	Software Engineer	BS-17	90000	All Provinces	MCS-001
0002	Network Engineer	BS-18	120000	Islamabad	MCS-007
0003	ML Engineer	BS-16	100000	Lahore	MCT-001
0004	Network Administrator	BS-18	150000	Karachi	MCT-002
0005	Data Scientist	BS-17	250000	Quetta	MD-007
0009	Web Developer	BS-16	50000	Peshawar	MFA-001
0010	General Manager	BS-20	250000	Islamabad	MFR-002
0011	Head Supervisor	BS-19	200000	Karachi	MFR-003

This table have no Transitive Dependencies and is in 2NF now it is in 3NF

Employee						
EmployeeID	EmployeeName	CNIC	DOB	Contact	DivisionID	PosID
1125	Abdul Rehman	15236-4587553-1	22/01/1986	03125647893	MCS-001	001
2254	Mutahir Sajjad	37406-5896124-5	24/05/2000	03059296660	MCS-007	002
5543	Waqas Khan	15423-6485698-7	30/06/1985	03154862336	MCT-001	003
6512	Muhammad Sarim	15426-7896452-3	15/10/1999	03125648933	MCT-002	004
8897	Ali Ahmad	23601-5462169-7	27/03/1989	03133537568	MD-007	005

This table have no Transitive Dependencies and is in 2NF now it is in 3NF

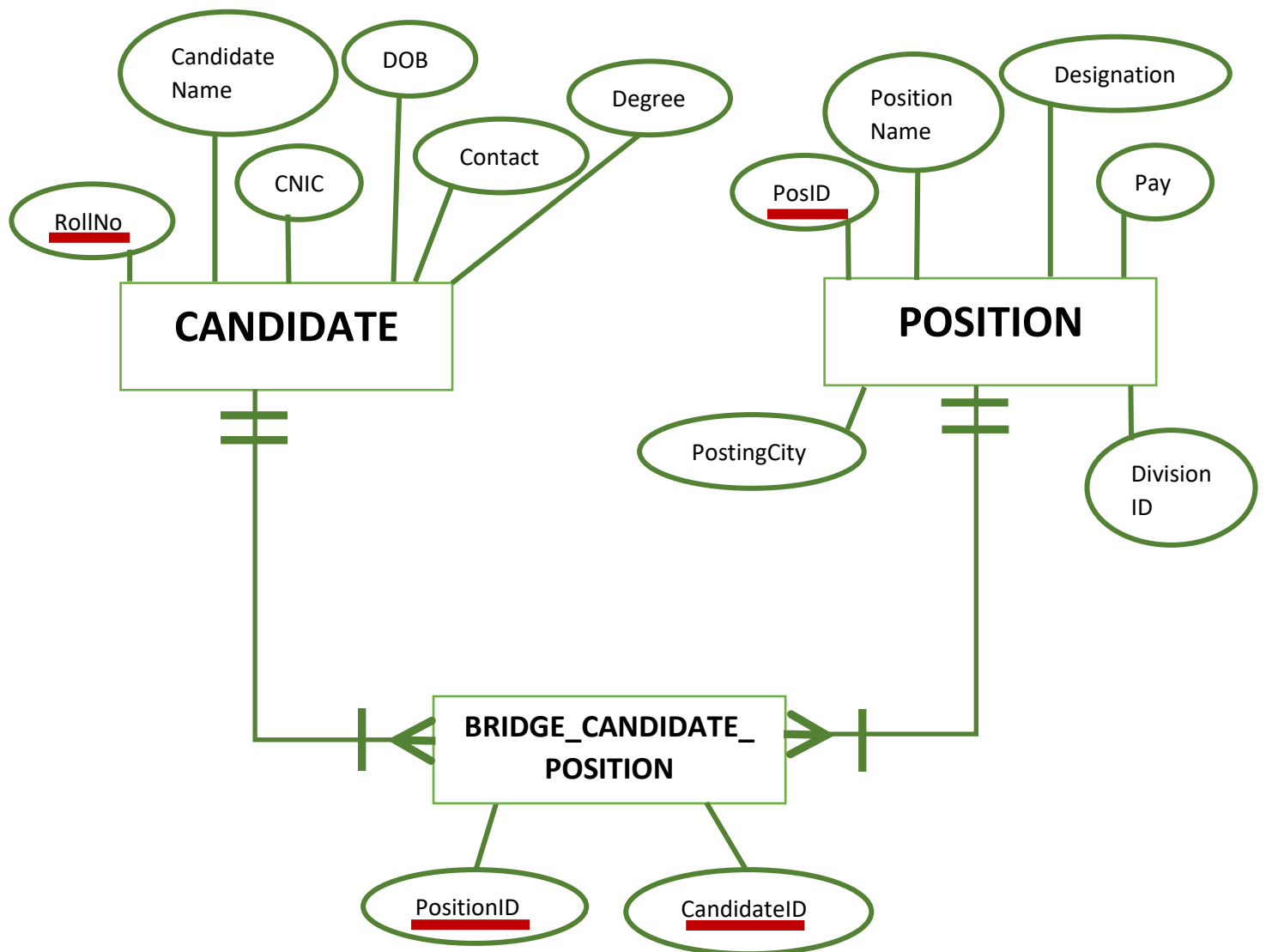
Division					
DivisionID	DivisionName	Contact	DivisionManager	ParentMinistry	MinistryID
MCS-001	Aviation Division	0519244140	Jamal Ahmad	Cabinet Secretariat	1
MCS-007	National Security Council	0513266789	Muhammad Nadeem	Cabinet Secretariat	11
MCT-001	Textile Division	0519202619	Iftikhar Ali Khan	Ministry of Commerce and Textile	13
MCT-002	Commerce Division	0519205745	Qamar Abbas	Ministry of Commerce and Textile	14
MD-007	Defence Division	0519272947	Asim Munir	Ministry of Defence	15
MFA-001	Foreign Affairs Division	0519207663	Muhammad Imran Saeed	Ministry of Foreign Affairs	16
MFR-002	Finance Division	0519205637	Fida Hussain	Ministry of Finance, Revenue and Economic Affairs	17
MFR-003	Revenue Division	0511772772	Baba Raiz	Ministry of Finance, Revenue and Economic Affairs	1

This table have no Transitive Dependencies and is in 2NF now it is in 3NF

Ministry				
MinistryID	MinistryName	MinistryDivisions	MinistryHQ	MinisterResponsible
1	Cabinet Secretariat	3	Constitution Avenue; Islamabad, ICT, Pakistan. 55000	Prime Minister
11	Ministry of Overseas Pakistanis and Human Resource Development	1	Islamabad, Islamabad Capital Territory	Syed Zulfi Bukhari, Special Assistant to PM
13	Ministry of Railways	1	4th Floor, Block D Pak. Secretariat, Islamabad. Islamabad.	Azam Khan Swati, Minister of Railways
14	Ministry of Science and Technology	2	Ministry of Science and Technology, 1 & 2 Constitution Ave, G-5/2 G-5, Islamabad, Islamabad Capital Territory	Fawad Chaudhry, Federal Minister for Science and Technology
15	Ministry of Information Technology and Telecommunication	1	F-5/1 F-5, Islamabad, Islamabad Capital Territory	Syed Aminul Haque
16	Ministry of National Food Security and Research	1	Ministry of National Food Security & Research, Red Zone, Islamabad, Islamabad Capital Territory	Syed Fakhar Imam, Federal Minister For National Food Security & Research
17	Ministry of National Health Services, Regulations and Coordination	1	Local government and rural development complex, G-5, Islamabad, Islamabad Capital Territory	Faisal Sultan, Federal Minister for NHRC, Ministry for National Health Services, Regulation and Coordination

Now finally we do two operations on 2 relationships to finalize the design and get rid of anomalies.

1. We have a many to many relationship CANDIDATES to POSITION, we will create a bridge table between these two get rid of REDUNDANCY.



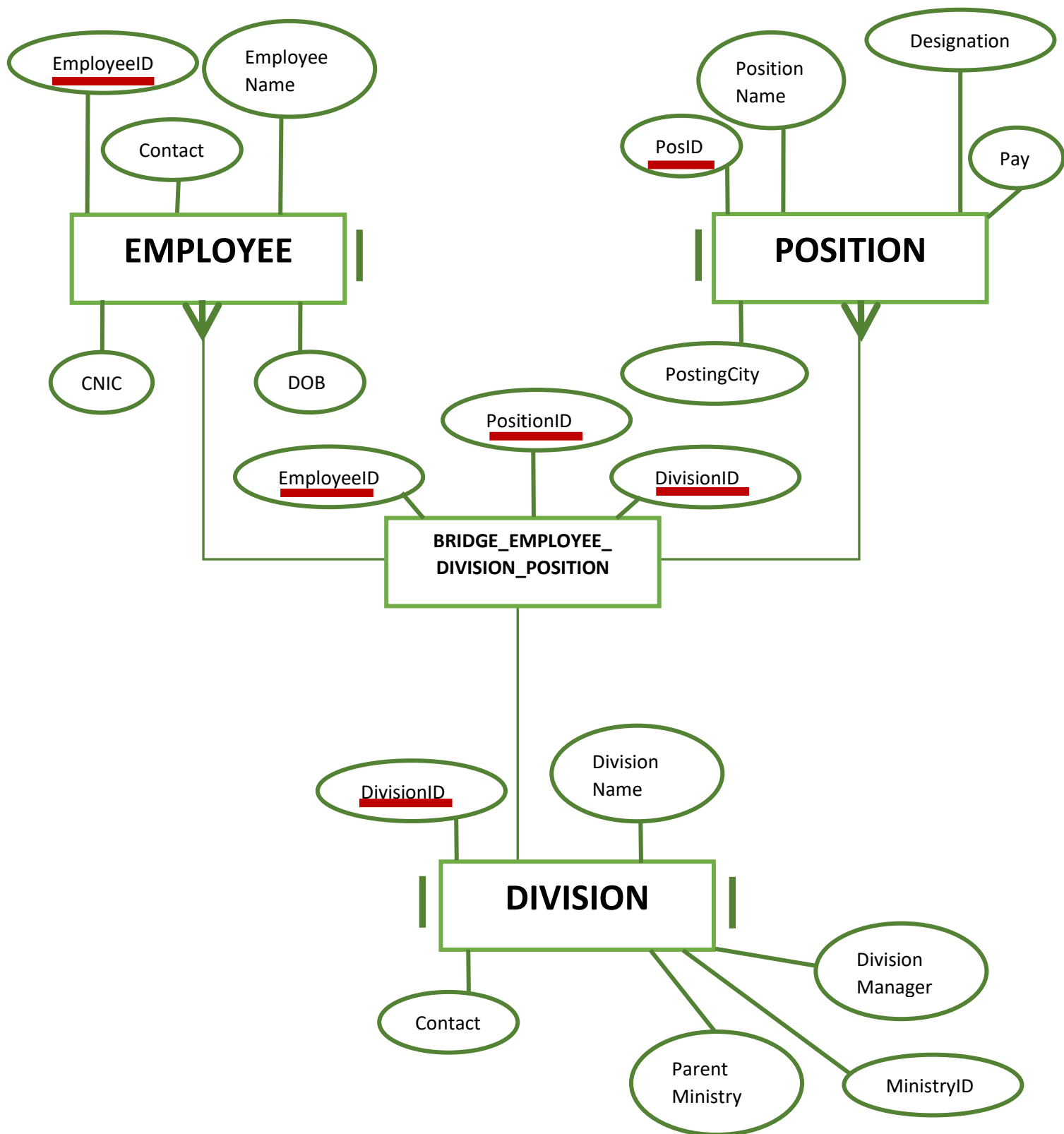
Candidate					
RollNo	CandidateName	CNIC	DOB	Contact	Degree
3995	Umar Sadiq	43201-6541289-3	01/04/1997	03045052313	BSCS
3995	Umar Sadiq	43201-6541289-3	01/04/1997	03045052313	BSCS
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4018	Muhammad Imtinan Ul Haq	37406-6385419-1	29/11/1998	03035541651	BSCS
4018	Muhammad Imtinan Ul Haq	37406-6385419-1	29/11/1998	03035541651	BSCS
4021	Ismat Ullah	43120-5489464-9	14/10/1999	03505135462	BSSE
4021	Ismat Ullah	43120-5489464-9	14/10/1999	03505135462	BSSE

Bridge_Candidate_Position	
CandidateID	PositionID
3995	001
3995	002
4018	001
4018	002
4018	004
4021	001
4021	002

Position					
PosID	PositionName	Desgination	Pay	PostingCity	DivisionID
0001	Software Engineer	BS-17	90000	All Provinces	MCS-001
0002	Network Engineer	BS-18	120000	Islamabad	MCS-007
0003	ML Engineer	BS-16	100000	Lahore	MCT-001
0004	Network Administrator	BS-18	150000	Karachi	MCT-002
0005	Data Scientist	BS-17	250000	Quetta	MD-007
0009	Web Developer	BS-16	50000	Peshawar	MFA-001
0010	General Manager	BS-20	250000	Islamabad	MFR-002
0011	Head Supervisor	BS-19	200000	Karachi	MFR-003



2. We have a TERNARY Relationship to get rid of anomalies we create a bridge table. We will get rid of the Foreign Keys in EMPLOYEE and POSITION



Employee				
EmployeeID	EmployeeName	CNIC	DOB	Contact
1125	Abdul Rehman	15236-4587553-1	22/01/1986	03125647893
2254	Mutahir Sajjad	37406-5896124-5	24/05/2000	03059296660
5543	Waqas Khan	15423-6485698-7	30/06/1985	03154862336
6512	Muhammad Sarim	15426-7896452-3	15/10/1999	03125648933
8897	Ali Ahmad	23601-5462169-7	27/03/1989	03133537568

Position				
PosID	PositionName	Desgination	Pay	PostingCity
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0002	Network Engineer	BS-18	120000	Islamabad
0003	ML Engineer	BS-16	100000	Lahore
0004	Network Administrator	BS-18	150000	Karachi
0005	Data Scientist	BS-17	250000	Quetta
0009	Web Developer	BS-16	50000	Peshawar
0010	General Manager	BS-20	250000	Islamabad
0011	Head Supervisor	BS-19	200000	Karachi

Bridge_Employee_Division_Position		
EmployeeID	DivisionID	PositionID
1125	MCS-001	0001
2254	MCS-007	0002
5543	MCT-001	0003
6512	MCT-002	0004
8897	MD-007	0005

Division					
DivisionID	DivisionName	Contact	DivisionManager	ParentMinistry	MinistryID
MCS-001	Aviation Division	0519244140	Jamal Ahmad	Cabinet Secretariat	1
MCS-007	National Security Council	0513266789	Muhammad Nadeem	Cabinet Secretariat	11
MCT-001	Textile Division	0519202619	Iftikhar Ali Khan	Ministry of Commerce and Textile	13
MCT-002	Commerce Division	0519205745	Qamar Abbas	Ministry of Commerce and Textile	14
MD-007	Defence Division	0519272947	Asim Munir	Ministry of Defence	15
MFA-001	Foreign Affairs Division	0519207663	Muhammad Imran Saeed	Ministry of Foreign Affairs	16
MFR-002	Finance Division	0519205637	Fida Hussain	Ministry of Finance, Revenue and Economic Affairs	17
MFR-003	Revenue Division	0511772772	Baba Raiz	Ministry of Finance, Revenue and Economic Affairs	1

[illegible]

## EMPLOYEE TABLE

[illegible]

## DIVISION TABLE

[illegible]

## MINISTRY TABLE

[illegible]

- CREATING QUERY

## EMPLOYEE QUERY

The screenshot displays the Microsoft Access 'Q\_Employee\_yearBorn' query design view. The design grid is as follows:

Field:	Table:	Sort:	Show:	Criteria:	on:
EmployeeID	TB_Employee		<input checked="" type="checkbox"/>		
EmployeeName	TB_Employee		<input checked="" type="checkbox"/>		
BORN: Year[(DOB)]			<input checked="" type="checkbox"/>		
Contact	TB_Employee		<input checked="" type="checkbox"/>		
CNIC	TB_Employee		<input checked="" type="checkbox"/>		
DOB	TB_Employee		<input checked="" type="checkbox"/>		
			<input type="checkbox"/>		
			<input type="checkbox"/>		
			<input type="checkbox"/>		
			<input type="checkbox"/>		
			<input type="checkbox"/>		

The field list on the left shows the 'TB\_Employee' table with fields: EmployeeID, EmployeeName, CNIC, DOB, and Contact.

## CANDIDATE QUERY

MAIN MENU
Q\_Candidate\_yearBorn
Q\_Divisions\_DivID
Q\_Ministries\_MinistryID
Q\_Positions\_Grade

TB\_Candidate

\*
RollNo
CandidateName
CNIC
DOB
Contact
Degree

Field:
Table:
Sort:
Show:
Criteria:
or:

RollNo	CandidateName	CNIC	BORN: Year([DOB])	Contact	Degree
TB_Candidate	TB_Candidate	TB_Candidate	[Enter Year]	TB_Candidate	TB_Candidate
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>

## DIVISIONS QUERY

[illegible]

## MINISTRY QUERY

MAIN MENU   Q\_Ministries\_MinistryID   Q\_Positions\_Grade

**TB\_Ministry**  
 \*  
 MinistryID  
 MinistryName  
 MinistryDivisions  
 MinistryHQ  
 MinisterResponsible


Field:	MinistryID	MinistryName	MinistryDivisions	MinisterResponsible	MinistryHQ			
Table:	TB_Ministry	TB_Ministry	TB_Ministry	TB_Ministry	TB_Ministry			
Sort:								
Show:	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Criteria:	[Enter ID]							
or:								

## POSITIONS QUERY


[illegible]

## ■ CREATING FORMS

### CANDIDATE FORM


MAIN MENU			Frm_Candidates			DIVISIONS DATA ENTRY			EMPLOYEE DATA ENTRY			MINISTRY DATA ENTRY			POSITION DATA ENTRY		
Form Header																	
						Federal Public Service Commission, Pakistan											
						Candidate Data Entry Form											
Detail																	
						<div><div>◀</div><div>📄</div><div>🔍</div><div>✖</div><div>▶</div></div>											
Candidate Roll:						RollNo											
Candidate Name:						CandidateName											
CNIC						CNIC											
Contact						Contact											
DOB						DOB											
Degree						Degree											
Form Footer																	

### DIVISIONS FORM

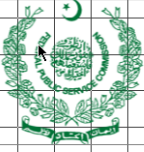
MAIN MENU			Frm_Candidates			Frm_Divisions			EMPLOYEE DATA ENTRY			MINISTRY DATA ENTRY			POSITION DATA ENTRY		
Form Header																	
						Federal Public Service Commission, Pakistan											
						Division Data Entry Form											
Detail																	
						<div><div>◀</div><div>📄</div><div>🔍</div><div>✖</div><div>▶</div></div>											
Division ID						DivisionID											
Division Name						DivisionName											
Division Manager						DivisionManager											
Division Contact						Contact											
Minister ID						MinistryID											
Form Footer																	



# EMPLOYEE FORM

MAIN MENU		Frm_Candidates	Frm_Divisions	Frm_Employee	MINISTRY DATA ENTRY	POSITION DATA ENTRY
Form Header						
		Federal Public Service Commission, Pakistan				
		Employee Data Entry Form				
Detail						
		<div>Navigation buttons: Previous, Add, Edit, Delete, Next</div>				
Employee ID:	EmployeeID					
Employee Name:	EmployeeName					
CNIC	CNIC					
Contact	Contact					
Date of Birth	DOB					
Form Footer						


# MINISTRY FORM

MAIN MENU		Frm_Candidates	Frm_Divisions	Frm_Employee	Frm_Ministries	POSITION DATA ENTRY
Form Header						
		Federal Public Service Commission, Pakistan				
		Ministry Data Entry Form				
Detail						
		<div>Navigation buttons: Previous, Add, Edit, Delete, Next</div>				
Ministry ID	MinistryID					
Ministry Name	MinistryName					
Ministry HQ	MinistryHQ					
Ministry Divisions	MinistryDivisions					
Minister Responsible	MinisterResponsible					
Form Footer						

# POSTIONS FORM

MAIN MENU Frm\_Candidates Frm\_Divisions Frm\_Employeed Frm\_Positions

Form Header

 **Federal Public Service Commission, Pakistan**  
Positions Data Entry Form

Detail

Position ID PosID

Position Name PositionName

Designation Desgination

Pay Pay

Posting City PostingCity


Form Footer

## CREATING REPORT

### CANDIDATE QUERY REPORT

Q\_Candidate Q\_Employee\_yearBorn Frm\_Candidates Report\_Candidate TB\_Positions TB\_Ministries Report\_Candidate\_TB

Report Header

 **Federal Public Service Commission, Pakistan**  
Candidate Report

Page Header

CandidateName Header

Detail

Name: CandidateName

Roll Number: RollNo Degree: Degree

CNIC: CNIC Contact: Contact


Page Footer

=Now() = "Page " & [Page] & " of " & [Pages]


Report Footer

Caps Lock Num Lock


## DIVISIONS QUERY REPORT

MAIN MENU		Report Divisions_Query	Report_Employee_Query	Report_Ministries_Query	Report_Positions_Query																								
1		2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29
Report Header																													
		Federal Public Service Commission, Pakistan																											
		Division Report																											
Page Header																													
Detail																													
		DivisionName																											
1		Division Minister:		DivisionManager																									
2		Contact:		ontact																									
3		Division ID:		DivisionID																									
4		MinistryID		MinistryID																									
5																													
Page Footer																													
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Report Footer																													


## EMPLOYEE QUERY REPORT

MAIN MENU		Report_Employee_Query	Report_Ministries_Query	Report_Positions_Query																							
1		2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25		
Report Header																											
		Federal Public Service Commission, Pakistan																									
		Employee Report																									
Page Header																											
Detail																											
1		Employee ID		EmployeeID																							
2		CNIC		CNIC																							
3		Employee Name		EmployeeName																							
4		Contact		Contact																							
5		Date of Birth		DOB																							
Page Footer																											
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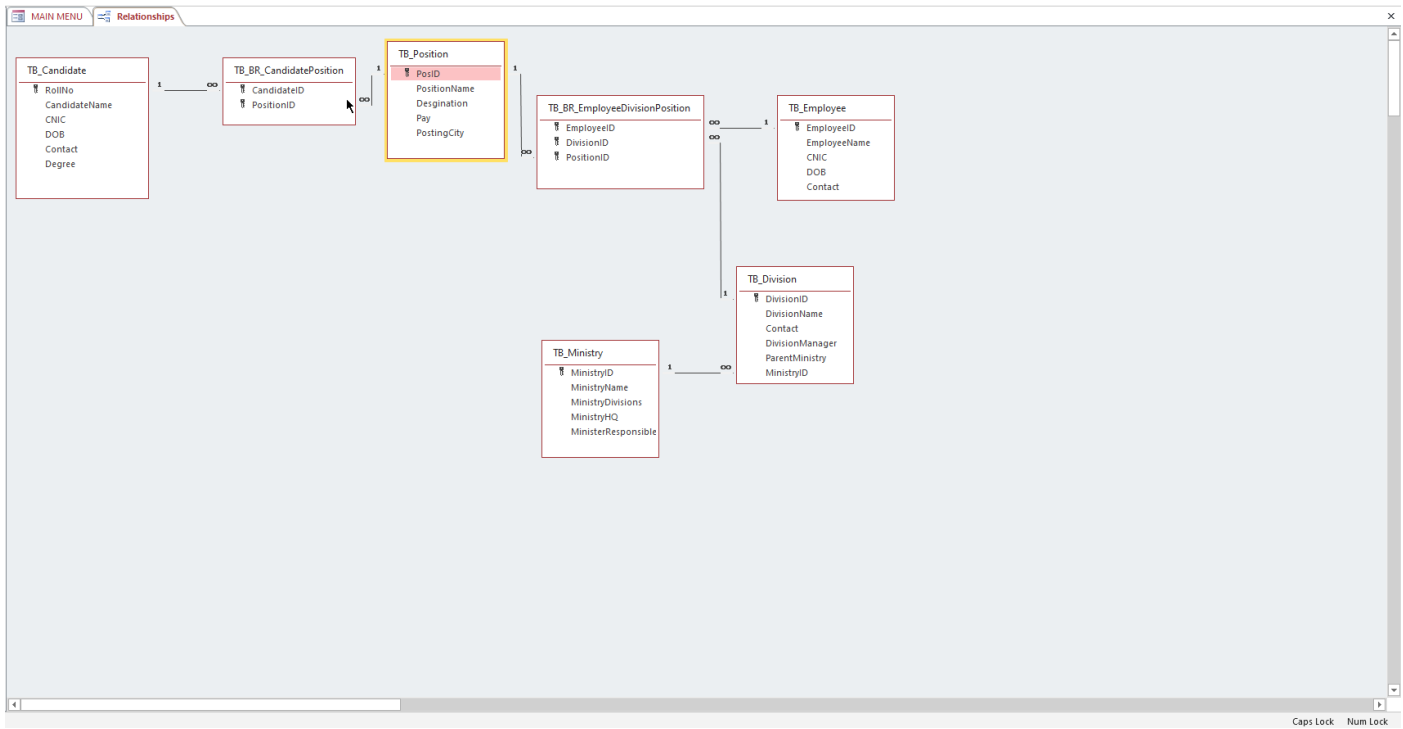
## MINISTRY QUERY REPORT

MAIN MENU		Report_Ministries_Query	Report_Positions_Query																
<div>Report Header</div> <div>  <div>Federal Public Service Commission, Pakistan</div> <div>Ministry Report</div> </div>																			
<div>Page Header</div> <div>Detail</div> <table border="1"> <tr> <td>Ministry ID:</td> <td>MinistryID</td> <td colspan="2">MinistryName</td> </tr> <tr> <td>No. of Divisions:</td> <td>MinistryDivisions</td> <td colspan="2"></td> </tr> <tr> <td>Ministry Headquarters:</td> <td>MinistryHQ</td> <td colspan="2"></td> </tr> <tr> <td>Minister Responsible:</td> <td>MinisterResponsible</td> <td colspan="2"></td> </tr> </table>				Ministry ID:	MinistryID	MinistryName		No. of Divisions:	MinistryDivisions			Ministry Headquarters:	MinistryHQ			Minister Responsible:	MinisterResponsible		
Ministry ID:	MinistryID	MinistryName																	
No. of Divisions:	MinistryDivisions																		
Ministry Headquarters:	MinistryHQ																		
Minister Responsible:	MinisterResponsible																		
<div>Page Footer</div> <div> <div>=Now()</div> <div>= "Page " &amp; [Page] &amp; " of " &amp; [Pages]</div> </div>																			
Report Footer																			

## POSITION QUERY REPORT

MAIN MENU		Report_Ministries_Query	Report_Positions_Query																				
<div>Report Header</div> <div>  <div>Federal Public Service Commission, Pakistan</div> <div>Position Report</div> </div>																							
<div>Page Header</div> <div>Detail</div> <table border="1"> <tr> <td>Position ID:</td> <td>PosID</td> <td colspan="2"></td> </tr> <tr> <td>Position Name:</td> <td>PositionName</td> <td colspan="2"></td> </tr> <tr> <td>Designation:</td> <td>Designation</td> <td colspan="2"></td> </tr> <tr> <td>Pay Grade:</td> <td>Pay</td> <td colspan="2"></td> </tr> <tr> <td>Posting City:</td> <td>PostingCity</td> <td colspan="2"></td> </tr> </table>				Position ID:	PosID			Position Name:	PositionName			Designation:	Designation			Pay Grade:	Pay			Posting City:	PostingCity		
Position ID:	PosID																						
Position Name:	PositionName																						
Designation:	Designation																						
Pay Grade:	Pay																						
Posting City:	PostingCity																						
<div>Page Footer</div> <div> <div>=Now()</div> <div>= "Page " &amp; [Page] &amp; " of " &amp; [Pages]</div> </div>																							
Report Footer																							

# RELATIONSHIPS



?

×

Edit Relationships

Table/Query:

Related Table/Query:

TB\_Candidate

TB\_BR\_CandidatePosi

RollNo

CandidateID

☒ Enforce Referential Integrity

☒ Cascade Update Related Fields

☒ Cascade Delete Related Records

Relationship Type:

One-To-Many

OK

Cancel

Join Type..

Create New..

This is the end of the Report. I hope after reading it, you have understood the working and designing of FPSCDB.