

PROJECT ABSTRACT

SGPA/CGPA Planner Android App

An Android app concept that tracks semester SGPA's, computes CGPA on a gauge, offers a live SGPA calculator with credit-weighted grades, and a target planner that derives the exact SGPA needed next semester for a CGPA goal. Delivered built-to-order with the working demo flow, source, report, PPT and viva kit.

01. Title

SGPA/CGPA Planner Android App

02. Introduction / Background

Every semester students ask the same two questions: 'what is my CGPA now?' and 'what SGPA do I need to reach my target?' The answers live scattered across mark sheets and spreadsheet formulas most students never build. A planner app centralizes this: semester-wise SGPA history, a live CGPA gauge, a calculator where changing any grade recomputes SGPA instantly, and a target planner that inverts the CGPA formula to give the exact required SGPA — with an honest verdict when the goal is mathematically out of reach.

03. Problem Statement

CGPA planning is done on scrap paper or not at all, so students set unrealistic targets or miss achievable ones. The project addresses this with a mobile planner: the dashboard shows CGPA and semester history; the calculator computes credit-weighted SGPA live from subject grades; the target planner solves $\text{required-SGPA} = (\text{goal} \times \text{totalCredits} - \text{currentCGPA} \times \text{doneCredits}) / \text{nextCredits}$ and reports feasibility, plus what-if scenarios for common goals.

04. Objectives

- Maintain semester-wise SGPA history with credit counts.
- Render CGPA on an animated gauge with the credit-weighted computation.
- Provide a live SGPA calculator: subjects with credits and grade dropdowns (O/A+/A/B+/B/C/P/F).
- Implement the target planner with feasibility verdicts (achievable / stretch / impossible).
- Show what-if scenarios mapping assumed SGPA to resulting CGPA.
- Support adding/removing subjects dynamically in the calculator.
- Deliver the complete student kit: demo flow source, report, PPT and viva Q&A.;

05. Proposed Methodology

Grades map to grade points on the standard 10-point scale (O=10 ... F=0). SGPA is computed as $\Sigma(\text{credits} \times \text{points}) / \Sigma \text{credits}$; CGPA extends this across semesters. The calculator binds input events on every row so any change recomputes instantly. The planner inverts the weighted-average formula to solve for the required next-semester SGPA and classifies it: ≤ 8.5 achievable, 8.5–10 a stretch, > 10 impossible — each with tailored guidance.

06. System Architecture / Working

Three screens: Dashboard (CGPA gauge, semester cards, CTA into the calculator), Calculator (dynamic subject rows with name/credits/grade, live SGPA result card), and Target Planner (four numeric inputs, calculate button, verdict card, what-if list). All computation is client-side and immediate; the dashboard pre-loads five semesters of realistic history.

07. Hardware / Software Requirements

- Android smartphone (demo flow runs in any modern browser)
- Kotlin + Jetpack Compose (production build path); HTML/CSS/JS for the interactive demo flow
- Optional: Room database for multi-year grade history

08. Expected Outcomes

- A working planner: dashboard gauge, live SGPA calculator, target planner.
- Correct credit-weighted SGPA/CGPA math with instant recomputation.
- Feasibility verdicts and what-if scenarios for CGPA goals.
- A complete report, PPT and viva Q&A; on the grading math and app logic.

09. Applications

- Semester planning for engineering students under credit-based grading.
- Academic counselling: advisors can demo 'what it takes' scenarios.
- Fresher-year orientation kits.

10. Future Scope

- Import of marksheets via photo/CSV parsing.
- Backlog-impact simulator for failed subjects.
- Department-wise grade-distribution benchmarks.
- Reminder nudges before semester grade deadlines.