1. **Create a table “time\_d” and get time\_diff(uid=1):**

CREATE TABLE geolife.time\_d

(

seri bigint NOT NULL,

time\_diff interval,

CONSTRAINT pri\_seri PRIMARY KEY (seri)

)

WITH (

OIDS=TRUE

);

insert into geolife.time\_d(seri,time\_diff)

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

1. **Update gps\_points.time\_diff :**

update geolife.gps\_points as gps set time\_diff = (select time\_diff from geolife.time\_d as time where gps.seri=time.seri )

1. **Create a table “distance\_d” and get distance(uid=1):**

CREATE TABLE geolife.time\_d

(

seri bigint NOT NULL,

time\_d interval,

CONSTRAINT pri\_seri PRIMARY KEY (seri)

)

WITH (

OIDS=TRUE

);

insert into geolife.dist\_d (seri,distance)

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

1. **Update gps\_points.distance:**

update geolife.gps\_points as gps set distance=(select distance from geolife.dist\_d as dis where dis.seri=gps.seri)

1. **Add a column called time\_diff\_s(integer) to table gps\_points**
2. **Create a table “time\_d\_s” and get time\_diff\_s(integer):**

CREATE TABLE geolife.time\_d\_s

(

seri bigint NOT NULL,

time\_diff\_s integer,

CONSTRAINT pri\_time\_d\_s PRIMARY KEY (seri)

)

WITH (

OIDS=TRUE

);

insert into geolife.time\_d\_s(seri,time\_diff\_s)

select seri,(select extract(epoch from time\_diff))as lol from geolife.gps\_points where uid=0 order by seri;

1. **Update gps\_points.time\_diff\_s:**

update geolife.gps\_points set time\_diff\_s=

(select time\_diff\_s from geolife.time\_d\_s where geolife.gps\_points.seri=geolife.time\_d\_s.seri)

1. **Create a table”err\_p” and get seri\_err(bigint):**

CREATE TABLE geolife.err\_p

(

seri bigint NOT NULL,

CONSTRAINT pri\_err\_p PRIMARY KEY (seri)

)

WITH (

OIDS=TRUE

);

1. **Insert into err\_p if ime\_diff>5s:**

insert into geolife.err\_p(seri) select seri from geolife.gps\_points where uid=0 and time\_diff\_s>5 order by seri;

1. **Update gps\_points (time\_diff, time\_diff\_s,distance)=NULL**

update geolife.gps\_points

set time\_diff=NULL,distance=NULL,time\_diff\_s=NULL

where seri in (select b.seri from geolife.err\_p as b);

1. **Calculate speed and update gps\_points table**

update geolife.gps\_points

set speed=w.speed

from (

select seri,distance/time\_diff\_s as speed from geolife.gps\_points where uid=0 order by seri

) as w

where geolife.gps\_points.seri=w.seri

1. **Count speed frequency**

select speed, count(\*) from geolife.gps\_points where uid=0 group by speed ;

1. **Find out home location**

select \* from geolife.gps\_points where uid=0 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 =a.geop\_p from (select seri,st\_transform(st\_setsrid(geolife.gps\_points.geog\_p,4326),3857) as geop\_p from geolife.gps\_points where uid=0) as a

where geolife.gps\_points.seri=a.seri;