**System Description**

*Neighbor Counter*

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**Context: CCRi’s Spatial Analysis**

CCRi distills spatial data to inform client decisions and develops GIS tools for cloud-based applications.

**Opportunity Neighbor Counter System Will Address**

Developing Neighbor Counter gets me thinking about spatial modeling, analysis, and visualization.

**What Neighbor Counter will Do**

Neighbor Counter will create a world, have settlers settle the world, and have settlers farm the world, all in the same farming pattern.

The Count Requester will provide world height, world width, number of settlers, and range of farming pattern with a command to start the application. The application will provide an introduction, which will use the provided parameters.

During the course of its run, the program will request permission to display the settled world, the farming pattern, and the settled and farmed world. The Count Requester will provide permission, or not.

Toward the end of its run, the application will provide to the Count Requester the number of cells of the world that were settled and farmed.

**Iterations of Development**

At the end of Iteration…

1. Neighbor Counter will have its minimum viable capability of creating a world, having settlers settle the world at random, having settlers farm the world all in the same von-Neumann farming pattern, providing opportunities to display the world and the farming pattern, and provide the total number of cells of the world farmed.
2. Neighbor Counter will have additional functionality to specify initial positions of settlers, have settlers farm the world in different patterns, and customize the shape of the world.
3. Neighbor Counter will have a React-based Graphical User Interface.