Ahsanullah University of Science & Technology
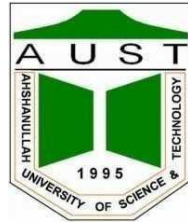## Department of Computer Science & Engineering

FALL 2021

Open OPD

CSE 3104: Project Report

Submitted By:

ID	NAME
190204070	Faiyaz Ahmed Rabbi
190204073	Intishar Rahman Nafi
190204081	Md. Naimul Islam Kingkon
190204086	Kazi Atiqur Rahman

Table of Contents

1. Motivation of the project

- To reduce paperwork, time and bringing monitoring
- To introduce this technology in rural areas of Bangladesh
- Making the OPD more transparent and convenient

2. Project Goal

1. Providing patients with a hassle-free experience from booking appointments, visiting Doctors, diagnosis, medication and coming to follow-up checkups.
2. Connecting patients and doctors in an appropriate way.
3. Generating monthly/annual reports for the organization to have an insight

3. Project Cost Calculation

Time required to complete: 11 weeks
Considering 4 people working on this one 2 days each week.
Salary of software developer team = 60,000 BDT/monthly
Payment for the team for each working day = 2000 BDT
So, payment for the whole team for developing the software in 11 weeks = 11 * 2 * 2000 = 44,000 BDT

Utilities such as internet costs us around 1000 BDT per month
Our software developing team will be working for around 3 months
So total utility cost = 3*1000 = 3000 BDT

Our total cost will be around (44000 + 3000) or 47,000 BDT

For selling the software, we'd consider a starting price from 8000 BDT(one-time purchase)
In order to make a profit, we have to sell a minimum number of (47000/8000) ≈ 5.8 or 6 software.

4. Potential Customers/Product Market

1. Clinics and Hospitals.
2. NGOs who are trying to build a medical camp anywhere in the country.

5. Requirement Analysis

Suppose United Hospital is one of our clients.
United hospital has 3 types of operators operating in the OPD. They are
1. Receptionist
2. Doctors
3. Managerial Body

Patients come to the receptionists to take appointments. Patients can be of 2 types:
1. New Patient
2. Old Patient,

A new EMR (Electronic Medical Record) will be generated for a new patient.
Then the receptionist appoints a doctor to that patient of his/her choice or need.
Upon making the appointment, the patient is provided with a serial number and
requested to wait until his/her number is displayed/called.

Doctors will call one after another patient from the queue into the chamber. A chamber
has one or more Nurses.
The EMR of an old patient will be available on the Doctor's screen.

The doctor can find and prescribe medicines and write tests and remarks for the patient.
After submitting, the prescription will be stored in the patient's EMR.

Members of the Managerial Body can see the Income statistics and manage the
Inventory and Donations.

6. Entity Relationship Diagram
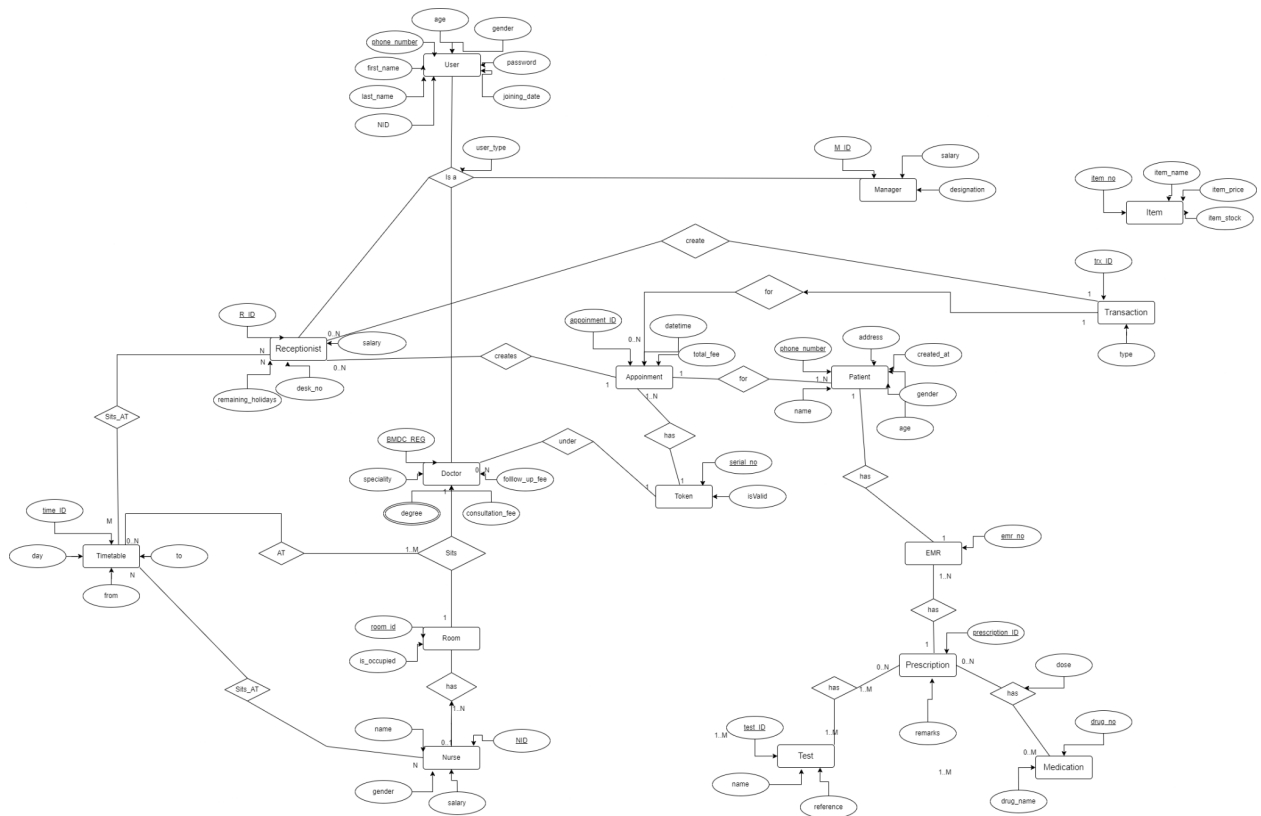
7. Schema/Tables

Possible Entity:

- User
- Receptionists
- Doctor
- Manager
- Appointment
- Token
- Patient
- Timetable

- Room
- Nurse
- EMR
- Prescription
- Test
- Medication
- Transaction
- Item

Possible Relation:
- Receptionist creates Appointment
- Appointment for Patient
- Appointment has Token
- Token under Doctor

- Doctor sits Room
- Doctor sits at Timetable
- Room has Nurse
- Nurse sits at Timetable
- Receptionists sits at Timetable
- Receptionists create Transaction
- Transaction for Appointment
- Patient has EMR
- EMR has Prescription
- Prescription has Test
- Prescription has Medication

Possible Attributes:
- **User:** phone_number, first_name, last_name, age, NID, gender, joining date
- **Appointment:** appointment_ID, datetime, total_fee
- **Patient:** phone_number, address, created_at, gender,age,name
- **Token:** serial_no, isValid
- **Receptionists:** R_ID, desk_no, salary, remaining_holidays
- **Doctor:** BMDC_REG, speciality, degree, consultations_fee, follow_up_fee
- **Room:** room_ID, is_occupied
- **Nurse:** NID, name, salary, gender
- **Timetable:** time_ID, from, to, day
- **EMR:** emr_no
- **Prescription:** prescription_id, remarks
- **Medication:** drug_no, drug_name
- **Test:** test_id, name, reference
- **Transaction:** trx_id, type
- **Item:** item_no, item_name, item_price, item_stock
- **Manager:** M_ID, salary, designation

8. Project Risk

One of the main obstacles we anticipate to face is that we might not collect all of the data of prescription drugs. We don't have the resources or the access to collect the information. Another problem we might face is we can't assure if our software will sell or not.

9. Conclusion

The purpose of creating this software is to keep track of the doctor, patient and transactions.Our software will be handy for hospital OPD systems. It will help the OPD stuff to work more efficiently and faster. The application will help hospitals to digitialize.