# Project Proposal:

I am proposing to make an online multiplayer tank based game. The goal of it is to allow people to play a simple classic game but in a large multiplayer context with a quick access through the web. To start out I will be making the game a downloadable LAN game so I will only need TKinter and the sockets module. If I am able to get done fast enough, then I will implement it to the web which will require use of Django and a good understanding of JS/HTML5. First I will work on basic gameplay and movement in TK inter, figuring out how to rotate and move the tanks based on user input as I want. At this point tanks will just be rectangles and bullets will just be circles. Then I will have the Tanks spawn bullets based on another user input. Then I will work on some basic collision detection with the edge of the screen to bounce bullets and then have them disappear after a certain number of bounces. After this basic single player game play is done, I will implement some basic multiplayer features using sockets just to make sure that basic gameplay with sockets is feasible and works. The difficult work comes after this where I start implementing mazes and add more complexity to the shape of the tanks/bullets. Doing collision detection for non-circular bullets with multiple rotated rectangles representing the tanks could prove to be a lot of math and complexity. Once I figure out all the algorithms here and put them in each class, the game should get to its final gameplay stages quite quickly. It will be just about adding more and more UI elements and tinkering with gameplay constants to make the user experience a lot better. I hope to reach here by the TP2 deliverable. After this I will try to implement complex features like AI, level-editing, auto level generating, or attempt to put it on the web.

# Competitive Analysis:

Many games are out there that comprise of parts of what I am trying to do. My game is in fact inspired by my best friend and I playing a large online multiplayer online game like [agar.io](http://agar.io/) and then thinking about whether we could actually apply this to the classic tank dueling games like [Tank Trouble](https://www.tanktrouble.com/) or [Wii Play: Tanks](https://www.youtube.com/watch?v=orLxrg51xL8). Both of these latter games work around the same basic overhead view of a maze with tanks moving and shooting to destroy enemy player tanks or AI-controlled tanks. The Wii play version is a bit more advanced with pseudo 3D graphics with pre-designed levels. The Tank Trouble version seems to create a random-ish maze every round, judging by the fact some of the levels end up with really poor gameplay and boxed in players. Also they both use different aiming and shooting mechanisms. The Wii Play version uses the WiiMote to aim and then D-Pad to move while Tank Trouble uses a shoot only in the direction you are facing scheme. I will likely be implementing the second control scheme just because I believe it requires higher skill and allows for 1 hand gameplay. Also my game is more likely to look a lot more like the Tank Trouble version just because it makes more sense time-wise to have randomly generated maps and simpler graphics than 3d graphics and make a whole bunch of pre-designed levels. I will also need to implement an AI that is similar to Tank Trouble’s “Leica” AI. That said, in my time playing Leica, she seems to be too strong and reacts too fast to have much of a chanThat said none of these games implement multiplayer beyond a local level on the same machine. I would be first using sockets to make it a LAN downloadable game and then hopefully implement the game with a similar interface and format to agar.io or diep.io, in that you enter a username and you get put onto a lobby with many players joining until there are enough to start a game, or you can just jump directly into a free-for-all game immediately.