import csv

import random

from datetime import datetime, timedelta

# Define the range of the Great Bear Rainforest

# Start: Eastern part

start\_lat = 53.0

start\_lon = -127.0

# End: Western part

end\_lat = 53.2

end\_lon = -128.0

# Total hours in 6 days

total\_hours = 6 \* 24 # 144 hours

# Define the step increments for latitude and longitude

lat\_step = (end\_lat - start\_lat) / total\_hours

lon\_step = (end\_lon - start\_lon) / total\_hours

# File name for CSV output

csv\_filename = 'elk\_movement.csv'

# Create a list to store the data

data = []

# Initialize starting latitude and longitude

lat = start\_lat

lon = start\_lon

# Current time

current\_time = datetime.now()

# Generate data for each hour

for hour in range(total\_hours):

lat += lat\_step

lon += lon\_step

timestamp = current\_time + timedelta(hours=hour)

# Create a row of data

data.append([timestamp.strftime('%Y-%m-%d %H:%M:%S'), lat, lon])

# Write the data to a CSV file

with open(csv\_filename, mode='w', newline='') as file:

writer = csv.writer(file)

# Write the header

writer.writerow(['Timestamp', 'Latitude', 'Longitude'])

# Write the data rows

writer.writerows(data)

print(f"Elk movement data has been written to {csv\_filename}")