**Proposed System:**

To address this challenge, in this paper, we propose *LocX* (short for location to index mapping), a novel approach to achieving user privacy while maintaining full accuracy in location-based social applications (LBSAs from here onwards).

Our insight is that many services do not need to resolve distance-based queries between arbitrary pairs of users, but only between friends interested in each other’s locations and data. Thus, we can partition location data based on users’ social groups, and then perform *transformations* on the location coordinates before storing them on un trusted servers. A user knows the transformation keys of all her friends, allowing her to transform her query into the virtual coordinate system that her friends use. Our coordinate transformations preserve distance metrics, allowing an application server to perform both point and nearest-neighbor queries correctly on transformed data. However, the transformation is *secure*, in that transformed values cannot be easily associated with real world locations without a *secret*, which is only available to the members of the social group. Finally, transformations are efficient, in that they incur minimal overhead on the LBSAs. This makes the applications built on LocX lightweight and suitable for running on today’s mobile devices.