

## Hospital Management System:

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### Main Features

1. Person and person information
2. Doctor and Doctor information
3. Patient and Patient information
4. Nurse and Nurse information

## Types of Users & Requirements

### Classes

- **Address:**  
Stores user address like lane, city, Province, and country. It has functions to get/set these attributes and show the attributes.
- **Person:**  
It has variables like name, age, id, gender, phone, and category and functions to get/set these attributes and print the attributes.
- **Doctor:**  
It has variables like name, age, id, gender, phone, specialization and category and functions to get/set these attributes and print the attributes.
- **Nurse:**  
Stores Nurse information like name, age, id, gender, phone, specialization, shift, and category. It has functions to get/set these attributes and show the attributes.
- **Patient:**  
It has variables like name, age, id, gender, phone, specialization, disease, admit no and category and functions to get/set these attributes and print the attributes.

### Functions

- **Input address:**  
Function to input the address of a user.
- **Print address:**  
Function to print the address of a user.
- **Add person:**

- Function to add the person .
- **Print Details:** Function to print details of a person.
- **Add Doctor:** Function to add the doctor.
- **Save Data:** Function to save the data of the doctor.
- **Print Details:** Function to print details of doctor.
- **Get Data:** Function to get details of doctor.
- **Find Doctor:** Function to find the doctor.
- **Update Counter:** function to update the counter means previous details.
- **Add Nurse:** Function to add the Nurse.
- **SaveNData:** Function to save the data of the Nurse.
- **GetNData:** Function to get details of Nurse.
- **PrintNDetails:** Function to print details of Nurse.
- **Find Nurse:** Function to find the Nurse.
- **Update Counter:** function to update the counter means to update previous details.
- **Add Patient:** Function to add the patient.
- **SavePData:** Function to save the data of the patient.
- **GetNData:** Function to get details of patient
- **PrintPDetails:** Function to print details of patient.
- **Find Patient:** Function to find the patient.
- **Update Counter:**

function to update the counter means to update previous details.

- **STOI:**

To convert string into integers.

- **Spaceremover/Spacer:**

Helper functions to replace spaces with underscores or vice versa in strings (used for file processing).

## **Main Function**

The main function first reads all the classes data the files then it displays all the information inside this class and all the classes functions by its specific object it has also two variables choice and ko which helps us that which user information we want.

## **Requirements Breakdown**

### **Classes:**

- **Address:**

- Variables:**

- Lane: stores user lanes.
    - City: stores user city.
    - province: stores user province.
    - Country: stores user country.

- **Methods:**

- Inputaddress: take user address.
    - Printaddress: Print user address.

- **Person:**

- Variables:**

- Name: stores user name.
    - Age: stores user age.
    - ID: stores user id.
    - Gender: stores user gender.
    - Phone: stores user phone.
    - Category: stores user category.

- **Methods:**

1. ``Person()`` - Default constructor.
2. ``Person(int a)`` - Constructor with an integer parameter.
3. ``getfname()`` - Inline function to get the first name.
4. ``getlname()`` - Inline function to get the last name.
5. ``getgender()`` - Inline function to get the gender.
6. ``getage()`` - Inline function to get the age.
7. ``add_person()`` - Function to add a person.
8. ``print_details()`` - Function to print details of a person.

**Doctor class:**

- **Variables**

- Name: stores user name.
- Age: stores user age.
- ID: stores user id.
- Gender: stores user gender.
- Phone: stores user phone.
- Category: stores user category.
- Speaciality: store user speciality

- **Methods**

1. ``Doctor()`` - Default constructor.
2. ``Doctor(int a)`` - Constructor with an integer parameter.
3. ``add_doctor()`` - Function to add a doctor.
4. ``savedata()`` - Function to save data.
5. ``printdetails()`` - Function to print details of a doctor.
6. ``getdata()`` - Function to get data.
7. ``find_doctor()`` - Function to find a doctor.
8. ``updatecounter()`` - Function to update counter.

**Nurse class:**

- **Methods**

1. ``Nurse()`` - Default constructor.

2. ``Nurse(int)`` - Constructor with an integer parameter.
3. ``add_nurse()`` - Function to add a nurse.
4. ``savedata()`` - Function to save data.
5. ``getNdata()`` - Function to get nurse data.
6. ``find_nurse()`` - Function to find a nurse.
7. ``N_updatecounter()`` - Function to update counter.
8. ``printNdetails()`` - Function to print nurse details.

- **Variables**

- Name: stores user name.
- Age: stores user age.
- ID: stores user id.
- Gender: stores user gender.
- Phone: stores user phone.
- Category: stores user category.
- Speaciality: store user speciality

**Patient class:**

- **Methods:**

1. ``Patient()`` - Default constructor.
2. ``Patient(int)`` - Constructor with an integer parameter.
3. ``add_patient()`` - Function to add a patient.
4. ``printpdetails()`` - Function to print patient details.
5. ``savedata()`` - Function to save data.
6. ``getpdata()`` - Function to get patient data.
7. ``updatepcounter()`` - Function to update counter.
8. ``find_patient()`` - Function to find a patient.

- **Variables**

- Name: stores user name.
- Age: stores user age.
- ID: stores user id.
- Gender: stores user gender.
- Phone: stores user phone.
- Disease: stores user disease