**Client: University Health Centre**

The health center provides a variety of services such as primary care, immunizations and emergency care for students and staff. These services are closely tied with billing through insurance. The objective of this project is to understand the business functions of the health center and build a solution that encompasses all its functionality and operations on a robust database management system.

Our project aims to build a generic database for the health center that maintains information about Doctors, Staff, Patients (students), Medicines prescribed to every patient, Treatment provided to every patient in tandem with the Billing and Insurance information.

The **functions of business** are divided into two broad categories

 1. Internal Functions:

1. Acquisition of finance- This determines the monetary flow in the health center of UMD.
2. Purchase of medicines- This function determines the purchase of medicine stock from different manufacturers and determining the quality.
3. Diagnosis and results- The lab test diagnosis and research requires equipment to conduct the research.

2. External functions:

1. Diagnosis - Conducting Diagnosis involves finance.
2. Communication mailer and appointment reminders- Keeping in touch with patients to keep a track of their status and informing them about their appointments.
3. Health insurance promotions- Promotion of health insurance of UMD to attract maximum students and UMD employees to buy it.
4. Accounting operations- Generation and managing the bill and payment by the patients/insurance companies.
5. Payroll management- Managing payroll of staff and doctors of the health center.

**ER Schema:**

Entities, Attributes and Primary Keys

StudentDB(**uID**, studentName, address, phoneNo, emailId, medicalHistory)

Doctor(**docID**, docName, specialization )

Insurance (**insuranceID** ,companyName, planType)

Medicine (**MedID,** medName, manufacturer)

PatientRecord (**recordID**, patientName)

Treatment (**treatmentID**, amount)

Relationships, Degrees and Participating Entities

Participates In: binary relationship

* 1 Doctor to 0 or more Insurance
* 1 Insurance to 0 or more Doctor

Bills: binary relationship

* 1 Insurance to 0 or more Patient Record
* 1 Patient Record to 0 or 1 Insurance

Has: binary relationship

* 1 Patient Record to only 1 StudentDB
* 1 StudentDB to 0 or 1 Patient Record

Prescribed: binary relationship

* 1 Patient Record to 1 or more Medicine
* 1 Medicine to 0 or more Patient Record

Treats: ternary relationship

* 1 Patient Record and 1 Treatment to only 1 Doctor
* 1 Patient Record and 1 Doctor to 1 or more Treatment
* 1 Doctor and 1 Treatment to 0 or more Patient Record

**ER Diagram**

