ADBMS PROJECT PRESENTATION

-JHANVI BHALODIA
(E281)

TOPIC:

Geospatial Database for Location-Based Services.

Developing a geospatial database capable of efficiently storing and querying location-based data for applications like navigation or location-based marketing.

REAL-LIFE USES:

Problem:

Optimizing Delivery Routes for a Logistics Company.

Solution:

Imagine you're working with a logistics company that delivers packages to customers across a city or region.

Challenges:

1.Route Optimization:

The company needs to determine the most efficient routes for its delivery vehicles to minimize travel time and fuel costs while ensuring timely deliveries.

2.Real-time Tracking:

Customers want to track the real-time location of their deliveries and receive accurate estimated arrival times.

3.Geofencing:

The company wants to set up geofences around specific areas, such as warehouses or no-delivery zones, to monitor and control vehicle access.

Solution:

1.Location Data Storage:

The project creates a geospatial database where each delivery vehicle's location is stored as a unique record with latitude and longitude coordinates

2.Real-time Tracking:

The database continuously updates vehicle locations. A front-end application or mobile app can query the database to provide real-time tracking to customers.

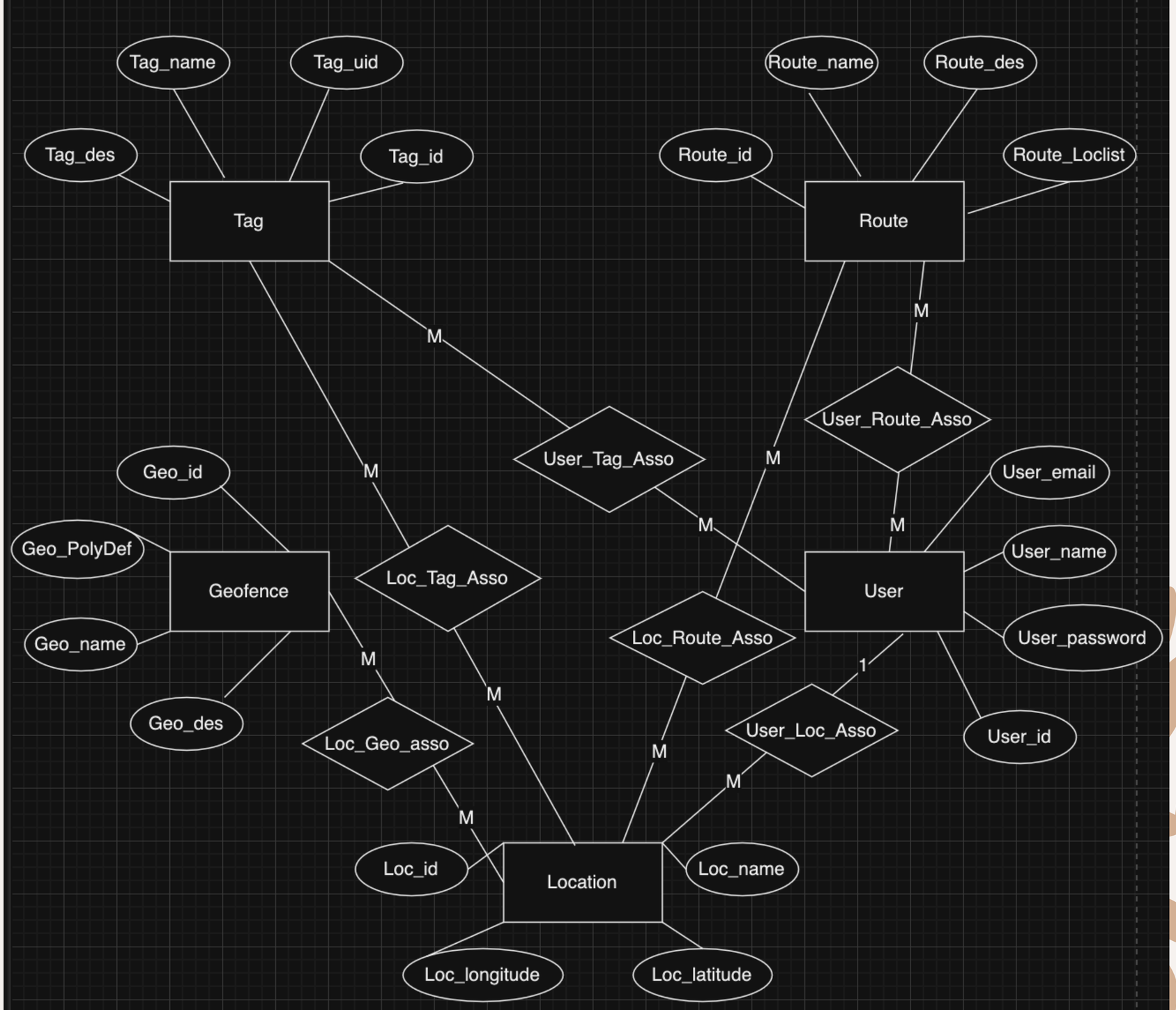
3.Route Optimization:

The project can incorporate advanced algorithms to calculate optimal delivery routes based on vehicle location and delivery destinations, taking into account traffic conditions and delivery time windows.

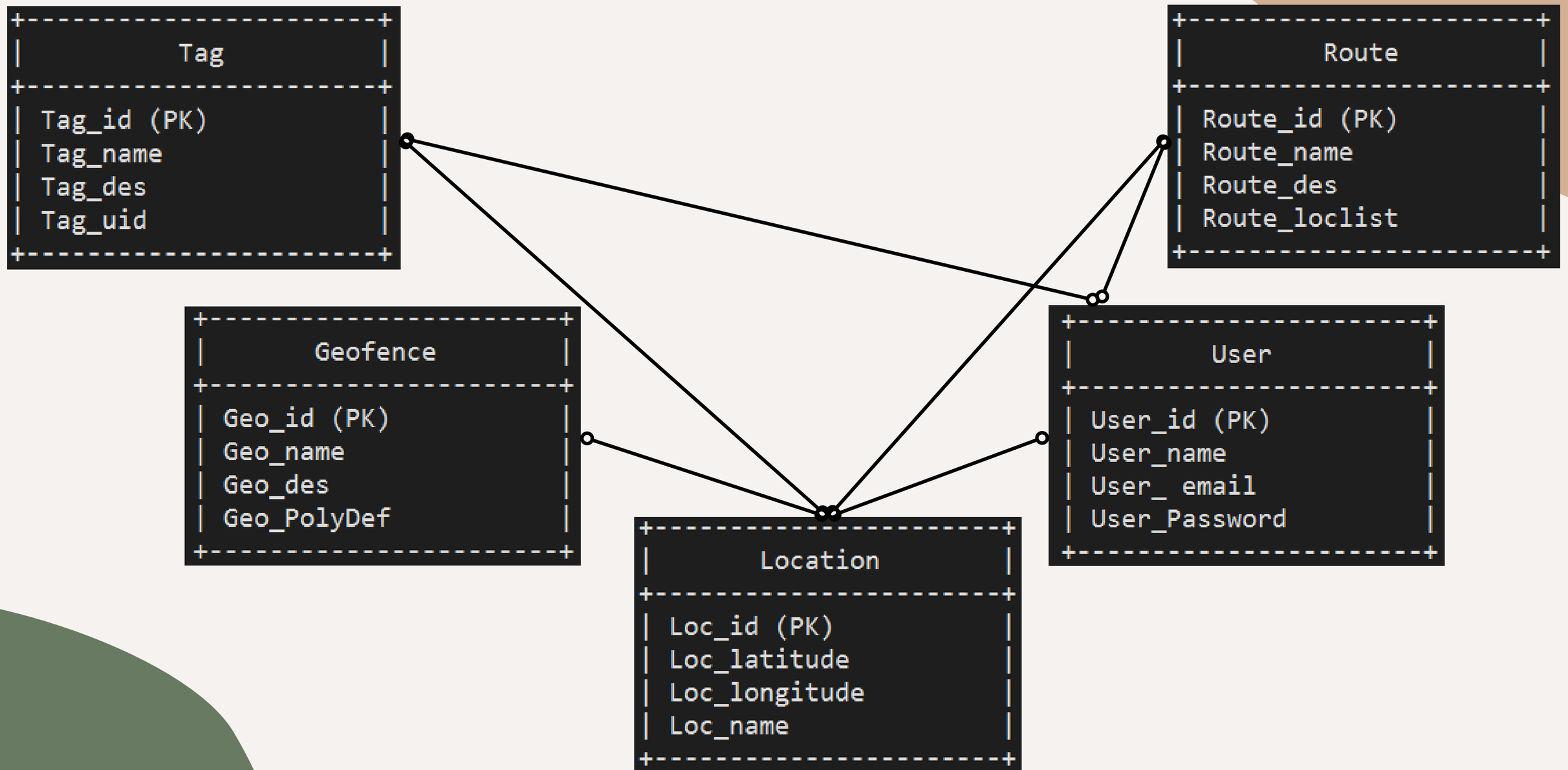
4.Geofencing:

Geofence data can be stored in the database. When a vehicle enters or exits a geofenced area, the system can trigger notifications or enforce specific rules.

E-R DIAGRAM:


Tag_name
Tag_uid
Tag_des
Tag_id
Tag
Route_name
Route_des
Route_id
Route_Loclist
Route
M
M
User_Route_Asso
User_Tag_Asso
M
M
Geo_id
Geo_PolyDef
Geofence
Geo_name
Geo_des
Loc_Tag_Asso
M
M
M
Loc_Route_Asso
User_email
User_name
User_password
User
User_id
1
M
M
User_Loc_Asso
Loc_Geo_asso
M
M
Loc_id
Location
Loc_name
Loc_longitude
Loc_latitude

TABLES:


Tag
Tag_id (PK)
Tag_name
Tag_des
Tag_uid
Route
Route_id (PK)
Route_name
Route_des
Route_loclist
Geofence
Geo_id (PK)
Geo_name
Geo_des
Geo_PolyDef
User
User_id (PK)
User_name
User_ email
User_Password
Location
Loc_id (PK)
Loc_latitude
Loc_longitude
Loc_name

THANK YOU!