**Technical Documentation for Taxi Geolocation Simulator**

**1. Introduction**

This document describes a Python script that simulates the generation and periodic retrieval of taxi geolocations. The script can be used for testing or demonstration purposes where taxi locations are needed.

**2. Dependencies**

The script relies on the following Python libraries:

* random: Used for generating random numbers.
* time: Used for getting the current time and sleep functionality.

**3. Functionality**

The script provides two main functions:

* **generate\_random\_geolocation()**: This function generates a random latitude and longitude within a plausible range (-90 to 90 for latitude and -180 to 180 for longitude).
* **get\_taxi\_geolocations(num\_taxis=5)**: This function creates a list of dictionaries containing the geolocations for a specified number of taxis (default is 5). Each dictionary has the following keys:
  + latitude: The randomly generated latitude value.
  + longitude: The randomly generated longitude value.

The script also includes a main function that continuously retrieves and prints the taxi geolocations. Here's a breakdown of the main function:

* **Infinite Loop**: The main function utilizes a while True loop to continuously perform the following actions:
  + **Generate Taxi Geolocations**: It calls the get\_taxi\_geolocations function to generate a fresh list of taxi locations.
  + **Print Geolocations**: It iterates through the list of taxi locations and prints the taxi number, latitude, and longitude for each taxi. It uses time.strftime to format the current timestamp for the printout.
  + **Wait for Next Update**: It calls time.sleep(90) to pause the script for 90 seconds before retrieving taxi locations again.

**4. Usage**

1. Save the script as a Python file (e.g., taxi\_geolocation\_simulator.py).
2. Run the script from the command line using python taxi\_geolocation\_simulator.py.

This will start the simulation, and the script will continuously print taxi geolocations every 90 seconds.

**5. Explanation of Key Parts**

* **random.uniform(a, b)**: This function from the random library generates a random floating-point number between the values a (inclusive) and b (exclusive). It's used to create realistic latitude and longitude values within a specific range.
* **time.strftime('%Y-%m-%d %H:%M:%S')**: This function from the time library formats the current date and time according to the specified format string. The provided format string represents year-month-day, hours-minutes-seconds.

**6. Conclusion**

This Python script provides a basic simulation for generating and retrieving taxi geolocations. It can be a helpful tool for testing or demonstration purposes where taxi location data is required. The script can be further extended to incorporate additional features, such as storing the generated locations in a file or database.

**Running the python script results:**

