

PROBLEM 4 - PART B

In lecture, we explored the concept of a random walk, using a set of different models of drunks. [Here is the code \(randomWalks-segment2.py\)](#) that we used in lecture for Locations, Fields, and the base class of Drunk – you should not have to study this code in detail, since you have seen it in lecture.

Rather than assuming the drunk is walking in a large field, we can assume that the field is enclosed with a fence. When the drunk reaches the fence different things may happen:

1. **SW** (Solid Walls): The drunk cannot go through the fence. If the drunk sees that his move will make him run into the fence, the drunk will hesitate and not move from the spot.
2. **SP** (Small Planet): The rightmost edge is connected to the leftmost edge, and the top edge is connected to the bottom edge.
3. **WW** (Warped World): If the drunk moves past the right-most edge, he ends up on the top edge and vice versa. If the drunk moves past the left edge, he ends up on the bottom edge and vice versa.
4. **BH** (Back to Home): Whenever the drunk reaches any edge, the drunk is transported back to the center of the world.

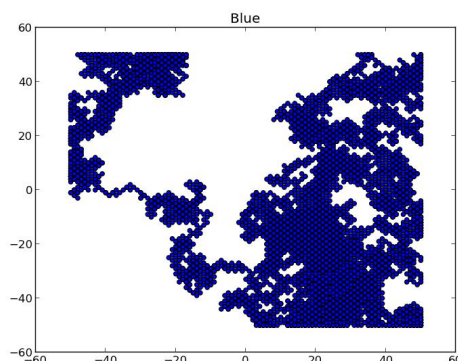
N-Random-Step: The drunk takes $N \times N$ steps with

```
dx,dy = random.choice(  
    [(-1.0,-1.0),(-1.0,0.0),(-1.0,1.0),(0.0,1.0),(0.0,-1.0),(1.0,-1.0))  
    (1.0,0.0),(1.0,1.0)]  
)
```

Assume the drunk walks for long enough that he has reached a wall. A mark is made on the graph for each position that the drunk occupies. For each of the graphs, indicate which type of walls (SW, SP, WW, or BH) bound the field. Choose option **NA** (None of the Above) to indicate that the graph is not consistent with a field that has any of the given types of wall.

Click on each graph to see the image at full size.

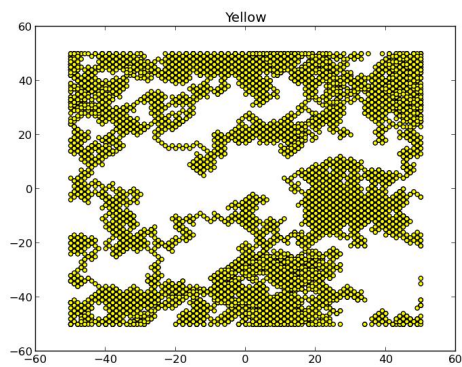
PROBLEM 4-8 (1/1 point)



- ☒ SW ✓
- ☐ SP
- ☐ WW
- ☐ BH
- ☐ NA

You have used 1 of 1 submissions

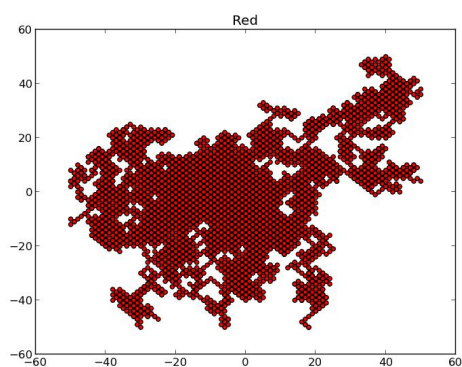
PROBLEM 4-9 (1/1 point)



- ☐ SW
- ☒ SP ✓
- ☐ WW
- ☐ BH
- ☐ NA

You have used 1 of 1 submissions

PROBLEM 4-10 (1/1 point)

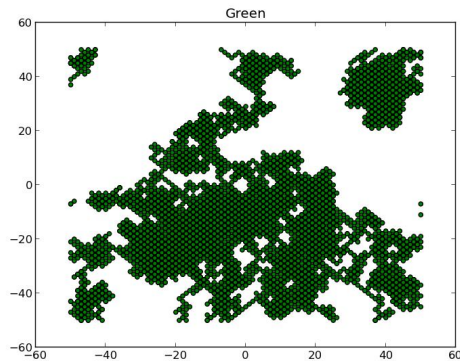


- ☐ SW

- ☐ SP
- ☐ WW
- ☒ BH ✓
- ☐ NA

You have used 1 of 1 submissions

PROBLEM 4-11 (1/1 point)



- ☐ SW
- ☐ SP
- ☐ WW
- ☐ BH
- ☒ NA ✓

You have used 1 of 1 submissions



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