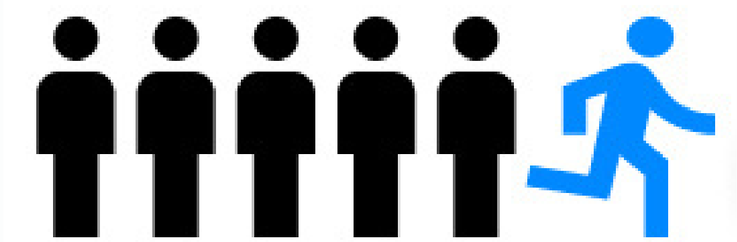

PATIENT CHURN PREDICTION

TEAM MEMBERS:

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MENTOR:

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PROBLEM STATEMENT

Develop a predictive model that identifies patients at high risk of "churning" (discontinuing care or services) in a healthcare system.

The model should use historical patient data such as demographics, medical history, appointment patterns, and engagement metrics to predict churn likelihood.

The goal is to enable early intervention strategies for retaining patients, improving overall patient outcomes, and optimizing resource allocation for healthcare providers

OBJECTIVES

THIS RESEARCH AIMS TO TO DEVELOP A PREDICTIVE MODEL THAT ACCURATELY IDENTIFIES PATIENTS AT RISK OF CHURNING, ENABLING HEALTHCARE PROVIDERS TO IMPLEMENT TIMELY INTERVENTIONS TO IMPROVE PATIENT RETENTION AND OPTIMIZE CARE MANAGEMENT

CONCEPT OF SOLUTION

A solution for patient churn prediction involves using machine learning models to analyze historical patient data and identify patterns that indicate a higher likelihood of patients discontinuing their healthcare services
The approach includes :

Data Collection
Data Preprocessing
Model Development
Prediction & Action
Evaluation & Iteration

EXISTING SYSTEM

Cohort Report:
A cohort report forecasts the number of clients and their rate of attrition through time. A cohort is a collection or group of patients, who made treatment from your hospital within a specific time period

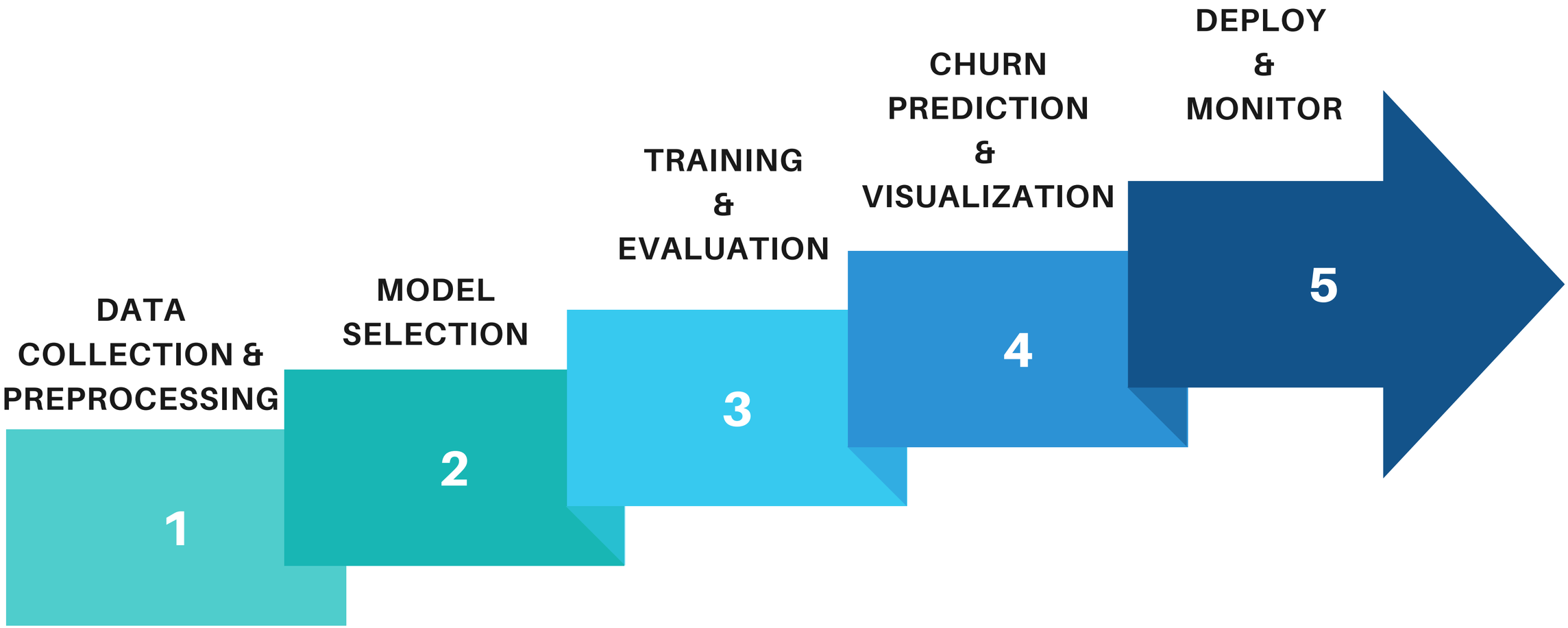
Churn by behavior:
Churn may be predicted in addition to being examined by the cohort report by looking at patient behavior. This means that you must watch a certain patient behavior pattern when they use a particular medication or make a particular treatment activity and assess its effects on churn rate

PROPOSED SYSTEM

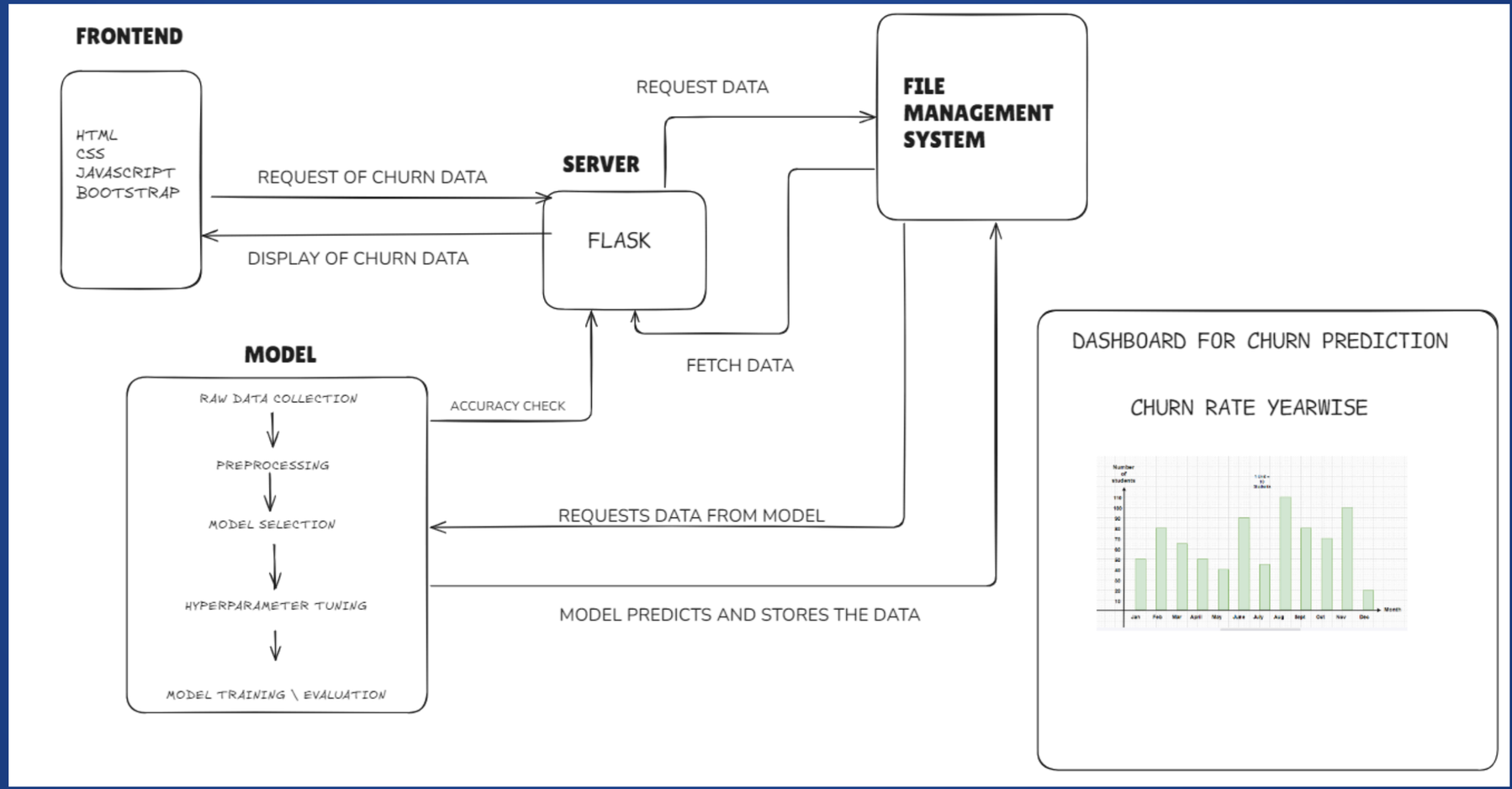
Developing various systems to recognize data patterns by making use of machine learning algorithms and learning from it without explicit programming is the core characteristic of machine learning techniques

Here different types of algorithms are used and the one which gives the most accurate result Random Forest Classifier) is used for recognizing the data patterns

IMPLEMENTATION



WORKFLOW


FRONTEND
HTML
CSS
JAVASCRIPT
BOOTSTRAP
REQUEST OF CHURN DATA
DISPLAY OF CHURN DATA
SERVER
FLASK
REQUEST DATA
FILE MANAGEMENT SYSTEM
FETCH DATA
MODEL
RAW DATA COLLECTION
PREPROCESSING
MODEL SELECTION
HYPERPARAMETER TUNING
MODEL TRAINING \ EVALUATION
ACCURACY CHECK
REQUESTS DATA FROM MODEL
MODEL PREDICTS AND STORES THE DATA
DASHBOARD FOR CHURN PREDICTION
CHURN RATE YEARWISE

Patient Churn Prediction System

We will analyze every detail, ensuring that the patient churn prediction system provides accurate insights, tailored for effective decision-making.

Patient Churn

Home Report About Contact

dashboard

Search by name Search

Churn No

Patient Name	Missed Appointments	Cancellation	Rescheduling	Low Engagement	Negative Feedbacks	Distance from Hospital	Status
Zehaan Kaul	3	2	2	Yes	No	58.69	Churn
Alexander Lad	1	2	0	No	No	64.99	Churn
Chanakya Batta	4	3	2	Yes	No	57.04	Churn
Manan Dugar	2	2	2	No	No	7.94	Churn
Saumya Chanda	2	2	2	No	No	72.14	Churn
Lekha Bawa	4	3	1	Yes	No	88.93	Churn
Nicholas Solanki	3	2	2	Yes	No	38.55	Churn

Patient Churn

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dashboard

Search by name Search

Churn No

Patient Name	Missed Appointments	Cancellation	Rescheduling	Low Engagement	Negative Feedbacks	Distance from Hospital	Status
Pallavi Vora	2	2	2	No	No	28.37	No Churn
Ronith Ramaswamy	1	2	0	No	No	2.14	No Churn
Wriddhish Chaudhari	0	1	0	No	No	92.47	No Churn
George Bhattacharyya	0	1	0	No	No	70.05	No Churn
Mohini Atwal	0	1	0	No	No	66.49	No Churn
Hemal Sanghvi	0	0	1	No	No	13.58	No Churn
Ekantika Ratta	2	2	0	No	No	51.44	No Churn
Ishita Narain	1	1	1	No	No	18.6	No Churn
Xalak Mand	1	1	1	No	No	64.84	No Churn
Yashvi More	0	0	1	No	No	43.38	No Churn

Patient Churn

Home Report About Contact

dashboard

Zehaan Kaul Search

Churn No

Patient Name	Missed Appointments	Cancellation	Rescheduling	Low Engagement	Negative Feedbacks	Distance from Hospital	Status
Zehaan Kaul	3	2	2	Yes	No	58.69	Churn

back

DASHBOARD

Total no of patient

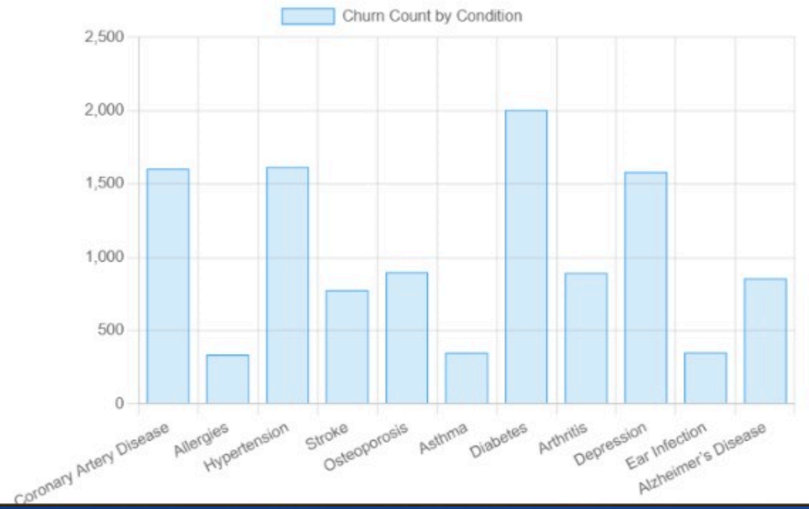
20000

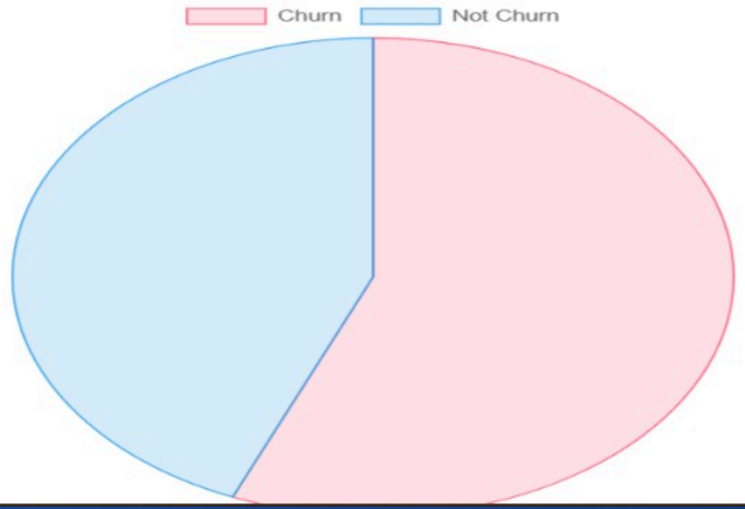
No of Churn

11273

No of No Churn

8727





Thank You