Database Design and Implementation

Task 6 Presentation by group 23

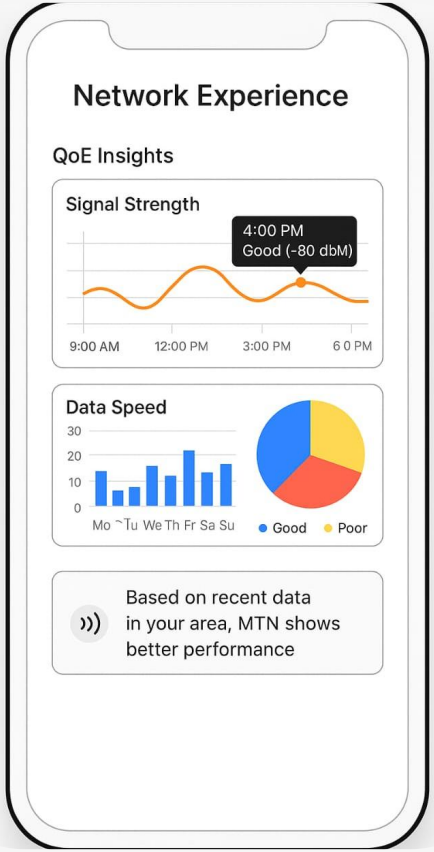
Table of *contents*

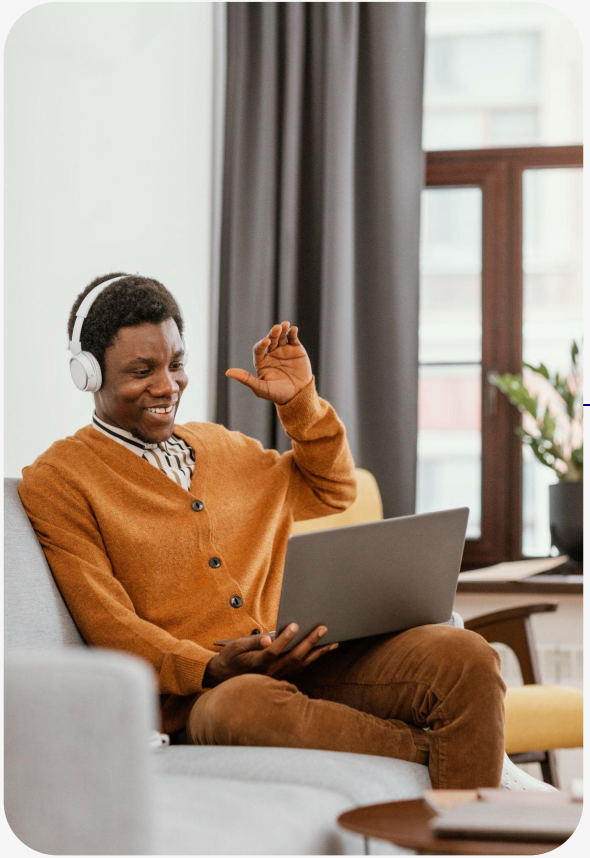
INTRO and DATA ELEMENTS

NTUV TCHAPTSA JAMISON LII

Introduction and Data *elements*

- User info(name , email, device id)
- Network feedback(rating, comment, timestamp)
- Network metrics (download speed, signal strength, latency)
- Location data
- History logs





CONCEPTUAL DESIGN

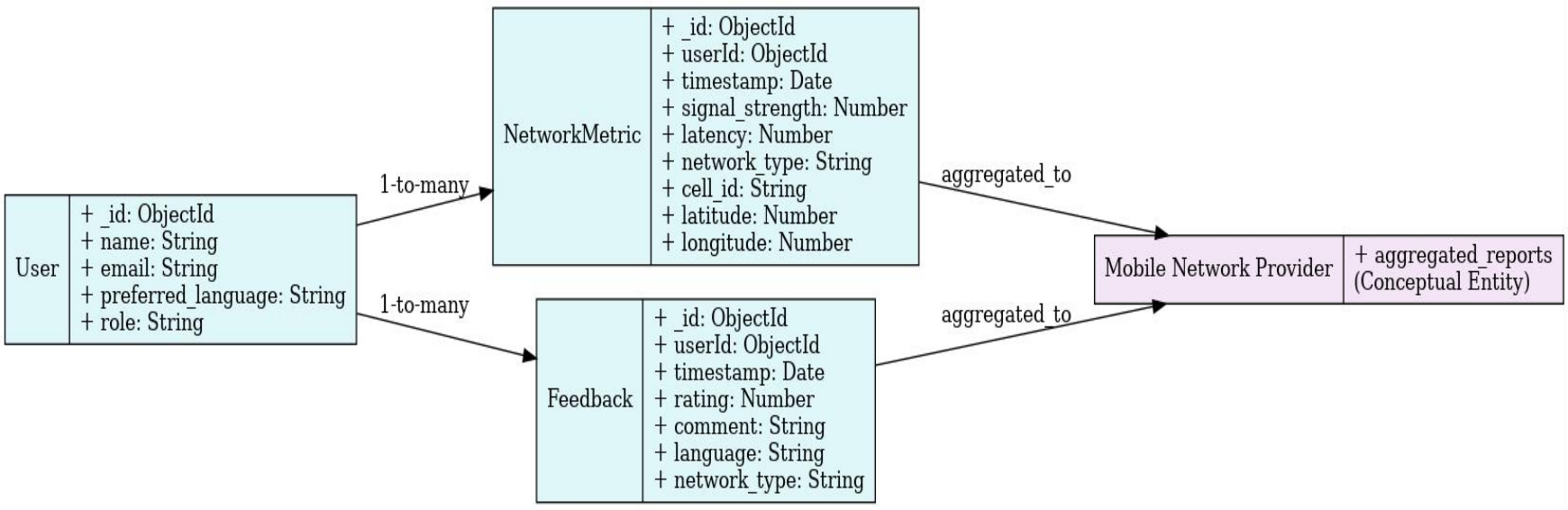
MBIGHA KINENUI STEPH

Conceptual *Design*

The table below gives a summary of our visual design

1	**Core entities: User , Network metrics, feedback**
2	Device_id helps link anonymous data
3	Data flows from device and local storage and backend

Concept


User
+ _id: ObjectId
+ name: String
+ email: String
+ preferred_language: String
+ role: String
1-to-many
1-to-many
NetworkMetric
+ _id: ObjectId
+ userId: ObjectId
+ timestamp: Date
+ signal_strength: Number
+ latency: Number
+ network_type: String
+ cell_id: String
+ latitude: Number
+ longitude: Number
Feedback
+ _id: ObjectId
+ userId: ObjectId
+ timestamp: Date
+ rating: Number
+ comment: String
+ language: String
+ network_type: String
aggregated_to
aggregated_to
Mobile Network Provider
+ aggregated_reports
(Conceptual Entity)

ER DIAGRAM

NGANYU BRANDON

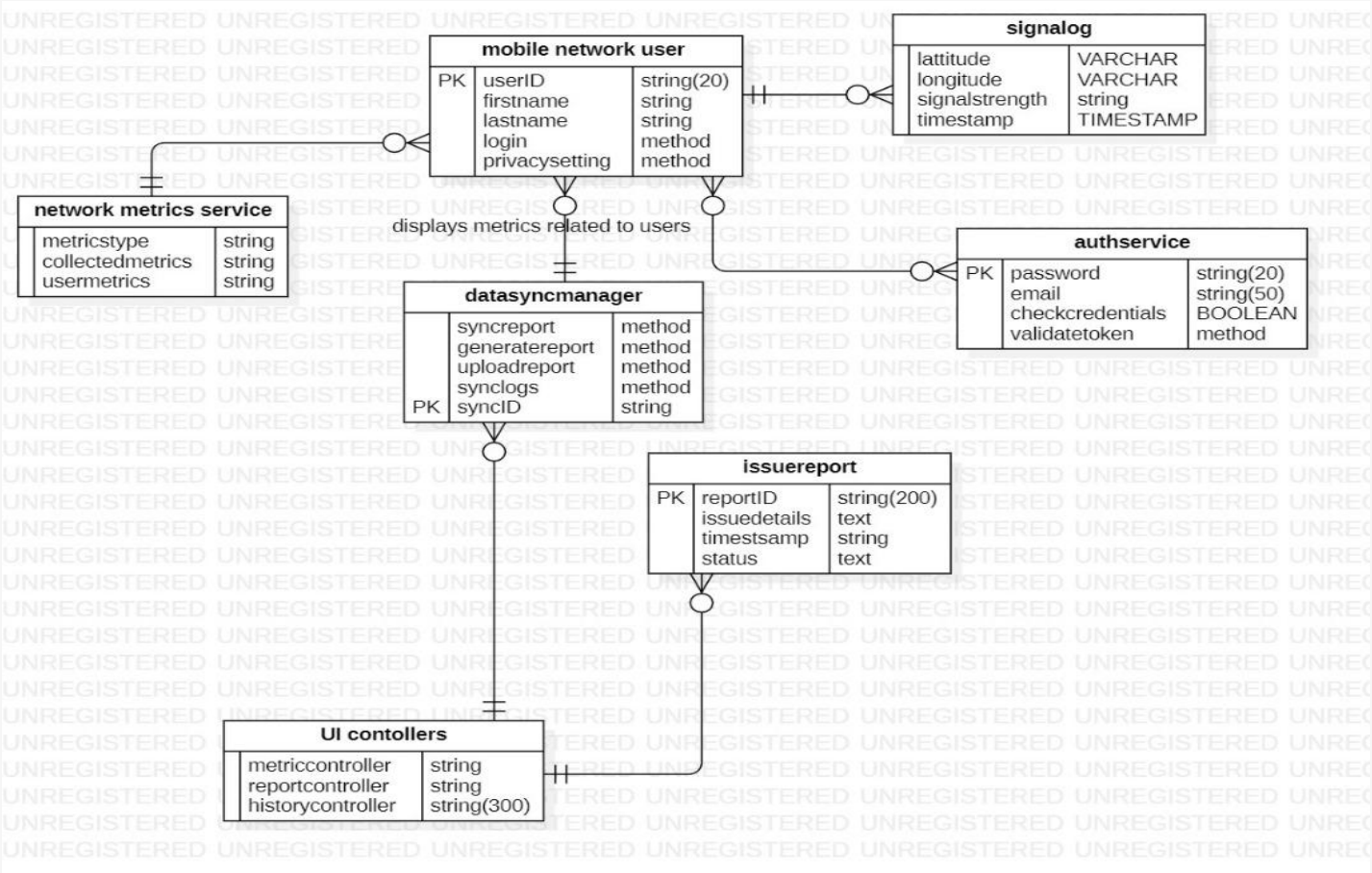
ER DIAGRAM Overview

1) ERD shows one to many relationships (user and Metrics/feedback

2)Each metric can belong to either anonymous (device_id) or logged-in user

3)MongoDB is schemaless but we apply structured logic

ER DIAGRAM


mobile network user
PK userID string(20)
firstname string
lastname string
login method
privacysetting method
signalog
lattitude VARCHAR
longitude VARCHAR
signalstrength string
timestamp TIMESTAMP
network metrics service
metricstype string
collectedmetrics string
usermetrics string
displays metrics related to users
authservice
PK password string(20)
email string(50)
checkcredentials BOOLEAN
validatetoken method
datasyncmanager
syncreport method
generatereport method
uploadreport method
synclogs method
PK syncID string
issuereport
PK reportID string(200)
issuedetails text
timestsamp string
status text
UI contollers
metriccontroller string
reportcontroller string
historycontroller string(300)

Database and Backend Implementation

TIAYA FOTSEU JOSUE

How did we come up with the *database?*

Step 1

Selected the appropiate db which is mongodb

Step 2

Created a cluster and a database with mongo db

Step 3

Specified the different colletions and fields

Step 4

Wrote the backend code with nodejs

Uses secure background tasks and permission handling

Supports API for data deletion or export

DB image

Connecting DB to Backend

NGULEFAC THEODORE

Connecting database to the *backend*

1)Backend exposes RESTful APIs for metrics and feedback

2)Anonymous data is tagged with device_id

3)On login backend links existing data to user_id

Backend image or demo

Thanks!

Do you have any questions?