TITLE PAGE

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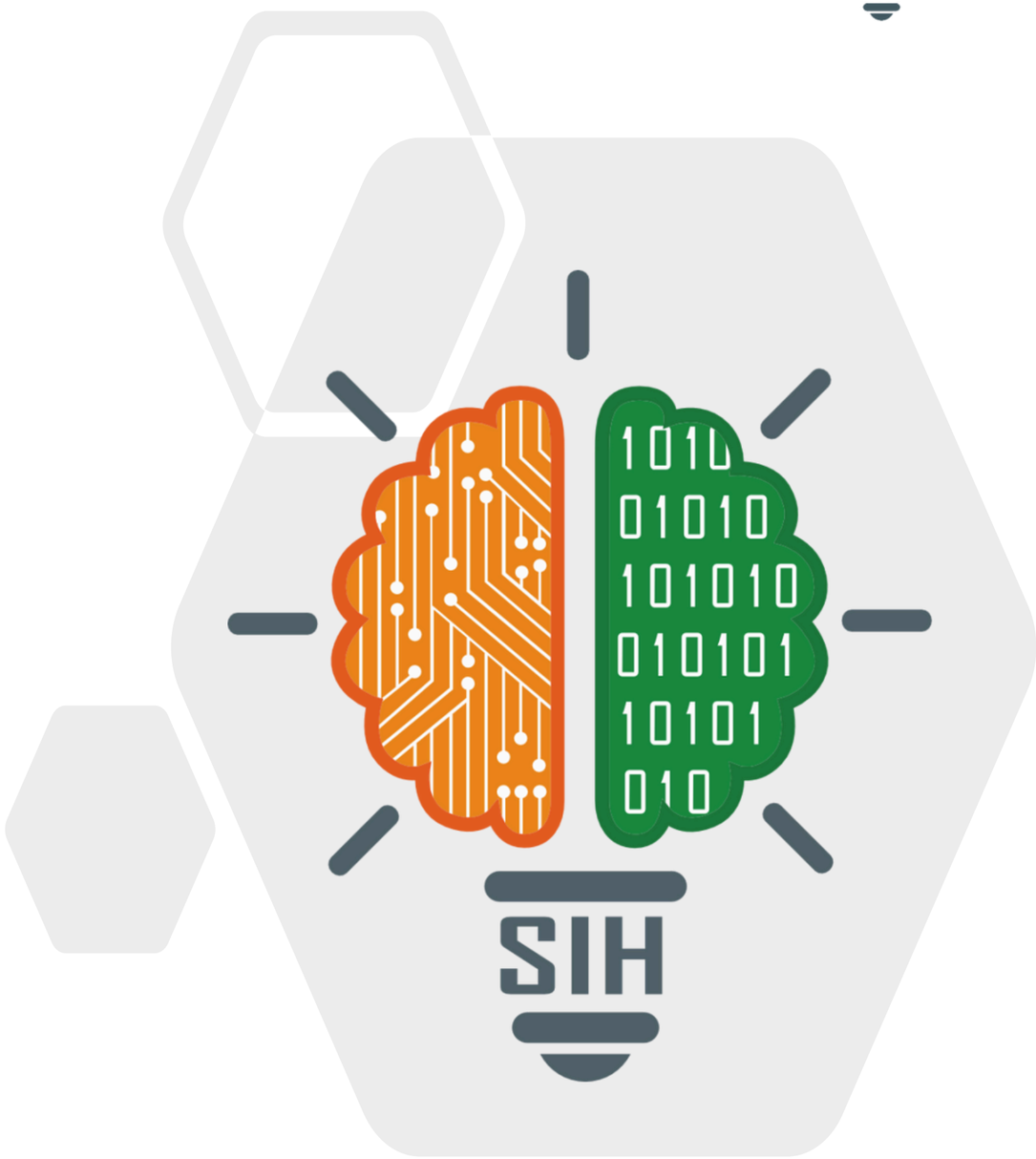
- **Problem Statement ID – 1626**
- **Problem Statement Title- Health Data Information & Management System Mobile Application (HDIMS)**
- **Theme- MedTech / BioTech / HealthTech**
- **PS Category- Software**
- **Team ID-**
- **Team Name (Registered on portal)**



Health Data Information & Management System Mobile Application (HDIMS)

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Workflow

Data Entries and Updates at the facility level

Synchronization of real-time data with Higher levels

Access to data according to user roles

Seamless data flow to State, District and Sub-district levels

Data to Super Admin, policy makers and managers.

New policies, pending updates and data entry deadlines

Notifications of policies and announcements

Problems and Solutions

- **Automated** system minimizes human errors and delays from Manual Data Entry
- Ensures **Data Privacy** and **Security** through Role based Access
- **Offline Data Entry** For areas with Low connectivity
- Facilitates swift communication between healthcare units and provides **real-time updates**.

Innovation and Uniqueness

- **Mobile-First Approach**: Real-time data entry with offline access for low-connectivity areas.
- **Cross-Platform Integration**: Seamless functionality across mobile and web using Kotlin and React.
- **Role-Based Access**: Provides secure, tailored access for different users.

TECHNICAL APPROACH

BOHR's BIT

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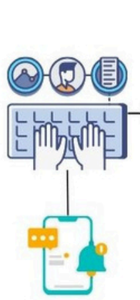


Real time Data Sync & Notiications

Data Entry & Update

Offline Capability (Store data locally, Sync online)

Hospitals / Departments

Intermediate Levels

SUPER ADMIN

User Roles

React

Web Applications

Dynamic Dashboard

Automated Reports

Analytics and Reporting

Sync Data to Central level

Aggregate data at Sub-District Level

Aggregate data at State level

Aggregate data at District Level

End-To-End Data Encryption

Audit logs

Security

HEALTH DATA MANAGEMENT SYSTEM

Scalability

Load Balancing (Cloud Services)

Offline Capability for Remote areas

Kotlin

Mobile App Features

Backend Systems

node

Data Entry Forms & Data update

Central Databases (PostgreSQL, MongoDB)

Role based access

Data aggregation logic at Sub-district, District and State Level

PostgreSQL

Database

mongoDB.

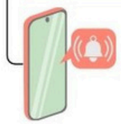
Real time Data Sync, Notifications

RESTful APIs for Communication

Generate reports for Stakeholders

Provide Insights for Policy Makers

View,Monitor and Analyze Data



TECH STACK

Kotlin

node

React

express

HTML

Jetpack Compose

CSS

REST API

mongoDB

PostgreSQL

JS

GitHub

FEASIBILITY AND VIABILITY

Analysis and Feasibility

- **Technical Feasibility** – The required technology (**Kotlin**, **MongoDB**) is available and supports integration with hospital systems.
- **Operational Feasibility** – Adoption is straightforward with minimal training; it reduces paperwork and enhances workflows.
- **User Adoption** – High potential due to its **user-friendly** interface and the trend toward digital healthcare solutions.
- **Legal Feasibility** – Complies with **healthcare regulations** through secure data handling.

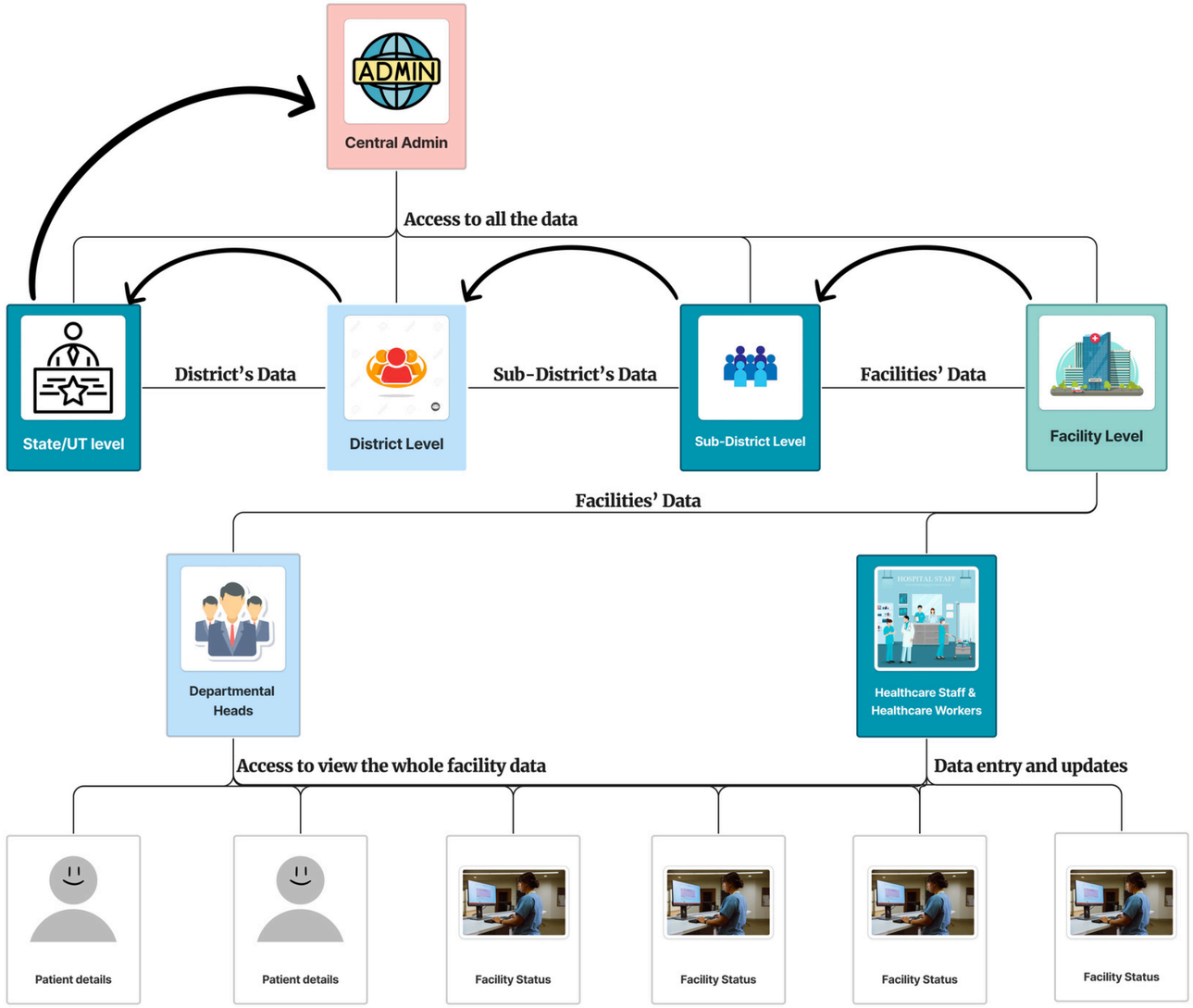
Potential Challenges and Risks

- **Data Security** – Ensuring robust protection against breaches and compliance with regulations.
- **System Integration** – Potential difficulties in aligning with existing hospital systems.
- **User Adoption** – Resistance to change or difficulty adapting to the new system.
- **Technical Reliability** – Managing and resolving potential software bugs or issues.

Strategies to Overcome Challenges

- **Data Security: OAuth** for delegated authorization and secure third-party access.
- **System Integration** – Use flexible **REST APIs** and REST API management platforms (e.g., **Postman**, **Swagger**).
- **User Adoption** – User guides and manuals to facilitate user adoption / Training sessions by hospitals.
- **Technical Reliability** – Perform thorough testing, deploy regular updates and use **Version control** systems (e.g., **Git**).

IMPACT AND BENEFITS



Potential Impact on Target Audience

- **Hospital Staff** – Faster access to patient data, improving care delivery.
- **Hospital Administrators** – Better operational management and decision-making.
- **Public Health Officials** – Real-time data for monitoring and informed policymaking.
- **Patients** – Better access to health data, improving healthcare experience.

Benefits of the Solution

- **Paperless Workflow** – Reduces paperwork and streamlines operations.
- **Real-Time Monitoring** – Enables public health officials to track trends.
- **Increased Efficiency** – Faster data access and management.
- **Cost Savings** – Automation and reduced paperwork lower hospital expenses.

RESEARCH AND REFERENCES

Links for References

- https://hmis.mohfw.gov.in/#!/
- https://www.researchgate.net/figure/Evolution-of-the-health-data-management-system_fig4_341051199
- https://www.researchgate.net/publication/366606658_Development_of_open_ba
- https://cis-india.org/internet-governance/blog/health-data-management-policies
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Research Work

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