

# Problem Statement 4

## Web Development – "Dev Insights: GitHub Repo Analyzer"

### Problem Statement:

Developers often need quick insights into GitHub repositories, such as contributor activity, issue trends, and pull request patterns. Manually checking repo stats is time-consuming, and GitHub's default analytics lack customization.

### Challenge:

#### Develop a web app that:

Takes a GitHub repository URL as input.

Fetches real-time repository stats using the GitHub API.

Visualizes insights like contributor activity, issue trends, and PR frequency using charts.

Provides an easy-to-read report with key metrics.

### Expected Features & Implementation:

#### Core Functionalities:

##### GitHub Repo Data Fetching

- Accept a GitHub repository URL from the user.
- Fetch key details using GitHub's REST API:
  - Stars, Forks, Open Issues, Pull Requests, Watchers.
  - Top contributors & their commit counts.
  - Issue trends (how many issues are opened/closed per month).

##### Data Processing & Insights Generation

- Calculate:
  - Most active contributors (rank by commits).
  - PR frequency (how often pull requests are merged).
  - Issue resolution time (how long issues remain open).
- Store results temporarily (caching recommended for performance).

##### Visual Report Generation

- Display bar charts, pie charts, and trend lines for repo activity.
- Provide a summary report with key insights (e.g., repo health score).