

INDIAN CIVIL SERVANTS DATABASE MANAGEMENT SYSTEM

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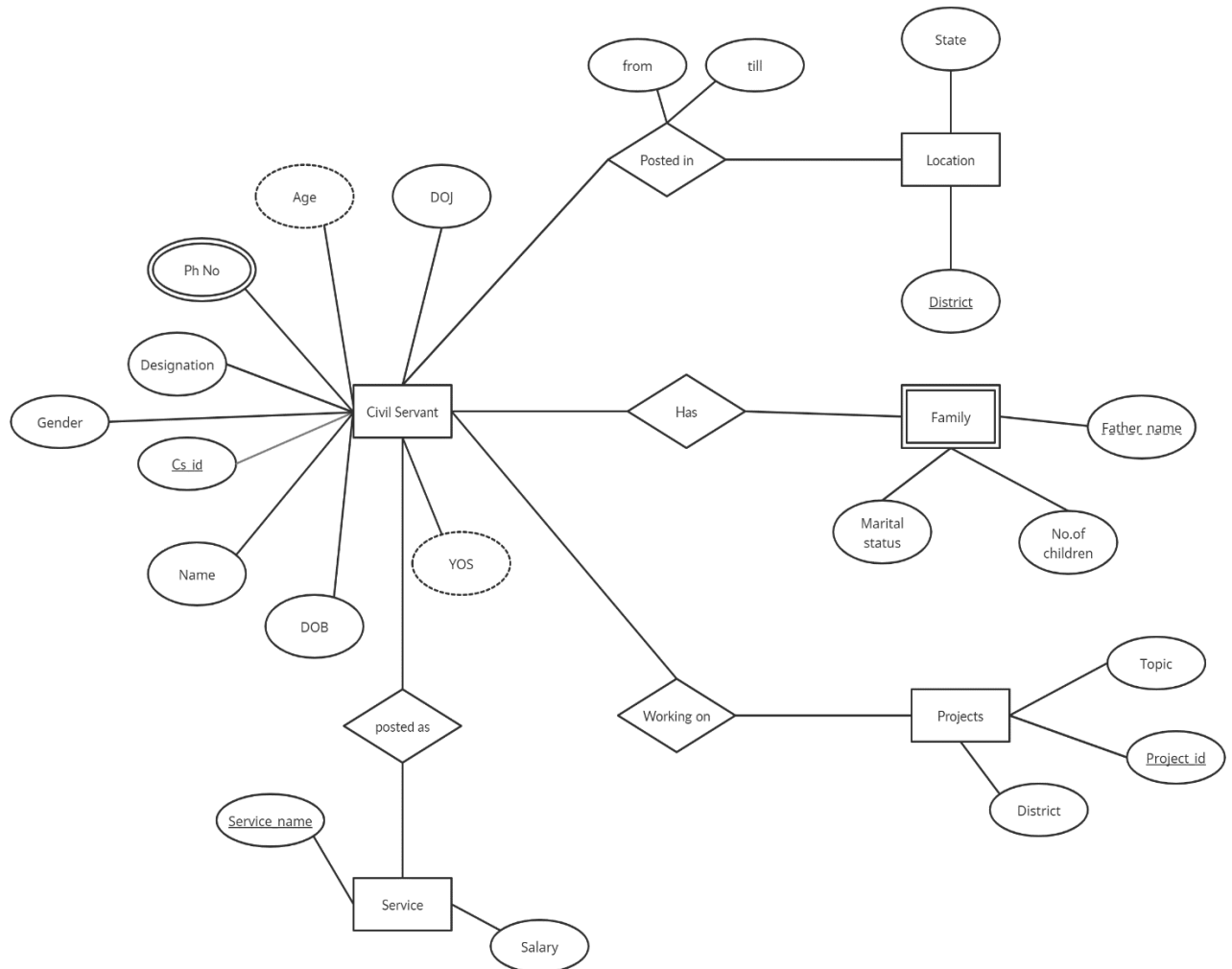
Problem Statement:-

In this project, we have designed a database management system to share information about the Indian Civil Servants. The database will contain important information about the Indian Civil Servants and will be accessible to central and state government officials.

This database will contain the information about the Indian Civil Servants like their posting, location, category, projects, designation they hold etc.

This database management system will help the state and central government administration to access various types of information quickly, this helps in solving the problems of the people in an efficient way.

Entity Relationship (ER) Diagram:-



ER Model Assumptions-

- In this database, Indian civil servants refer those who only got posted via Indian civil services exam.
 - Indian civil servants will get their salary on the basis of his service name and it remains fixed.
 - Each Indian civil servant has a family whose details are stored in the form of Father's name, Number of children and his/her marital status
 - Posting information consists the period of time for which he/she will be posted in that particular region. The period of time for which the Indian civil servant is posted will already be predefined by the government (We already know the deadline date in the future).
 - There is a Location table which will serve two purposes – Storing the detailed address of the Indian civil servant and storing the detailed address of all the places where an Indian civil servant has been posted.
 - The database is not going to consider regarding sudden demises of Indian civil servants .All the Indian civil servants were considered to be working officials.
 - Same project will have different project id's in different locations.
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Tables :-

1.Civil servant

| Attribute | Datatype | Constraints and Characteristics |
|------------------|-----------------|--|
| Cs_Id | VARCHAR(20) | Primary key |
| Name | VARCHAR(20) | Not null |
| DOB | DATE | Not null |
| DOJ | DATE | Not null |
| YOS | INT | Not null |
| Designation | VARCHAR(20) | Not null |
| Ph No | INT | Not null |
| Age | INT | Not null |
| Gender | CHAR(1) | Not null |
| Service_name | VARCHAR(20) | Foreign key, Not null |

2. Project

| Attribute | Datatype | Constraints and Characteristics |
|------------------|-----------------|--|
| Project_Id | INT | Primary key |
| Topic | VARCHAR(20) | Not null |
| District | VARCHAR(20) | Not null |
| Cs_Id | VARCHAR(20) | Foreign key, Not null |

3. Location

| Attribute | Datatype | Constraints and Characteristics |
|------------------|-----------------|--|
| State | VARCHAR(20) | Not null |
| District | VARCHAR(20) | Primary key |

4. Posted in

| Attribute | Datatype | Constraints and Characteristics |
|-----------|--------------|---------------------------------|
| from | DATE | Not null |
| till | DATE | Not null |
| Cs_id | INT | Foreign key, Not null |
| District | VARCHAR2(20) | Foreign key, Not null |

5.Service

| Attributes | Data Type | Constraints and Characteristics |
|--------------|-------------|---------------------------------|
| Service_name | VARCHAR(20) | Primary key |
| Salary | INT | Not null |

6. Family

| Attributes | Data Type | Constraints and Characteristics |
|-----------------|-------------|---------------------------------|
| Father_name | VARCHAR(20) | Primary key(1) |
| Marital status | VARCHAR(10) | Not null |
| No. of Children | INT | - |
| Cs_Id | VARCHAR(20) | Primary key(2) , Foreign key |

Functional Dependencies and Primary Key:-

- 1) Civil servant –Cs_Id -> {Name, DOB, DOJ, YOS, Designation ,Ph No, Age, Gender} Since all the fields depend on Cs_Id. Hence, Cs_Id is Primary Key.
- 2) Project-Project-id->{Topic ,District} here each project will have unique project id so it is the primary key .

3)Location- District -> {State} Since State depend on District. Hence, District is Primary Key.

4)Posted in -is a Relation.

5) service-Service_name->{ salary } here salary depends on the Service_name so,Service_name is a Primary key.

6) Family- {FatherName, Cs_Id} -> { No. of Children, MaritalStatus}. Since all the fields depend on {FatherName, Cs_Id}. Hence, {FatherName,Cs_Id} is Primary Key.

SCHEMA:

civilservant{ Cs_id,Name,DOB,DOJ,YOS,Age,Designation,gender,
service_name(FK)}

Ph No{ Ph No,Cs_id(FK)}

Service {servicename ,salary }

Projects{ project_Id,topic,district,Cs_id(FK)}

Location{ State,District }

Posted in{ from,till,Cs_id(FK),district(FK)}

Family{ fathername,marital status,Cs_id,No.of children }

NORMALISATION:

civil servant{Cs_id,Name,DOB,DOJ,Designation,gender, service name }

Cs_id->Name

Cs_id->DOB

Cs_id->DOJ

Cs_id->Designation

Cs_id->gender

Cs_id->service name

DOB->age

DOJ->YOS

This table is in 1 NF and 2NF.

Ph No{Ph No,Cs_id(FK)}

Cs_idPh No->Cs_id

Cs_idPh No->Ph No

This table is in 1NF ,2NF,3NF,BCNF.

Service{servicename,salary,Cs_id(FK)}

Servicename->salary

Servicename->Cs_id

This table is in 1NF ,2NF,3NF,BCNF.

Projects{project_Id,topic,district,Cs_id(FK)}

project_Id->topic

project_Id->district,

project_Id->Cs_id

This table is in 1NF ,2NF,3NF,BCNF

Location{State,District}

District->state

This table is in 1NF ,2NF,3NF,BCNF

Posted in{from,till,Cs_id(FK),District(FK)}

Cs_idDistrict->from

CS_idDistrict->till

Cs_idDistrict->Cs_id

Cs_idDistrict->District

This table is in 1NF ,2NF,3NF,BCNF.

Family{fathername,marital status,Cs_id,No.of children}

Cs_idfathername->maritalstatus

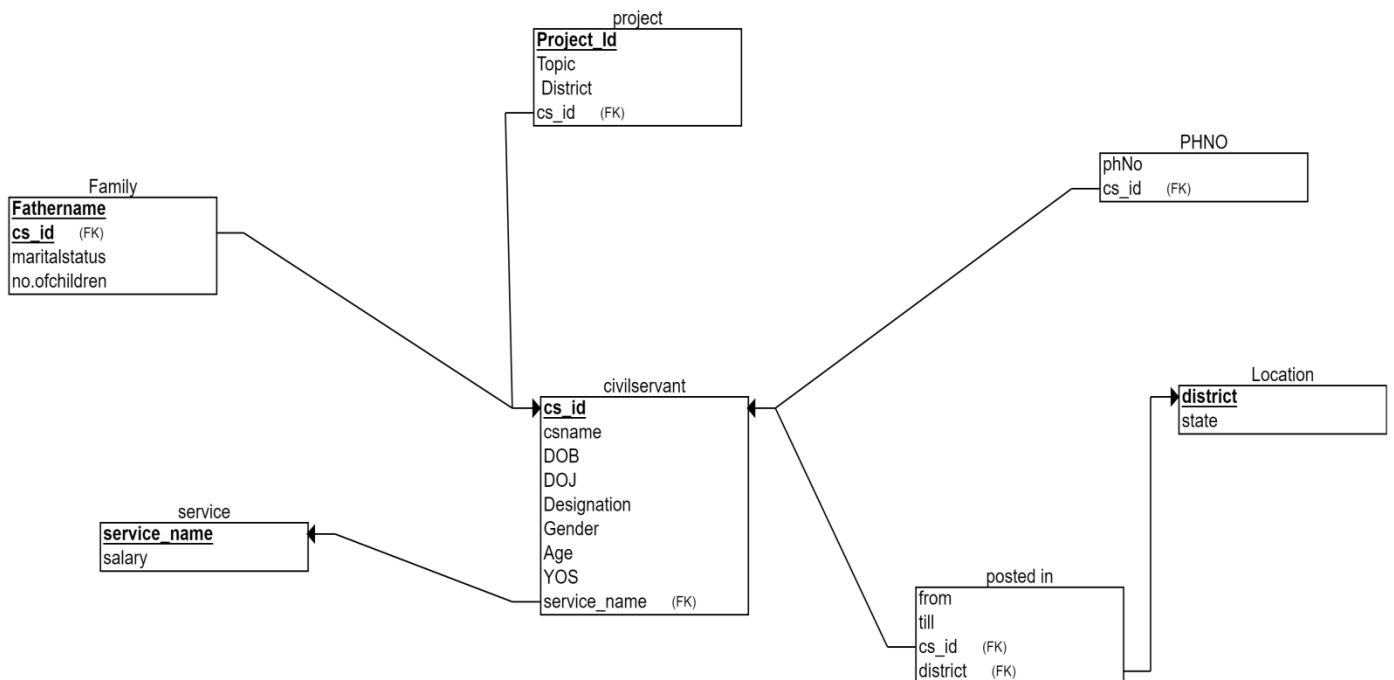
Cs_idfathername->Cs_id

Cs_idfathername->fathername

Cs_idfathername->No.of children

This table is in 1NF ,2NF,3NF,BCNF.

RELATIONAL SCHEMA



SQL CODE:-

1.services

create table services(service_name archer(20) primary key,
salary int not null) ;

2.civilservant

create table civil_servant (cs_id archer(20) primary key,
cs_name archer(20) not null,
dob date not null,
doj date not null,
yos int not null,
designation archer(20) not null,
age int not null,
gender char(1) not null,
service_name archer(20) not null,
foreign key(service_name) references services(service_name));

3.project

create table project (project_id int primary key,
topic archer(20) not null,
district varchar(20) not null,
cs_id varchar(20) not null,
foreign key(cs_id) references civil_servant(cs_id));

3.location

```
create table location( state varchar(20) not null,  
district varchar(20) primary key );
```

4.posted in

```
create table posted_in( from_d date not null,  
till date not null,  
cs_id varchar(20) not null,  
foreign key(cs_id) references civil_servant(cs_id),  
district varchar(20) not null,  
foreign key(district) references location(district) );
```

6.family

```
create table family( father_name varchar(20),  
marital_status varchar(20) not null,  
no_of_children int,  
cs_id varchar(20) not null,  
foreign key(cs_id) references civil_servant(cs_id),  
primary key(father_name,cs_id) );
```

TABLES CREATED

```
insert into services values('IAS',80000);  
insert into services values('IFS',70000);  
insert into services values('IPS',60000);  
insert into services values('G-A',50000);  
insert into services values('G-B',40000);
```

```
insert into civil_servant values('1','Iron man','1999-08-15','2002-01-  
01',25,'Collector',50,'m','IAS');  
insert into civil_servant values('2','Thor','1998-01-15','2004-01-01',23,'District  
Magistrate',51,'m','IAS');
```

```
insert into civil_servant values('3','Black Widow','1958-05-18','1999-01-01',28,'SDO',78,'f','IAS');
insert into civil_servant values('4','Spider Man','1999-07-28','2000-01-01',27,'CDO',50,'m','IAS');
```

```
insert into location values('AP','East Godavari');
insert into location values('AP','West Godavari');
insert into location values('AP','Srikakulam');
insert into location values('Bihar','Munger');
```

```
insert into project values(242,'cannal','Srikakulam','1');
insert into project values(487,'road','West Godavari','4');
insert into project values(369,'schools','Munger','2');
insert into project values(420,'hospitals','Viziangaram','3');
```

```
insert into posted_in values ('2002-03-22','2021-03-22','1','East Godavari');
insert into posted_in values ('2002-03-20','2021-03-20','3','West Godavari');
insert into posted_in values ('2002-03-12','2021-03-02','4','East Godavari');
insert into posted_in values ('2002-03-02','2021-03-12','2','West Godavari');
```

```
Insert into family values("Kuwar Pratap","Y",1,'4');
Insert into family values ("Ashok Pandit","N",0,'2');
Insert into family values("Rajeev Verma","Y",0,'1');
Insert into family values ("Manas Kumvat","N",0,'3');
```

VALUES INSERTED .