Virtual Tour*

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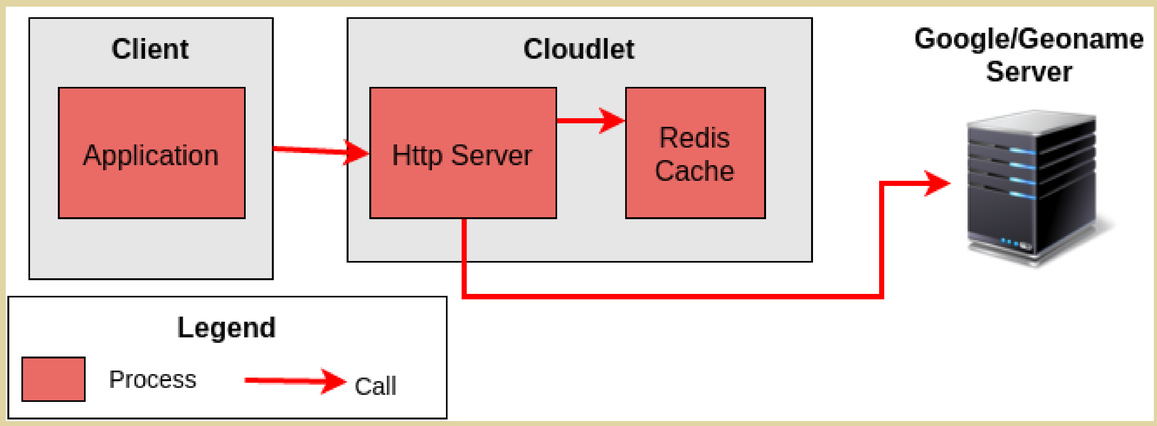
15821- Mobile and Pervasive Computing

PROJECT OVERVIEW

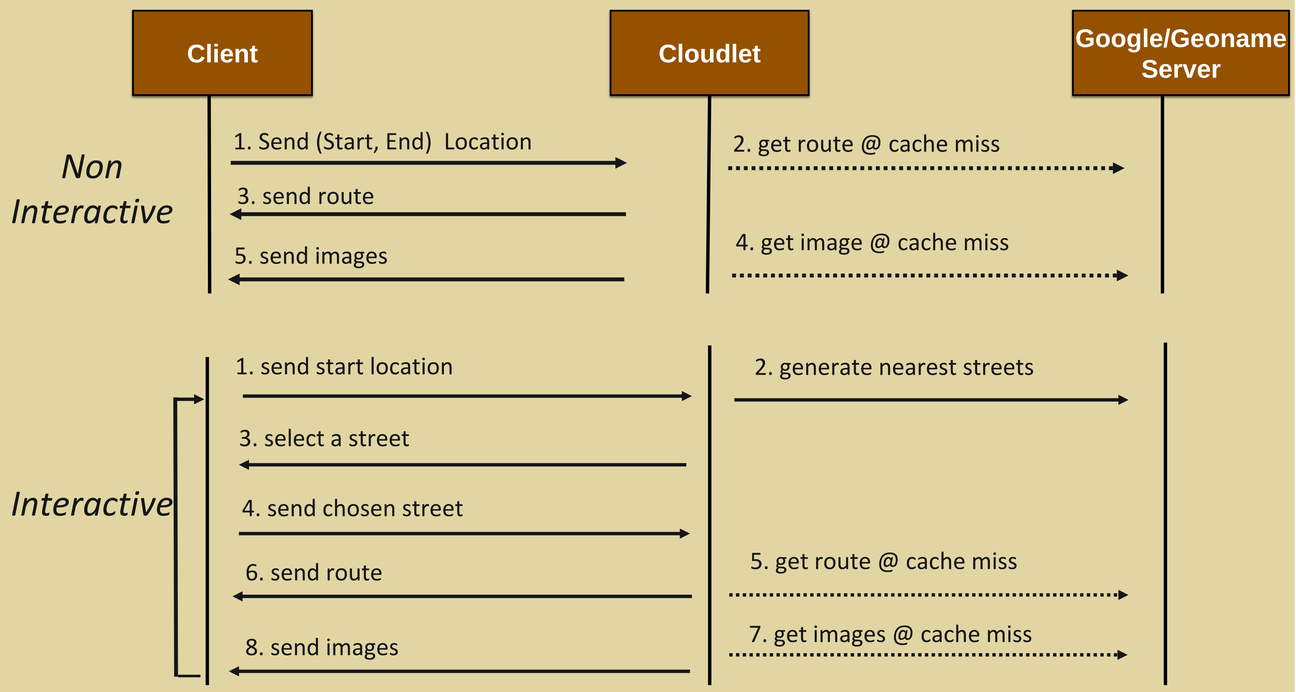
Developed a web application which provides virtual tour of any city* in the world. Cardboard Integration provides an immersive experience. Cloudlet is used as a cache for street-view images for faster downloading of data. Application works on any Windows, Android, iOS device**.

** Street view images should be available*
*** Browser should support Web-GL*

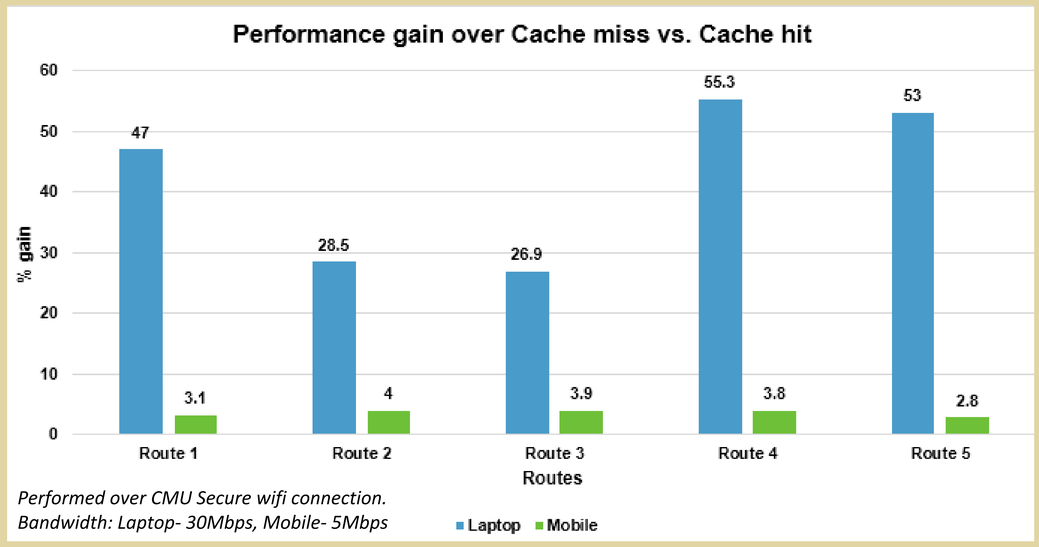
ARCHITECTURE



Sequence Diagram



RESULT



Performed over CMU Secure wifi connection.
Bandwidth: Laptop- 30Mbps, Mobile- 5Mbps

Due to multi-hop network between mobile client and cloudlet, benefit of cache hit is not seen. A single hop network connection would give cache hit benefit on low bandwidth.

LESSONS LEARNED

Having cloudlet as a caching resource eliminates the need to extensively cache on the client.

CHALLENGES

- Google street-view services can run on browser JavaScript only. Porting them to server took considerable time and effort.
- Complete information of nearby streets (intersection, relative position) is not available without using Google services.

FUTURE WORK

- Align images with route direction
- Use users' eye movement to choose new end-point for interaction purpose
- Display position of near-by streets relative to current location
- Provide cardboard support for the interactive application

** Inspired from https://github.com/TeehanLax/Hyperlapse.js*