

User Manual Guide

Android Inspection App

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1 Introduction

This Android Inspection App enables users to capture sample images, simulate impurity detection, and store inspection records locally. It is designed to meet the specifications of the university assignment for Inspection Mode functionality.

2 System Requirements

- Android device running Android 8.0 (API 26) or higher
- Camera permission enabled
- Minimum 50MB of free storage

3 Installation Instructions

1. Download the APK file from the university portal or GitHub repository.
2. Open the file and install the app.
3. Grant camera permission when prompted.
4. Launch the app from your home screen.

4. App Overview

Screen	Description
Inspection Screen	Capture sample image and preview before detection
Detection Screen	Simulate impurity detection with progress bar and display results
History Screen	View all completed inspection records stored in local database

5. Using the App

- 5.1 Launching Inspection Mode
- Open the app.
- Tap the “Capture Image” button.
- The camera will activate automatically.
- Take a photo — it will be saved locally and previewed.
- The app transitions to the Detection Screen.

5.2 Detection Interface

- Displays the captured image
- Shows a real-time horizontal progress bar
- After detection completes, displays:
 - Timestamp
 - Device information (e.g., Samsung SM-A546B, Android 14)
 - Impurity quantification result (e.g., “Impurities detected: 3.2%”)

5.3 Inspection Record Storage

All completed detections are saved to a local SQLite database with:

- Image path
- Timestamp
- Detection result
- Device information

These records can be viewed in the History Screen.

6. Troubleshooting

Issue	Solution
Camera not opening	Ensure camera permission is granted in device settings
Image not saving	Check device storage availability and app permissions
Detection screen not loading	Restart the app and ensure image was captured successfully
History not showing records	Confirm detection completed and database was updated

7. Compliance Checklist

- Camera activates on button click
- Image pass through a detection screen
- Progress bar simulate detection
- Results include timestamps ,device information and impurity level
- Record saved to SQLite database
- UI meets assignment spec and is modular