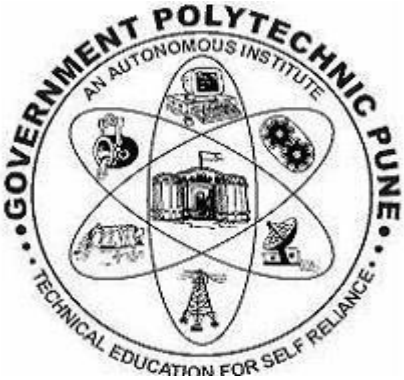
GOVERNMENT POLYTECHNIC, PUNE-16

(An Autonomous Institute of Government of Maharashtra)



A

Seminar Project

On

VILLAGE GOVERNANCE SYSTEM

Submitted by:

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ABSTRACT

The tittle of the Microproject is "**Village Governance System**" design to efficiently governed villages in easy and in efficient manner. Village Governance System is a software which is helpful for Village authorities. In the current system all the things are done manually. It is very time consuming and costly. Our Village Governance System deals with various activity related to village governance and monitor various activity related to the development of village with the help of PRI. Village Governance System is based on the six pillars which are defined by the analysis of the governance of village. These pillars are as follow :- Panchayati Raj Institution(PRI), Public Distribution System Fair Price Shop(PSD-FPS) , Primary Healthcare Center(PHC),Primary Schools, Secondary Schools, Post office , Banking services.

The Village Governance System is made up of 10 entities which are PRI, Schools, Population, PHC, Village, PSD_FPS, Farmers, Infrastructure and Development Ratios. And every entity is related to each other in some relation. This database provides as a backend for the main software of Village Governance System. System has various modules which give way in managing the organization efficiently. So, this project **Village Governance System** helps in efficient management of human's resources inside the village for managing various activity in the village. Also it consumes less time.

The main and important benefit of the proposed system is that its is very user friendly and accurate. Thus, the system increase the productivity.Also the employee and administrator feels so much comfortable to work with it.

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1. INTRODUCTION

In this 21's century, all is about technology. The government of India also implementing the Digital India plan to improve and make various activity available online so that many people can take advantage of various schemes given by the Indian Government. As every field is changing its work and making digitalization. The governance field is also changing its work form to digital form. And this Village Governance System is making the management, governance, monitoring and various activity related to the village digital using some platforms. This will help in the development of villages rapidly and fastly. As this database system is developed using the Oracle ServiceXE as the IDE and this database works as the backend for the real software of Village Governance System. The current system does all the work manually and stores data in the form of hard copies on the paper and files which results in tremendous waste of work and time, also it has some disadvantages.

As the current system store data in files its hard to maintain them for long and organize them in the efficient manner. The faster retrieval of data is almost impossible in the current system. Also, we use papers for storing data which results in deforestation. As a result, a system called Village Governance System developed as the upgraded version of the existed system to solve all the problem faced in the current system.

The proposed system is developed using SQL and its has various features such as faster access, data consistency, easy to modify and handle the system. The administrator can add, modify or delete the village details as when needed, while others can only see the data.

2. PROBLEM DEFINATION

Village Governance System is used to manage all the data related to the villages such economical data, demographic data, area and farming related data , etc. These records should be in the logical and sequential order because there is a need to retrieve this data/records number of times.

Using manual system to manage the village data, we store all information on the register book, file or on the paper. It was causing many problems to employee working in the PRI and other using the services. Also this create so much trouble to the employee in completing the job as the may be get lost may not get the data at required time or in some fixed time. This record has a possibility of missing or destroys when any accident happens. While some of the government agencies and department are using computer to store the data , but the system are fully outdated. Also they are not able to handle such large amount of data efficiently. As we have developed the DBMS database to store the data. The Village Governance System is totally updated and based on the advanced technology , so its easy to store and manipulate the data using Village Governance System , also it is capable to store data which is in very large size.

By replacing Village Governance System with the old one we will definitely improve the performance and throughput of governance work. This will help in development of Villages in very effortless manner. According to analysis of many NGO`s its very important to implement such system in India, as it will help to achieve the goal of making India **developed country**. We have developed this system to slove real world problem.

3. ENTITIES & THEIR RELEVANT ATTRIBUTES

Entities list :-

1. Village
2. Primary Healthcare Center
3. Public Distribution System-Fair Price Shop
4. Schools
5. Population
6. Farmers
7. Panchayati Raj Institution
8. Infrastructure
9. Geography
10. Development ratios

Entity Structure with relevant attributes :-

Village :-

Field	Data type	Description	Constraint
Village_id	INT	Id of village	PRIMARY KEY
Village_name	CHAR	Name of village	NOT NULL
Village_address	CHAR	Address of village	NOT NULL
Total_economy	INT	Total economy in Rs	NOT NULL
APL	INT	Above poverty Line population	NOT NULL
BPL	INT	Below poverty line population	NOT NULL
No_PSD_Shop	INT	No of PSD-FPS	NOT NULL
No_PHC_number	INT	No of PHC	NOT NULL
No_secondary_school	INT	No of secondary schools	NOT NULL
No_primary_school	INT	No of primary schools	NOT NULL

Primary Healthcare Center:-

Field	Data type	Description	Constraint
Village_id	INT	Id of village	FOREIGN KEY
PHC_id	INT	Id of PHC in the village	PRIMARY KEY
PHC_name	CHAR	Name of PHC	NOT NULL
PHC_address	CHAR	Address of PHC	NOT NULL
No_Doctors	INT	No of doctors in PHC	NOT NULL
No_Assistant	INT	No of assistant in PHC	NOT NULL
Rate_of_Immunization	INT	Rate of immunization in the village	NOT NULL

Public Distribution System-Fair Price Shop:-

Field	Data type	Description	Constraint
Village_id	INT	ID of village	FOREIGN KEY
Shop_id	INT	ID of PSD-FPS	PRIMARY KEY
Shop_name	CHAR	Name of PSD-FPS	NOT NULL
Shop_address	CHAR	Address of PSD-FPS	NOT NULL

Schools:-

Field	Data type	Description	Constraint
Village_id	INT	Id of village	FOREIGN KEY
School_id	INT	ID of school	PRIMARY KEY
School_name	CHAR	Name of school	NOT NULL
School_address	CHAR	Address of the school	NOT NULL
School_type	CHAR	Type of school	NOT NULL
No_Teachers	INT	No of teachers in school	NOT NULL
No_Students	INT	No of students in school	NOT NULL

Population :-

Field	Data type	Description	Constraint
Village_id	INT	Id of village	FOREIGN KEY
Total_Population	INT	Total population of village	NOT NULL
Village_name	CHAR	Name of the village	UNIQUE KEY
Teenagers_populaion	INT	Population of teenager in village	NOT NULL
Youngster_population	INT	Population of youngster in village	NOT NULL
Old_Peoples_populati on	INT	Population old people	NOT NULL
Female_population	INT	Population of female people	NOT NULL
Male_population	INT	Population of male people	NOT NULL
Literate_Peoples	INT	Population of literate peoples	NOT NULL
Illiterate_Peoples	INT		NOT NULL

Farmers :-

Field	Data type	Description	Constraint
Village_id	INT	ID of village	FOREIGN KEY
Total_Farmers	INT	Total number of framers in the village	NOT NULL
No_SMF	INT	Number of Small Marginal Farmer in village	NOT NULL
No_LMF	INT	Number of Large Marginal Farmer in village	NOT NULL

Panchayati Raj Institution :-

Field	Data type	Description	Constraint
Village_id	INT	Id of village	FOREIGN KEY
Village_name	CHAR	Name of village	UNIQUE KRY
Sarpanch_name	CHAR	Name of sarpanch	NOT NULL
Deputy_Sarpanch_Name	CHAR	Name of Deputy sarpanch	NOT NULL
Village_Accountant_name	CHAR	Name of village accountant	NOT NULL
Village_Servant_name	CHAR	Name of village servant	NOT NULL
PRI_Members_count	INT	Count of PRI member	NOT NULL

Infrastructure :-

Field	Data type	Description	Constraint
Village_id	INT	Id of village	PRIMARY KEY
Village_name	CHAR	Name of village	UNIQUE KEY
Water_Resource_infra	CHAR	Information of water resource infrastructure in the village	NOT NULL
Banking_infra	CHAR	Information of banking infrastructure	NOT NULL
Transportation_infra	CHAR	Information of transportation infrastructure	NOT NULL
Network_Communication_infra	CHAR	Information of network & communication infrasstructure	NOT NULL

Geography :-

Field	Data type	Description	Constraint
Village_id	INT	Id of village	FOREIGN KEY
Village_name	CHAR	Name of village	UNIQUE KEY
Total_Area	INT	Total area of village	NOT NULL
Farming_Land	INT	Total farming land in village	NOT NULL
Non_Farming_Land	INT	Total non-farming land in the village	NOT NULL
Total_Forest_Area	INT	Total forest land of village	NOT NULL

PDevelopment ratios :-

Field	Data type	Description	Constraint
Village_id	INT	Id of village	FOREIGN KEY
Village_name	CHAR	Name of village	UNIQUE KEY
Literacy_Rate	INT	Literacy rate of village	NOT NULL
Death_Ratio	INT	Death ratio of village	NOT NULL
Birth_Ratio	INT	Birth ratio of village	NOT NULL
Growth_Ratio	INT	Growth ratio of village	NOT NULL
Economy_Development_Ratio	INT	Economy development ratio of village	NOT NULL
Immunization_rate	INT	Immunization ratio of village	NOT NULL

4. PRIMARY KEYS & FOREIGN KEYS

Table	Primary Key	Foreign Keys	
		Column	References
Village	Village_id	--	_--
PSD_FPS	Shop_id	Village_id	Village.Village_id
PHC	PHC_id	Village_id	Village.Village_id
Schools	School_id	Village_id	Village.Village_id
Population	--	Village_id	Village.Village_id
Farmers	--	Village_id	Village.Village_id
Infrastructure	--	Village_id	Village.Village_id
Geography	--	Village_id	Village.Village_id
Development_Ratios	--	Village_id	Village.Village_id
PRI	--	Village_id	Village.Village_id

4. DATA DEFINATION LANGUAGE IMPLEMENTATION

********** 1] Basic Village Information **********

```
-- Create Table Village
CREATE TABLE Village
(
 Village_id number(10) constraint pk PRIMARY KEY,
 Village_name varchar2(20) NOT NULL,
 Village_address varchar2(50) NOT NULL,
 Total_economy number(10) NOT NULL,
 APL number(10) NOT NULL,
 BPL number(10)  NOT NULL,
 No_PSD_Shop number(10) NOT NULL,
 No_PHC number(10) NOT NULL,
 No_secondary_school number(10) NOT NULL,
 No_primary_school number(10) NOT NULL
);
-- Inserting into table Village
INSERT INTO Village (1,'Kanersar','Kanersar,Tal-Khed, Dist-
Pune',1770000,1000,1000,1,1,1,2);
```

********** 2] Public Distribution System Information **********

```
-- Create table Public_Distribution_System-Fair_Price_Shop
CREATE TABLE PSD_FPS
(
 Shop_id number(10) constraint pk PRIMARY KEY,
 Shop_name varchar2(30) NOT NULL,
 Shop_address varchar2(50) NOT NULL,
 Village_id number(10) references Village(Village_id)
);
-- Inserting into table PSD_FPS
INSERT INTO PSD_FPS VALUES(1001,'S.K. SHOP','Kanersar,Tal-Khed, Dist-
Pune',1);
```

********** 3] Healthcare System Information **********

```
-- Create table PHC(Primary_Healthcare_Center)
CREATE TABLE PHC
(
 PHC_id number(10) constraint pk PRIMARY KEY,
 PHC_name varchar2(30) NOT NULL,
 PHC_address varhar2(50) NOT NULL,
```

```
 No_Doctors number(5) NOT NULL,
 No_Assistant number(5) NOT NULL,
 Rate_of_Immunization number(5,2) NOT NULL,
 Village_id number(10) references Village(Village_id)
);
-- Inserting into table PHC
INSERT INTO PHC VALUES(2001,'PHC Kanersar','Kanersar,Tal-Khed, Dist-
Pune',2,3,3.50,1);

**************************** 4] Education System Information
**********************
-- Create table Schools
CREATE TABLE Schools
(
 School_id number(10) constraint pk PRIMARY KEY,
 School_name varchar2(50) NOT NULL,
 School_address varchar2(50) NOT NULL,
 School_type varchar2(20) NOT NULL,
 No_Teachers number(10) NOT NULL,
 No_Students number(10) NOT NULL,
 Village_id number(10) references Village(Village_id)
);
-- Insert into table Schools
INSERT INTO Schools VALUES(3001,'Z.P Primary School
kanersar','Kanersar,Tal-Khed, Dist-Pune','Primary',2,40);


**************************** 5] Population Information
**************************
-- Create table Population
CREATE TABLE Population
(
 Total_Population number(50) NOT NULL,
 Village_id number(10) references Village(Village_id),
 Village_name varchar2(20) NOT NULL,
 Teenagers_populaion number(50) NOT NULL,
 Youngster_population number(50) NOT NULL,
 Old_Peoples_population number(50) NOT NULL,
 Female_population number(50) NOT NULL,
 Male_population number(50) NOT NULL,
 Literate_Peoples number(30) NOT NULL,
 Illiterate_Peoples number(30)
);


**************************** 6] Farmers Information
```

```
*****************************
--Create table Farmers
CREATE TABLE Farmers
(
 Total_Farmers number(50) NOT NULL,
 No_SMF number(40) NOT NULL,
 No_LMF number(40) NOT NULL,
 Village_id number(10) references Village(Village_id)
);


***************************** 7] PRI Information
***********************************
-- Create table PRI(Panchayti Raj Institution)
CREATE TABLE PRI
(
 Village_id number(10) references Village(Village_id),
 Village_name varchar2(20) NOT NULL,
 Sarpanch_name varchar2(50) NOT NULL,
 Deputy_Sarpanch_Name varchar2(50) NOT NULL,
 Village_Accountant_name varchar2(50) NOT NULL,
 Village_Servant_name varchar2(50) NOT NULL,
 PRI_Members_count number(50) NOT NULL
);

***************************** 8] Infrastructure Information
************************
-- Create table Infrastructure
CREATE TABLE Infrastructure
(
 Village_id number(10) references Village(Village_id),
 Village_name varchar2(20) NOT NULL,
 Water_Resource_infra varchar2(50) NOT NULL,
 Banking_infra varchar2(50) NOT NULL,
 Transportation_infra varchar2(50) NOT NULL,
 Network_Communication_infra varachar2(50) NOT NULL
);

***************************** 9] Geographical Data
*********************************
-- Create table Geography
CREATE TABLE Geography
(
 Village_id number(10) references Village(Village_id),
 Village_name varchar2(20) NOT NULL,
 Total_Area number(20) NOT NULL,
```

```
 Farming_Land number(20) NOT NULL,
 Non_Farming_Land number(20) NOT NULL,
 Total_Forest_Area number(20) NOT NULL
);

****************************** 10] Development Ratios
******************************
--Create table Devlopment_Ratios
CREATE TABLE Development_Ratios
(
 Village_id number(10) references Village(Village_id),
 Village_name varchar2(20) NOT NULL,
 Literacy_Rate number(5,2) NOT NULL,
 Death_Ratio number(5,2) NOT NULL,
 Birth_Ratio number(5,2) NOT NULL,
 Tree_Plantation_Ratio number(5,2) NOT NULL,
 Growth_Ratio number(5,2) NOT NULL,
 Economy_Development_Ratio number(5,2) NOT NULL,
 Immunization_rate number(5,2) NOT NULL
);

 -- PL/SQL procedure to find if the Village is present in the database or not
CREATE PROCEDURE find() IS
   id NUMBER(10);
   CURSOR village IS select  Village_id, Village_name
   FROM Village;
   VILLAGE  village%ROWTYPE;
BEGIN
   id :=&id;
   FOR VILLAGE IN Village
   LOOP
      EXIT WHEN Village%NOTFOUND;
      IF id = VILLAGE.,Village_id THEN

           DBMS_OUTPUT.PUT_LINE(' Village Id = ' || VILLAGE.Village_id || '
Village Name = ' || Village_name );

     ELSE

          DBMS_OUTPUT.PUT_LINE(' SORRY , NO VILLAGE FOUND
WITH ID '|| id |'  PLEASE CHECK THE ENTERED ID OR REENTER IT' ) ;

     END IF;
   END LOOP;
END;
/
```

```
-- PL/SQL Procedure to Extract data of particular village from database
CREATE PROCEDURE extract( )
IS
id number(10);
CURSOR Village IS  SELECT * FROM
Village V,PSD_FPS PF,PHC P,Population PO,Farmers F,PRI PI,Geography
G,Development_Ratios DR
WHERE V.Village_id = PF.Village_id AND P.Village_id = PO.Village_id AND
F.Village_id = PI.Village_id AND G.Village_id = DR.Village_id;
VILLAGE Village%ROWTYPE;
BEGIN
    id:=&id;
    OPEN Village;
    LOOP
        FETCH Village INTO VILLAGE;
        EXIT WHEN Village%NOTFOUND;
        IF id = VILLAGE.Village_id THEN

         DBMS_OUTPUT.PUT_LINE('Village id = ' || VILLAGE.Village_id );
         DBMS_OUTPUT.PUT_LINE('Village Name = ' ||
VILLAGE.Village_name );
         DBMS_OUTPUT.PUT_LINE( 'Total Economy = ' ||
VILLAGE.Total_economy  );
         DBMS_OUTPUT.PUT_LINE( 'Number of PSD Shops = ' ||
VILLAGE.No_PSD_Shop );
         DBMS_OUTPUT.PUT_LINE('Number of PHC = ' ||
VILLAGE.No_PHC);
         DBMS_OUTPUT.PUT_LINE('Number of Secondary school = ' ||
VILLAGE.No_secondary_school);
         DBMS_OUTPUT.PUT_LINE('Number of Primary School ='||
VILLAGE.No_primary_school);
         DBMS_OUTPUT.PUT_LINE('Total Population ='||
VILLAGE.Total_Population);
         DBMS_OUTPUT.PUT_LINE('Total Area ='||VILLAGE.Total_Area );
         DBMS_OUTPUT.PUT_LINE('Growth ratio ='||Growth_Ratio);
         DBMS_OUTPUT.PUT_LINE('Sarpanch Name ='||Sarpanch_name);
         DBMS_OUTPUT.PUT_LINE('Rate of immunization ='||
Immunization_rate);

        ELSE
         DBMS_OUTPUT.PUT_LINE('NO SUCH VILLAGE PRESENT IN
THE DATABASE !!! PLEASE CHECK ENTERED ID ');

        END IF;
    END LOOP;
```

```
    CLOSE Village;
END;
/
```

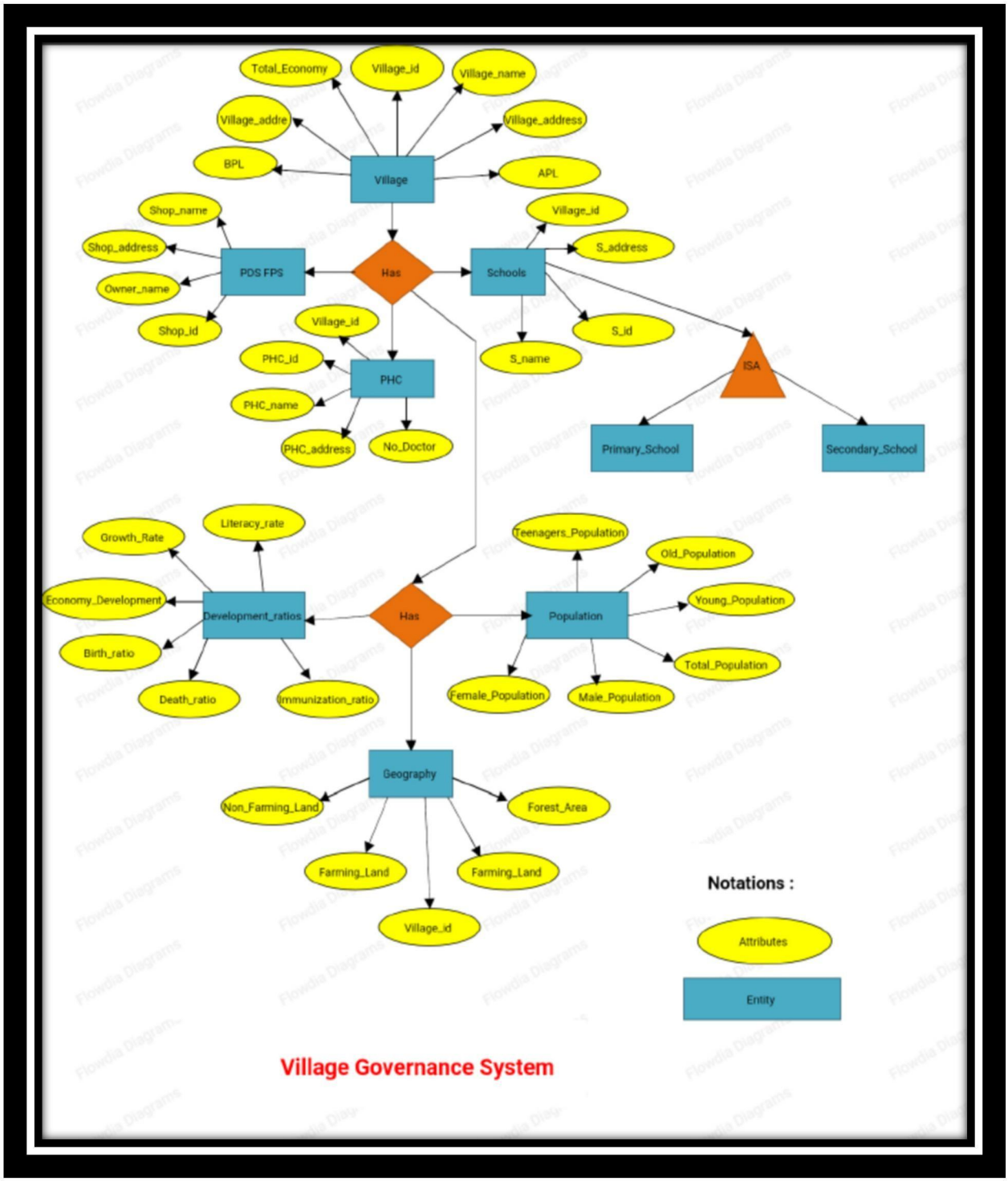
6. CARDINALITY

Cardinality notation using **Chen style.**

M= Many , N = 0, 1, 2, ...

Sr.No.	Entities	Cardinality
1	Village & PRI	1 : 1
2	Schools & Village	M : 1
3	PHC & Village	M : 1
4	PSD_FPS & Village	M : 1
5	Farmers & Village	M : 1
6	Geography & Village	1 : 1
7	Infrastructure & Village	1 : 1
8	Village & development_ Ratios	1 : M
9	PRI & Infrastructure	1 : M

7. E-R DIAGRAM


Total_Economy
Village_id
Village_name
Village_addre
Village_address
BPL
Village
APL
Shop_name
Village_id
Shop_address
S_address
PDS FPS
Has
Schools
Owner_name
Shop_id
Village_id
S_id
PHC_id
S_name
PHC
ISA
PHC_name
PHC_address
No_Doctor
Primary_School
Secondary_School
Literacy_rate
Growth_Rate
Teenagers_Population
Old_Population
Economy_Development
Development_ratios
Has
Population
Young_Population
Birth_ratio
Total_Population
Death_ratio
Immunization_ratio
Female_Population
Male_Population
Geography
Non_Farming_Land
Forest_Area
Farming_Land
Farming_Land
Village_id
Notations :
Attributes
Entity
Village Governance System

8. OUTCOME ACHIEVED

1. Design database schema

2. Normalize given database

3. Draw an entity relationship diagram

4. Create and process database for a given case study using relational database management engine .

5. Write and execute PL/SQL procedure using the cursors and exception handling.

9. HARDWRE SPECIFICATION

Operating System Used:	Windows 10.
Processor Used:	Intel Core i7 (2.4 GHz).
RAM Availability:	8GB.
System Type:	64-bit OS.
DBMS Used:	Oracle 11g Express Edition

10. BIBLIOGRAPHY

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