National University
of computer and emerging sciences

Database Systems Project

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Section:

B

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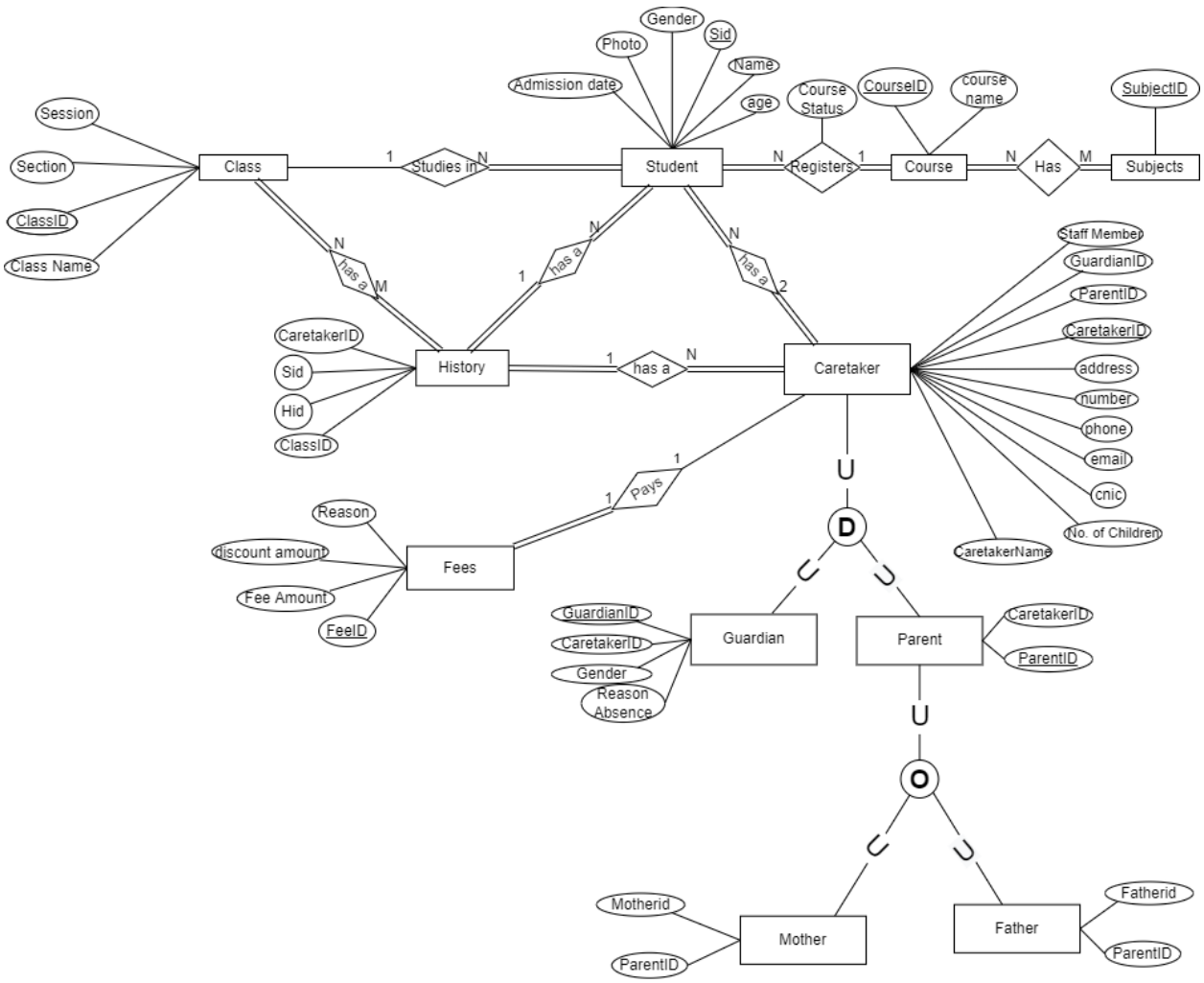
Entity Relationship Diagram



Relational Schema

Table Caretaker													
Caretakerid	**CaretakerName**	**Guardianid**	**Parentid**	**address**	**number**	**phone**	**cnic**	**email**	**staff_member**	**Feeid**	**no_of_childern**	**Sid**	**Relation**
Primary Key		Foreign Key	Foreign Key							Foreign Key		Foreign Key	

Table Class					
Classid	**Session_name**	**Class_name**	**Sections**	**sessionid**	**Sid**
Primary Key				Foreign Key	Foreign Key

Table Course		
Courseid	**Course_name**	**Subjectid**
Primary Key		Foreign Key

Table father
Fatherid
Primary Key

Table fee			
Feeid	**Reason**	**Fee_amount**	**discount_amount**
Primary Key			

Table guardian		
Guardianid	**Gender**	**Reason_Absence**
Primary Key		

Table history				
Hid	**Sid**	**Classid**	**Caretakerid**	**sessionid**
Primary Key	Foreign Key	Foreign Key	Foreign Key	

Table mother
Motherid
Primary Key

Table parent			
Parentid	**Motherid**	**Fatherid**	**Guardianid**
Primary Key	Foreign Key	Foreign Key	Foreign Key

Table registers		
Course_status	**Sid**	**Courseid**
	Foreign Key	Foreign Key

Table Student								
Sid	**OrderNumber**	**Name**	**Age**	**photo**	**Parentid**	**Courseid**	**Classid**	**Caretakerid**
Primary Key					Foreign Key	Foreign Key	Foreign Key	Foreign Key

Table subject	
Subjectid	**Courseid**
Primary Key	Foreign Key

Table’s Description:

Subject

This table describes the subjects of each through each subject

Course

This tables the courses that are offered by the institution, it is linked to subject and student

Student

This table contains the information of every student and is linked to various entities like caretaker, course, class

Registers

This is a bridge entity between course and student it defines how a student will interact with course, It also has an additional attribute course status which tells us whether has completed or not completed his or her course

Parent

This is a child attribute of caretaker and spawns further child entities mother and father

Caretaker

This defines information in regards to the caretaker of a particular student, it also spawns 2 further child entities which are parent and guardian

Fee

It a entity which defines the amount of fee that a caretaker of a student should pay

Father

It is a child entity of parent

Mother

It is a child entity of parent

History

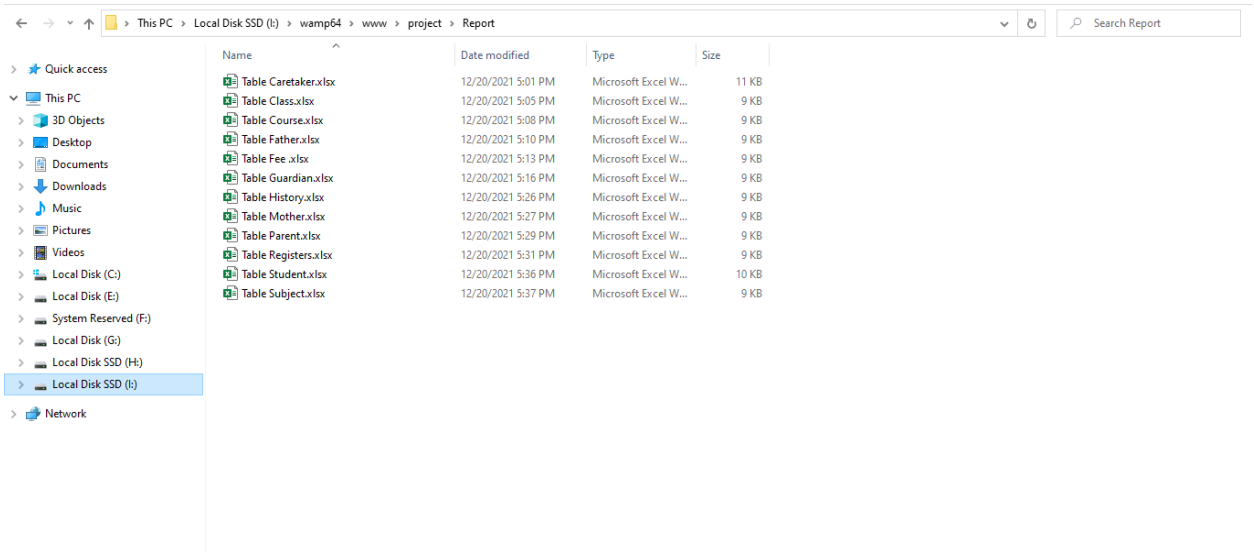
It is an entity that keeps track of the history of a particular student, each history id represent a unit of time, it also has a sessionid which keeps track of the session of a particular student

Class

It is an entity which tells us about the class that a student belongs to and tells the display information regarding a class like section, class name and subject

Datasets:

Sample datasets of every table(**excel files**) are included in the **Report** folder.



SQL Statements Used to Create And Populate Tables:

Caretaker Table:

```
--
-- Table structure for table `caretaker`
--

DROP TABLE IF EXISTS `caretaker`;
CREATE TABLE IF NOT EXISTS `caretaker` (
  `Caretakerid` int(255) NOT NULL,
  `CaretakerName` varchar(255) NOT NULL,
  `Guardianid` int(255) DEFAULT NULL,
  `Parentid` int(255) DEFAULT NULL,
  `address` varchar(255) NOT NULL,
  `number` int(255) NOT NULL,
  `phone` int(255) NOT NULL, -- phone INT
  `cnic` int(255) NOT NULL,
  `email` varchar(255) NOT NULL,
  `staff_member` varchar(255) NOT NULL, -- staff member = YES or NO
  `Feeid` int(255) DEFAULT NULL,
  `no_of_childern` int(255) NOT NULL,
  `Sid` int(255) DEFAULT NULL,
```

```
  `Relation` varchar(255) NOT NULL,
  PRIMARY KEY (`Caretakerid`),
  KEY `Feeid` (`Feeid`),
  KEY `Parentid` (`Parentid`),
  KEY `Guardianid` (`Guardianid`),
  KEY `Sid` (`Sid`)
) ENGINE=MyISAM DEFAULT CHARSET=latin1;
```

```
-- ----------------Populating caretaker Table



INSERT INTO
`caretaker`(`Caretakerid`,`CaretakerName`,`Guardianid`,`Parentid`,`address
`,`number`,`phone`,`cnic`,`email`,`staff_member`,`Feeid`,`no_of_childern`,
`Sid`,`Relation`) VALUES

(100,'Ahmed',NULL,101,'WahCantt',0316,453,37406,'ahmed@gmail.com','No',01,
2,1111,'Father'),

(200,'Salar',NULL,102,'Islamabad',0333,521,4860,'salar@gmail.com','No',02,
1,1112,'Father'),

(300,'Fatima',NULL,103,'Rawalpindi',0334,456,7353,'wadood@gmail.com','No',
03,1,1113,'Mother'),

(400,'Ayesha',NULL,104,'Lahore',0321,567,6784,'kamran@gmail.com','No',04,2
,1114,'Mother'),

(500,'Sobia',NULL,105,'Attock',0331,675,1112,'tahir@gmail.com','Yes',05,1,
1115,'Mother'),

(600,'Areeba',006,NULL,'Islamabad',0332,588,3455,'areeba@gmail.com','No',0
6,1,1116,'Sister');
```

Class Table:

```
--
-- Table structure for table `class`
--
```

```
DROP TABLE IF EXISTS `class`;
CREATE TABLE IF NOT EXISTS `class` (
  `Classid` int(255) NOT NULL,
  `Session_name` varchar(255) NOT NULL,
  `Class_name` varchar(255) NOT NULL,
  `Sections` varchar(255) NOT NULL,
  `sessionid` int(255) DEFAULT NULL,
  `Sid` int(255) DEFAULT NULL,
  PRIMARY KEY (`Classid`),
  KEY `sessionid` (`sessionid`),
  KEY `Sid` (`Sid`)
) ENGINE=MyISAM DEFAULT CHARSET=latin1;
```

```
-- populating class table
INSERT INTO
`class`(`Classid`,`Session_name`,`Class_name`,`Sections`,`sessionid`,`Sid`
)VALUES
(1,'Spring','Grade One','A',10,1111),
(2,'Autumn','Grade Two','A',20,1112),
(3,'Summer','Grade Three','A',30,1113),
(4,'Winter','Grade Four','A',40,1114);
-- --------------------------------------------------------
```

Course Table:

```
--
-- Table structure for table `course`
--

DROP TABLE IF EXISTS `course`;
CREATE TABLE IF NOT EXISTS `course` (
  `Courseid` int(255) NOT NULL,
  `Course_name` varchar(255) NOT NULL,
  `Subjectid` int(255) DEFAULT NULL,
  PRIMARY KEY (`Courseid`),
```

```
  KEY `Subjectid` (`Subjectid`)
) ENGINE=MyISAM DEFAULT CHARSET=latin1;
```

```
-- populating course table
INSERT INTO `course`(`Courseid`,`Course_name`,`Subjectid`)VALUES
(1000,'Playgroup',1111),
(2000,'Nursery',2222),
(3000,'Prep',3333),
(4000,'Advance',4444),
(5000,'Primary',5555);
```

Father Table:

```
--
-- Table structure for table `father`
--

DROP TABLE IF EXISTS `father`;
CREATE TABLE IF NOT EXISTS `father` (
  `Fatherid` int(255) NOT NULL,
  PRIMARY KEY (`Fatherid`)
) ENGINE=MyISAM DEFAULT CHARSET=latin1;
```

```
-- populating father table
INSERT INTO `father`(`Fatherid`)VALUES
(301),
(302),
(303),
(304),
(305);
-- --------------------------------------------------------
```

Fee Table:

```
--
-- Table structure for table `fee`
--

DROP TABLE IF EXISTS `fee`;
CREATE TABLE IF NOT EXISTS `fee` (
  `Feeid` int(255) NOT NULL,
  `Reason` varchar(255) NOT NULL,
  `Fee_amount` int(255) NOT NULL, -- Fee amount INT
  `discount_amount` int(255) NOT NULL,
  PRIMARY KEY (`Feeid`)
) ENGINE=MyISAM DEFAULT CHARSET=latin1;
```

```
-- populating fee table
INSERT INTO `fee`(`Feeid`,`Reason`,`Fee_amount`,`discount_amount`)VALUES
(01,'Financial Reasons',2000,1000),
(02,'Financial Reasons',2000,500),
(03,'Financial Reasons',3000,1500),
(04,'Financial Reasons',3000,2000),
(05,'Child of a staff member',2000,2000);
-- ----------------------------------------------------------
```

Guardian Table:

```
--
-- Table structure for table `guardian`
--

DROP TABLE IF EXISTS `guardian`;
CREATE TABLE IF NOT EXISTS `guardian` (
  `Guardianid` int(255) NOT NULL,
  `Gender` varchar(255) NOT NULL,
  `Reason_Absence` varchar(255) DEFAULT NULL,
```

```
  PRIMARY KEY (`Guardianid`)
) ENGINE=MyISAM DEFAULT CHARSET=latin1;
```

```
-- populating guardian table
INSERT INTO `guardian`(`Guardianid`,`Gender`,`Reason_Absence`)VALUES
(001,'male','Out of City'),
(002,'male','Out of City'),
(003,'female','Sick'),
(004,'female','Sick'),
(005,'female','Sick'),
(006,'female','Sick');
```

History Table:

```
--
-- Table structure for table `history`
--

DROP TABLE IF EXISTS `history`;
CREATE TABLE IF NOT EXISTS `history` (
  `Hid` int(255) NOT NULL,
  `Sid` int(255) DEFAULT NULL,
  `Classid` int(255) DEFAULT NULL,
  `Caretakerid` int(255) DEFAULT NULL,
  `sessionid` int(255) NOT NULL,
  PRIMARY KEY (`Hid`),
  KEY `Sid` (`Sid`),
  KEY `Caretakerid` (`Caretakerid`),
  KEY `Classid` (`Classid`)
) ENGINE=MyISAM DEFAULT CHARSET=latin1;
```

```
-- populating history table
INSERT INTO
`history`(`Hid`,`Sid`,`Classid`,`Caretakerid`,`sessionid`)VALUES
```

```
(010,1111,1,100,10),
(020,1112,2,200,20),
(030,1113,3,300,30),
(040,1114,4,400,40),
(050,1115,5,500,50);
```

Mother Table:

```
--
-- Table structure for table `mother`
--

DROP TABLE IF EXISTS `mother`;
CREATE TABLE IF NOT EXISTS `mother` (
  `Motherid` int(255) NOT NULL,
  PRIMARY KEY (`Motherid`)
) ENGINE=MyISAM DEFAULT CHARSET=latin1;
```

```

-- populating mother table
INSERT INTO `mother`(`Motherid`)VALUES
(201),
(202),
(203),
(204),
(205);
-- --------------------------------------------------------
```

Parent Table:

```
--
-- Table structure for table `parent`
--

DROP TABLE IF EXISTS `parent`;
CREATE TABLE IF NOT EXISTS `parent` (
```

```
  `Parentid` int(255) NOT NULL,
  `Motherid` int(255) DEFAULT NULL,
  `Fatherid` int(255) DEFAULT NULL,
  `Guardianid` int(255) DEFAULT NULL,
  PRIMARY KEY (`Parentid`),
  KEY `Motherid` (`Motherid`),
  KEY `Fatherid` (`Fatherid`),
  KEY `Guardianid` (`Guardianid`)
) ENGINE=MyISAM DEFAULT CHARSET=latin1;
```

```
-- populating parent table
INSERT INTO `parent`(`Parentid`,`Motherid`,`Fatherid`,`Guardianid`)VALUES
(101,201,301,NULL),
(102,202,302,NULL),
(103,203,303,NULL),
(104,204,304,NULL),
(105,205,305,NULL),
(NULL,NULL,NULL,006);
-- --------------------------------------------------------
```

Registers Table:

```
--
-- Table structure for table `registers`
--

DROP TABLE IF EXISTS `registers`;
CREATE TABLE IF NOT EXISTS `registers` (
  `Course_status` varchar(255) NOT NULL,-- completed / Not completed
  `Sid` int(255) DEFAULT NULL,
  `Courseid` int(255) DEFAULT NULL,
  KEY `Sid` (`Sid`),
  KEY `Courseid` (`Courseid`)
) ENGINE=MyISAM DEFAULT CHARSET=latin1;
```

```
-- populating registers table
INSERT INTO `registers`(`Course_status`,`Sid`,`Courseid`)VALUES
('Not Completed',1111,1000),
('Not Completed',1112,2000),
('Not Completed',1113,3000),
('Not Completed',1114,4000),
('Completed',1115,5000);
```

Student Table:

```
--
-- Table structure for table `student`
--

DROP TABLE IF EXISTS `student`;
CREATE TABLE IF NOT EXISTS `student` (
  `Sid` int(255) NOT NULL,
  `OrderNumber` int(255) NOT NULL,
  `Name` varchar(255) NOT NULL, -- Name Varchar
  `Age` int(255) NOT NULL,
  `photo` blob,
  `Parentid` int(255) DEFAULT NULL,
  `Courseid` int(255) DEFAULT NULL,
  `Classid` int(255) DEFAULT NULL,
  `Caretakerid` int(255) DEFAULT NULL,
  PRIMARY KEY (`Sid`),
  KEY `Parentid` (`Parentid`),
  KEY `Courseid` (`Courseid`),
  KEY `Classid` (`Classid`),
  KEY `Caretakerid` (`Caretakerid`)
) ENGINE=MyISAM DEFAULT CHARSET=latin1;
```

```
-- populating student table
```

```
INSERT INTO
`student`(`Sid`,`OrderNumber`,`Name`,`Age`,`photo`,`Parentid`,`Courseid`,`
Classid`,`Caretakerid`)VALUES
(1111,1,'Talha',11,'',101,1000,1,100),
(1112,2,'Sabir',13,'',102,2000,2,200),
(1113,3,'Haris',10,'',103,3000,3,300),
(1114,4,'Usman',9,'',104,4000,4,400),
(1115,5,'Hamza',7,'',105,5000,5,500);
-- --------------------------------------------------------
```

Subject Table:

```
--
-- Table structure for table `subject`
--

DROP TABLE IF EXISTS `subject`;
CREATE TABLE IF NOT EXISTS `subject` (
  `Subjectid` int(255) NOT NULL,
  `Courseid` int(255) DEFAULT NULL,
  PRIMARY KEY (`Subjectid`),
  KEY `Courseid` (`Courseid`)
) ENGINE=MyISAM DEFAULT CHARSET=latin1;
```

```
-- populating subject table

INSERT INTO `subject`(`Subjectid`,`Courseid`)VALUES
(1111,1000),
(2222,2000),
(3333,3000),
(4444,4000),
(5555,5000);
```

Sql Queries:

```
USE dbproject;

#Query 1
SELECT *
FROM student;

# Query 2
SELECT                                                    Motherid,Fatherid
FROM parent
WHERE Motherid IS NOT NULL AND Fatherid IS NOT NULL


# Query 3
SELECT *
FROM caretaker
GROUP BY Sid
HAVING Parentid = NULL;

# Query 4
SELECT c.Caretakerid, c.sid, CaretakerName, s.Name
FROM caretaker c JOIN student s
ON(c.sid);

# Query 5
SELECT c.Caretakerid, c.sid, CaretakerName, s.Name, classid
FROM caretaker c JOIN student s
ON(c.sid)
GROUP BY classid;

# Query 6
SELECT c.sessionid , c.Sid, c.Classid
FROM class c
ORDER BY sessionid DESC;

# Query 7
#SELECT
c.Classid,Session_name,sessionid,Class_name,Sections,Sid,OrderNumber,Name,Age
#FROM class c JOIN student s
#ON(c.Classid = s.Classid)
#ORDER BY sessionid DESC

SELECT c.sessionid , c.Sid, c.Classid
```

```
FROM class c
ORDER BY sessionid DESC;


# Query 8
SELECT h.Caretakerid , h.Hid, h.sessionid, s.Sid, s.OrderNumber, s.Name, s.Age, s.photo,
s.Courseid
FROM history h JOIN student s
ON(h.hid)
ORDER BY sessionid DESC;

# Query 9
SELECT *
FROM caretaker
WHERE sid = (
   SELECT sid
   FROM student
   WHERE age = 15
)

# Query 10
update history of student
UPDATE class
SET session_name ="Autumn", Class_name = "Grade Four", Sections = "B"
WHERE session_name REGEXP "Summer" AND Class_name REGEXP "Grade Three" AND
Sections REGEXP "A" AND sessionid > 10
```