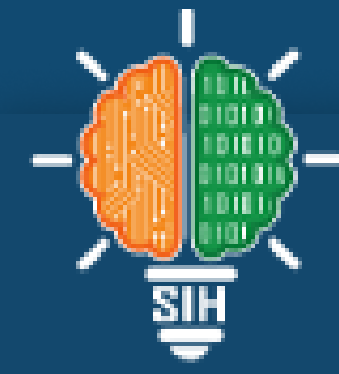INDIAN INSTITUTE
OF INFORMATION
TECHNOLOGY, RANCHI

SMART INDIA
HACKATHON
2022

[Software Category]

Software for Categorization of cases

Organization - eCourts, Department of Justice, Ministry of Law & Justice

Problem Statement Code - AK1211

Team Name - TEAM STAIRCASE
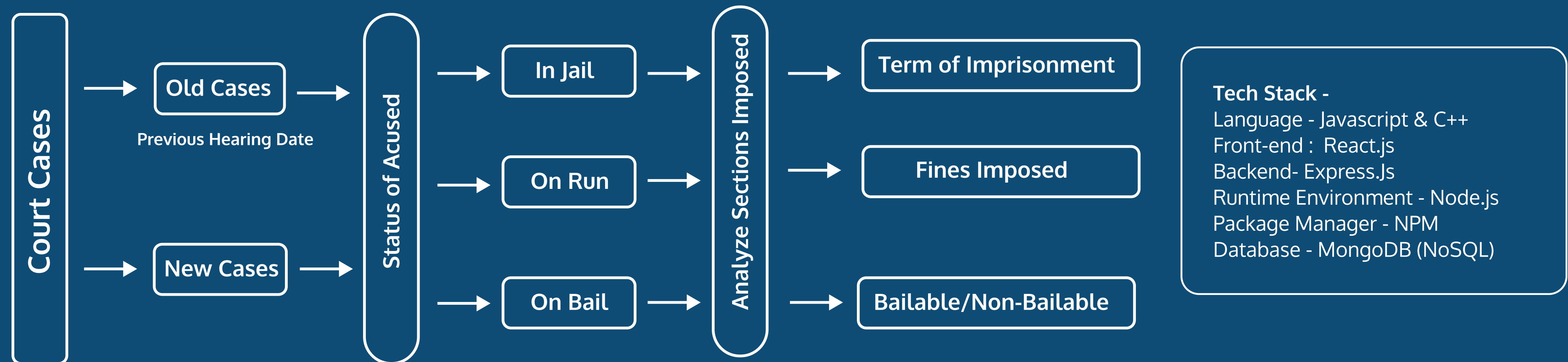
Team Leader Name - Tushar Jain

Institute Code (AISHE) - U-0840

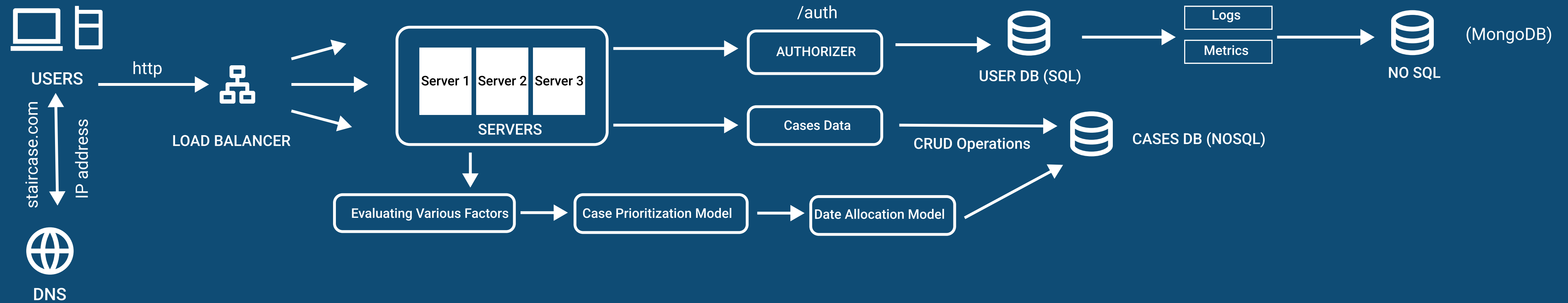Institute Name - Indian Institute of Information Technology, Ranchi

14th March, 2022

Idea/Approach Details

- The algorithm we have developed will help in priortizing and allocation of dates to court cases
- System will consider various factors involved
- Factors - Accused Status, Severity of Section Involved, last hearing date & chargesheet date
- System proposes an optimal date by running out number of operations on the dataset

Court Cases → **Old Cases** (Previous Hearing Date) / **New Cases** → **Status of Acused** → **In Jail** / **On Run** / **On Bail** → **Analyze Sections Imposed** → **Term of Imprisonment** / **Fines Imposed** / **Bailable/Non-Bailable**

Tech Stack -
Language - Javascript & C++
Front-end : React.js
Backend- Express.Js
Runtime Environment - Node.js
Package Manager - NPM
Database - MongoDB (NoSQL)

14th Mar, 2022

Solution Architecture

USERS — http → **LOAD BALANCER** → **SERVERS** (Server 1, Server 2, Server 3)

staircase.com / IP address

DNS

/auth → **AUTHORIZER** → **USER DB (SQL)** → Logs / Metrics → **NO SQL** (MongoDB)

Cases Data → CRUD Operations → **CASES DB (NOSQL)**

Evaluating Various Factors → Case Prioritization Model → Date Allocation Model → **CASES DB (NOSQL)**

Use Cases

1. Utilizing judiciary resources in an efficient manner to hear cases having high priority
2. Proposing/Allocating optimal dates against absurd demand of lawyer
3. Minimize human involvement in allocation of hearing dates to court cases
4. Reduce impartiality and avoid stalling of cases

Dependencies

1. Chief Judge and Registrar can over rule the proposed date.
2. Cases data should be available in digital format

14th Mar, 2022

Team Member Details

1. Team Leader Name - Tushar Jain
- Branch - B.Tech
- Stream - CSE
- Year - III

2. Team Member 1 Name - Abhay Raj
- Branch - B.Tech
- Stream - CSE
- Year - III

3. Team Member 2 Name - Hrishika Agrawal
- Branch - B.Tech
- Stream - CSE
- Year - III

1. Team Mentor 1 Name - Mr Bharat Singh
- Category (Academic/Industry): Academic
- Expertise (AI/ML/Blockchain etc): CS
- Domain Experience (in years): 10

4. Team Member 3 Name - Suvigya Agrawal
- Branch - B.Tech
- Stream - CSE
- Year - III

5. Team Member 4 Name - Tushar Tiwary
- Branch - B.Tech
- Stream - CSE
- Year - III

6. Team Member 5 Name - Hari Om Yadav
- Branch - B.Tech
- Stream - CSE
- Year - III

2. Team Mentor 2 Name - Mr Santosh Mahto
- Category (Academic/Industry)
- Expertise (AI/ML/Blockchain etc): Electronics & Communication
- Domain Experience (in years): 10

14th Mar, 2022

91
hearings this week

11
cases need validation

11030
cases has priority high but
next proposed hearing date
> 1month

🔍 Search: ⋮

Case ID	Domain	Sections Involved	Accused Status	Last Hearing Date	System Proposed ...	Next Hearing Date	
1289	Violence	301,302	on Bail	12/08/2019	12/08/2019	06/10/2019	✏️
3242	Robbery	102,101	In Jail	02/01/2018	12/08/2019	12/08/2019	✖️ ✔️
4219	Mischief	426	on Run	12/08/2019	12/08/2019	12/08/2019	✏️
3219	Tresspass	447,448	on Bail	12/08/2019	12/08/2019	12/08/2019	✏️
3001	Violence	301,302	on Bail	12/08/2019	12/08/2019	12/08/2019	✏️
109	Forgery	465,466,468	In Jail	12/08/2019	2/01/2022	2/01/2022	✏️

Total rows: 6