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Executive Summary – *RootBeer Security Library* (scottyab/rootbeer)

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Project Overview

RootBeer is our Android security library aimed at detecting if a device has been rooted, helping prevent security breaches. Over the past ~9 years (roughly 500 weeks of activity), the project has attracted **36 source files** and **20 distinct contributors**. Development initially centered on core functionality for root detection, and later evolved to refine edge-case handling and integrations with other Android security checks.

Key Highlights

- **Steady Activity**
  - Commits extend from the project's inception to the present, with notable spikes in the first 100 weeks and a recent cluster of commits around weeks 400–500.
- **Most-Touched File**
  - *RootBeer.java* has been updated **53 times**, the highest among all source files. This suggests it is central to the library's functionality and frequently refined for bug fixes or feature enhancements.
- **Top Contributors**
  - **scottyab** (the original author) remains the principal contributor, accounting for the majority of significant changes.
  - Several secondary contributors (e.g., *LeonKarabchevsky*, *stealthcopter*, *namouchsilim*) have made periodic feature updates and fixes.
- **Recent and Potentially Inactive Authors**
  - The scatter plot indicates a handful of developers who were very active in the early stages but show no commits in the past 100–200 weeks (e.g., *ArstemKurantsou*, *BlizzedRu*). These contributors may have moved on or become inactive.
  - In contrast, others like *Mohammed Ezzat* and *aippisch* appear to have engaged more recently, suggesting ongoing collaboration with scottyab.

Overall Status

- **Quality & Maintenance**
  - The library remains **actively maintained** with continued commits on core security checks.
  - Frequent touches to the key files show iterative improvements, reflecting code refactoring, bug fixes, and new security detection logic.
- **Risks & Opportunities**
  - With only a handful of core maintainers regularly contributing, the project risks slowed progress if they become unavailable.

- ○ High-activity files (like *RootBeer.java*) may need a deeper refactoring or dedicated ownership to streamline future updates.

Useful Git Commands & Analysis

- Using **`git log --pretty=oneline`** and **`git shortlog -sn`** helped identify active contributors and overall commit counts.
- **`git blame`** on high-change files showed which sections specific authors worked on the most.
- **`git diff`** and **`git show`** were used to understand the nature of changes (bug fixes vs. new features).

Charts and Graphs
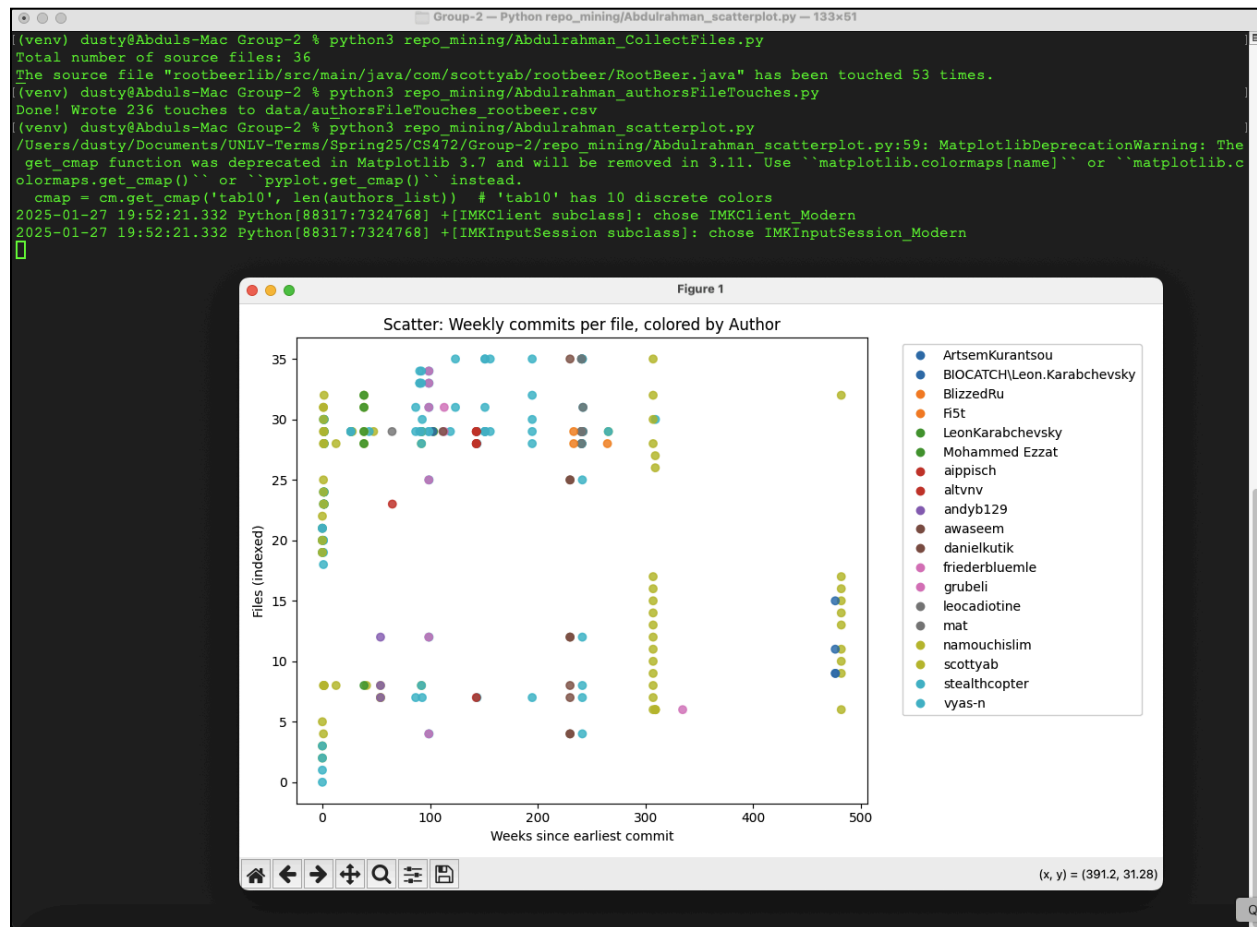
Recommendation

Continue monitoring contributions from newer, active developers. Consider assigning additional support to critical files like *RootBeer.java* to ensure updates remain clean and consistent. Overall, the project is stable, drawing a moderate flow of commits and retaining strong core maintainers.