**July-Dec 2023**

**SCHOOL OF COMPUTER SCIENCE AND ENGINEERING**

A close-up of a logo

Description automatically generated

Submitted to-

**DR. NITIN ARVIND SHELKE**

**By:**

**Maahir Chugh (E22BCAU0076)  
Gunika Kaushik (E22BCAU0038)**

**INDEX**

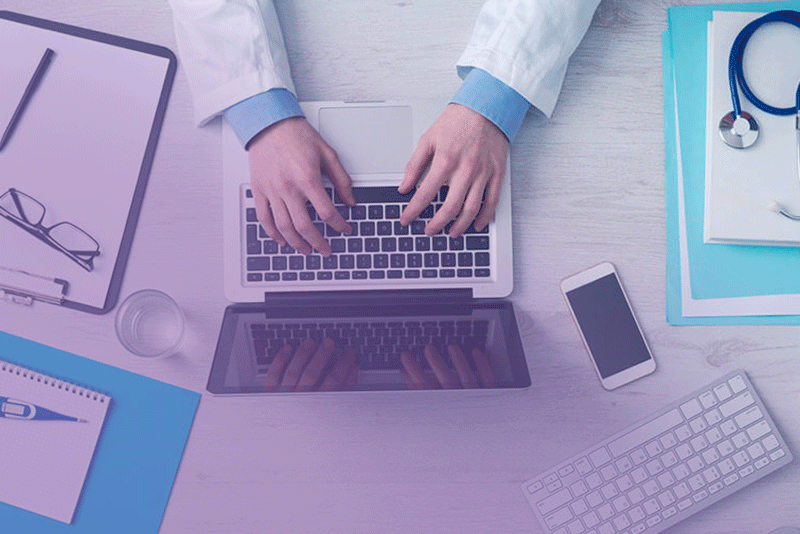
* **Introduction**
* **Why do we need?**
* **How to use**
* **Criteria**
* **Methodology**
* **Libraries imported**
* **Performance Check**
* **Conclusion**



Hospital Classification System

**“**Hospital classification systems are frameworks used to categorize and differentiate hospitals based on various criteria. These systems help in organizing and understanding the different types of hospitals, which can vary in terms of size, services offered, ownership, and other factors.**”**

***why do we need this system?***

Hospital classification systems serve several important purposes:

* **Resource Allocation:** Understanding the types and capacities of different hospitals helps in the efficient allocation of resources.
* **Emergency Response Planning:** In the event of a public health emergency or disaster, knowing the capabilities of different hospitals is crucial for planning an effective response.
* **Healthcare Policy Development:** Hospital classification systems contribute to the development of healthcare policies.
* **Quality Assurance:** Classifying hospitals based on their services and facilities can aid in quality assurance efforts.
* **Public Access to Care:** Patients and communities benefit from knowing the capabilities of nearby hospitals. Understanding the classification of hospitals helps individuals make informed decisions about where to seek care based on their medical needs.

**But how to find them ?**



**To solve this problem we have created a model which helps in find the best hospital at your place.**

**Our model helps you to find the nearest hospital in your locality so that in case of an emergency you want be delayed.**



Criteria

**Some common criteria used in hospital classification systems:**

* **Size and Capacity:**

**Small Hospitals:** Usually, these hospitals have fewer than 100 beds.

**Medium-sized Hospitals:** Typically have 100 to 500 beds.

**Large Hospitals:** Have more than 500 beds.

* **Ownership:**

**Public Hospitals:** Owned and operated by government entities.

**Private Hospitals:** Owned and operated by private organizations or individuals.

**Nonprofit Hospitals:** Operated by nonprofit organizations.

* **Services Provided:**

**General Hospitals:** Provide a wide range of services, including surgery, maternity, and emergency care.

**Specialty Hospitals:** Focus on specific medical specialties, such as orthopedics, cardiology, or cancer treatment.

**Teaching Hospitals:** Affiliated with medical schools and involved in medical education and research.

* **Patient Population:**

**Pediatric Hospitals:** Specialize in the care of children.

**Geriatric Hospitals:** Focus on the elderly population.

* **Location:**

**Urban Hospitals:** Located in urban areas.

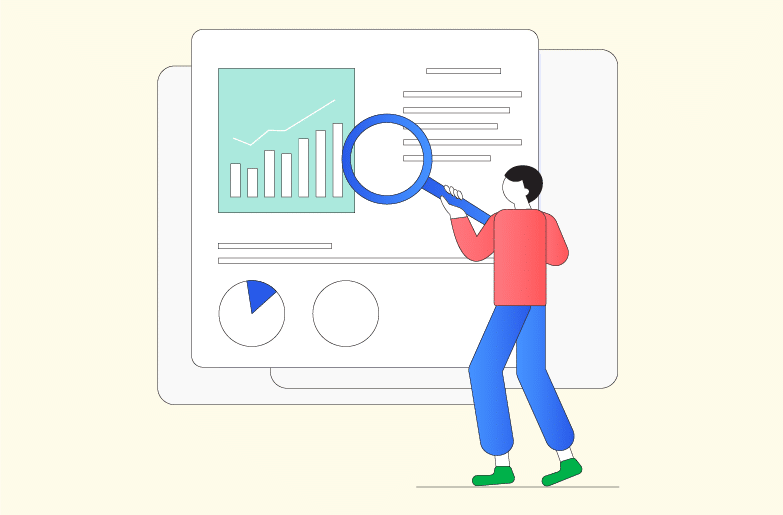
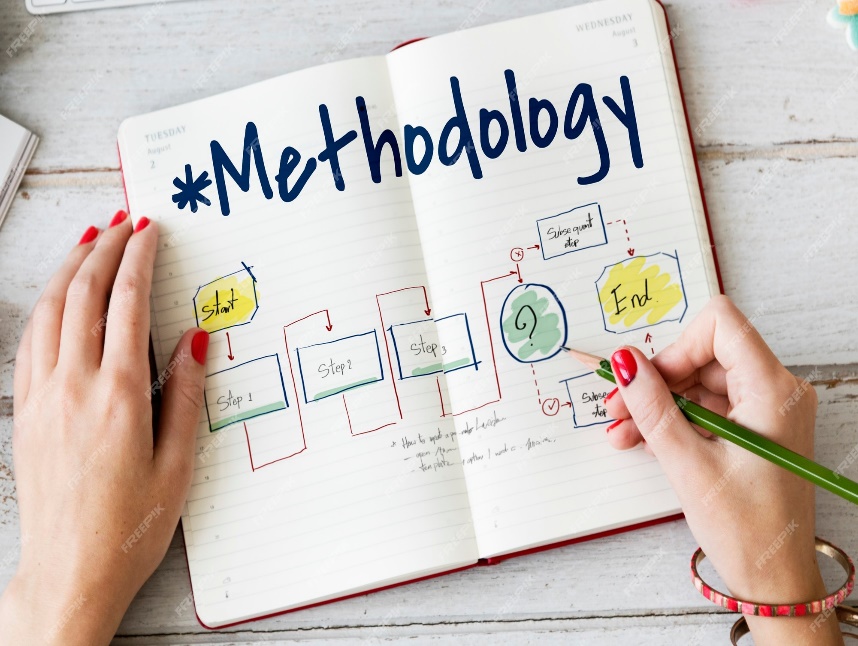
**Rural Hospitals:** Located in rural or remote areas.

Methodology

The methodology for hospital classification involves defining criteria and parameters that differentiate one hospital from another based on various factors. The specific methodology can vary by region, country, or the organization responsible for classification.

**Here are general steps that might be involved in developing a hospital classification system:**

* **Define Objectives**
* **Select Classification Criteria**
* **Establish Categories**
* **Data Collection**
* **Define Thresholds and Parameters**
* **Consult Stakeholders**
* **Pilot Testing**
* **Documentation and Communication**
* **Implementation**



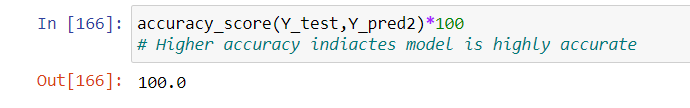
Libraries imported

Different types of libraries used in this model creation are:

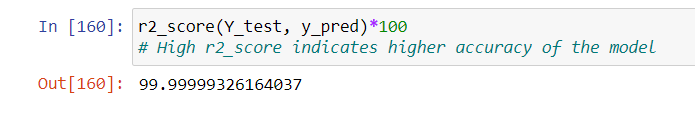
* Pandas
* Numpy
* Statistics
* Sklearn
* Train\_Test\_Split
* MinMaxScaler
* Linear Regression
* Mean\_squared\_error
* r2\_score
* Mean\_absolute\_error
* DecisionTreeClassifier
* confusion\_matrix
* accuracy\_score
* recall\_score
* f1\_score
* Multiplelinearregression

**Performance check**

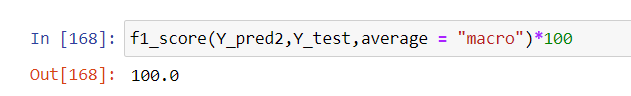
**Accuracy:**

****

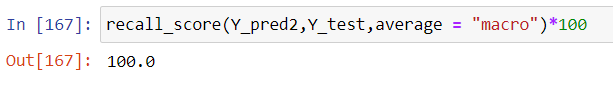
**R2 score:**

****

**F1 score:**

****

**Recall Score:**

****

**Conclusion**

In conclusion, a hospital classification system plays a crucial role in organizing and understanding the diverse landscape of healthcare institutions. By categorizing hospitals based on various criteria such as size, services offered, ownership, and accreditation.

The system facilitates efficient resource allocation by helping authorities distribute funds, personnel, and equipment based on the specific needs and capacities of different types of hospitals.Hospitals with specialized services or higher capacities can be identified, contributing to effective emergency preparedness and response in times of public health crises or disasters.

Hospital classification systems contribute to the development of healthcare policies, enabling governments to design strategies that address the unique challenges and requirements of different healthcare facilities.The classification system supports quality assurance efforts by establishing standards for healthcare delivery, which can be monitored and assessed by accreditation bodies.

Patients and communities benefit from understanding the capabilities of nearby hospitals, allowing them to make informed decisions about where to seek care based on their medical needs.Hospital classification systems enable comparisons between healthcare systems at the national and international levels, fostering the identification of best practices and areas for improvement.

Healthcare providers can use the classification system to establish efficient referral systems, ensuring that patients receive the appropriate level of care.