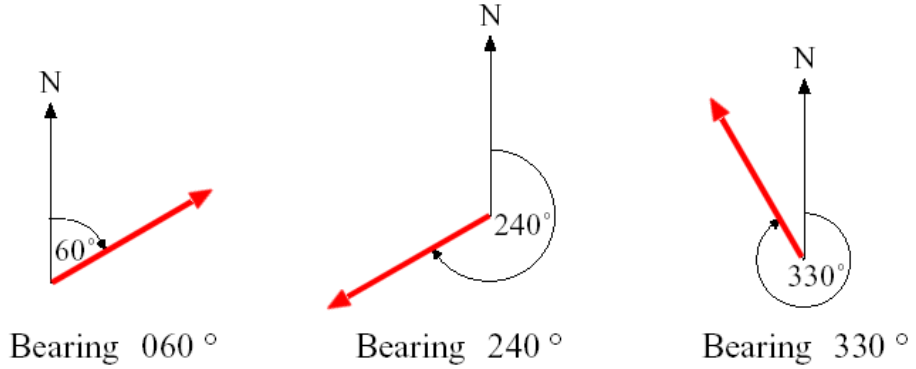
Sierra Nevada Corporation
Programming Assessment

Please provide source for a program that fulfills the following requirements to the best of your ability. Source code shall be Java, version 8 or newer. Our team uses Maven to compile our projects. If you choose a different environment, please provide instructions to compile and run in win32/x64, as well as a compiled win32/x64 deliverable. There is no need for an installer or GUI interface – command line arguments or configuration files are acceptable.

Create a program to generate emulated travel log outputs. These travel logs must comply with the provided interface description, and these constraints:

- Your program must be capable of generating a random JNY file specifying a car along with its path.
- Your program must be capable of generating a random JNY file specifying a boat along with its path.
- The properties of the vehicle (weight, width, height, etc) can be wildly random, so long as names and descriptions are human-readable.
- Semi-realistic waypoints for the vehicle must be generated, with the following constraints:
    - There should be between 10 and 30 waypoints, inclusive.
    - They should be generated using some sort of semi-randomized ground speed and bearing. If you are unfamiliar with the concept of bearing, see the below diagram.



Bearing 060 ° Bearing 240 ° Bearing 330 °

    - All cars travel between 25 and 60 miles per hour.
    - Motor boats travel between 25 and 60 miles per hour.
    - Sail boats travel between 15 and 30 miles per hour.
    - Unpowered boats travel between 1 and 10 miles per hour.
    - The vehicles must turn at least 3 times on their route.
    - Cars cannot turn more than 90 degrees between waypoints.
    - Boats cannot turn more than 30 degrees between waypoints.

Java code to compute ground distance and move lat/lon points by linear feet has been included to help with this.

- Boats can't be on the land! Your boats must remain within one of the following zones at all times, picked randomly per boat. (Our cars are amphibious, don't worry.)
    - Zone 1: Latitude: 15.6 to 56.2, Longitude: -49.8 to -23.1
    - Zone 2: Latitude: -48.8 to -6.9, Longitude: -28.6 to 8.2
    - Zone 3: Latitude: -43.4 to 8.1, Longitude: -161.4 to -98.4
    - Zone 4: Latitude: -41.1 to -1.4, Longitude: 62.2 to 94.5