UBC Sailbot

Software Technical Questions

Compress files and return to control@ubcsailbot.org

Python Section

For the following questions, write one python file with a main that calls each function.

1) An autonomous sailing program uses angles between -180 and 179. Your job is to write a python method

```
is_angle_between(input_angle, bound1, bound2)
```

The method returns `true` when the `input_angle` is within the bounds of the angle formed by `bound1` and `bound2` (choose the angle which is <= 180 degrees).

2) Write an efficient program that will return whether a GPS coordinate `coord1` (in decimal form) is less than or equal to distance `dist` (in meters) from another GPS coordinate `coord2`. Use *6,378,100m* for radius of the earth in meters.
Method name:

```
are_coords_within_distance(dist, coord1, coord2)
```

*Be sure to have code that shows that your methods work!

Git Section

For the following questions, write out Git version control commands as you would from command line.
Answer in a file named sailbot_git_questions.txt

1) How would you clone the repository https://github.com/UBCSailbot/ubcsailbots onto your computer?

2) Suppose you have changes with a desired message: "`updated wind angles and added unit tests!`" You have a modified file `wind_angles.txt` and added a new file `test_wind_angles.py`. How would you submit all of your changes to the remote repository you cloned above?