# Testing

Effect of creation probability:

The higher the creation probability of each person the more people there are in the room therefore less empty space in the party room. While changing the probabilities of all people I have found that when the guests creation probabilities are high compared to the hosts probabilities, there is more movement of guests than hosts as the hosts have less space to move to. However, when the host probability is higher than all of the guest probability guests still move around just as much as the hosts do.

Effect of distance n:

The distance n, the maximum distance a person can move away from their current position, affects how fast the people move around in the simulation. The lower the value of n the faster the people move around the simulation, this can be because there are less spaces to be checked before moving which reduces the time taken for a person to be moved. When the range of movement is lower, there is more space between people as they move around which separates the larger groups of people into smaller ones, meaning more interactions. This allows the attendees to meet more types of people other than their own types and have more intimate interactions in smaller groups.

Effect of different room sizes:

The size of the room affects the length of the party simulation. When the dimensions are smaller, the party room is smaller, as there are less spaces to be checked before moving each person this speeds up the simulation making the length of the simulation faster than if the dimensions of the party are bigger. This also affects the speed of the movement of the people around the party. When the dimension sizes are lower the people move around the party at a faster pace than when there are smaller dimensions.

What happens if only one type of guest attends the party?

When only one type of guest attends, all the guests group together and move around the room in big clusters and join other groups of the guests. The hosts move around individually joining the groups of guests or other individual or small groups of hosts.

What happens if only two types of guest attend the party?

If two types of guests attend the result is similar to one guest type attending. Each type of guest moves around in a group of themselves and join with other groups of a type of guest, while all moving around together. The hosts move around individually while joining different groups of guests or other individual hosts.

What happens if there are no hosts at the party?

When there are no hosts the guests move around in big groups of their own type joined with other groups which are also of one type. They all move around in a few big groups of guests.

What purpose do hosts serve?

The hosts help to break these groups down into smaller groups. They ensure that the guests are interacting with more people at the party rather than sticking in big groups of their own type. This means that they are meeting more people that are not just of their type and moving around the party more.

How does distance n affect the number and size of clusters that the guests form?

As n increases the size of the clusters increases which decreases the number of clusters there are. When n is lower the guests interact in a higher number of smaller groups scattered around the party.