Link to github: https://github.com/Darkat-X/Rutgers-CS428-523-Social-Force
Links to videos:
Part1: https://www.youtube.com/watch?v=De91X7eJXwU
Part2:

Pursue and Evade: https://www.youtube.com/watch?v=7RXhgQ_DSqw
Growing Spiral: https://www.youtube.com/watch?v=yWICk4CxBck
Leader Following: https://www.youtube.com/watch?v=u68432yYVsQ
Queueing: https://www.youtube.com/watch?v=RpMiH_gdiOE

Fundamental Social Force Components:
Part 1:

Social Force = Goal Force + Agent Force + Wall Force
Agent Force = Proximity Force + Repulsion Force + Sliding Friction
Wall Force = Proximity Force + Repulsion Force + Sliding Friction

Part 2:

Pursue and Evade:

Pursuer Social Force = Goal Force From Pursuer to Evader + Agent Force + Wall Force
Evader Social Force = - Goal Force From Evader to Pursuer + Agent Force + Wall Force
If Evader is too close to the Wall:
Evader Social Force += The Tangential Force + Goal Force
So that if Evader approaches the corner, they will spin away (The center of spin should be Vector3.zero)

Growing Spiral:

Social Force = The Tangential Force + Goal Force + Agent Force + Wall Force
After a period of time:
Social Force = The Tangential Force - Goal Force + Agent Force + Wall Force

Leader Following:

Leader Social Force = Goal Force + Agent Force + Wall Force
Follower Social Force = Goal Force to the Leader + Agent Force + Wall Force
If Follower may block the way of leader:
Follower Social Force += The Tangential Force + Goal Force
The direction of the tangent is dependent on the angle

Queueing:

Social Force = Goal Force to their queue position + Agent Force + Wall Force

The queue position is the position that is a little behind the position that is next one agent closer to the destination than this agent.
The queue order is dependent on the distance from agent to the destination, after a period of time, the order will not change any more. So that the queue will form a line that goes to the destination and will not change the shape of line after a period of time.

Hints:

1. There is a private int, named “Mode” in Agent.cs. By changing the value of “Mode”, you can choose different modes. You can change it in Agent script, in start().

```
/* Mode
1 = Pursue and Evade
2 = Growing Spiral
3 = Leader Following
4 = Queueing
other number = Normal Mode for Part one */
```

2. FreeCam Keys:

wasd / arrows	- movement
q/e	- up/down (local space)
r/f	- up/down (world space)
pageup/pagedown	- up/down (world space)
hold shift	- enable fast movement mode
right mouse	- enable free look
mouse	- free look / rotation