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**Sprint Report 2B**

*Team Fam: Doodle Jump*

Team Fam’s goal for this sprint was to have a working 2 player game over the internet. In order for this to happen, we would need to create a database with a username/password login system to verify users. We were able to do this, and were also able to connect a client player to a host player.

We connect the client and host players and program all networking components using Unity’s Transport Layer API. We establish the connection between the client and host before synchronizing the platform generation seed over TCP and begin the game when both client and host sends each other “Ready” messages through TCP as well. Once the game begins, the host sends the player number to the clients such that if there are more than 2 players, each client will be assigned a specific player to control.

During the game, clients send their movement input to the host and the host simulates these inputs in the game. On each tick, the host sends the game state to the clients using UDP so that it sends the game state quickly but reliability is not an issue. The game state contains the locations, rotations, and velocities of all players, as well as the player’s scores and current status (dead, alive). Upon receiving the game client message, the clients will parse the message and assign each player’s location, rotation, and velocity to the respective player. Currently the game runs quite well and our next goal is to introduce latency mitigation techniques so that the game feels smooth to play even in high latency situations.