JAIN POLYTECHNIC BELAGAVI
Department of Computer Science and Engineering

GoGreenCampus Android App

A presentation by:

Aruna Kadalagi (573CS15010),
Bharata Patil (573CS15013),
Nelson Lobo(573CS15024),
Owais Shaikh (573CS15029).

Under the guidance of

Dr. Vijay Kalmani, Prinicipal, Jain Polytechnic

TABLE OF CONTENTS

- Introduction and objectives
- Modules and components
- Tools used
- Future Scope and Enhancements
- Operation / Demonstration

Introduction

The environment and it’s present - day issues


Global Warming


Pollution


Non - sustainability

Rapid industrialization

Objective:

A waste management Android application that respects environmental standards

The most popular mobile operating system by market share is Android

- Bringing change at an foundational level

- Implementing a community-based solution

Existing environmental certification systems:

The
Leadership in
Energy and
Environmental
Design program

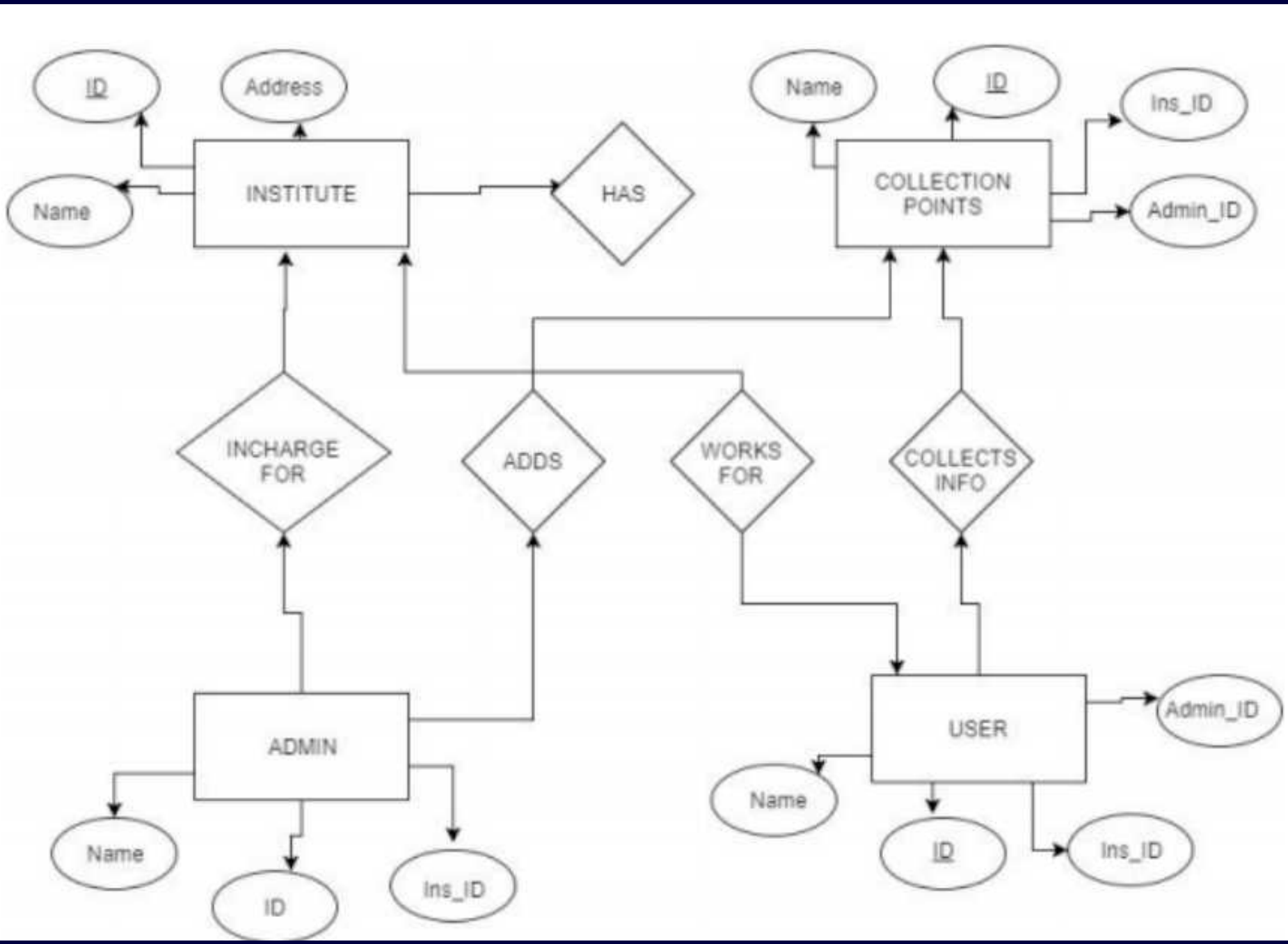
The LEED system implementation for our app:

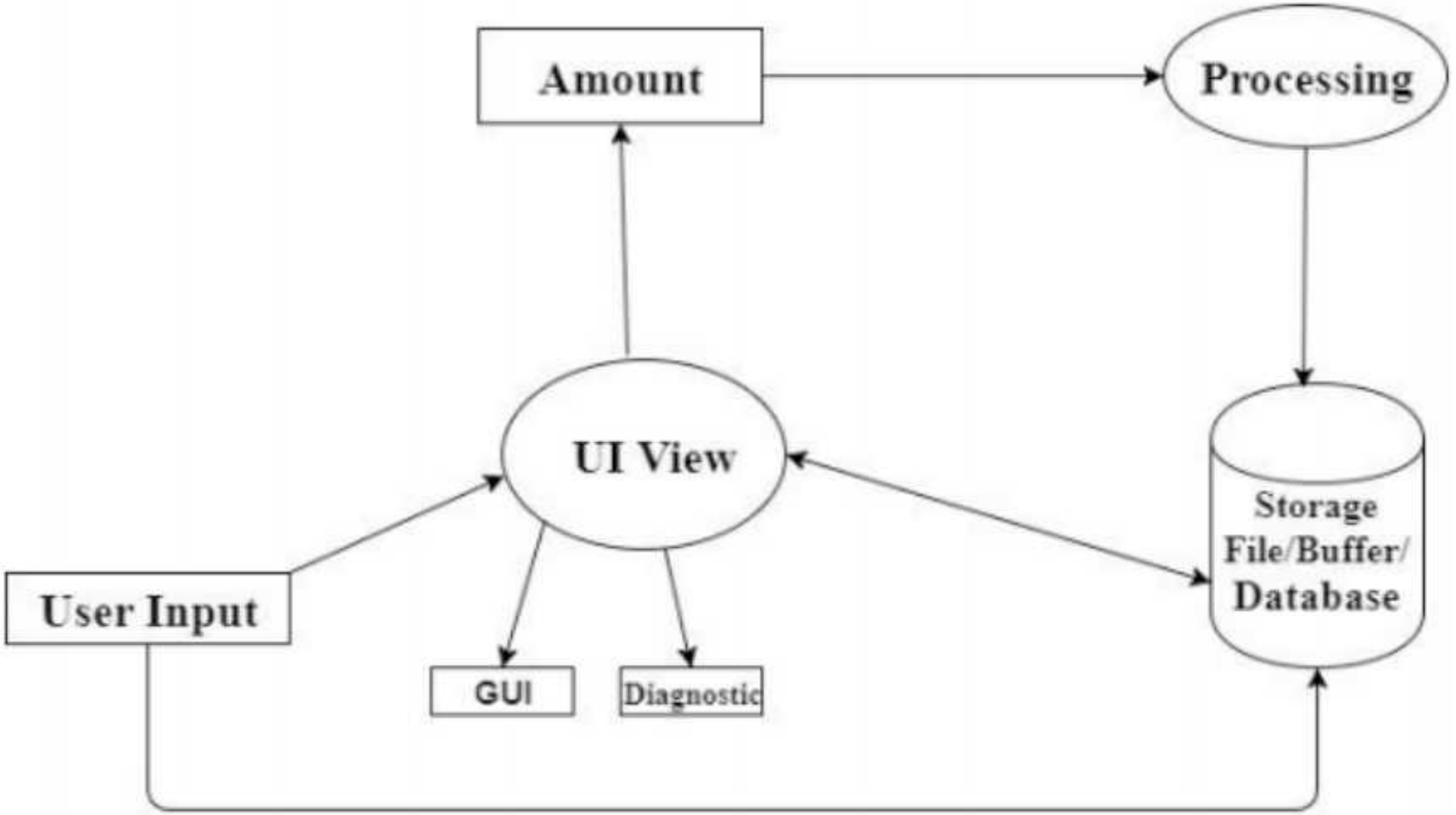
- Amount of waste generated by the campus
- Type of waste generated
- Surrounding pollution levels
- Recyclability factor of generated waste

The four LEED system rankings:

- Certified (0 – 49 points)
- Silver (50 – 59 points)
- Gold (60 – 79 points)
- Platinum (80 – 100 points)

Data Flow:


ID
Address
INSTITUTE
Name
HAS
Name
ID
Ins_ID
COLLECTION POINTS
Admin_ID
INCHARGE FOR
ADDS
WORKS FOR
COLLECTS INFO
ADMIN
Name
ID
Ins_ID
USER
Admin_ID
Name
ID
Ins_ID


Amount
Processing
UI View
Storage
File/Buffer/
Database
User Input
GUI
Diagnostic

App Modules

- Waste addition and segregation
- Waste material data calculation
- Graph to obtain visual metrics

Features

- Easy to use User Interface
- Easily accessible
- Verbose and precise data logging

Formulae for metrics:

Average of the ratio of waste added to waste recycled and treated

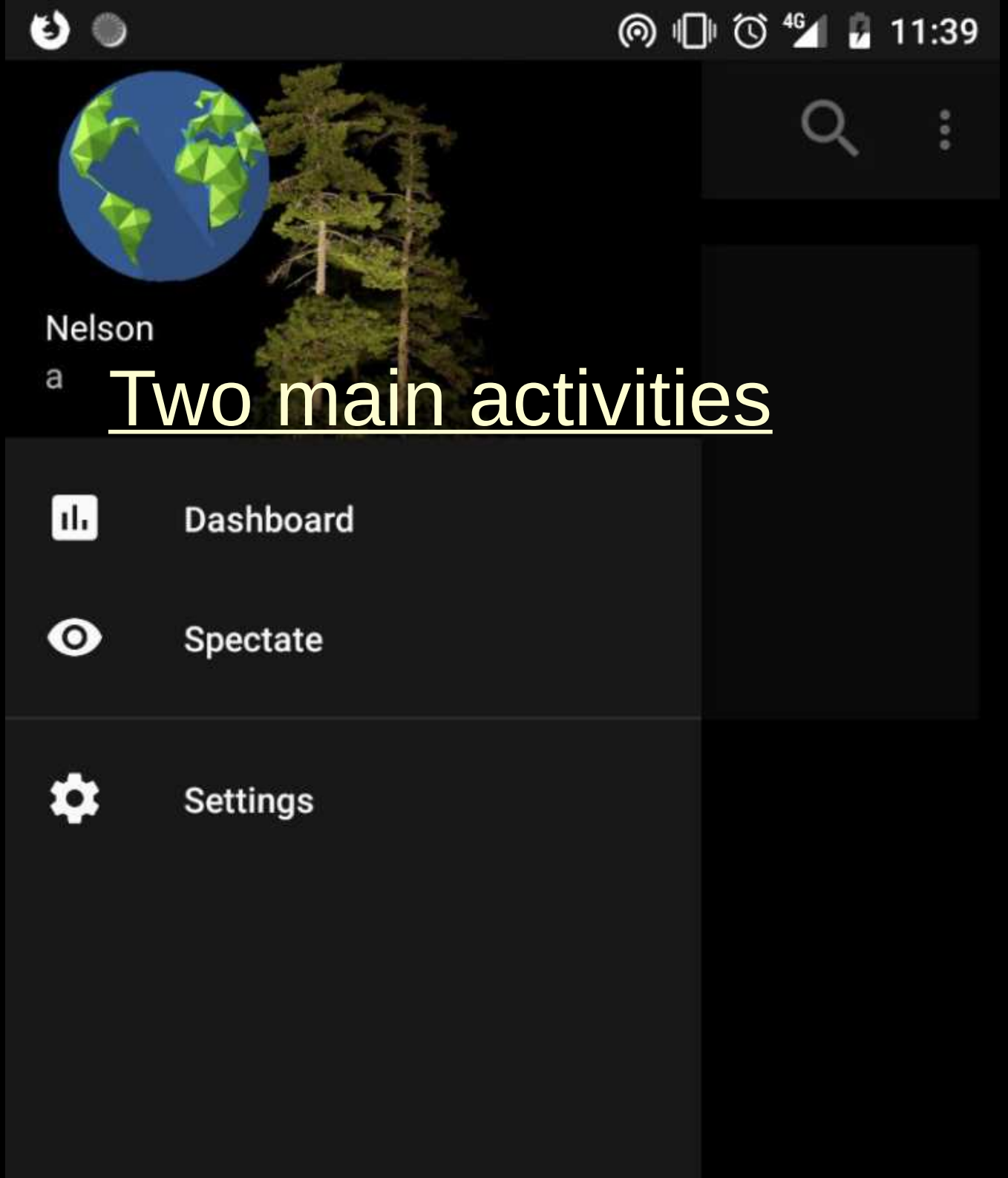
$$Waste\left(liters\right)=\frac{\left(\frac{Treated}{Input}\right)+Recycled}{2}$$

Air pollution for the month

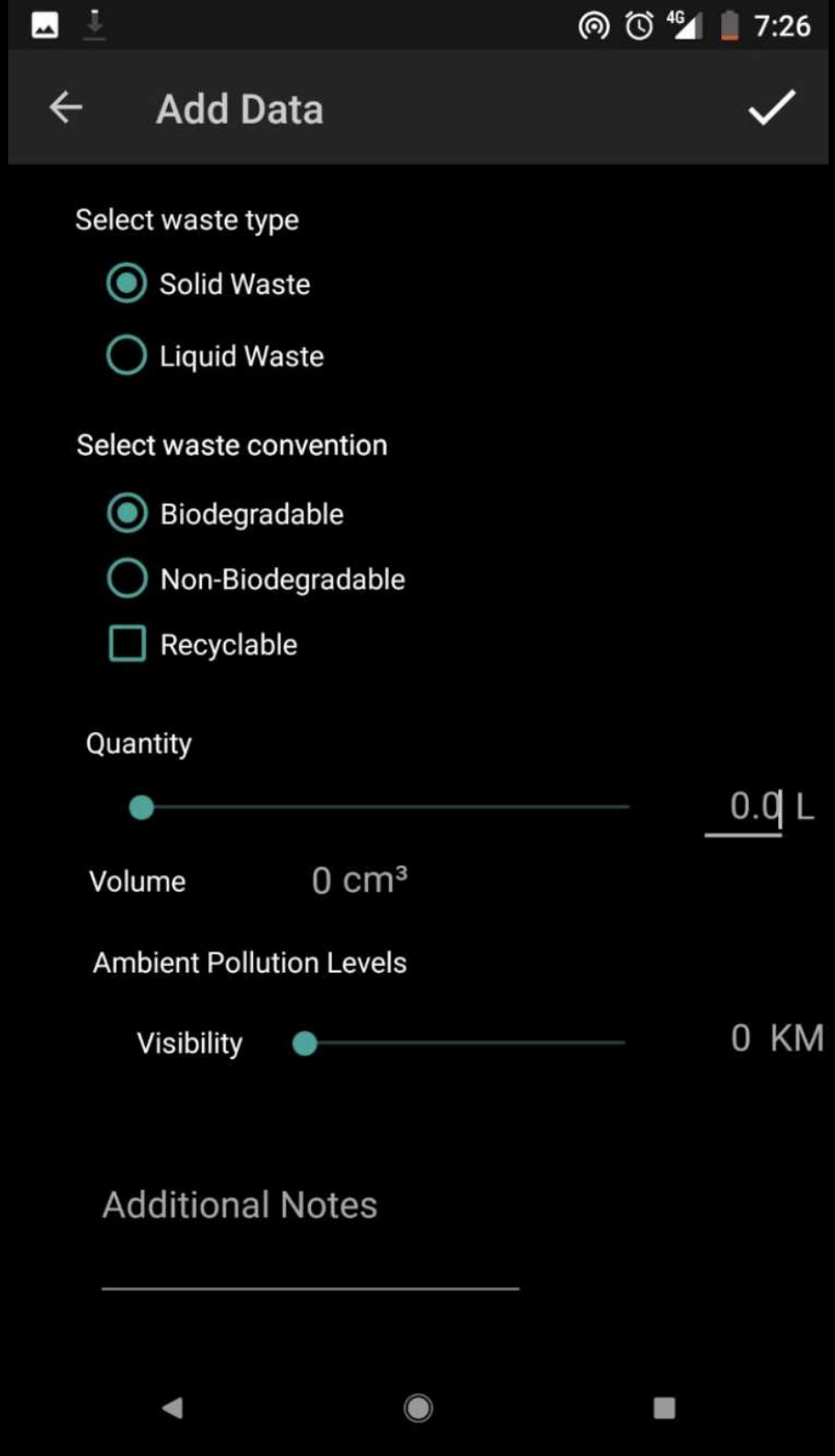
$$Average\ pollution\ levels = \frac{Visibility\ per\ day}{30}$$

Goal for the month

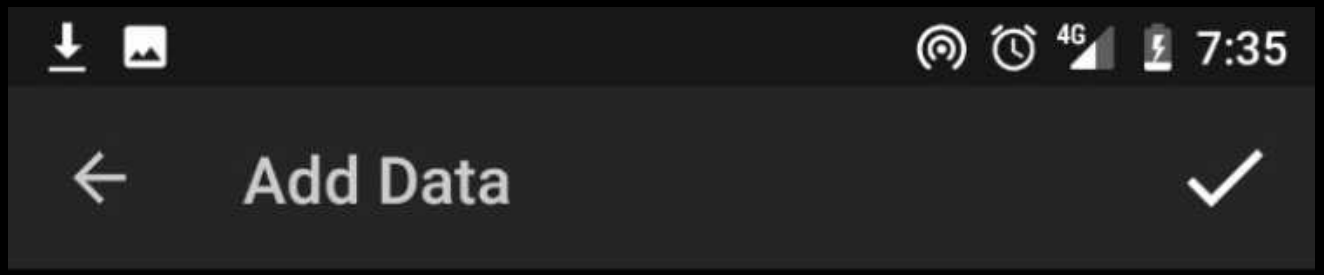
$$Monthly\ goal = \frac{Current\ logs}{Dataset\ for\ previous\ month}$$


11:39
Nelson
a
Two main activities
Dashboard
Spectate
Settings

Addition of data:


7:26
Add Data
Select waste type
Solid Waste
Liquid Waste
Select waste convention
Biodegradable
Non-Biodegradable
Recyclable
Quantity
0.0 L
Volume
0 cm³
Ambient Pollution Levels
Visibility
0 KM
Additional Notes

Logging of waste into the system
(type and quantity)



Select waste type

- (•) Solid Waste
- ( ) Liquid Waste

Select waste convention

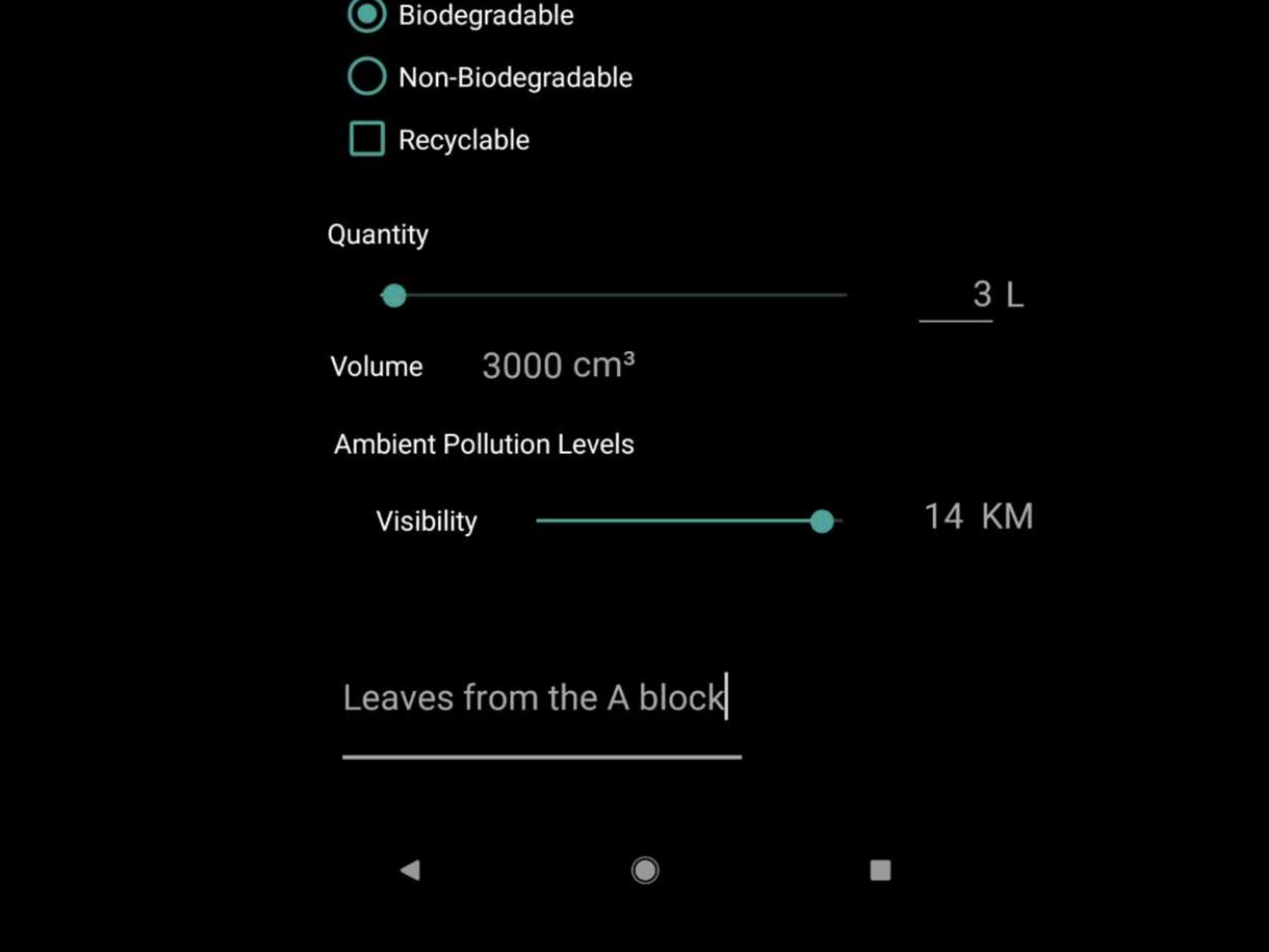
- (•) Biodegradable
- ( ) Non-Biodegradable
- [ ] Recyclable

Quantity

3 L

Volume 3000 cm^3

Logging of ambient pollution levels


Biodegradable
Non-Biodegradable
Recyclable
Quantity
3 L
Volume
3000 cm³
Ambient Pollution Levels
Visibility
14 KM
Leaves from the A block

Dashboard (evaluation and display):

Display of data:

- Cards

- Graphs

Goal: 2.49% | Environmental Index: 3.3/5.0 (↑100.0%)

Collected 5 liters of solid waste 22/3/2018

Aluminum cans from cafeteria

Item is non-biodegradable and recyclable 5000 cm³ 15KM

Collected 6 liters of liquid waste 22/3/2018

Sewage Sludge

Item is non-biodegradable 6000 cm³ 10KM

Collected 1 liters of solid waste 22/3/2018

Old newspapers

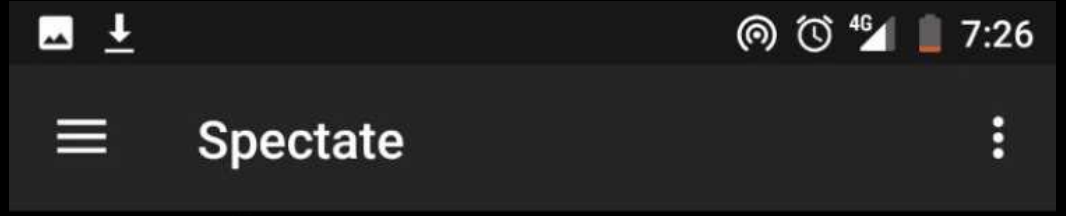
Item is biodegradable and recyclable 1000 cm³ 12KM

Spectator View:

Spectator View:

- Shows the LEED rating of competing institutes in the GoGreenCampus Service

- Motivates institutes to keep their campus clean and green


7:26
Spectate
Here are the top institutes
#1 Jain College of Engineering
LEED Rating: 66.0/100 (↑100.0%) | LEED Rank: Gold
#2 Gogte Institute of Technology
LEED Rating: 0.0/100 (↑100.0%) | LEED Rank: Certified
That's it for now... :)

Other features:

Portals for registration

7:21

Sign Up

First Name

Last Name

Email

Username

Password

Institute Code

Select City

Select State

7:21

Register Institute

Institute Name

Address (Street, Area etc.)

Select Country

Select State

Select City

Campus Area (in km²)

Institute Code

REGISTER YOUR INSITUTE

Tools used:

- Android Studio IDE
- XAMPP for Linux
- Android Profiler for monitoring and debugging

< / >

Programming languages used:

- Kotlin programming language (object-oriented)

- Xtensible Markup Language (XML) for User Interface design

- Structured Querying Language (SQL) for querying MySQL database

External libraries used:

- GraphView graph library

- Android Volley library for server side connection

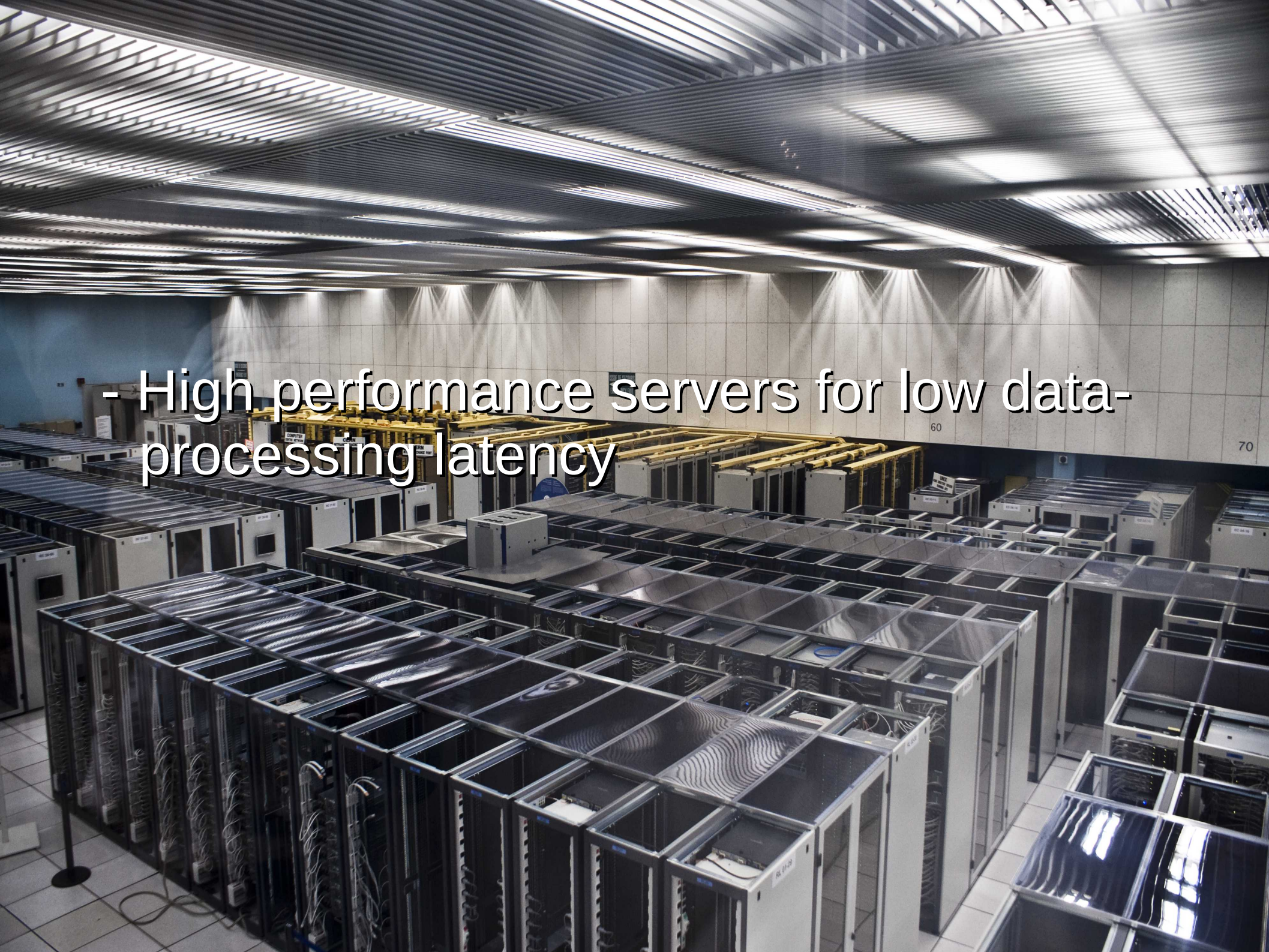
Demo

- End of Demo -

Future Scope and Enhancements:

- Uploading application to the Google Play Store, F-Droid or other application repositories for ease-of-access

- Integrating more metrics into the application for higher precision, such as community ratings, engineering standards etc.


- High performance servers for low data-processing latency

- Adding external hardware support for devices such as mini wind vanes, dosimeters etc.

Thank you.