Tutorial 4: System Design Exercises

Design a system to facilitate the functional and nonfunctional requirements of the following solutions.

Application	Description	Functional Requirements	Non-Functional Requirements
Pot-Hole Spotter	Crowd sourced application to report potholes and create potholes citing leaderboard of the regional corporations responsible.	• View pothole map • Report pothole with location and picture • Pothole free navigation • Report fixed pothole with location and picture	• Accessibility, should be able to log reports even while offline • Scalability: Upload functionality should be isolated to a microservice due to the high memory requirements
Regional Fruitdex	An application to identify regional fruits by camera and provide their different regional names.	• Identify fruit • Submit fruit data • Verify other fruit submissions	• Performance, fruits should be correctly and quickly identified • Accessibility: should have some offline functionality • Robustness; System should have a fallback mechanism for fruit identification
Type Racer	A multiplayer speed typing competition game	• Enter race • View race results • View race history	• Responsiveness: Application must visualize the progress of all racer to all players in real time

Template