**[Hospital Management System]**

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**0. Acknowledgment**

The project is solely conceptual based holding every pillar of OOP on consistent bases. Mostly, the syntaxial errors were omitted by the help of stack overflow and geeks for geeks. In addition to it, the group members were equally skilled and had clear concepts of OOP, and possessed a command on its interpretation which led us to develop this project without the help of any external humanly source.

**1. Introduction**

The project proclaims a minor demonstration with the diseases relating to the current pandemic situations. The program target’s medicine department of the hospital and deals with 4 diseases (Covid-19, Sars, influenza, malaria) having correlated symptoms.

It’s mostly based on filing, inheritance and encapsulation. It possesses 9 classes which include diagnostic, report generation, administration, Ward (including 4 diseases mentioned above) and the finance department. These classes are inherited as per their functionality which is best defined in the code.

The diagnostic is used to gather patient’s personal information from a friendly interface. Furthermore, it gets symptoms for users and compare them with the symptoms stored in a file. Then, the disease is diagnosed and stored in the patient’s data. The report generation class explicitly work on the idea of storing patient’s data in a txt file for the easy access of guardian. After the diagnostic, the patient is transferred into their respective wards, the treatment function holds responsibility of treating the patient with certified medicine in different time slots with different doctors working on the same diseases.

The administration class holds responsibility of assigning the doctor to the certain patient which are generated through a random function as many doctors are working in treating the same scope of disease. After the successful treatment of the patient, billing department holds responsibility of providing the certified monitory value to the patient. In this class, doctor bill, medicine bill as well as ward bills are calculated (Classified ward options are given to the patient). The user is also given options to claim their life insurance and are given exquisite discounts accordingly.

**2. Tools and technologies used**

* The IDE used is Visual Studio code.
* The included Libraries are:
* <ifstream>,<time.h>,<windows.h>,<conio.h> and some other basic libraries and some defined functions such as “rand” etc are also used.

**3. Class diagram**

**Diagnostic**

#doctor:string

#hospid:const string

#pid:static int

#age: int

#name:string

#symptoms[5]:string

#DOB:string

#pat\_id:string

#disease:string

#gender:char

+Diagnostic()

+Diagnostic(string,int,string,char,string,int)

+SymptomMatch():void

+

**Report Generation**

+ReportGeneration()

+ReportGeneration(diagnostic)

+PatientReport():void

**Administration**

#dr:string

+doctor(Diagnostic):void

+showdoctor():string

**Finance Department**

-Covidward:float

-Sarsward:float

-Malariaward:float

-Influenzaward:float

-wardbill:float

-medicinebill:float

-doctorbill:float

-totalbill:double

-discountedbill:double

+Financedepartment()

+Generalward(diagnostic):void

+semiprivateward(diagnostic):void

+privateward(diagnostic):void

+Drbill(string,diagnostic):void

+totalhospbill():double

+insurance():void

**Wards(abstract)**

+treatment(diagnostic):virtual void

**Covid 19**

+treatment(diagnostic):void

**Sars**

+treatment(diagnostic):void

**Influenza**

+treatment(diagnostic):void

**Malaria**

+treatment(diagnostic):void

**4. Link to source**

https://github.com/hassan1344/HospitalManagementSystem

**5. Future work**

The future prospect of the project can be improved through various aspects. The encryption\decryption facility can be added in the project to secure the integrity of patient’s data. Furthermore, more diseases could be added in the program so more diagnostics could happen.

In addition to it, the staff interaction policy can be introduced which will ease patient’s communication with the management while his time to time recovery is taking place. An appointment facility can also be provided to the guardian so the visiting hours with the certain doctors could be scheduled as it is a significant aspect of any management system.