AtLongLat! Location aggregation and developer platform

Abstract
AtLongLat lets users share their location, from many devices, with web services via a developer platform focused on privacy and security.

Motivation
- Aggregate location from devices
- Manage privacy and access
- Broadcast location securely

Features
- Source / application requests via http
- OAuth authentication
- Blackout range management
- User & application level options
- Proximity obfuscation
- Source, application, and privacy interfaces
- Application registration
- Application gallery
- Plug-in architecture
- Automatic recalculation

System Design

Architecture Design Goals
- Modularity: Plug-in architecture for aggregation, rapid development on independent layers, extensible privacy framework
- Abstraction: Abstract implementation details from other layers and 3rd parties, mapping database models to Python classes
- Security: Standard secure protocols to 3rd parties via API, handshake mechanism for authentication
- Testing: Test implementations given standard interfaces, generate data simulating device readings

System Overview
- Application Interface Layer
- Privacy Layer
- Aggregation Layer
- Source Interface Layer

Motivation
- Aggregate location from devices
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Consumers
- Standard API to query location
- Abstract privacy settings
- Develop independent of device

Developers
- Aggregate location from devices
- Manage privacy and access
- Broadcast location securely

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AtLongLat iPhone application sends and receives a user's location to and from the server AtLongLat Updater authenticates and updates a user's location to the Twitter service

Conclusion
Designed and implemented a location brokering service to solve:
- Location aggregation needs
- Device independent location queries
- Privacy issues of broadcasting