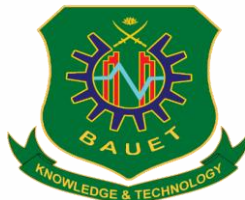


**Bangladesh Army University of Engineering & Technology (BAUET)**  
**Qadirabad, Natore-6431**



Department of Computer Science and Engineering  
Course Code: CSE-3200  
Course Title: Integrated Design Project / Capstone Project

**Project Presentation on “Custom ROM”**

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Semester: 1<sup>st</sup>

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# Introduction

A custom ROM is a modified version of the Android operating system. <sup>[1]</sup>

Custom ROMs can:

- Enhance performance and overall speed
- Bring an old device up-to-date
- Allow users to focus on privacy and security
- Give your phone a whole new look



Xiaomi MIUI

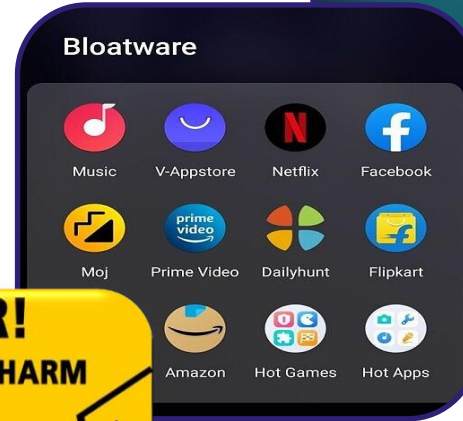


Lineage OS

# Problem Statement

Current problem of stock ROM:

- Privacy and Security
- Bloatware and unwanted apps
- Unrestricted access to apps and websites
- Less control over OS



05-12-2023

# Motivation

The motivation behind our project:

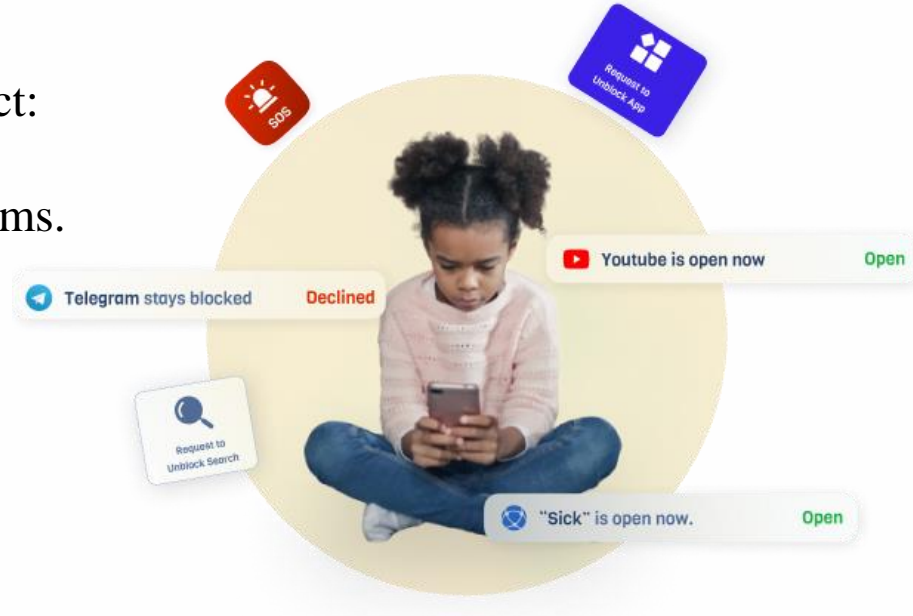
- To make a custom-tailored ROM for Parental Control.
- Develop a custom ROM that focuses on the privacy of its users.
- ROM for a specific group of people for their work.
- Demand in the current marketplace.



# Objectives

The main objective of our project:

- Installation control mechanisms.
- Privacy-focused OS
- Speed improvement
- Block Advertisement
- Block Data Leak





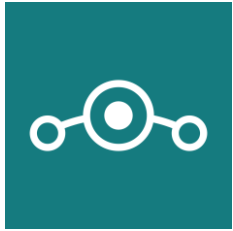
# Background Study

By Researching we found these points to our interest

- There is a current Demand for custom ROM on the online market place.<sup>[2][3]</sup>
- People want more Digital privacy.<sup>[4]</sup>
- Parents want more secure ROM for their children.<sup>[5]</sup>

# Existing System

These are most Popular Custom ROM in current market.



LineageOS



Pixel Experience



Paranoid Android





# Comparative Analysis

Stock ROM	<b>Provided by</b>	—	<b>Provided by</b>	Custom ROM
	The device manufacturer		Independent developers	
	<b>Performance</b>	—	<b>Performance</b>	
	Less fast and contains bloatware		More faster because of Mods	
	<b>Control</b>	—	<b>Control</b>	
	User has less control		User has less control	


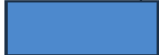











# Challenges

The key Challenges behind our project:

- Overcoming Bootloader and Security Measures.
- Device-specific Drivers and Kernel Issues.
- Customization and Feature Integration.
- Community and User Expectations.



# Project planning

Task Name	June	July	August	September	October	November
Gather necessary tools and prerequisites						
Unlock the bootloader						
Making the UI on Figma						
Managing the Git-Repo & Documentation						
Create Custom recovery for Nokia 2.2						
Obtain the device-specific source code						
Set up the build environment						
Configure the build						
Apply customizations						
Build the custom ROM						
Test the custom ROM						
Debug and fix issues						
Create a flashable package						

# Requirement specification

The Requirement for project:

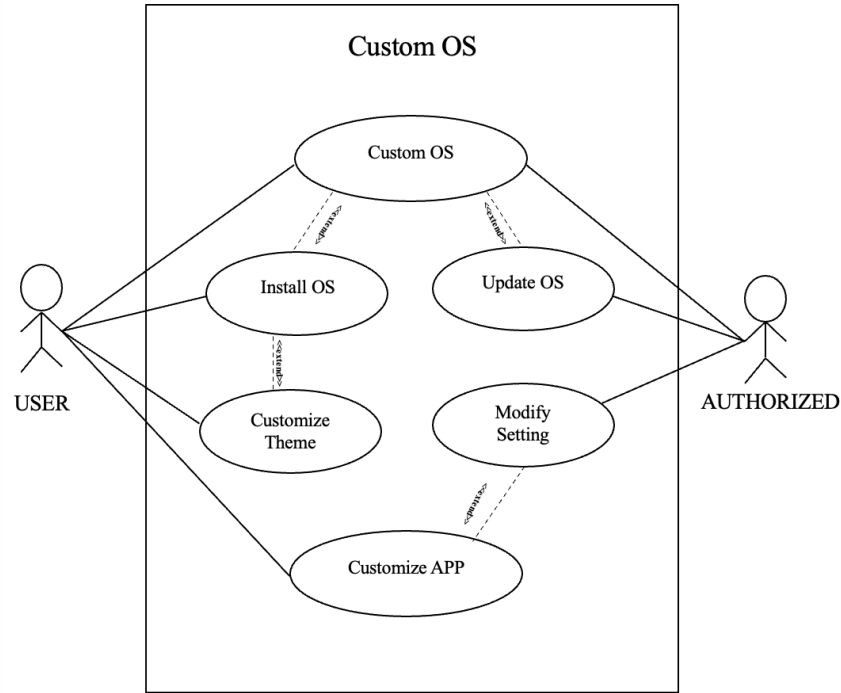
- A Computer that supports Windows 10 & Linux
- A working android Phone
- Good USB cable, Internet and Device Drivers
- Stock Rom and Necessary software

# Design specification

A design specification (DS) describes how a system meets the requirements outlined in the Functional Requirements. The Basic Design for our project:

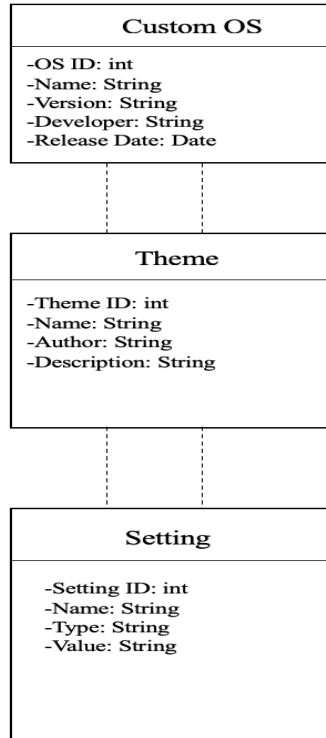
- Unlock the bootloader
- Install custom recovery
- Gain root access
- Do the necessary modification

# Use Case



**Figure-1: Use Case Diagram**

# Data Flow



**Figure-2: Dataflow Diagram**

# Front End



Fig-01: Modified Home Screen

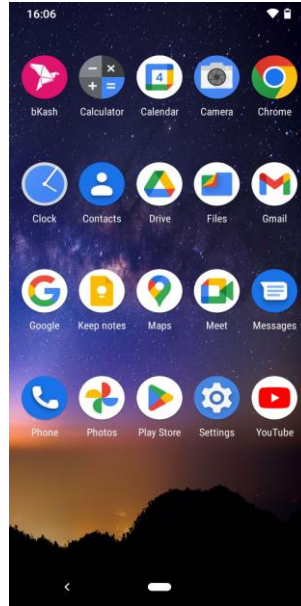


Fig-02: Modified APP Drawer

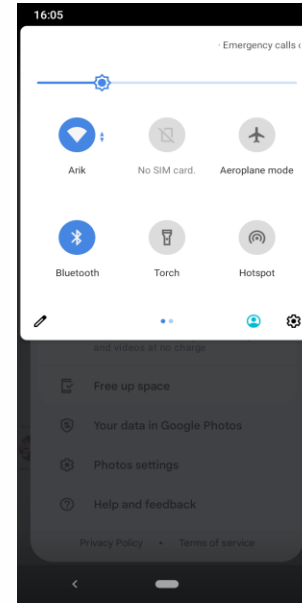


Fig-03: Modified Nav Bar 1



# Front End

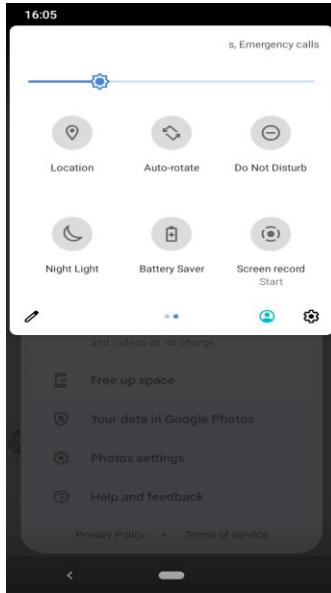


Fig-04: Modified Nav Bar 2

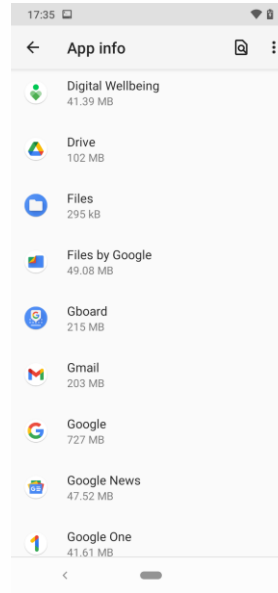


Fig-05: Uninstall System App

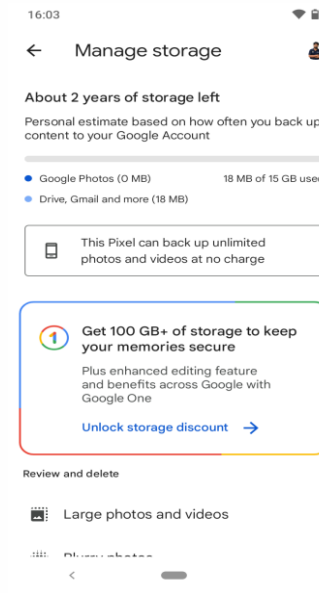
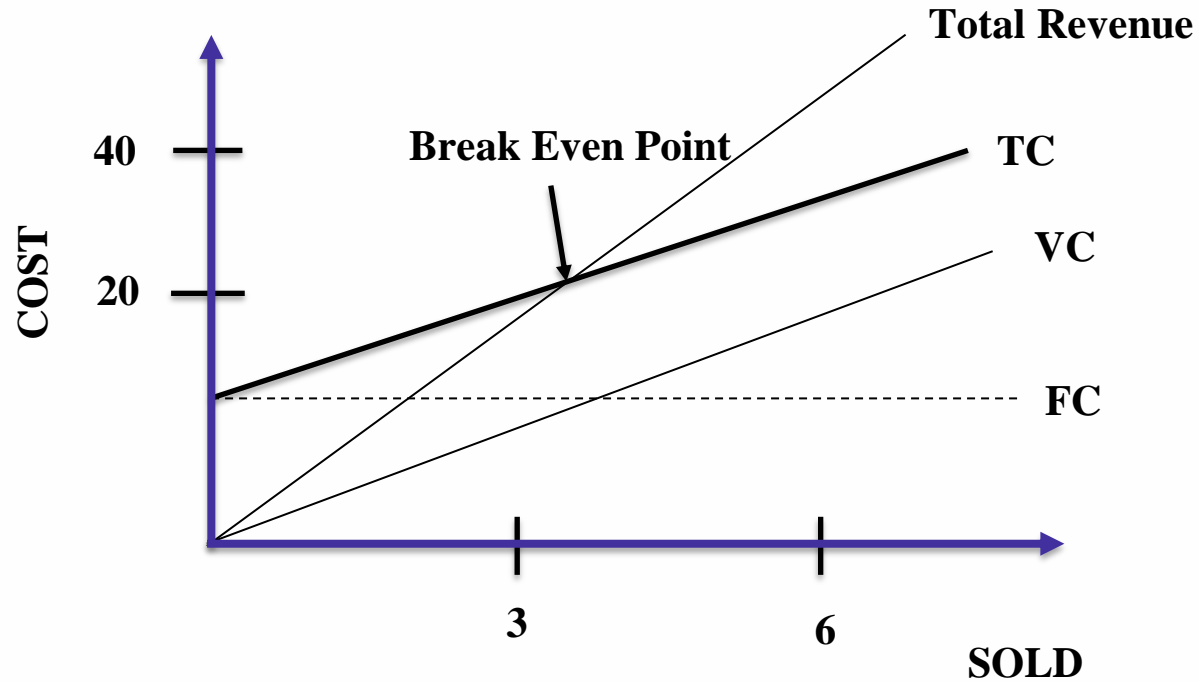


Fig-06: Unlimited google photos

# Budget

Hourly Income	Our Project Cost
<p>A average Bangladesh software engineer's salary per month is 36000 taka.</p> <p>20 working days and 6 hours of work every day. Hourly Charge <math>6000/(20*6)=300</math> taka</p>	<p><math>(365/7) = 52</math> working weeks and 12 weeks of vacation. Our lab is 0.75 credits. Total of <math>(0.75*3) = 2.25</math> hours of is required each week.</p> <p>Total working hours <math>(2.25*40)=90</math> hours.</p> <p>Cost of three people <math>(300*90*3)=81000</math> taka.</p>

# Cost-Benefit



# Impact on Society

- Enhanced Device Longevity
- Freedom and Customization
- Security and Privacy
- Community and Collaboration
- Learning and Education

# Future Work

- Security and Privacy Features
- Customization and User Experience
- Community Engagement and Support
- Regular Updates and Feature Innovation

# Conclusion

In conclusion, custom ROMs offer users a pathway to personalize and optimize their device experiences beyond manufacturer-provided firmware, fostering a culture of innovation and individualization within the Android ecosystem.

# Reference

1	<a href="https://www.linkedin.com/pulse/custom-roms-surya-a/">https://www.linkedin.com/pulse/custom-roms-surya-a/</a>
2	<a href="https://www.fiverr.com/bilaljaved1789/all-android-rom-customization-frimware-customization">https://www.fiverr.com/bilaljaved1789/all-android-rom-customization-frimware-customization</a>
3	<a href="https://www.fiverr.com/one_family/advise-how-to-secure-your-custom-android-firmware-or-rom">https://www.fiverr.com/one_family/advise-how-to-secure-your-custom-android-firmware-or-rom</a>
4	<a href="https://smowl.net/en/blog/digital-privacy/">https://smowl.net/en/blog/digital-privacy/</a>
5	<a href="https://xdaforums.com/t/custom-rom-advice-looking-for-a-kid-friendly-solution.4259189/">https://xdaforums.com/t/custom-rom-advice-looking-for-a-kid-friendly-solution.4259189/</a>
6	They are sorted by theme so you can use them in all kinds of presentations

The image features a white background with decorative purple elements in the corners: a rounded rectangle in the top-left, a circle in the top-right, a circle in the bottom-left, and a rounded rectangle in the bottom-right.

Thanks!