

**RASHMI N S**

**20PW28**

### **Database Management**

There are 3 Enhancement Methods:

- Per User Location Caching
- User Profile Replication
- Forwarding Pointers

#### **Per User Location Caching:**

**Concept-** This technique involves storing the location data of a user on the user's device or on a nearby server, rather than retrieving it from the network every time it is needed. The location data is stored in a cache on the user's device or on a nearby server, and is used to provide location-based services (such as navigation) when the user requests them. When new location data becomes available, it replaces the previous data in the cache.

Suppose let's say, when user Y calls X, then X's location is cached and stored in the VLR of the Y's Location Area(LA). So, any subsequent call to X from that particular Location Area can reuse this information. It does not need to contact user X's HLR.

#### **Cache Invalidation:**

**Eager Caching –** All the data's are immediately cached as soon as it is received, regardless of whether it will be needed in the future. Here, whenever a user moves to a new Location Area, all the cache entries for this user's location are updated. Location update cost increases if a user moves frequently, as many updates has to take place.

**Lazy Caching -** Data is only cached when it is actually needed, rather than pre-emptively caching all data. There comes 2 cases: a hit or a miss. When a hit occurs, the data is directly fetched and served. But, when a miss occurs, it contacts HLR, gets the updated location and updates the cache. Now new location is served.