1. **Update gps\_poitnst.time\_diff): (uid=1)**

update geolife.gps\_points set time\_diff=m.b from

(select seri, b.time\_p-lag(b.time\_p) over (partition by b.day\_week order by b.time\_p ASC) as b from geolife.gps\_points as b where uid=1) as m where geolife.gps\_points.seri=m.seri;

1. **Update gps\_points.distance):(uid=1)**

**Update geolife.gps\_points set distance=m.b from (**select seri,st\_distance\_sphere (geog\_p,lag(geog\_p) over (partition by day\_week order by time\_p ASC)) as b from geolife.gps\_points where uid=1**) as m where geolife.gps\_points.seri=m.seri**

1. **Update gps\_points.speed: uid=1**

update geolife.gps\_points as a set speed=(distance/extract(epoch from time\_diff)) where uid=1;

1. **Set error points speed =0**

update geolife.gps\_points as a set speed=Null where uid=1 and time\_diff>’00:00:05’

1. **Count speed frequency**

select speed, count(\*) from geolife.gps\_points where uid=1 group by speed ;

1. **Find out home location**

select \* from geolife.gps\_points where uid=1 and hour\_day>'2:00:00'and hour\_day<'5:00:00'and day\_week<5 and speed=0;

1. **Add a new column “geop\_p”(geometry(point))**

alter table geolife.gps\_points add column geop\_p geometry(Point,3857);

1. **Update geop\_p from geog\_p (4326->3857)**

update geolife.gps\_points set geop\_p=(st\_transform(st\_setsrid(geog\_p,4326),3857)) where uid=1;