Project on SQL

Student Database Management System

By

Namrata M. Gotmare

Student Database Management System

1. **Description:**

A **student database** is a structured collection of information about students. It serves as a foundation for informed decision-making and tailored services.

Student Database Management System deals with all kind of student details, academic reports, college details, course details, curriculum, batch details and other resource related details too.

It tracks various details of a student which can be used for following purpose

1. Reporting purpose.
2. Tracking of progress in the course, completed semester/ year, upcoming semester/ year.
3. Curriculum details.
4. Exam details, project or assignment details
5. Final exam result
6. Personal/Family details etc

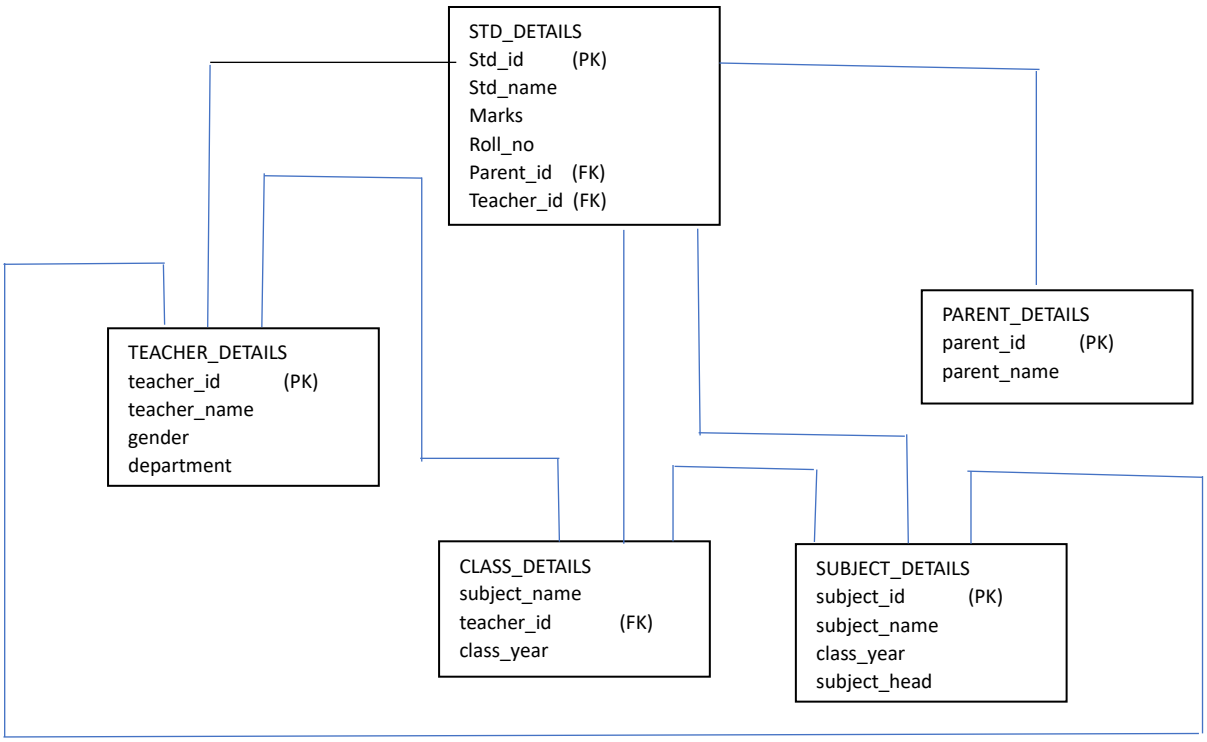
Following tables fall under student database management system

1. Student details
2. Parent details
3. Teacher details
4. Class details
5. Subject details

The above tables are related to each other.

Entity diagram is used to show the relation between tables.

2.Entity Diagram:



3.Table Description:

Table1: Students details

Field	Type	Null	Key	Default	Extra
Std_id	int	NO	Primary key	NULL	
std_name	varchar(512)	YES		NULL	
MARKS	int	YES		NULL	
roll_no	int	YES		NULL	
parent_id	int	YES		NULL	
teacher_id	varchar(512)	YES		NULL	

Table2: Parents details

Field	Type	Null	Key	Default	Extra
parent_id	int	NO	Primary key	NULL	
parent_name	varchar(512)	YES		NULL	
mobile	int	YES		NULL	

Table3: Teachers details

Field	Type	Null	Key	Default	Extra
teacher_id	varchar(512)	NO	Primary key	NULL	
teacher_name	varchar(512)	YES		NULL	
Gender	varchar(512)	YES		NULL	
Department	varchar(512)	YES		NULL	

Table4: Class details

Field	Type	Null	Key	Default	Extra
teacher_id	varchar(512)	YES		NULL	
subject_name	varchar(512)	YES		NULL	
class_year	varchar(512)	YES		NULL	

Table5: Subject details

Field	Type	Null	Key	Default	Extra
sub_id	int	NO	Primary key	NULL	
sub_name	varchar(512)	YES		NULL	
class_year	varchar(512)	YES		NULL	
subject_head	varchar(512)	YES		NULL	

4.Commands :

- create database management;
- use management;

➢ CREATE TABLE std_details

```
(
   Std_id        INT,
   std_name      VARCHAR(512),
   MARKS         INT,
   roll_no       INT,
   parent_id     INT,
   teacher_id    VARCHAR(512)
);
```

➢ Populate ’std_details’ table:

```
INSERT INTO std_details VALUES ('11', 'MULAY HRITIKA ', '75', '1', '1011', 'MV'),
('22', 'MURASKAR SWARAJ ', '75', '2', '1022', 'MPA'),
('33', 'MUTADAK UTSAV ', '60', '3', '1033', 'MS'),
('44', 'NAMA ADITYA', '70', '4', '1044', 'MKU'),
('55', 'NAMBIAR SIDDHANT ', '75', '5', '1055', 'MMA'),
('66', 'NAWLANI CHIRAG ', '45', '6', '1066', 'MKA'),
('77', 'PARANJAPE ANANT ', '75', '7', '1077', 'MPQ'),
('88', 'PATIL GANESH ', '75', '8', '1088', 'MRA'),
('99', 'PATIL NAYAN ', '70', '9', '1099', 'MA'),
('101', 'PATIL SIDDHARTH ', '75', '10', '1000', 'MN'),
('111', 'PATIL SNEHAL ', '65', '11', '1013', 'MSH'),
('121', 'PATIL VEDANT ', '70', '12', '1014', 'MRR'),
```

('131', 'PATWARDHAN ', '60', '13', '1015', 'MPP'),

('141', 'PAWAR MAYUR ', '75', '14', '1016', 'MKK'),

('151', 'PULI KAUSHIK ', '65', '15', '1017', 'MSV'),

('161', 'RAO ANURAAG ', '75', '16', '1018', 'MKT'),

('171', 'SALIAN AATISH ', '75', '17', '1019', 'MII'),

('181', 'SARAK RUSHIKESH ', '70', '18', '1020', 'MTT'),

('191', 'SAVALKAR PRATHAMESH ', '75', '19', '1021', 'MJJ'),

('201', 'SHARMA TEJAS ', '45', '20', '1023', 'MQQ');

- CREATE TABLE class_details

```
(
id          VARCHAR(512),
   subject_name            VARCHAR(512),
   class_year      VARCHAR(512)
);
```

- Populate ’class_details’ table:

```
INSERT INTO class_details VALUES('MV', 'electronics', 'I'),
('MPA', 'ED', 'II'),
('MS', 'Algebra', 'IV'),
('MKU', 'EM', 'IV'),
('MMA', 'Geometry', 'II'),
('MKA', 'Maths', 'I'),
('MPQ', 'chemistry', 'IV'),
('MRA', 'physics', 'II'),
('MA', 'Analog Electronics', 'III'),
('MN', 'electronics', 'I'),
('MSH', 'computer science', 'IV'),
('MRR', 'electronics', 'III'),
('MPP', 'electronics', 'II'),
```

('MKK', 'BEE', 'III'),

('MSV', 'control system', 'II'),

('MKT', 'advance power electronics', 'III'),

('MII', 'digital electronics', 'II'),

('MTT', 'microprocessor', 'IV'),

('MJJ', 'power electronics', 'I'),

('MQQ', 'null', 'II');

- CREATE TABLE teacher_details

```
(
   teacher_id     VARCHAR(512),
   teacher_name          VARCHAR(512),
   Gender         VARCHAR(512),
   Department   VARCHAR(512)
);
```

- Populate ’teacher_details’ table:

INSERT INTO teacher_details VALUES ('MV', 'Mr. verma', 'M', 'cmpn '),

('MPA', 'Mr.patil', 'M', 'cmpn '),

('MS', 'Mr. seth', 'M', 'inft'),

('MKU', 'Mr.kulkarni', 'M', 'inft'),

('MMA', 'Mr.marathe', 'M', 'inst'),

('MKA', 'Mr.kale', 'M', 'inst'),

('MPQ', 'Mr.pawar', 'M', 'extc'),

('MRA', 'Mr.rane', 'M', 'extc'),

('MA', 'Mr. arora', 'M', 'cmpn '),

('MN', 'Mr. nair', 'M', 'cmpn '),

('MSH', 'Mr.shrinivas', 'F', 'inft '),

('MRR', 'Mrs. joshi', 'F', 'inft'),

('MPP', 'Mrs. sharma', 'F', 'ectc'),

('MKK', 'Mrs. dixit', 'F', 'extc'),

('MSV', 'Mrs.sanjivni', 'F', 'inst'),

('MKT', 'Mrs. gole', 'F', 'inst'),

('MII', 'Mrs. mehrunkar', 'F', 'inft'),

('MTT', 'Mrs. shetty', 'F', 'inft'),

('MJJ', 'Mrs. vaithy', 'F', 'cmpn '),

('MQQ', 'Mrs. chaubey', 'F', 'cmpn');

- CREATE TABLE parent_details

```
(
   parent_id       INT,
   parent_name VARCHAR(512),
   pincode int
);
```

- Populate ’parent_details’ table:

INSERT INTO parent_details VALUES ('1011', 'Mr. jaydeep', 11),

('1022', 'Mr. Rahul',22),

('1033', 'Mr.Arun',33),

('1044', 'Mr.Ravi',44),

('1055', 'Mr. Ramesh',55),

('1066', 'Mr. Rajeev',66),

('1077', 'Mr. Raj',77),

('1088', 'Mr. dilip',88),

('1099', 'Mr. Mahesh',99),

('1000', 'Mr. Manoj',98),

('1013', 'Mr. Sameer',13),

('1014', 'Mr. Pankaj',14),

('1015', 'Mr. Nitin',15),

('1016', 'Mr. Rajesh',16),

('1017', 'Mr. Akshay',17),

('1018', 'Mr. Mohit',18),

('1019', 'Mr. Karan',19),

('1020', 'Mr. salil',20),

('1021', 'Mr. Rishi',21),

('1023', 'Mr. Nishant',23);

- CREATE TABLE subject_details

```
(
   sub_id          INT,
   sub_name        VARCHAR(512),
   class_year      VARCHAR(512),
   subject_head VARCHAR(512)
);
```

- Populate ’subject_details’ table:

INSERT INTO subject_details VALUES ('901', 'Maths', 'I', 'Mr.kale'),

('808', 'ED', 'II', 'Mr.patil'),

('404', 'BEE', 'III', 'Mrs. dixit'),

('701', 'EM', 'IV', 'Mr.kulkarni');

5.Result

I). Group By

Display the count of female teachers

count(gender)
10

Display the count of class year III

count(class_year)
4

Display count of teachers in each department

count(teacher_name)	departmer
5	cmpn
5	inft
4	inst
3	extc
1	inft
1	ectc
1	cmpn

Display the count of students with ascending marks

count(std_name)	marks
2	45
2	60
2	65
4	70
10	75

II). Joins

Display the name of class teachers assigned to I year

teacher_name	class_year
Mr. verma	I
Mr.kale	I
Mr. nair	I
Mrs. vaithy	I

Display the name of students whose parents name contain letter ‘j’

std_name	parent_name
MULAY HRITIKA	Mr. jaydeep
NAWLANI CHIRAG	Mr. Rajeev
PARANJAPE ANANT	Mr. Raj
PATIL SIDDHARTH	Mr. Manoj
PATIL VEDANT	Mr. Pankaj
PAWAR MAYUR	Mr. Rajesh

Display names of teacher not assigned subject head

teacher_name
Mr. verma
Mr. seth
Mr.marathe
Mr.pawar
Mr.rane
Mr. arora
Mr. nair
Mr.shrinivas
Mrs. joshi
Mrs. sharma
Mrs.sanjivni
Mrs. gole
Mrs. mehrunkar
Mrs. shetty
Mrs. vaithy
Mrs. chaubey

Display names of parents with ward score 75

parent_name
Mr. jaydeep
Mr. Rahul
Mr. Ramesh
Mr. Raj
Mr. dilip
Mr. Manoj
Mr. Rajesh
Mr. Mohit
Mr. Karan
Mr. Rishi

Display names of teachers whose subject name is same as teacher id MPP

teacher_name
Mr. verma
Mr. nair
Mrs. joshi
Mrs. sharma

Conclusion:

This project is a comprehensive system for managing information on students, courses, teachers, scores, and semester/year.

These databases facilitate efficient management of student information, allowing educational institutions to track progress, allocate resources, and provide personalized support.

In essence, a student database acts as the backbone for administrative processes and educational planning.