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CHAPTER 1

1.INTRODUCTION

DATA ANALYTICS

The process of reviewing raw datasets to detect trends, draw conclusions, and propose areas for improvement is known as data analytics. Health care analytics employs the data to produce the insights to help business and patient decision-making. Health data analytics are used to enhance patient care by enabling more precise diagnoses, preventive interventions, individualised treatment plans, and informed decision-making. It can reduce expenses, streamline internal processes, and other things at the corporate level. We must first comprehend the data that is being gathered and processed in order to talk about health data analytics and the part it plays in the healthcare industry. On the business side's operations and procedures, data is being gathered.

1.1PROJECT OVERVIEW:

Your customers produce a tonne of data every day. These technologies gather and process that data for your company each time a user opens your email, uses your mobile app, tags you on social media, enters your store, makes an online purchase, speaks to a customer care agent, or queries a virtual assistant about you. And those are just your clients. Employees, supply chains, marketing initiatives, finance departments, and more produce a tonne of data every day. Big data is a very big volume of information and datasets that originate from numerous sources and take many different formats. Numerous businesses have realised the benefits of gathering as much data as possible. However, gathering and storing massive data isn't enough; you also need to implement. Organizations may utilise big data analytics to turn terabytes of data into useful insights since technology is developing quickly. Big data analytics is the act of spotting patterns, trends, and correlations in vast quantities of unprocessed data in order to support data-driven decision-making. These procedures employ well-known statistical analysis methods, such as clustering and regression, to larger datasets with the aid of more recent instruments. Since the early 2000s, when advancements in software and hardware allowed businesses to manage substantial amounts of unstructured data, the term "big data" has been popular. Since then, new technologies—from smartphones to Amazon—have added even more to the large volumes of data that corporations may now access. Early innovation initiatives like Hadoop, Spark, and NoSQL databases have emerged in response to the data explosion. As data engineers explore for ways to combine the enormous volumes of complex information produced by sensors, networks, transactions, smart devices, web usage, and more, this discipline continues to develop. To find and scale more sophisticated insights, big data analytics techniques are still being employed in conjunction with cutting-edge technology like machine learning..

1.2 PURPOSE

1.Transportation

Data analytics can be used to enhance transportation systems and the surrounding intelligence. The research' predictive methodology aids in identifying transportation issues including network or traffic congestion. As a result, there are fewer accidents and mishaps. It helps synchronise the massive quantity of data and uses them to construct and build plans and strategies to prepare other routes, lessen traffic, and reduce congestion. By collecting data from social media, data analytics may also aid in improving the buyer's travel experience. According to the data gathered, it also aids travel companies in improving their packages and personalising the vacation experience.

2. Logistics and Delivery

Data analytics is used by a variety of logistical organisations, including DHL, FedEx, and others, to manage their overall operations. They can determine the optimum shipping routes, estimate delivery times, and follow the current state of items that are delivered using GPS trackers employing data analytics apps. Data analytics has facilitated and increased demand for online purchasing.

3. Web Search or Internet Web Results

When you search a set of data, web search engines like Yahoo, Bing, DuckDuckGo, and Google will return results. Every time you click the search button, the search engines use data analytics algorithms to quickly give the most relevant results. Data analytics is used to obtain the set of data that is displayed whenever we perform an information search.

4. Manufacturing

Through the use of methods like budgeting, regression analysis, and prediction analysis, data analytics assists the manufacturing sectors in maintaining their total productivity. The unit can determine how many items need to be produced based on data gathered and analysed from demand samples, and it can do the same in many other operations, boosting operating capacity and profitability.

5. Security

Data analysts offer the highest level of security to the company, and security analytics is a method of handling internet defence that is focused on the analysis of data to supply proactive safety measures. No company can predict the future, especially when it comes to security risks. However, by sending security investigation tools that can analyse security incidents, it is possible to spot danger before it has a chance to negatively impact your system and primary concern.

6. Education

Currently, data analysts are especially needed for applications involving data analytics in education. Adaptive learning, new inventions, adaptive content, etc. are where it is most frequently applied. is the evaluation, collection, examination, and description of data about students and their unique situations for the purposes of understanding and simplifying learning and the environments in which it occurs.

7. **Healthcare**

Applications of data analytics in healthcare can be used to quickly channel vast amounts of information in order to find solutions or treatments for a variety of ailments. This will not only provide precise decisions based on collected data, but it may also provide precise responses to unique concerns for certain patients.

8. Military

Data analytics in the military combines a variety of specialised and application-specific use cases. It enables leaders and engineers to connect information analysis with disciplines like augmented reality and psychology that are advancing military alliances across the globe.

CHAPTER 2

2. LITERATURE SURVEY

TITLE : A SURVEY ON BIG DATA IN HEALTH CARE 2022

AUTHOR: JAVIER NIETO LEON

YEAR OF PUBLICATION: 2022

The use of consumer, patient, physiological, and medical data that is too huge or complicated to be understood by traditional data processing techniques is referred to as big data in the healthcare industry. Instead, data analysts and machine learning methods are frequently used to process huge data.

Benefits of Big Data in Healthcare

Assemble a comprehensive, 360-degree image of the patients, clients, and physicians. Personalized, effective care at a higher level with thorough patient reports. Locate geographical markets with a lot of room for development. With information on consumer, patient, and doctor requirements and preferences, healthcare promotion activities can be improved. Provide easy-to-understand patterns for recognising health outcomes, patient satisfaction, and hospital progress. Due to the rapid expansion of virtual data health systems, medical records have gone digital. In addition to EHRs, a lot of data is gathered using wearable technology, smartphone apps, digital marketing initiatives, social media, and many more channels. All of this generates a vast quantity of knowledge that enables big data systems and technologies for gathering, analysing, and exploiting knowledge to be implemented in health systems. Over the past 20 years, American healthcare costs have consistently increased.

TITLE: BIG DATA ANALYTICS IN HEALTH CARE

AUTHOR: PRABLEEN KAUR

YEAR OF PUBLICATION: 2021

Math Department, Chandigarh University, Punjab, India PrableenKaur. In recent years, numerous industries around the world have produced enormous amounts of organised, unstructured, and semi-structured data, none of which is homogenous. This huge amount of data is known as big data. Data is a strong source that is generated daily at an increasing rate. In order to extract the most value from this new data, it needs to be stored somewhere. Mobile phones, social media, search engine data, healthcare data, and many more sources all contribute to its creation. This tremendous diversity of data coming in at an unpredictable rate is too much for our conventional database systems to handle. This resulted in the coining of the phrase "big data," which denotes the voluminous datasets produced that is growing exponentially with time.

Utilizing recently developed technologies and distributed architecture, analysis of this data enables value extraction from the dataset. One terabyte or so of new trading data is produced daily, for instance, by the New York Stock Exchange. Healthcare is one of the major industries where big data analytics is bringing about change. Healthcare is producing big data in terms of the gathering, analysing, and leveraging of consumer, patient, physiological, and medical data that is too huge or complicated to be understood by traditional data processing techniques. The growth of value-based medicine and the digitization of medical records contributed to the expansion of big data in the field of healthcare.

TITLE: DATA ANALYSIS OF COVID-19 HOSPITAL RECORDS

AUTHOR: VRUSHABH GADA

YEAR OF PUBLICATION: 2022

The Coronavirus Disease of 2019 is one of the most dangerous pandemics to have ever affected humanity (COVID-19). The COVID-19 pandemic has had a significant impact on mankind, despite the fact that modern medicine has made enormous strides thanks to cutting-edge technology. The number of people being hospitalised has increased as a result of the virus' quick spread. To improve interpretation of the data from the research hospital's discharge summary, we suggest a contextual patient classification system. The Knuth-Morris-Pratt algorithm was used to classify the data. We have also examined patient data with and without COVID-19. Studies on medications, medical procedures and examinations, pulse rate, core body temperature, and the overall impact of age and gender were conducted as part of the analysis. The life vs death choice ratio for the COVID-19 positive patients. The contextual patient categorization system's achieved classification accuracy was 97.4%. All industries will benefit from the combination of data analysis and contextual patient classification in order to better prepare for any future COVID-19 pandemic waves.

In India, the COVID-19 pandemic has wreaked unimaginable destruction. Numerous neighbourhood hospitals were unprepared to handle this disaster because this was an unanticipated event. As a result of COVID-19, more patients are being admitted at an alarming rate, placing a pressure on hospital resources including ventilators, beds, medications (drugs), ICU beds, oxygen supply, etc.

TITLE: INTEGRATIVE ANALYSIS FOR COVID-19 PATIENT OUTCOME PREDICTION

AUTHOR: CHAO H,FANG X,ZHANG J.

YEAR OF PUBLICATION: 2021

Abstract The Coronavirus Disease of 2019 is one of the most dangerous pandemics to have ever affected humanity (COVID-19). The COVID-19 pandemic has had a significant impact on mankind, despite the fact that modern medicine has made enormous strides thanks to cutting-edge technology. The number of people being hospitalised has increased as a result of the virus' quick spread. To improve interpretation of the data from the research hospital's discharge summary, we suggest a contextual patient classification system.

The Knuth-Morris-Pratt algorithm was used to classify the data. We have also examined patient data with and without COVID-19. Studies on medications, medical procedures and examinations, pulse rate, core body temperature, and the overall impact of age and gender were conducted as part of the analysis. For COVID-19 positive patients, the mortality vs survival ratio has also been researched. The contextual patient categorization system's achieved classification accuracy was 97.4%.

All industries will benefit from the combination of data analysis and contextual patient classification in order to better prepare for any future COVID-19 pandemic waves. Based on differences in gender and age, the death vs survival ratio of COVID-19 patients was calculated. Using the information in the discharge summary portion of the organised data, this classification and comparison will aid in making an early forecast for the resource allocation and treatment procedure for COVID-19 patients.

TITLE: BIG DATA ANALYTICS IN HEALTHCARE

AUTHOR: J. N. UNDAVIA , A. M. PATEL.

YEAR OF PUBLICATION: 2020

The development of technology has also created new opportunities for automated data collection. One such device gathers enormous amounts of data with no further upkeep or human involvement. The necessity to manage the big data being produced by numerous sources, which are well known for providing enormous amounts of heterogeneous data, has been faced by the health industry sector. Healthcare is one of the industries that has embraced high levels of sophistication. The essay demonstrates that the enormous amount of data generated in the healthcare industry is neither homogeneous nor a straightforward type of data. The different data sources and goals are then emphasised and addressed. Data must be adaptable in every way because they come from numerous sources. Big data analytics has therefore legitimately and significantly affected the healthcare sector, and its effects are also emphasised.

2.1 EXISTING SYSTEM:

Massive amounts of information in the healthcare sector have amazing potential. Due of the enormous potential it has, it has gained particular attention over the past 20 years. To enhance the services they offer, numerous public and private sector industries produce, store, and analyse big data. Hospital records, patient medical records, test findings, and internet of things-enabled devices are some of the big data sources used in the healthcare sector. Big data pertinent to public healthcare is also produced in great quantities by the biomedical research field. To produce useful information from this data, effective administration and analysis are necessary.

Otherwise, trying to find a solution through big data analysis quickly resembles trying to find a needle in a haystack. Every step of processing big data comes with a unique set of difficulties that can only be overcome by adopting high-end computing solutions for big data analysis. Healthcare providers must be fully equipped with the necessary infrastructure to regularly create and analyse big data in order to offer pertinent solutions for enhancing public health. That is precisely the reason why a variety of sectors, including the healthcare sector, are moving aggressively to transform this potential into better services and financial benefits. Modern healthcare institutions may improve medical therapy and personalised medicine with a strong integration of biomedical and healthcare data.

Our ability to generate ever-increasing amounts of data—to the point that it is now beyond the capabilities of currently existing technologies—has been made possible by technical advancements As a result, the term "big data" was developed to refer to vast and impractical amounts of data. We need to create new methods for organising this data so that we may extract useful information in order to meet our current and future social needs. Healthcare is one such unique societal need.

Healthcare firms, like many other industries, are producing data at a great velocity that brings both many benefits and difficulties at the same time. The fundamentals of big data, including its management, analysis, and future possibilities, particularly in the healthcare sector, are covered in this overview.

In fact, healthcare analytics has the ability to lower treatment costs, foresee epidemic outbreaks, help people avoid preventable diseases, and generally enhance their quality of life.

ADVANTAGES:

The first step in transforming healthcare is the use of electronic health records (EHRs). Better patient care through increased safety, efficacy, patient-centeredness, communication, education, timeliness, efficiency, and equity are just a few of the advantages of electronic health records.

2.2 REFERENCES

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2.3 PROBLEM STATEMENT DEFINITION

Date	19 September 2022
Team ID	PNT2022TMID13684
Project Name	Analytics for hospital's health-care data
Maximum Marks	2 Marks

Customer Problem Statement :

Analytics for hospital's health-care data:

Problem Statement (PS)	Iam (Customer)	I'm trying to	But	Because	Which makes me feel
PS-1	Patient	Cure the diseases like covid-19,fever, and more diseases	I am not able to get the beds in hospitals	In pandemic situation , hospital beds are fully occupied by several patients.	I want to live
PS-2	Doctor	Give the beds for severe patients to be live	In pandemic many peoples can be affected they want beds	They are affected by covid-19 anytime they want ventilators for our health conditions	Innocent , To cure the patients

FIGURE 2.3

CHAPTER 3

IDEATION & PROPOSED SOLUTION

3.1EMPATHY MAP CANVAS

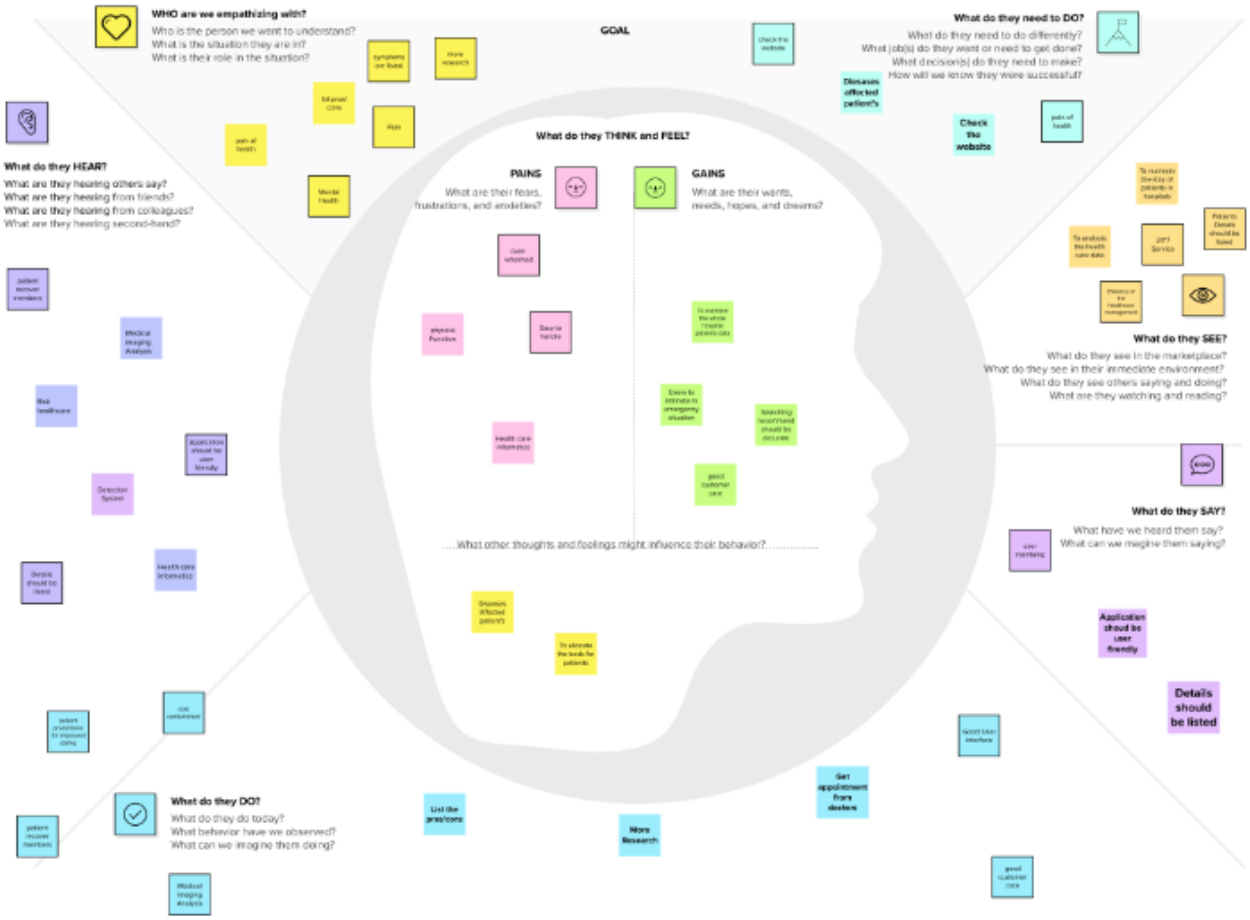

FIGURE 3.1

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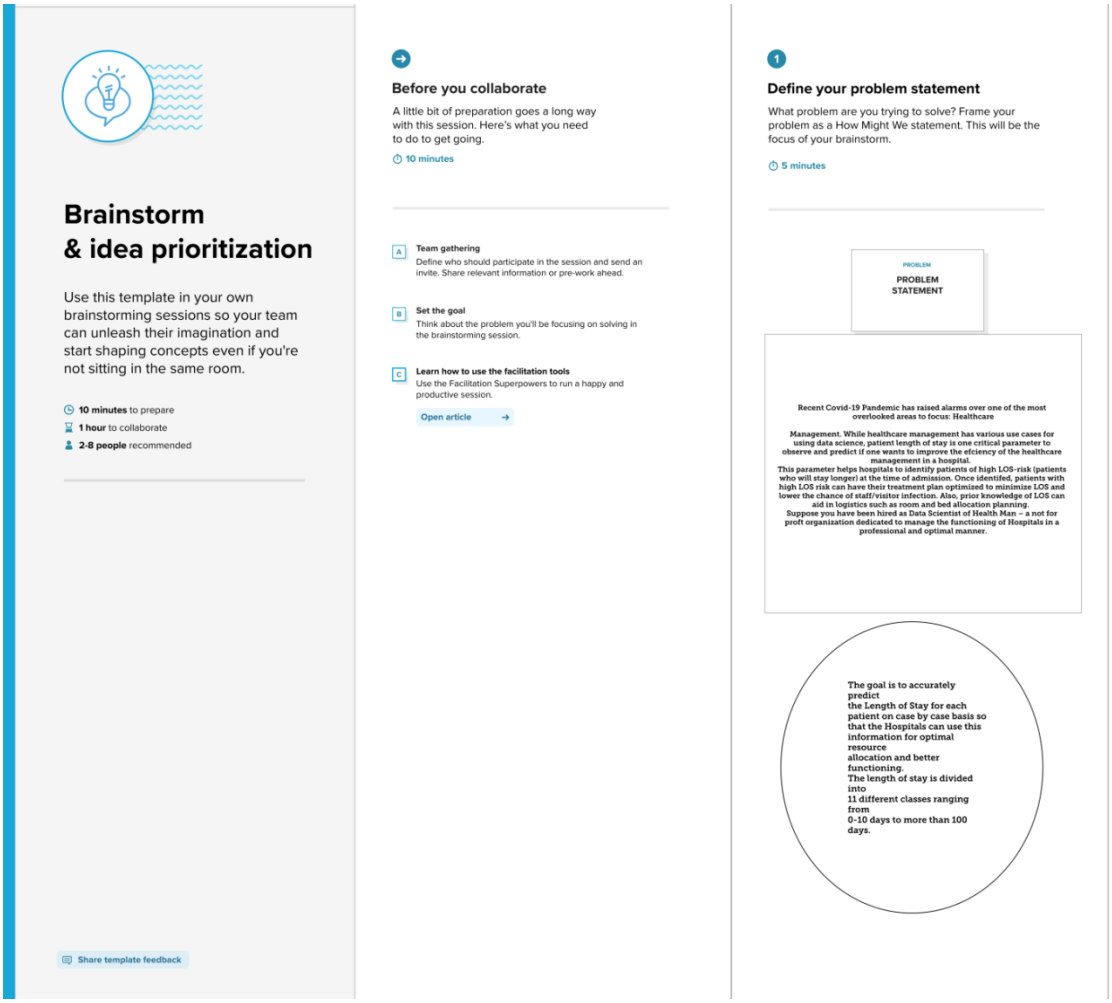
d25f90 ca5c5679195&key=82f70bdb-2bf9-4c0e-a1e0-37494e27102f

3.2 IDEATION AND BRAIN STORMING

Ideation Phase
Brainstorm&Idea Prioritization

Date	19 September 2022
Team ID	PNT2022TMID13684
Project Name	Analytics for hospital's health-care data
Maximum Marks	4 Marks



2

Brainstorm

Write down any ideas that come to mind that address your problem statement.

10 minutes

TIP

You can select a sticky note and hit the pencil [switch to sketch] icon to start drawing!

NAVENDARAN V A

- Utilizing Health Information For Strategic Planning
- Analyzing claim patterns across different insurance policies or insurers
- increase privacy
- Internal Communications That Work
- An authorised user credentials are required to access the data's to ensure data privacy
- reduce cost
- The techniques should be affordable and simple to use.
- The use of data from the cloud for real-time installation and updating
- Hospitals can store every patient details electronically and can be stored on cloud cost effeciently

KAVIYARASAN P

- To be structured data
- In cloud we pay for what we use
- By keeping patients away from hospitals, telemedicine helps to reduce costs and improve the quality of service.
- The methods should be cost efcient and easy to operate
- Allocating a sufcient number of workers in accordance with workload
- nalyzing claim patterns across different insurance policies or insurers
- Patients can avoid waiting in lines and doctors don't waste time on unnecessary consultations and paperwork.
- In infrastructure deficient times, in critical situations can use Train compartments
- Effective Internal Communications

MANOJ D

- Awareness should be created among youngsters in blood donation
- Future usage of certain robots to compensate for a lack of human labour
- Young people should be made aware of the importance of blood donation
- Prior to Emergency medical Treament
- monitoring network traffic changes detecting suspicious cyber-attack behavior calculating real-time risk scores for specific transactions
- Fullfil the needs of the Staffs
- An authorised user credentials are required to access the data's to ensure data privacy.
- Data made available on cloud can help for real time implementation and updation
- Expand Hospital Capacity

MANOJ R

- complete the the Needs of the Staff
- In times with enough infrastructure. Using train compartments in urgent situations
- Regular computer maintenance is necessary to prevent minor problems.
- Can Hire some peoples who has basic knowledge
- Some robots may be deployed in the future to compensate for a lack of labourers.
- Patients are directly involved in the monitoring of their own health, and incentives from health insurance can push them to lead a healthy lifestyle (e.g.: giving money back to people using smartwatches).
- storing huge datasets in a public cloud
- Hybrid works to address issues like the availability of beds in the present.
- Rewards for Professionals

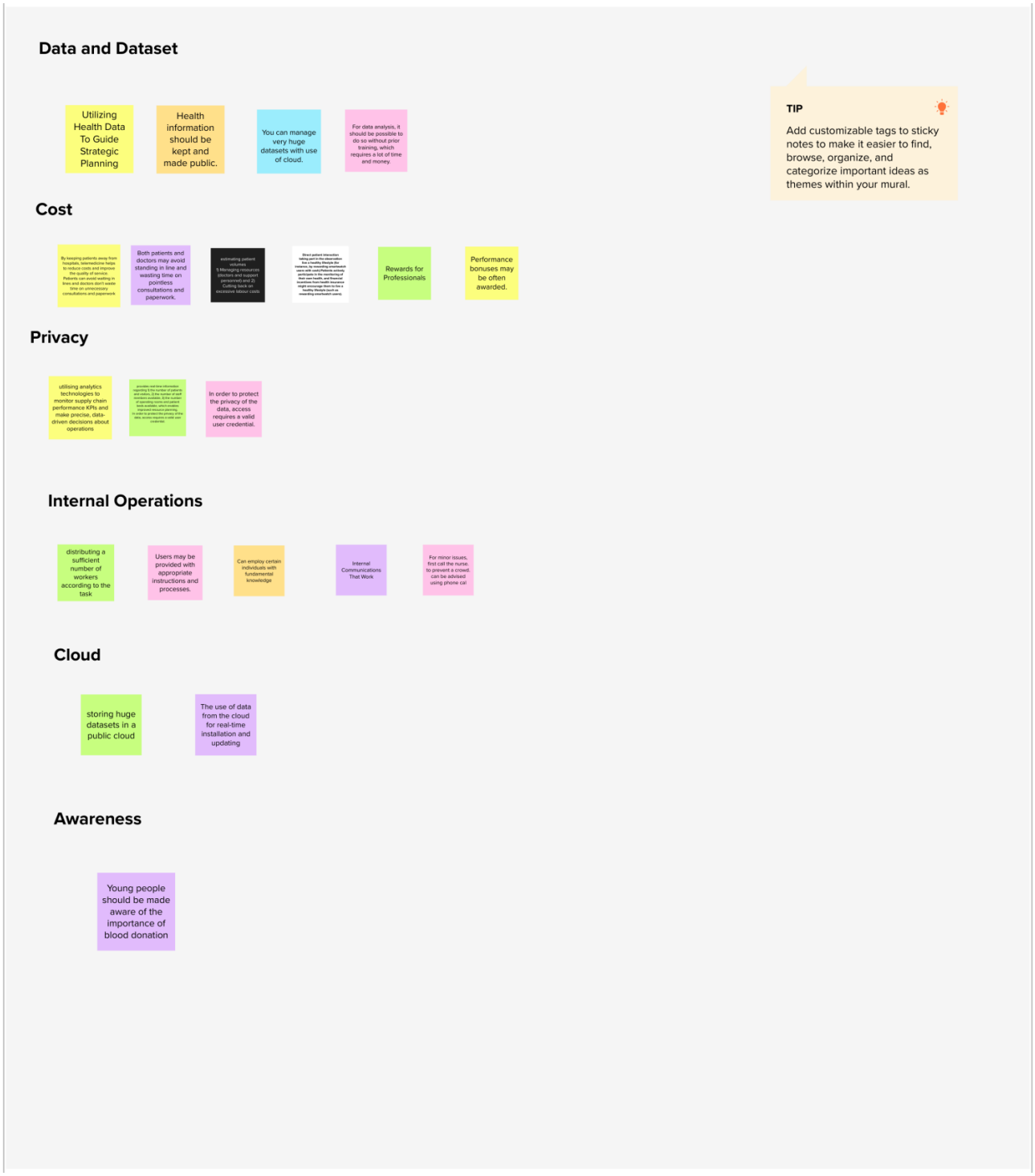

Data and Dataset
Utilizing Health Data To Guide Strategic Planning
Health information should be kept and made public.
You can manage very huge datasets with use of cloud.
For data analysis, it should be possible to do so without prior training, which requires a lot of time and money.
TIP
Add customizable tags to sticky notes to make it easier to find, browse, organize, and categorize important ideas as themes within your mural.
Cost
Both patients and doctors may avoid standing in line and wasting time on pointless consultations and paperwork.
Rewards for Professionals
Performance bonuses may be often awarded.
Privacy
utilising analytics technologies to monitor supply chain performance KPIs and make precise, data-driven decisions about operations
In order to protect the privacy of the data, access requires a valid user credential.
Internal Operations
distributing a sufficient number of workers according to the task
Users may be provided with appropriate instructions and processes.
Internal Communications That Work
Cloud
storing huge datasets in a public cloud
The use of data from the cloud for real-time installation and updating
Awareness
Young people should be made aware of the importance of blood donation

FIGURE 3.2

3.3 PROPOSED SOLUTION

Project team shall fill the following information in proposed solution template.

S.No.	Parameter	Description
1.	Problem Statement (Problem to be solved)	Recent Covid-19 Pandemic has raised alarms over one of the most overlooked areas to focus: Healthcare Management. While healthcare management has various use cases for using data science, patient length of stay is one critical parameter to observe and predict if one wants to improve the efficiency of the healthcare management in a hospital.
2.	Idea / Solution description	The goal is to accurately predict the Length of Stay for each patient on case by case basis so that the Hospitals can use this information for optimal resource allocation and better functioning. The length of stay is divided into 11 different classes ranging from 0-10 days to more than 100 days.
3.	Novelty / Uniqueness	By using the IBM cognos analytics we can able to allocate the beds and also analyze the datas for giving the treatment in the instant time it can be helpful for doctors as well as hospital management
4.	Social Impact / Customer Satisfaction	A shorter LOS reduces the risk of acquiring staph infections and other healthcare-related conditions, frees up vital bed spaces, and cuts overall medical expenses. Hospitals can use this information for optimal resource allocation and better functioning.
5.	Business Model (Revenue Model)	That choice between going to the hospital or an urgent care center is exactly why hospital business models need to change the current health care. It is used to produce the availability of the beds in hospital prior to that date so patient be aware of booking the room in advance to take treatment
6.	Scalability of the Solution	A hospital management system helps you to message the enormous complexities of efficiently managing the hospital in a sustainable manner.

3.4 PROBLEM SOLUTION FIT

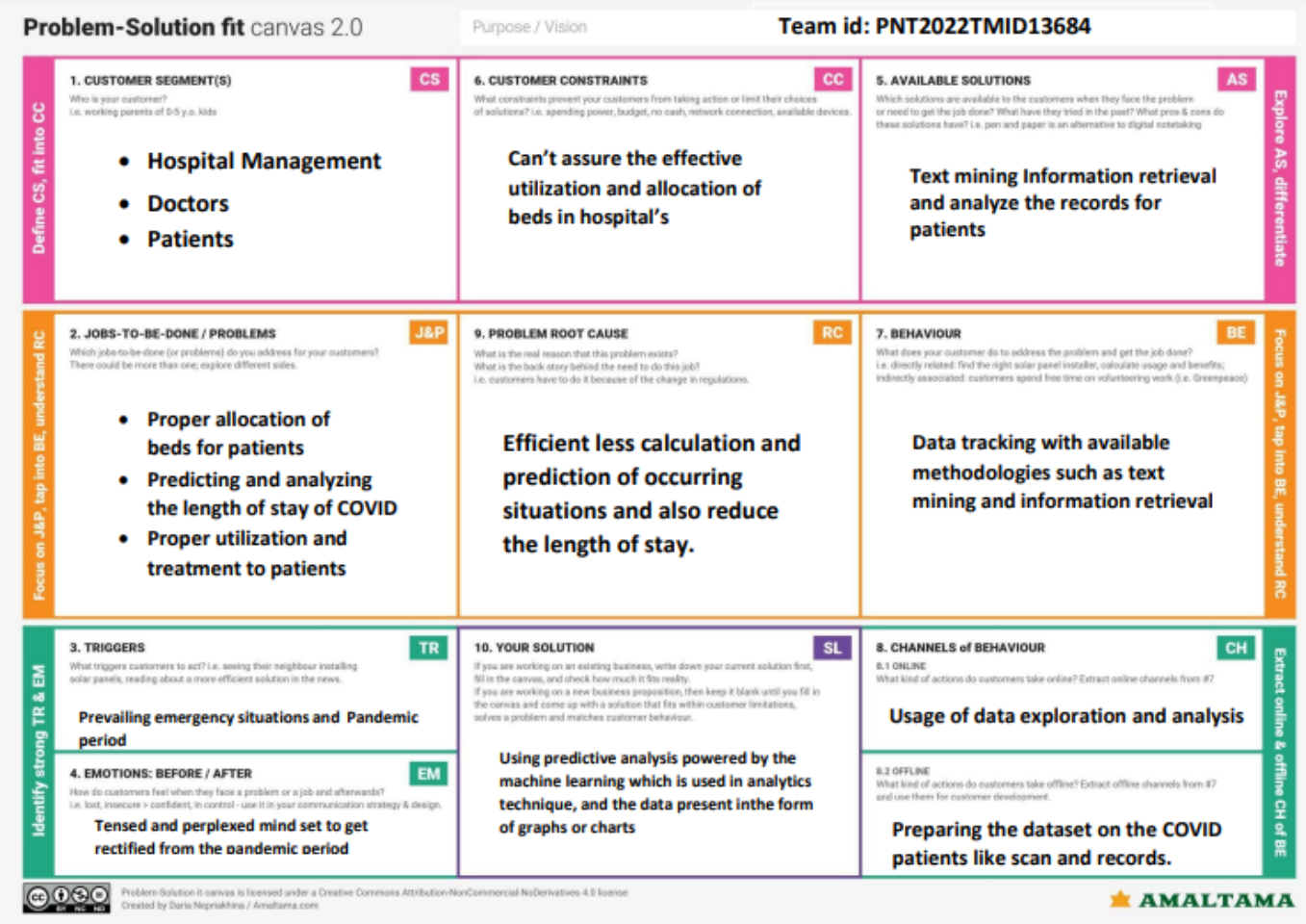


FIGURE 3.4

CHAPTER 4
REQUIREMENT ANALYSIS

4.1 FUNCTIONAL REQUIREMENTS

Processor	: 2.4 GHz processor
Ram	: 2.00GB
Hard Disk	: 100GB
Monitor	: CRT Monitor 1.5inch
Keyboard	: Multimedia keyboard
Mouse	: Optical mouse

4.2 NON-FUNCTIONAL REQUIREMENTS

Operating System	: Windows 7
Tools	: IBM COGNOS ANALYTICS.
Cloud	: IBM Cloud
Browser	: Any Browser

CHAPTER 5

5. PROJECT DESIGN

A data flow diagram can show the information flows through a process. This includes data input/output, data storage, and various sub processes through which data moves. DFDs are created using standardized symbols and notations to describe various entities and their relationships.

5.1 DATA FLOW DIAGRAM

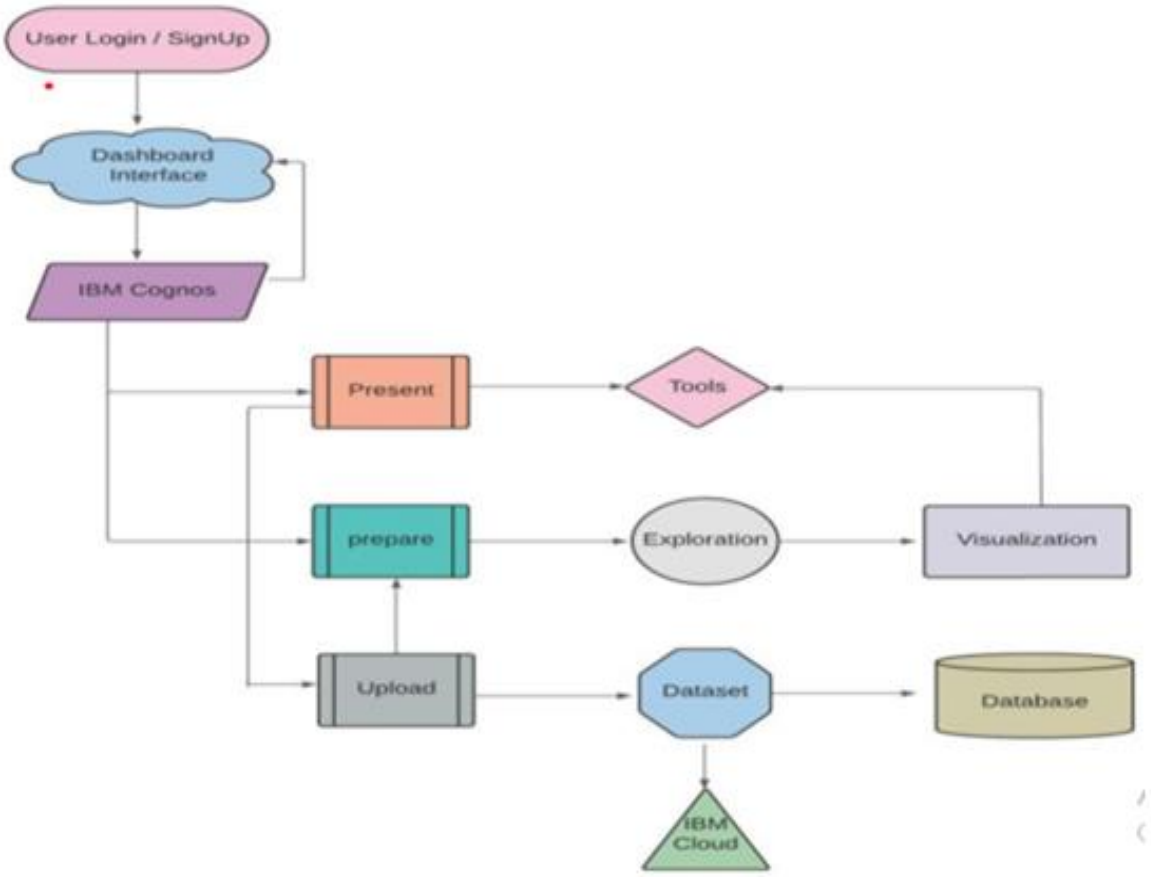
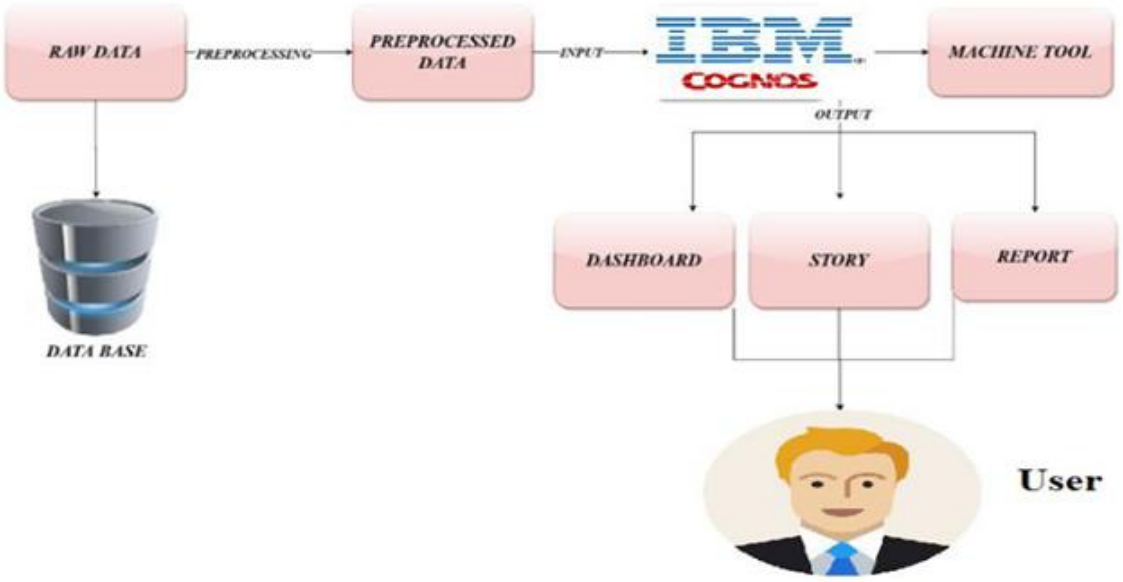


FIGURE 5.1

5.2 SOLUTION&TECHNICALARCHITECTURE



SOLUTION AND TECHNICAL ARCHITECTURE

FIGURE 5.2

IBM Cognos Analytics provides visualizations, exploration, dashboard report and stories to communicate and analysis. You can assemble a view that contains visualizations such as a graph, chart, plot, table, map, orany other visual representation of data. Explore powerful visualizations of your data in IBM Cognos Analytics and discover patterns and relationships that impact your business. A dashboard helps you to monitor events or activities at a glance by providing key insights and analysis about your data on one or more pages or screens

5.4 USER STORIES

A "user narrative" is a casual, generic explanation of a software feature written from the perspective of the client or end user. A user narrative explains how a piece of work will give the client a specific of a value.

User Type	Functional Requirement (Epic)	User Story Number	User Story / Task	Acceptance criteria	Priority	Release
Customer (Mobile user)	Registration	USN-1	As a user, I can register for the dashboard by entering my email, and password, and confirming my password.	I can access my account in the dashboard	High	Sprint-1
		USN-2	As a user, I will receive a confirmation email once I have registered for the dashboard	I can receive a confirmation email & click confirm	High	Sprint-1
		USN-3	As a user, I can register for the dashboard	I can register & access the dashboard.	Low	Sprint-2
		USN-4	As a user, I can register for the dashboard through Gmail	I can register and access dashboard with Gmail	Medium	Sprint-2
	Login	USN-5	As a user, I can log into the application by entering email & password	I can login to the account in my email login.	High	Sprint-2
	Dashboard	USN-6	As a user ,I can use my account in my dashboard for uploading dataset.	I can login to the account for uploading dataset.	Medium	Sprint-3
Customer (Web user)	Website	USN-7	As a user ,I can use my dashboard in website	I can login into the dashboard by visiting website.	Medium	Sprint-3
Administrator		USN-9	As a user ,I can contact administrator for my queries.	I can contact administrator for solving my queries.	High	Sprint-4
Exploration	Dashboard	USN-10	As a user, I can prepare data by using Exploration Techniques.	I can prepare data by using Exploration Techniques.	High	Sprint-4
Presentation	Dashboard	USN-11	As a user, I can Present data in my dashboard.	I can present data by using my account in dashboard.	High	Sprint-4
Visualization	Dashboard	USN-12	As a user, I can Prepare Data by using Visualization Techniques.	I can prepare data by using Visualization Techniques.	High	Sprint-4

CHAPTER 6

6. PROJECT PLANNING & SCHEDULING

6.1 SPRINT PLANNING & ESTIMATION

Sprint	Functional Requirement(Epic)	User Story Number	User Story /Task	Story Points	Priority	Team Members
Sprint-1	Registration	USN-1	A user can register for the application through email and password	10	Low	Navendaran V A, Manoj R, Manoj D, Kaviyarasan P
	Data Uploading	USN-2	A user can upload the patient data into the IBM COGNOS Analytics	10	Medium	Navendaran V A, Manoj R, Manoj D, Kaviyarasan P
Sprint-2	Data Visualization	USN-3	A user can visualize the data with various tools	5	High	Navendaran V A, Manoj R, Manoj D, Kaviyarasan P
	Dashboard	USN-4	A user can create a interactive dashboard from the data	10	High	Navendaran V A, Manoj R, Manoj D, Kaviyarasan P
Sprint-3	Data Analysis	USN-5	A user can apply different columns on the dataset for predicting	20	Medium	Navendaran V A, Manoj R, Manoj D, Kaviyarasan P
Sprint-4	Report	USN-6	A user can make a report from the analysis and dashboards	20	High	Navendaran V A, Manoj R, Manoj D, Kaviyarasan P

6.2 SPRINT DELIVERY SCHEDULE

Sprint	Total Story Points	Duration	Sprint Start Date	Sprint End Date (Planned)	Story Points Completed (as on Planned End Date)	Sprint Release Date (Actual)
Sprint-1	20	6 Days	24 Oct 2022	29 Oct 2022	20	29 Oct 2022
Sprint-2	20	6 Days	31 Oct 2022	05 Nov 2022	20	05 Nov 2022
Sprint-3	20	6 Days	07 Nov 2022	12 Nov 2022	20	12 Nov 2022
Sprint-4	20	6 Days	14 Nov 2022	19 Nov 2022	20	19 Nov 2022

6.3 REPORTS FROM JIRA

Jira helps teams plan, assign, track, report, and manage work and brings teams together for everything from agile software development and customer support to start-ups and enterprises.

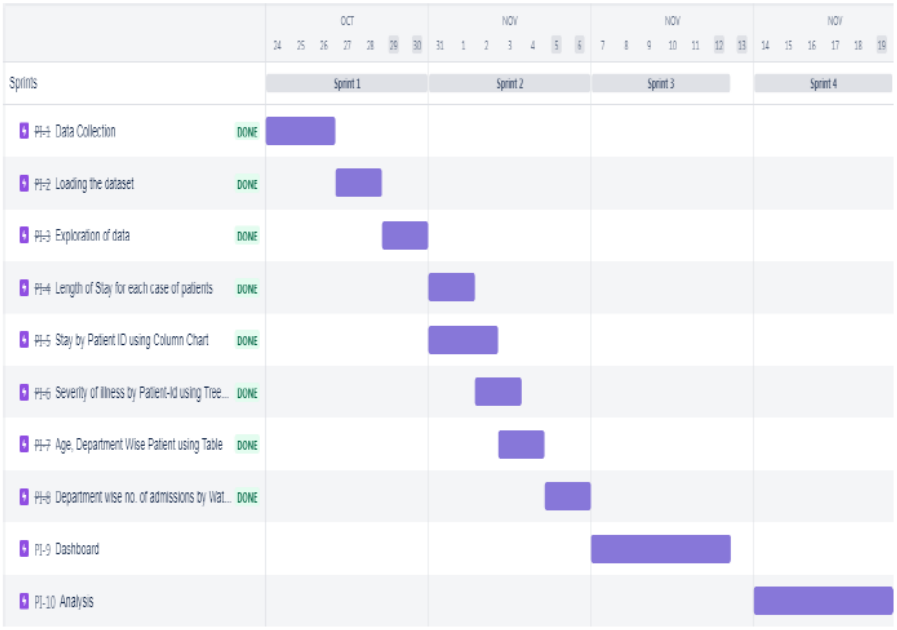


FIGURE 6.3

CHAPTER 7

CODING & SOLUTION

7.1 FEATURE 1

IBM Cognos Analytics provides dashboards and stories to communicate your insights and analysis. You can assemble a view that contains visualizations such as a graph, chart, plot, table, map, or any other visual representation of data.

7.2 FEATURE 2

Explore powerful visualizations of your data in IBM Cognos Analytics and discover patterns and relationships that impact your business. A dashboard helps you to monitor events or activities at a glance by providing key insights and analysis about your data on one or more pages or screens.
The following are the modules in our work:

- Working With The Dataset
- Data Visualization Charts
- Creating The Dashboard

7.3 DATABASE SCHEMA

Database are customized collections of data items that you use frequently.As you make updates to the data set, the dashboards, stories, or explorations that use that data set are also updated the next time you run them.

- Need to first Understand the Database and the Load it to Cloud platform.
- Build the required Visalizations to provide various visual analytical solutions.
- Task in working with dataset
    i. Understanding The Database

Column	Description
case_id	Case_ID registered in Hospital
Hospital_code	Unique code for the Hospital
Hospital_type_code	Unique code for the type of Hospital
City_Code_Hospital	City Code of the Hospital
Hospital_region_code	Region Code of the Hospital
Available Extra Rooms in Hospital	Number of Extra rooms available in the Hospital
Department	Department overlooking the case
Ward_Type	Code for the Ward type
Ward_Facility_Code	Code for the Ward Facility
Bed Grade	Condition of Bed in the Ward
Patientid	Unique Patient Id
City_Code_Patient	City Code for the patient
Type of Admission	Admission Type registered by the Hospital
Severity of Illness	Severity of the illness recorded at the time of admission
Visitors with Patient	Number of Visitors with the patient
Age	Age of the patient
Admission_Deposit	Deposit at the Admission Time
Stay	Stay Days by the patient

Database

ii. Loading The Database

- Before you can build a view and analyze your data, you must firstconnect the data to IBM Cognos.
- Cognos supports connecting to a wide variety of data, stored in avariety of places.
- The data might be stored on your computer in a spreadsheet or a text file.

CHAPTER 8

TESTING

8.1 TEST CASES

The purpose of testing is to discover errors. Testing is the process of trying to discover every conceivable fault or weakness in a work product. It provides a way to check the functionality of components, sub-assemblies, assemblies and/or a finished product. It is the process of exercising software with the intent of ensuring that the Software system meets its requirements and user expectations and does not fail in an unacceptable manner. There are various types of test. Each test type addresses a specific testing requirement.

8.2 USER ACCEPTANCE TESTING

User Acceptance Testing is a critical phase of any project and requires significant participation by the end user. It also ensures that the system meets the functional requirements. All test cases are run at this point to ensure that the program is right and complete.

The test must be completed successfully before the program can be accepted by the customer. The customer formally approves the delivery of this system after customer workers have checked that the preliminary production statistics load is correct and that the test suite has been achieved with perfect results.

CHAPTER 9

RESULTS

9.1 PERFORMANCE METRICS

Using the Hospital's health care management dataset, we plan to create various graphsand charts to highlight the insights and visualizations.

9.1.1.Case_id by Severity of Illness:

Build a visualization of case id by the severity of Illness in the hospital's management system.

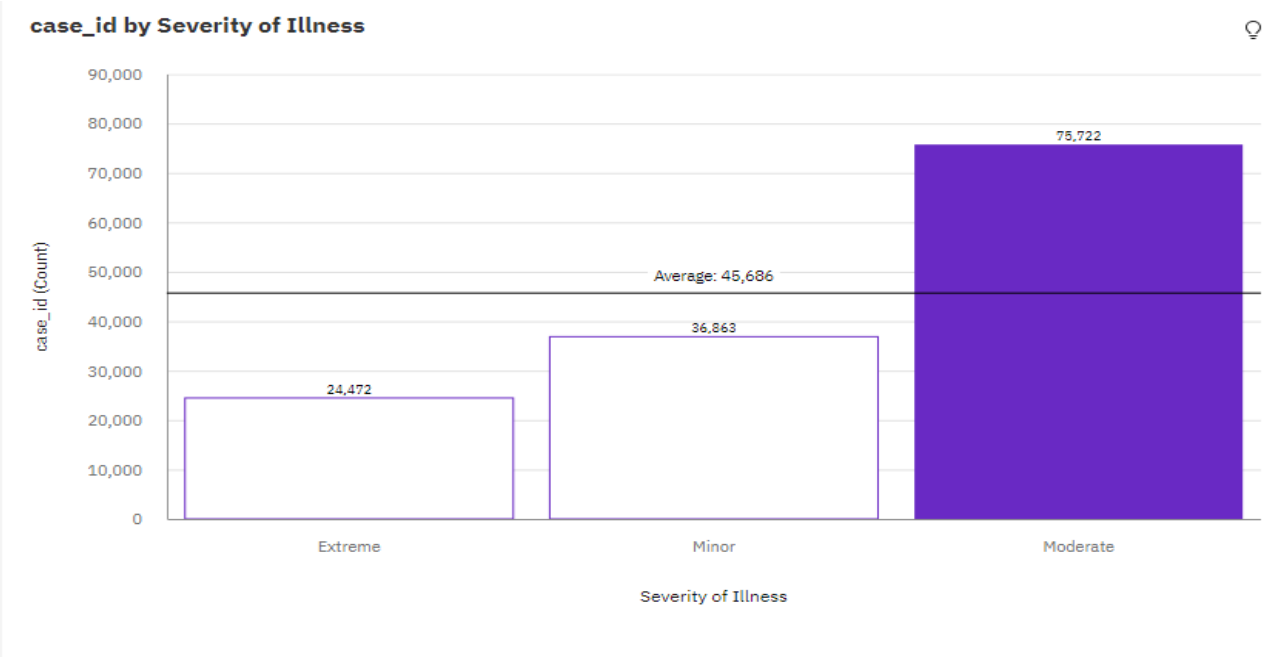


FIGURE 9.1.1

9.1.2. Case_id by age:

Build the visualization in IBM cognos Analytics by using the case id and age in the Line chart can display the visualization of the hospital's management.

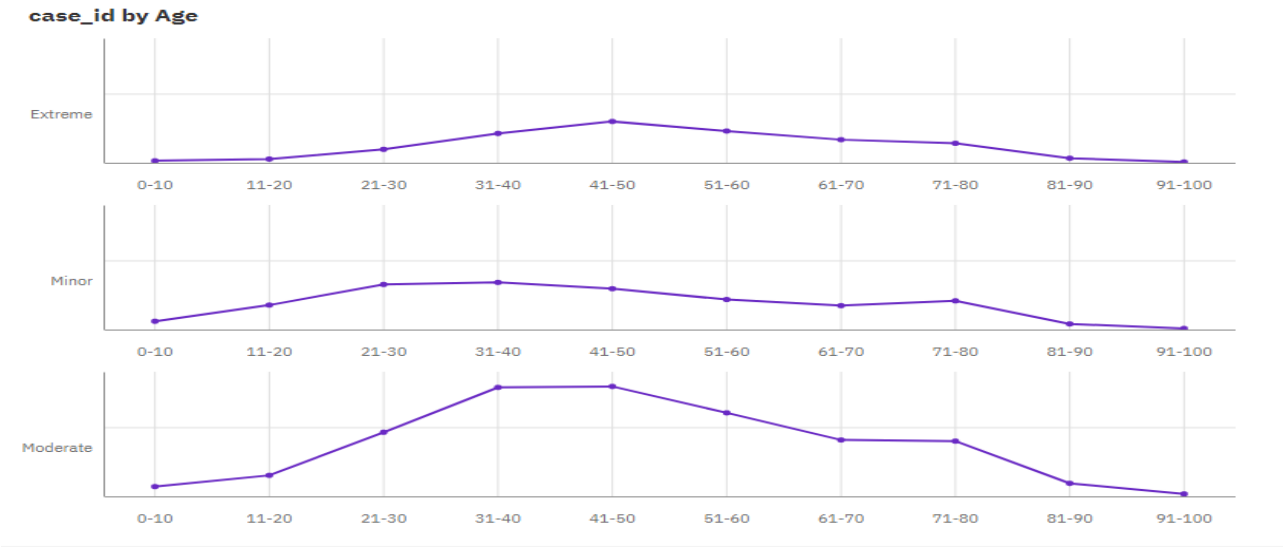


FIGURE 9.1.2

9.1.3. Case_id by Department:

Build a visualization of case id by the severity of Illness in the hospital's management system.

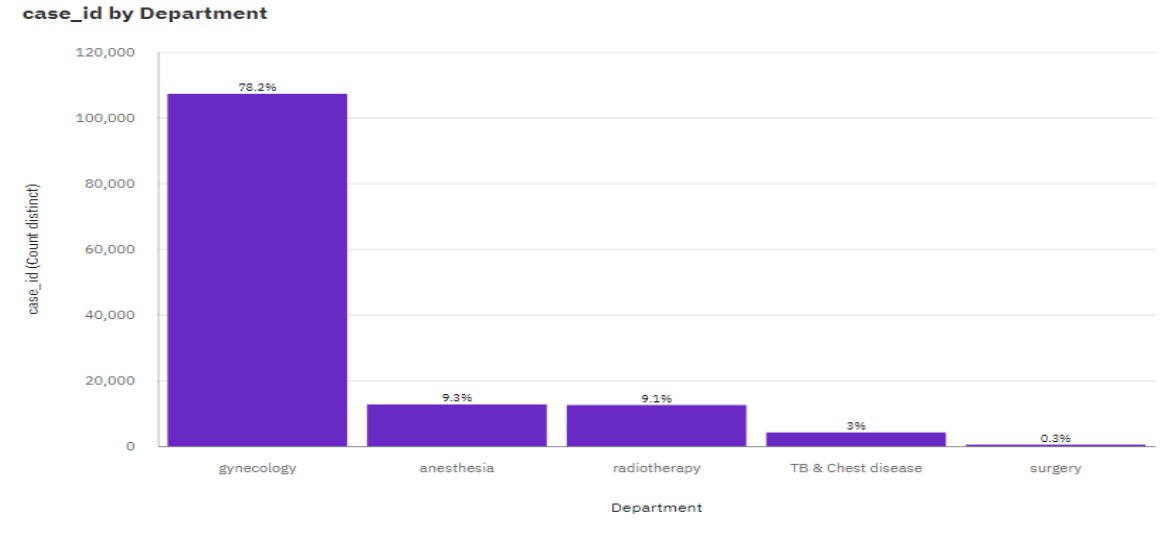


FIGURE 9.1.3

9.1.4. Department and Bed Grade colored by Department

Build the visualization of Department and Bed Grade can be colored by the Department using the Packed Bubble in IBM Cognos Analytics.

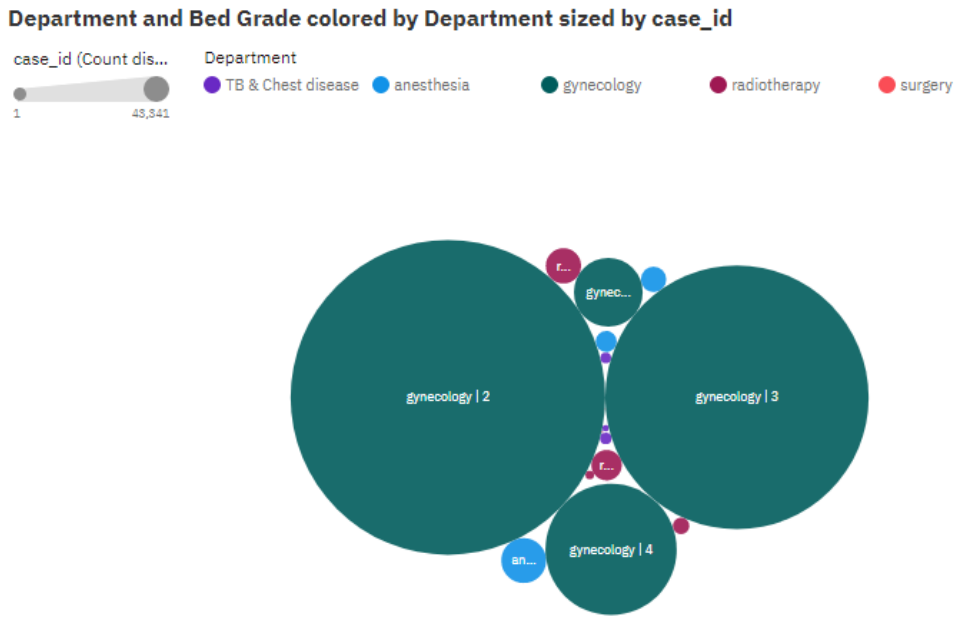


FIGURE 9.1.4

9.1.5.Creating The Dashboard

A data dashboard is a tool many businesses use to track, analyze, and display data—usually to gain insight into the overall wellbeing of an organization, department, or specific process.To collaborate all charts previously created to make an interactive dashboard.

CHAPTER 10

10.1 ADVANTAGES

Easy to collect details of patients.

Farmer can easy to learn.

And we can estimated the profit or loss.

10.2 DISAVANTAGES

Industry is the issue of lack of privacy.

Expensive to obtain unless already.

Valid instrument required.

CHAPTER 11
CONCLUSION

Health care datas make a great difference for patients who travel to their clinic from distant locations. They can be taken care of much faster, because the medical workers will no longer have to search for their paper records in a storage room full of packed up shelves. All it will take to gain access to patients' records are a few clicks in the system. EMR also increases efficiency, and it is especially important in underserved countries where the number of healthcare workers is still too low to meet the needs of the society. The smoother each appointment goes, the more people can be treated. BL is used to enhance the flexibility of system for filtering. Besides classification facilities, the system provides a powerful rule layer exploiting a flexible language to specify Filtering Rules (FRs), by which users can state what contents should not be displayed on their walls. FRs can support a variety of different filtering criteria that can be combined and customized according to the user needs. More precisely, FRs exploit user profiles, user relationships as well as the output of the categorization process to state the filtering criteria to be enforced. In addition, the system provides the support for user-defined Blacklists (BLs), that is, lists of users that are temporarily prevented to post any kind of messages on a user wall. There are a few methods to implement an EMR system. Depending on your space, time and resources, you can decide to set up your own server room, or use the service of a cloud hosting provider. The second option is much faster and requires less preparation on your part. Another advantage of this solution is that the server will be maintained by the host. Once your EMR is installed, you will have to go through a long and tedious process of digitizing your existing medical records.

CHAPTER 12
FUTURE SCOPE

As per this project we will be analyzing some important visualization, creating a dashboard and by going through these we will get most of the insights of analytics for hospital health care data. Analytics is the interpretation of data pattern that assist decision- making and performance improvement. Agriculture Data analytics in crop yield helps in analysing some important visualization, creating a dashboard and by going through these we will get most of the insightsanalytics for hospital health care data. IBM Cognos Analytics is used to create a report, modelling, analysis, visualization, exploration, dashboards, stories, and we can understand easily our organization's data, and make effective decisions in hospitals. A dashboard helps us to monitor events or activities at a glance by providing key insights and analysis about our data on one or more pages or screens. In this project, we visualize, analyse and gain most of the insights by creating a dashboard.

ADVANTAGES:

The data's can be visualized using IBM Cognos analytics in various methods.

i. Several problems indication.

ii. With year usage health care datas.

iii. Implement average medical records .

iv. Quality control of data collection.

CHAPTER 13

APPENDIX

13.1 SOURCE CODE

Index.html

```
<!DOCTYPE html>
<html lang="en">
<head>

    <title>Analytics for hsopital's health care  </title>

    <meta charset="UTF-8">
    <meta http-equiv="X-UA-Compatible" content="IE=Edge">
    <meta name="description" content="">
    <meta name="keywords" content="">
    <meta name="author" content="Tooplate">
    <meta name="viewport" content="width=device-width, initial-scale=1, maximum-scale=1">

    <link rel="stylesheet" href="css/bootstrap.min.css">
    <link rel="stylesheet" href="css/font-awesome.min.css">
    <link rel="stylesheet" href="css/animate.css">
    <link rel="stylesheet" href="css/owl.carousel.css">
    <link rel="stylesheet" href="css/owl.theme.default.min.css">

    <link rel="stylesheet" href="css/tooplate-style.css">

</head>
<body id="top" data-spy="scroll" data-target=".navbar-collapse" data-offset="50">

    <section class="preloader">
        <div class="spinner">

            <span class="spinner-rotate"></span>

        </div>
    </section>
```

```
<!-- MENU -->
    <section class="navbar navbar-default navbar-static-top" role="navigation">
        <div class="container">

            <div class="navbar-header">
                <button class="navbar-toggle" data-toggle="collapse" data-
target=".navbar-collapse">
                    <span class="icon icon-bar"></span>
                    <span class="icon icon-bar"></span>
                    <span class="icon icon-bar"></span>
                </button>

                <a href="index.html" class="navbar-brand">Medlife</a>
            </div>

            <!-- MENU LINKS -->
            <div class="collapse navbar-collapse">
                <ul class="nav navbar-nav navbar-right">
                    <li><a href="#top" class="smoothScroll">Home</a></li>
                    <li><a href="#about" class="smoothScroll">About Us</a></li>
                    <li><a href="#team" class="smoothScroll">Doctors</a></li>
                    <li><a href="#news" class="smoothScroll">News</a></li>
                </ul>
            </div>

        </div>
    </section>


    <!-- HOME -->
    <section id="home" class="slider" data-stellar-background-ratio="0.5">
        <div class="container">
            <div class="row">

                    <div class="owl-carousel owl-theme">
                        <div class="item item-first">
                            <div class="caption">
                                <div class="col-md-offset-1 col-md-10">
                                    <h3>Medlife</h3>
                                    <h1>Hospital's health care </h1>
```

```
 <a href="Dashboard.html" class="section-btn btn btn-default
smoothScroll">Dashboard</a>
                                </div>
                            </div>
                        </div>

                        <div class="item item-second">
                            <div class="caption">
                                <div class="col-md-offset-1 col-md-10">
                                    <h3>Medlife
                                    </h3>
                                    <h1>Hospital's health care </h1>
                                    <a href="Story.html" class="section-btn btn btn-default
btn-gray smoothScroll">Story</a>
                                </div>
                            </div>
                        </div>

                        <div class="item item-third">
                            <div class="caption">
                                <div class="col-md-offset-1 col-md-10">
                                    <h3>Medlife</h3>
                                    <h1>Hospital's health care</h1>
                                    <a href="Report.html" class="section-btn btn btn-default
btn-blue smoothScroll">Report</a>
                                </div>
                            </div>
                        </div>

                    </div>
                </div>
            </section>


            <!-- ABOUT -->
            <section id="about">
                <div class="container">
                    <div class="row">
```

```
                <div class="col-md-6 col-sm-6">
                    <div class="about-info">
                        <h2 class="wow fadeInUp" data-wow-delay="0.6s">Welcome to Your <i class="fa fa-h-square"></i>ealth Care Data Analytics</h2>
                        <div class="wow fadeInUp" data-wow-delay="0.8s">
                            <p>The goal is to accurately predict the Length of Stay for each patient on case by case basis so that the Hospitals can use this information for optimal resource allocation and better functioning.</p>
                            <p>The length of stay is divided into 11 different classes ranging from 0-10 days to more than 100 days.</p>
                        </div>
                        <figure class="profile wow fadeInUp" data-wow-delay="1s">
                            <img src="images/mansukh-mandaviya-71757.jpg" class="img-responsive" alt="">
                            <figcaption>
                                <h3>Dr. mansukh mandaviya</h3>
                                <p>MINISTRY OF HEALTH & FAMILY WELFARE</p>
                            </figcaption>
                        </figure>
                    </div>
                </div>

            </div>
        </div>
    </section>


    <!-- TEAM -->
    <section id="team" data-stellar-background-ratio="1">
        <div class="container">
            <div class="row">

                <div class="col-md-6 col-sm-6">
                    <div class="about-info">
                        <h2 class="wow fadeInUp" data-wow-delay="0.1s">Our Doctors</h2>
                    </div>
                </div>

                <div class="clearfix"></div>
```

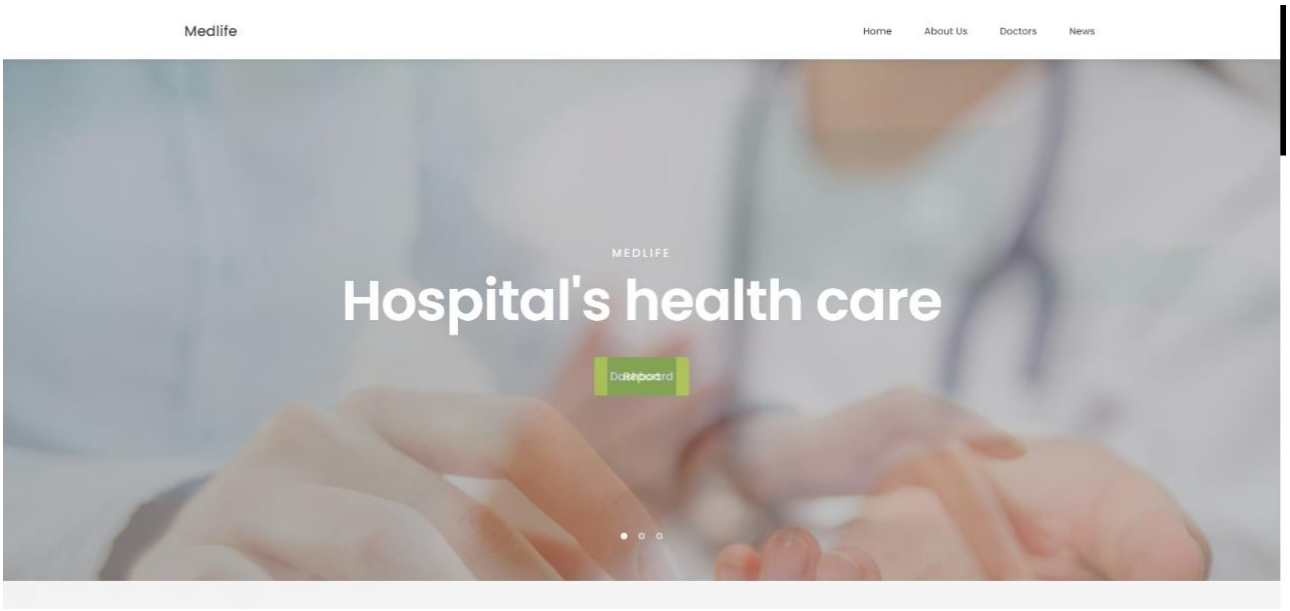
```
                <div class="col-md-4 col-sm-6">
                    <div class="team-thumb wow fadeInUp" data-wow-delay="0.2s">
                        <img src="images/dr-anuj-sathe-cardiology-in-mumbai.png"
class="img-responsive" alt="">

                            <div class="team-info">
                                <h3>Dr.Anuj Sathe</h3>
                                <p>Cardiology</p>

                            </div>

                    </div>
                </div>

                <div class="col-md-4 col-sm-6">
                    <div class="team-thumb wow fadeInUp" data-wow-delay="0.4s">
                        <img src="images/WhatsApp-Image-2020-07-02-at-10.jpg"
class="img-responsive" alt="">

                            <div class="team-info">
                                <h3>Dr.Bimal Chhajer</h3>
                                <p>Cardiology</p>

                            </div>

                    </div>
                </div>

                <div class="col-md-4 col-sm-6">
                    <div class="team-thumb wow fadeInUp" data-wow-delay="0.6s">
                        <img src="images/Dr._Ramakanta_Panda.jpg" class="img-
responsive" alt="">

                            <div class="team-info">
                                <h3>Ramakanta Panda</h3>
                                <p>Cardiology</p>

                            </div>
```

```
                </div>
            </div>

        </div>
    </div>
</section>


<!-- NEWS -->
<section id="news" data-stellar-background-ratio="2.5">
    <div class="container">
        <div class="row">

            <div class="col-md-12 col-sm-12">
                <!-- SECTION TITLE -->
                <div class="section-title wow fadeInUp" data-wow-delay="0.1s">
                    <h2>Latest News</h2>
                </div>
            </div>

            <div class="col-md-4 col-sm-6">
                <!-- NEWS THUMB -->
                <div class="news-thumb wow fadeInUp" data-wow-delay="0.4s">
                    <a href="news-detail.html">
                        <img   src="images/news-image1.jpg"   class="img-responsive"
alt="">
                    </a>
                    <div class="news-info">
                        <span>March 08, 2020</span>
                        <h3><a href="news-detail.html">Ventilator beds</a></h3>
                        <p>In India many peoples can affected covid 19 but they are
not having the Ventilator beds in Hospitals. </p>

                    </div>
                </div>
            </div>

            <div class="col-md-4 col-sm-6">
                <!-- NEWS THUMB -->
                <div class="news-thumb wow fadeInUp" data-wow-delay="0.6s">
```

```
                    <a href="news-detail.html">
                        <img src="images/news-image2.jpg" class="img-responsive" alt="">
                    </a>
                    <div class="news-info">
                        <span>February 20, 2020</span>
                        <h3><a href="news-detail.html">Rapid increase of covid 19 cases</a></h3>
                        <p>In world, millions of peoples can be affected by covid-19 in last two months can rapid increase of cases.</p>

                    </div>
                </div>
            </div>

            <div class="col-md-4 col-sm-6">
                <!-- NEWS THUMB -->
                <div class="news-thumb wow fadeInUp" data-wow-delay="0.8s">
                    <a href="news-detail.html">
                        <img src="images/news-image3.jpg" class="img-responsive" alt="">
                    </a>
                    <div class="news-info">
                        <span>January 27, 2021</span>
                        <h3><a href="news-detail.html">Covid 19 was controlled in India</a></h3>
                        <p>In India, many cases can cured by the help of doctors to rectify the diseases in the effecient way.</p>

                    </div>
                </div>
            </div>

        </div>
    </section>



    <!-- SCRIPTS -->
```

```
    <script src="js/jquery.js"></script>
    <script src="js/bootstrap.min.js"></script>
    <script src="js/jquery.sticky.js"></script>
    <script src="js/jquery.stellar.min.js"></script>
    <script src="js/wow.min.js"></script>
    <script src="js/smoothscroll.js"></script>
    <script src="js/owl.carousel.min.js"></script>
    <script src="js/custom.js"></script>

</body>
</html>
```

OUTPUT



Dashboard.html

```
<html>
   <head>
      <title>
         Dashboard-Analytics for hospital's health care data
      </title>
      <meta charset="UTF-8">
    <meta http-equiv="X-UA-Compatible" content="IE=Edge">
    <meta name="description" content="">
    <meta name="keywords" content="">
```

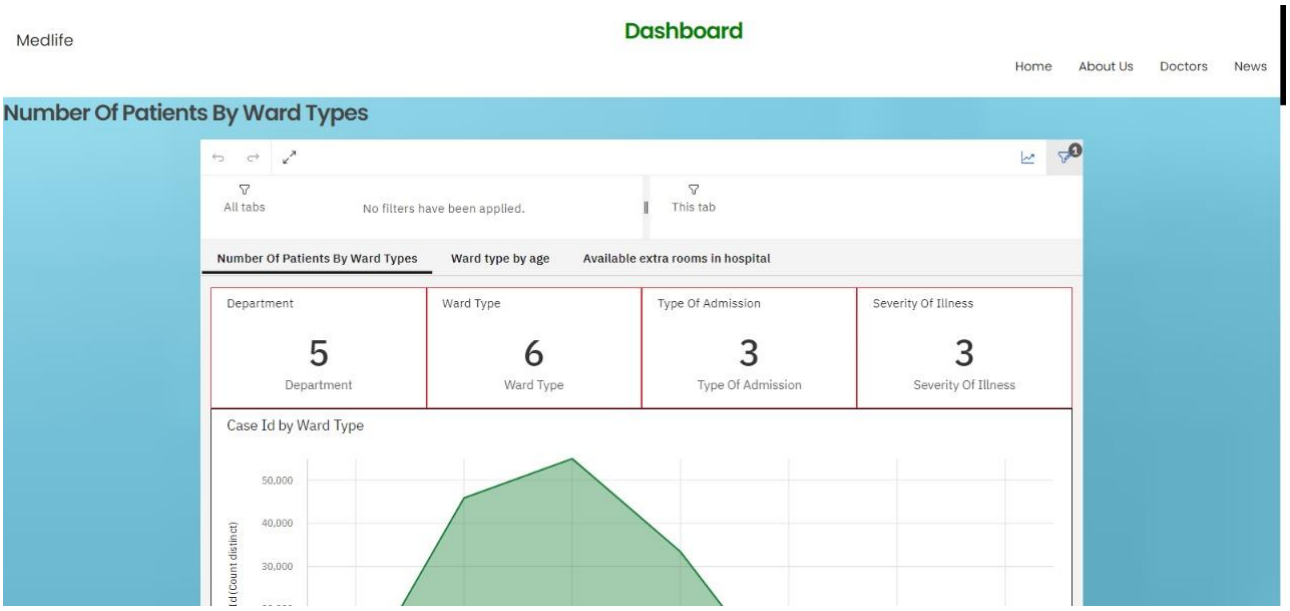
```
    <meta name="author" content="Tooplate">
    <meta name="viewport" content="width=device-width, initial-scale=1, maximum-scale=1">

    <link rel="stylesheet" href="css/bootstrap.min.css">
    <link rel="stylesheet" href="css/font-awesome.min.css">
    <link rel="stylesheet" href="css/animate.css">
    <link rel="stylesheet" href="css/owl.carousel.css">
    <link rel="stylesheet" href="css/owl.theme.default.min.css">

    <link rel="stylesheet" href="css/tooplate-style.css">
    <style>
        .fpgimg{
  background-image: url("https://encrypted-tbn0.gstatic.com/images?q=tbn:ANd9GcSNcVnm1ndrynlxAnsHV92_JNWkTjseeKKoyw&usqp=CAU");
  background-size: cover;
  background-repeat: no-repeat;
}
    </style>

   </head>
   <body>

<!--Menu-->
       <div class="navbar-header">
          <button class="navbar-toggle" data-toggle="collapse" data-target=".navbar-collapse">
              <span class="icon icon-bar"></span>
              <span class="icon icon-bar"></span>
              <span class="icon icon-bar"></span>
          </button>

          <a href="index.html" class="navbar-brand">Medlife</a>
          <center>

      </div>
      <h3 style="text-align: center; color: green;">Dashboard</h3>
       <div class="collapse navbar-collapse">
          <ul class="nav navbar-nav navbar-right">
```

```
            <li><a href="index.html#top" class="smoothScroll">Home</a></li>
            <li><a href="index.html#about" class="smoothScroll">About Us</a></li>
            <li><a href="index.html#team" class="smoothScroll">Doctors</a></li>
            <li><a href="index.html#news" class="smoothScroll">News</a></li>
          </ul>
        </div>
        <div class="fpgimg">
        <div>
<h4 style="text-align:left">Number Of Patients By Ward Types</h4>


       <center>
        <iframe
src="https://us3.ca.analytics.ibm.com/bi/?perspective=dashboard&amp;pathRef=.my_folders%2FAnalytics%2FNumber%2BOf%2BPatients%2BBy%2BWard%2BTypes&amp;closeWindowOnLastView=true&amp;ui_appbar=false&amp;ui_navbar=false&amp;shareMode=embedded&amp;action=view&amp;mode=dashboard&amp;subView=model0000018467a63bf4_00000002" width="1000" height="800" frameborder="0" gesture="media" allow="encrypted-media" allowfullscreen=""></iframe>
    </center>
    </div>
    <div>
        <h4 style="text-align:left">Dashboard To Show Number Of Patients</h4>
        <center>
            <iframe
src="https://us3.ca.analytics.ibm.com/bi/?perspective=dashboard&amp;pathRef=.my_folders%2FAnalytics%2FDashboard%2BTo%2BShow%2BNumber%2BOf%2BPatients&amp;closeWindowOnLastView=true&amp;ui_appbar=false&amp;ui_navbar=false&amp;shareMode=embedded&amp;action=view&amp;mode=dashboard&amp;subView=model000001846798ce01_00000000" width="1000" height="700" frameborder="0" gesture="media" allow="encrypted-media" allowfullscreen=""></iframe>
        </center>
    </div>
    <div>
        <h4 style="text-align:left">Age Wise Patients With Department And Severity Filters</h4>
        <center>
```

```
        <iframe
src="https://us3.ca.analytics.ibm.com/bi/?perspective=dashboard&amp;pathRef=.my
_folders%2FAnalytics%2FAge%2BWise%2BPatients%2BWith%2BDepartment%2
BAnd%2BSeverity%2BFilters&amp;closeWindowOnLastView=true&amp;ui_appba
r=false&amp;ui_navbar=false&amp;shareMode=embedded&amp;action=view&amp
;mode=dashboard" width="1000" height="700" frameborder="0" gesture="media"
allow="encrypted-media" allowfullscreen=""></iframe>
      </center>
   </div>
   <div>
      <h4 style="text-align:left">Dashboard With Hierarchy Bubble And Radial
Visuals</h4>
      <center>
        <iframe
src="https://us3.ca.analytics.ibm.com/bi/?perspective=dashboard&amp;pathRef=.my
_folders%2FAnalytics%2FDashboard%2BWith%2BHierarchy%2BBubble%2BAnd
%2BRadial%2BVisuals&amp;closeWindowOnLastView=true&amp;ui_appbar=false
&amp;ui_navbar=false&amp;shareMode=embedded&amp;action=view&amp;mode
=dashboard" width="1000" height="700" frameborder="0" gesture="media"
allow="encrypted-media" allowfullscreen=""></iframe>
      </center>
   </div>

   <div>
      <h4 style="text-align:left">Dashboard Showing Pie, Stacked Bar, Waterfall
And Pie Charts</h4>
      <center>
        <iframe
src="https://us3.ca.analytics.ibm.com/bi/?perspective=dashboard&amp;pathRef=.my
_folders%2FAnalytics%2FDashboard%2BShowing%2BPie%252C%2BStacked%2B
Bar%252C%2BWaterfall%2BAnd%2BPie%2BCharts&amp;closeWindowOnLastVi
ew=true&amp;ui_appbar=false&amp;ui_navbar=false&amp;shareMode=embedded
&amp;action=view&amp;mode=dashboard" width="1000" height="700"
frameborder="0" gesture="media" allow="encrypted-media"
allowfullscreen=""></iframe>
      </center>
   </div>
   </div>
     <!-- SCRIPTS -->
   <script src="js/jquery.js"></script>
```

```
    <script src="js/bootstrap.min.js"></script>
    <script src="js/jquery.sticky.js"></script>
    <script src="js/jquery.stellar.min.js"></script>
    <script src="js/wow.min.js"></script>
    <script src="js/smoothscroll.js"></script>
    <script src="js/owl.carousel.min.js"></script>
    <script src="js/custom.js"></script>

    </body>
</html>
```

OUTPUT



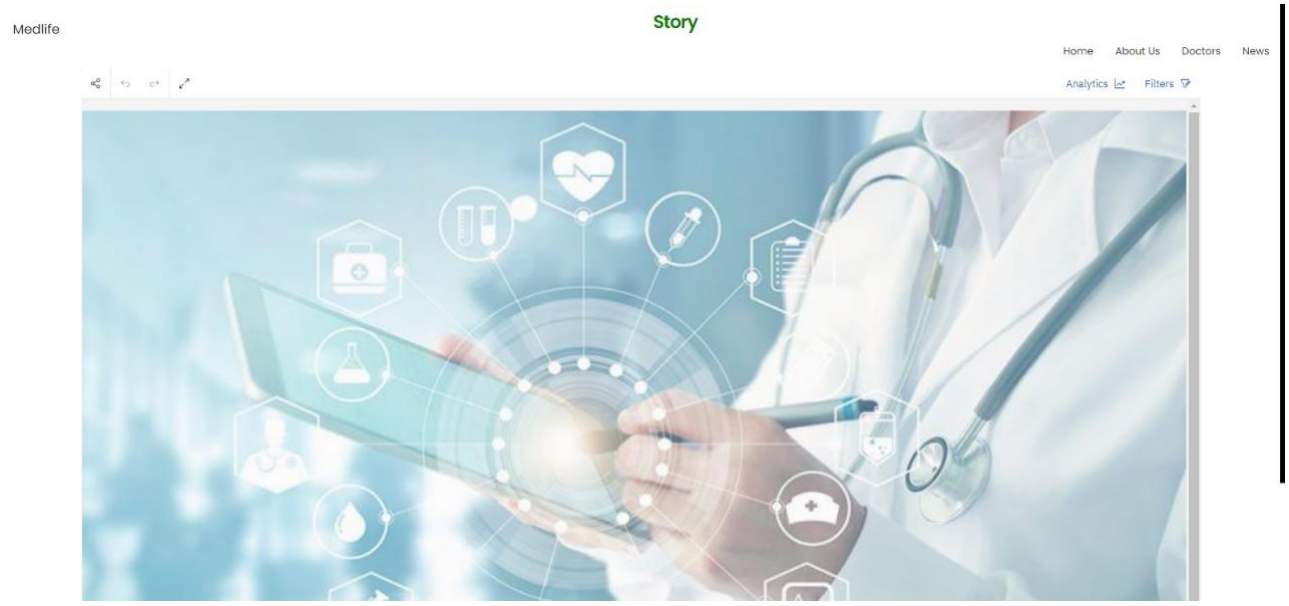
Story.html

```
<html>
   <head>
      <title>
         Story-Analytics for hospital's health care data
      </title>
      <meta charset="UTF-8">
    <meta http-equiv="X-UA-Compatible" content="IE=Edge">
    <meta name="description" content="">
```

```
    <meta name="keywords" content="">
    <meta name="author" content="Tooplate">
    <meta name="viewport" content="width=device-width, initial-scale=1, maximum-scale=1">

    <link rel="stylesheet" href="css/bootstrap.min.css">
    <link rel="stylesheet" href="css/font-awesome.min.css">
    <link rel="stylesheet" href="css/animate.css">
    <link rel="stylesheet" href="css/owl.carousel.css">
    <link rel="stylesheet" href="css/owl.theme.default.min.css">

    <link rel="stylesheet" href="css/tooplate-style.css">
   </head>
   <body>
      <div class="navbar-header">
         <button class="navbar-toggle" data-toggle="collapse" data-target=".navbar-collapse">
            <span class="icon icon-bar"></span>
            <span class="icon icon-bar"></span>
            <span class="icon icon-bar"></span>
         </button>

         <a href="index.html" class="navbar-brand">Medlife</a>
         <center>

      </div>
      <h3 style="text-align: center; color: green;">Story</h3>
       <div class="collapse navbar-collapse">
         <ul class="nav navbar-nav navbar-right">
            <li><a href="index.html#top" class="smoothScroll">Home</a></li>
            <li><a href="index.html#about" class="smoothScroll">About Us</a></li>
            <li><a href="index.html#team" class="smoothScroll">Doctors</a></li>
            <li><a href="index.html#news" class="smoothScroll">News</a></li>
         </ul>
      </div>
       <center>
      <iframe
src="https://us3.ca.analytics.ibm.com/bi/?perspective=story&amp;pathRef=.my_folders%2FAnalytics%2FStoryforIBM&amp;closeWindowOnLastView=true&amp;ui_a
```

```
ppbar=false&amp;ui_navbar=false&amp;shareMode=embedded&amp;action=view
&amp;sceneId=model000001846b7f67a1_00000000&amp;sceneTime=10000"
width="1550" height="950" frameborder="0" gesture="media" allow="encrypted-
media" allowfullscreen=""></iframe>
        </center>
        <script src="js/jquery.js"></script>
    <script src="js/bootstrap.min.js"></script>
    <script src="js/jquery.sticky.js"></script>
    <script src="js/jquery.stellar.min.js"></script>
    <script src="js/wow.min.js"></script>
    <script src="js/smoothscroll.js"></script>
    <script src="js/owl.carousel.min.js"></script>
    <script src="js/custom.js"></script>

    </body>
</html>
```

OUTPUT



Report.html

```
<html>
    <head>
        <title>
```

```
        Report-Analytics for hospital's health care data
      </title>
      <meta charset="UTF-8">
    <meta http-equiv="X-UA-Compatible" content="IE=Edge">
    <meta name="description" content="">
    <meta name="keywords" content="">
    <meta name="author" content="Tooplate">
    <meta name="viewport" content="width=device-width, initial-scale=1, maximum-scale=1">

    <link rel="stylesheet" href="css/bootstrap.min.css">
    <link rel="stylesheet" href="css/font-awesome.min.css">
    <link rel="stylesheet" href="css/animate.css">
    <link rel="stylesheet" href="css/owl.carousel.css">
    <link rel="stylesheet" href="css/owl.theme.default.min.css">

    <link rel="stylesheet" href="css/tooplate-style.css">
   </head>
   <body>
      <div class="navbar-header">
         <button class="navbar-toggle" data-toggle="collapse" data-target=".navbar-collapse">
            <span class="icon icon-bar"></span>
            <span class="icon icon-bar"></span>
            <span class="icon icon-bar"></span>
         </button>

         <a href="index.html" class="navbar-brand">Medlife</a>
         <center>

      </div>
      <h3 style="text-align: center; color: green;">Report</h3>
       <div class="collapse navbar-collapse">
         <ul class="nav navbar-nav navbar-right">
            <li><a href="index.html#top" class="smoothScroll">Home</a></li>
            <li><a href="index.html#about" class="smoothScroll">About Us</a></li>
            <li><a href="index.html#team" class="smoothScroll">Doctors</a></li>
            <li><a href="index.html#news" class="smoothScroll">News</a></li>
         </ul>
```

```
        </div>
         <center><iframe
src="https://us3.ca.analytics.ibm.com/bi/?pathRef=.my_folders%2FAnalytics%2FIBM%2Breport&amp;closeWindowOnLastView=true&amp;ui_appbar=false&amp;ui_navbar=false&amp;shareMode=embedded&amp;action=run&amp;format=HTML&amp;prompt=false" width="1550" height="950" frameborder="0" gesture="media" allow="encrypted-media" allowfullscreen=""></iframe>
        </center>
        <script src="js/jquery.js"></script>
    <script src="js/bootstrap.min.js"></script>
    <script src="js/jquery.sticky.js"></script>
    <script src="js/jquery.stellar.min.js"></script>
    <script src="js/wow.min.js"></script>
    <script src="js/smoothscroll.js"></script>
    <script src="js/owl.carousel.min.js"></script>
    <script src="js/custom.js"></script>

    </body>
</html>
```

OUTPUT

13.2 GITHUB & PROJECT DEMO LINK

https://github.com/IBM-EPBL/IBM-Project-1152-1658376620