KHULNA UNIVERSITY

REPORT ON

Dining Management System

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Contents:

Introduction:

Database system for converting dining hall meal receipt and payment process from manual to online. Students can pre-order lunch and dinner with pre-payment facility using the system. Easy order management facility using database for dining managers and users.

Motivation:

The subject of our project is Khulna University Hall Dining Management System.

There are total five halls in Khulna University. Three halls for boys and two for girls. Each hall has a separate dining room. Students can eat two meals in the dining hall. Dining is mainly available for lunch and dinner. Every day there are different types of menu of food. Moreover, the fest is given twice every month. Good food is provided on that day.

Every night the meal starts from 8.00 pm. Every day students have to pay a certain amount of money to take next day meal. 65 taka for two time meals (lunch and dinner). And 35 takas have to be paid for one meal (lunch or dinner). Most of the time student give 100 taka and then money change problem arises. Moreover sometimes many students stay outside of the hall. But they want to take the next day's meal. But it is not possible for him. Also, the dining manager has to face problem to keep track of everything. It is also difficult to calculate the amount of money every day. This is a huge waste of his time. He/she had to sit up to late-night to take the payment of everyone's meal.

To solve these problems we want to make online based dining management system.

Here we can get rid of all these problems. There will be an opportunity to place food orders online every day through online websites or apps. As a result, students will not be in trouble. Even if he/she is not in hall, he can order next day meal. The dining manager does not have to sit up to late-night. As a result, his/her time will be saved. Later there will be option to make payment through online payment gateway. There, the student's information and the amount of money will be calculated through the database system. So, the manager will not waste extra time. He/she will get the hard copy by downloading it the next day before market. Moreover, there will be no problem of money change as there is an option of online payment.

Therefore, dining management system is required for both students and dining manager.

Interesting queries:

In our system there can be two types of query. One is from manager side and another is from user side. Those are mentioned below-

Manager queries:

1. Total amount of meals per day.
2. Total amount of money per day.
3. List of students of taking every day meal.

4. Which students take highest meal per month?
5. In which day of week highest number of students take meal.

User queries:

1. How much money he/she spend for meal per month.
2. How many days he/she takes meal in a particular month.

Entity Relationship Diagram:

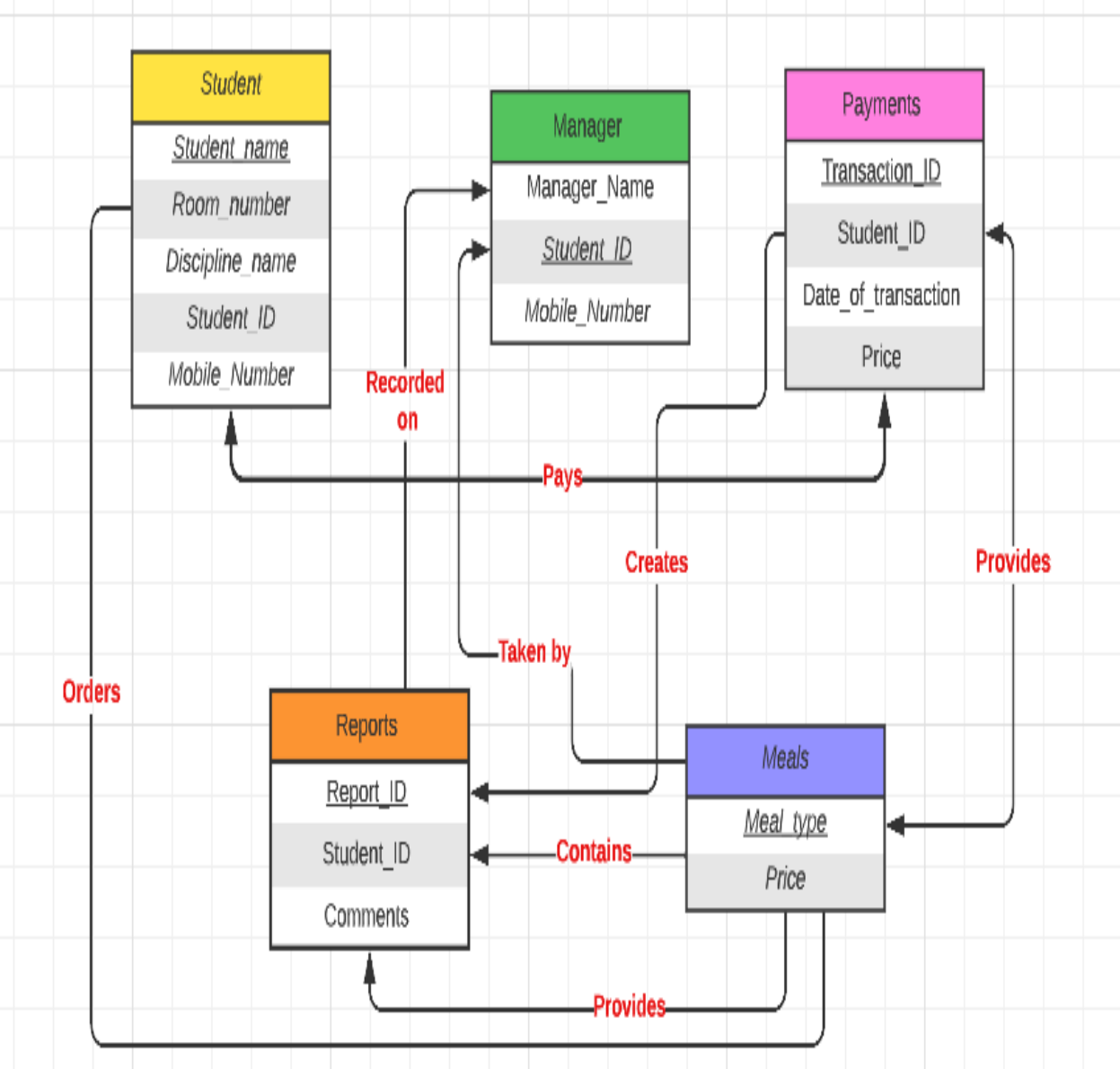


Fig: E-R Diagram

Schema Design:

SQL Command:

```
create database Dining_Management_System;
Use Dining_Management_System;
create table Student
        (Student_name  varchar(20),
         Room_number  varchar(3),
         Discipline_name varchar(20),
         Student_ID  numeric(6),
         Mobile_Number  numeric(11),
         primary key (Student_ID)  );
create table Meals
        (Meal_type  varchar(6),
        Price  numeric(2,2),
        primary key (Meal_type)  );
create table Payments
        (Transaction_ID  varchar(15),
         Student_ID  numeric(6),
         Date_of_transaction  date,
         Price  numeric(2,2),
         primary key (Transaction_ID)  );
create table Manager
        (Manager_Name  varchar(20),
         Student_ID              numeric(6,0),
         Moblie_Number  numeric(11),
```

```
 primary key (Student_ID)
);
```

```
create table Reports
        (Report_ID varchar(20),
        Student_ID  numeric(6),
        Comments  varchar(20),
         primary key (Report_ID        )
        );
```

Schema Diagram:

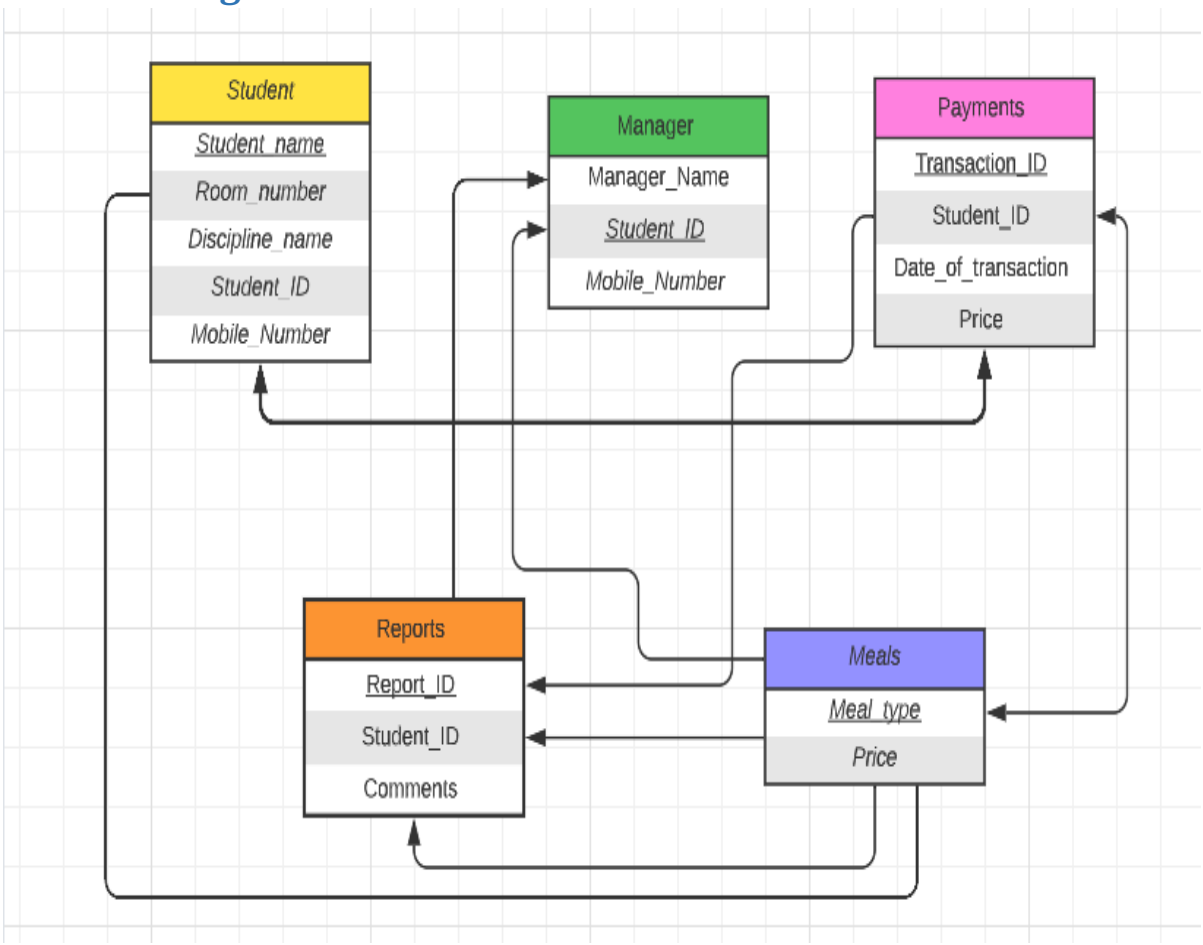
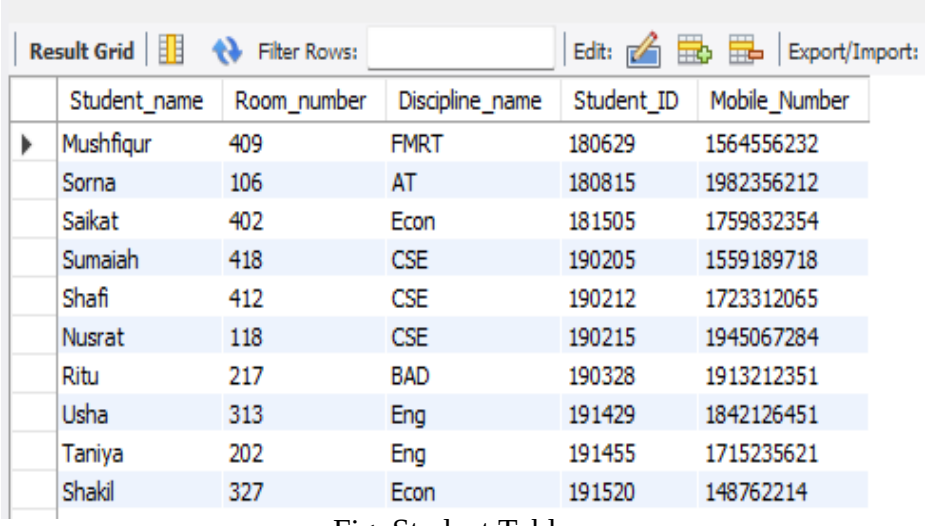


Fig: Schema Diagram

Data Entry:

Student table:



Result Grid | Filter Rows: | Edit: | Export/Import:

Student_name	Room_number	Discipline_name	Student_ID	Mobile_Number
Mushfiqur	409	FMRT	180629	1564556232
Sorna	106	AT	180815	1982356212
Saikat	402	Econ	181505	1759832354
Sumaiah	418	CSE	190205	1559189718
Shafi	412	CSE	190212	1723312065
Nusrat	118	CSE	190215	1945067284
Ritu	217	BAD	190328	1913212351
Usha	313	Eng	191429	1842126451
Taniya	202	Eng	191455	1715235621
Shakil	327	Econ	191520	148762214

Fig: Student Table

Payments table:

Transaction_ID	Student_ID	Date_of_transaction	Price	Meal_type
T101	200204	2023-02-15	35	Lunch
T102	200234	2023-03-17	65	Lunch and Dinner
T103	200240	2023-03-18	65	Lunch and Dinner
T104	202608	2023-04-04	65	Lunch and Dinner
T105	190212	2023-04-05	35	Lunch
T106	202040	2023-04-06	35	Dinner
T107	190205	2023-04-07	65	Lunch and Dinner
T108	181505	2023-04-09	65	Lunch and Dinner
T109	190215	2023-04-11	65	Lunch and Dinner
T110	200912	2023-04-11	65	Lunch and Dinner
T111	180815	2023-04-11	65	Lunch and Dinner
T112	202805	2023-04-11	65	Lunch and Dinner
T113	192909	2023-04-12	65	Lunch and Dinner
T114	180629	2023-04-12	35	Dinner
T115	191429	2023-04-14	65	Lunch and Dinner

Fig: Payments Table

Meals table:

Result Grid | Filter Rows:

Meal_type	Price
Dinner	35
Lunch	35
Lunch and dinner	65
NULL	NULL

Fig: Meals Table

Manager table:

Manager_Name	Student_ID	Moblie_Number
Tanmoy	182828	1445421854
Sumaiah	190205	154548965
Noor	190223	1783336372
Rabeya	191608	154542211
Istyaque	200240	1968291189
NULL	NULL	NULL

Fig: Manager Table

Reports table:

Report_ID	Student_ID	Comments
R101	190205	Lunch meal is not well cooked.
NULL	NULL	NULL

Fig: Reports Table

Normalization:

Student Table:

Student table satisfies the 1st Normal Form, because it has no repeating groups of data. Each column contains atomic values, which means that it cannot be further divided into sub-columns.

This table satisfies the 2nd Normal Form, because it is in 1NF and all non-key attributes are fully dependent on the primary key.

This table satisfies the 3rd Normal Form, because it is in 2NF and there are no non-key attributes that are dependent on another non-key attributes.

Payments table:

Payments table satisfies the 1st Normal Form, because it has no repeating groups of data. Each column contains atomic values, which means that it cannot be further divided into sub-columns.

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Meals table:

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This table satisfies the 3rd Normal Form, because it is in 2NF and there are no non-key attributes that are dependent on another non-key attributes.

Manager table:

Manager table satisfies the 1st Normal Form, because it has no repeating groups of data. Each column contains atomic values, which means that it cannot be further divided into sub-columns.

This table satisfies the 2nd Normal Form, because it is in 1NF and all non-key attributes are fully dependent on the primary key.

This table satisfies the 3rd Normal Form, because it is in 2NF and there are no non-key attributes that are dependent on another non-key attributes.

Reports table:

Reports table satisfies the 1st Normal Form, because it has no repeating groups of data. Each column contains atomic values, which means that it cannot be further divided into sub-columns.

This table satisfies the 2nd Normal Form, because it is in 1NF and all non-key attributes are fully dependent on the primary key.

This table satisfies the 3rd Normal Form, because it is in 2NF and there are no non-key attributes that are dependent on another non-key attributes.

Design:

Registration Form:

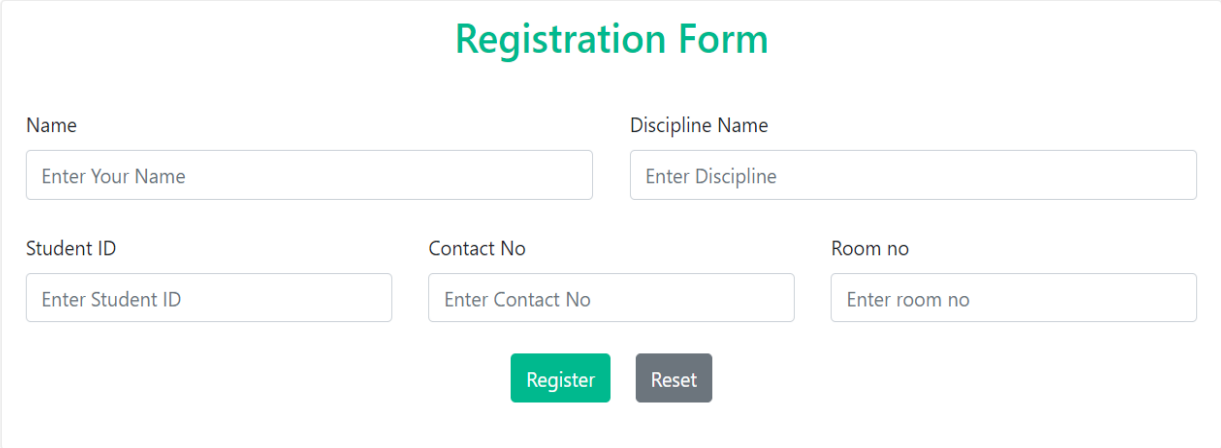


Fig: Registration Form

Payment Form:

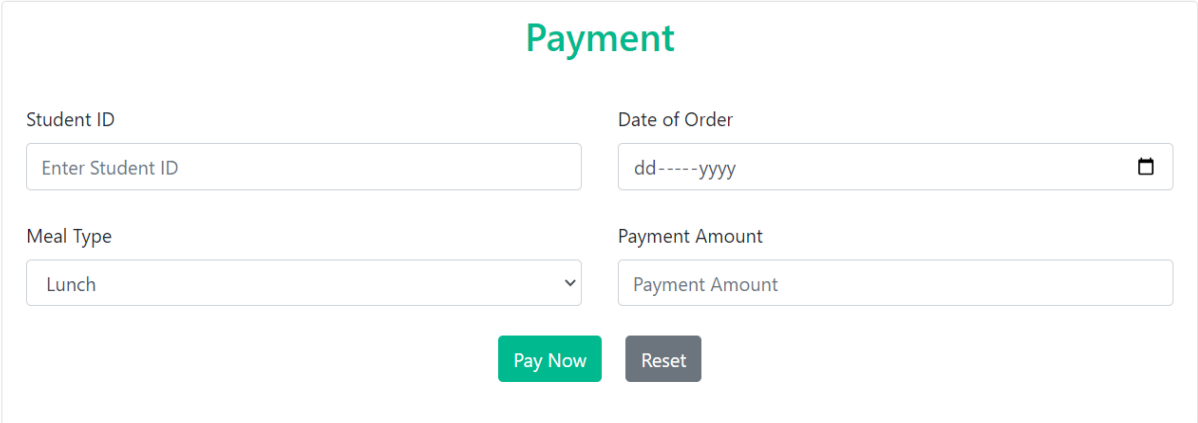


Fig: Registration Form

Data:

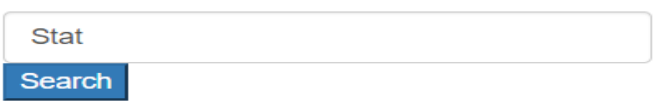
Transaction id	Student id	Name	Discipline	Room No	Meal Type
T101	200204	Swapnil	CSE	605	Lunch
T102	200234	Rabiul	CSE	321	Lunch and Dinner
T103	200240	Istyaque	CSE	404	Lunch and Dinner
T104	202608	Maliha	MCJ	605	Lunch and Dinner
T105	190212	Shafi	CSE	412	Lunch
T106	202040	Rakib	Stat	404	Dinner
T107	190205	Sumaiah	CSE	418	Lunch and Dinner
T108	181505	Saikat	Econ	402	Lunch and Dinner
T109	190215	Nusrat	CSE	118	Lunch and Dinner
T110	200912	Ananya	ECE	517	Lunch and Dinner
T111	180815	Sorna	AT	106	Lunch and Dinner
T112	202805	Tahia	Law	102	Lunch and Dinner
T113	192909	Sumon	Edu	110	Lunch and Dinner
T114	180629	Mushfiqur	FMRT	409	Dinner
T115	191429	Usha	Eng	313	Lunch and Dinner
T116	200234	Rabiul	CSE	321	Lunch
T117	211806	Fatema	Chem	615	Dinner
T118	190328	Ritu	BAD	217	Lunch and Dinner

Fig: Total Data

Interesting Query:

- Student who take meal from Statistics Discipline

Transaction id	Student id	Name	Discipline	Room No	Meal Type
T106	202040	Rakib	Stat	404	Dinner
T119	202035	Atiqul	Stat	404	Lunch and Dinner
T2023-03-23192044	192044	Mohua	Stat	106	Lunch and Dinner
T2023-03-30202017	202017	Toma	Stat	404	Lunch
T2023-04-02202035	202035	Atiqul	Stat	404	Lunch



Tools and Technologies:

To develop the whole system the tools and technologies we use are mentioned below-

Operating system	: Windows 11 Home
Framework	: .NET
Front end design	: HTML, CSS
Back end design	: PHP,
Workbench	: MySQL
Connectors	: jdbc, xampp