6 team members

Hospital Management system.

(Report)

**Introduction**

*This is our project report, in this report we are going to discuss our project from all the perspectives. First, as you can tell from the title our project is about a hospital management system, our project consists of* ***8*** *classes (****Patient*** *–* ***Doctor*** *–****nurses*** *–* ***Pharmasist****–* ***Pharmacy*** *–*Laboratory*–****Viewdata****–****Netprofit****). Every class will be mentioned in*

*details later on.*

**Libraries**

1. **Bits/stdc++.h**

* It is a header file that includes every standard library. We wanted to reduce time wasting.

1. **Fstream**

* This library is responsible for any file management.

1. **Iostream**

* One of the fundamentals libraries, must be included for printing anything on the screen. Whatever, it is taken from the user or printed by the developer.

1. **String**

* This library for any operate done on strings.

**THIS ALL Libraries used in our project**

**Interface**

**-The First thing will face the user is the interface. This project’s main menu have nine choices:**

**1- patient**

* This option gives access to any patient to register on the system.

**2- Doctor**

* this option is to get doctor's information known for the system.

**3- Nurses**

* This option is to know in which department the nurse is working and get their salary

**4- Pharmacist**

* This option is to get pharmacist's information known for the system.

**5- Pharmacy**

* This option is to sell medicines according to the hospital department.

**6-Laboratory**

* This option gives access to any result analysis patient or any patient to register on the system.

**7- view data**

* This for display the data of Doctor, patient, pharmacy, nurse.

**8- Net Profit**

* This option is for calculate not profit or loss from balance of hospital.

**9- Exit**

* To close the program.

~ if you press number 1 (patient) it takes you to enter some personal details :-

* Name
* Gender (f or m)
* ID (14 numbers)
* Phone number (11 numbers)
* Age
* Social status
* Job

~ After getting patient's personal data they face other options which is

about medical history: -

If he/she did ant operation before?

* Yes

If (yes) they are going to be asked about on which organ it was. and who did it.

* No

If (no) 🡪 good! will be printed.

If he/she has any chronic disease?

* Yes

If (yes) they will be asked about what it is.

* No

If (no)🡪 very good! will be printed.

If any of his/her close family has any chronic?

* Yes

Which takes you to another option: -

Which of your mother / father / both have any

chronic disease ?

* Father
* Mother
* Both

Then the patient must tell me the chronic disease they might suffer from.

* No

If (yes)🡪 very good !!!! will be printed.

~ Then we will take some medical information by: -

What is your blood type?

~ Then he/she will tell us about what they suffer from

With a lot of options and we will direct them to the suitable clinic for their disease.

~ if you choose number 2 (Doctor) it takes you to the option of choosing the doctor's department

1- Dermatologis

2- Gynecologist

3-Urologist

4-Nose and ear

5-An ophthalmologist

6-Pediatrician

~ then if you choose any of those departments they will be asked about their over time, holidays and check on their age to allow them retiring and calculate their salary.

~ if you choose number 3 (nurses) it first asks you about how many nurses are working in the hospital then will be asked about the department they are working in and the shifts they attend and calculate their salary .

~ if you choose 4 (pharmasist) you will be asked about personal information of a pharmasist and the number of days which the pharmasist is worked then

print salary.

~ if you choose 5 (pharmacy) you will be asked about the department you get your medicine recipe from and then comes out the types of available medicines for your case

**So**, you choose the wanted medicine with its name and id and the wanted quantity from it and tells you how much it will cost.

~ if you choose 6(laboratory) you will be appearing two option about the data which you want to enter about patient or view result.

~ then if you choose 7 (view data), it takes you to another option which asks you about which of the patients or doctors or nurses or about the pharmacy.

~ if you choose 8 (netprofile), it prints the hospital lost or net profile from its balance.

***Classes***

***1- Patient class***

This class contains **four** functions: -

* ***first choice***

This function of type **void** that has **seven** parameter (string n, char g , long long id , long long pn , int a , string job , string socialState) ,this function takes every single personal information about patients like name & ID & phone number & age &social state & job.

* ***report\_interface***

it is a void function that has one parameter (int startPoint). This function takes everything related to the patient's medical history like previous operations & chronic disease and generated chronic health.

* ***patient\_illness***

This function of type **float** that has not parameter. This function tells us about the patient's current disease, and we send the patient to the chosen doctor and inform them with check bills.

* ***Room bills***

This function calculates the booked room bills in addition to the check bills.

***2- Doctor class***

This class contains **eight** functions: -

- **dataD**

This function of type **void** that has seven parameter (string n1 ,string n2, char g , long long id , long long pn , string ad ,int w) ,this function takes every single personal information about doctors like name & ID & phone number & age & address.

- **specialty**

This function of type **void** that has not any parameter, this function

determines specialty of a doctor to determine salary of doctor.

- **attendTime**

This function of type **void** that has seven parameter, this function

determines the time which the doctor want to attend.

- **Salary**

This function of type **void** that has not any parameter, In which the salary

of every doctor is calculated According to their Specialty.

- **operation**

This function of type **void** that has not any parameter , this function

calculate number of operations that the doctor performed this month.

**- overTime**

This function of type **void** that has not any parameter, In which calculate

extra hour this month.

- **holiday**

This function of type **void** that has not any parameter, In which subtracts

how many off hours taken more Than 8 hours.

- **checkAge**

This function of type **void** that has not any parameter, In which we check on

the age of the doctor to make Sure that he does not want to retire when they

are mor than 60 years old.

***3*- Nurses*: -***

This class contains **Three** functions: -

- **Data\_nurse**

This function of type **void** that has not any parameter, In this function we

apply the personal data of the Nurse to be as data base.

- **salary**

This function of type **double** that has two parameter (int num\_days, int

time), we use this function to calculate the salary of the Nurse on her

shifts (mourning and night).

- **nurse\_department**

This function of type **void** that has not any parameter ,In this function we

specialize the nurse to a Department For her shift

hours.

***4- Pharmasist***

This class contains **two** functions: -

- **salary**

This function of type **int** that has **one** parameter (int num\_days)

, this function calculates the salary of the pharmasist according to

number of days he is worked.

- **Pharmicst\_Data**

This function of type **void** that has **six** parameters (string n, char g, long

long id, long long pn, int a, int ph\_id), this functions the user enters

every single some personal information about pharmacist like name &

gender & ID & phone number & age & the pharmasist id. Then it stores

all this data in the file by **fstream**.

***5- Pharmacy***

This class contains **One** function: -

- **Selles**

This function of type **void** that has **not** parameters.

* It firstly displays the departments the patient might come from, when they choose the department, we display the available medicines of the patient illness.
* Then the patient chooses the wanted medicine with its name and id.
* Then the patient chooses the quantity of the medicine he/she wants.
* Then we calculate the amount of money needed for those medicines.

**6- Laboratory**

This class contains **Six** functions: -

- **Information**

This function of type void that have 8 parameters (string n, char g, long long

id, long long pn, int a, string date, string physician, string address), this

function the user enters every single some personal information about

patients like name & gender & ID & phone number & age & date & name of

physician & address. Then it stores all this data in the file called Laboratory

file .text by fstream.

- **TakenMedicale**

It is a void function that stores by fstream everything related to the treatment the patient is currently (takenMedicine, takenMedicine2, takenMedicine3, takenMedicine4) which is take to some diseases like diabetes, antibiotic , gland ,antiviral and he can add some notes in file.

- **discount**

This function of type **double** that have one parameter (double b). this

function determines the discount value for the patient and return the price

the patient should pay it.

- **analayscost**

This function of type void thatcalculate the price of the analysis to every

patient according to analysis type and if you want to do a discount it do

that on price and calculate price after that.

- **resultanalysis**

It is a void function that prints the result analysis which is stored before in

file according to type analysis. (Result Anemia .text) recalls anemia analysis

result, (Result Urine .text) recalls urine analysis result, (Result Stool .text)

recalls stool analysis result, (Result Virology .text) recalls virology analysis

result, (Result Complete blood count .text) recalls complete blood count

analysis result, and (Result Sugar .text) recalls sugar analysis result.

- **Data**

It is a void function thatask user if he want to view result or enter patient

data if chooses (1) it recalls function resultanalysis if chooses (2) it recalls

functions information, TakenMedicaland and analaycost.

**7- view data**

this classhas **four** functions:

this class allows you to **inform** the data of patients and doctors and nurses and some information about the medicines in the pharmacy that has been read from text file and every function has one parameter.

***8- net\_profit***

this classhas **three** functions: -

**- out**

This function of type void that calculate total salary to all doctors and total

salary to all nurses then add them together then store the output in variable

called sum1 then print sum1.

- **in**

This function of type void that calculate total bills to all patients in class

patient, total medicine price in class pharmacy and total price of analysis to

all patient in class laboratory. then add them together then store the output

in variable called sum2 then print sum2.

- **sub**

This function of type void that calculate net profit or loss from balance of

hospital so it is in the beginning check if sum2<sum1 the hospital made a

profit and print sum1-sum2 which is the net profit. If sum2>sum1 the

hospital is lost and print abs (sum2 - sum1) which represent the hospital

lost from its balance.

**\*\*There are some global functions**.

- (surface, first choice, count, an integer variable z)

These functions are the menus that was discussed earlier. Surface is the

main menu *(Patient – Doctor –nurses – Pharmasist– Pharmacy –*

Laboratory*–Viewdata–Netprofit –Exit)*.

first choice this second menu .

- main

The main function where we implement all the functions call

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