Objectives:

* Flask server with list of users and their corresponding account information.
* World manager that generates a world full of pixels
* QT menu with user login or user selection
* PyGame game shell that displays the pixels and player(s).
* Ability for players to ‘mine’ pixels.
* Controller support

Stretch Goals:

* Place mined pixels
* Craft new pixels from mined pixels
* World expands as you reach the edge, player is center of focus.

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| **Server** |
| **- users : List<Player>**  **- world : World Manager** |
| **+ login() : void**  **+ worldState() : World Manager**  **+ playerStates() : List<Player>**  **+ update() : void**  **+ controlInput() : void** |

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| **World Manager** |
| **- pixels : List<Pixel>[][]** |
| **+ generate(w : double, h : double) : void**  **+ force(x : double, y : double, strength : double) : void**  **+ getView(x : int, y : int) : List<Pixel>**  **+ tick() : void** |

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| **Pixel** |
| **- isMoving : bool** |
| **+ ForceApplied(x : double, y : double) : void**  **+ tick() : void**  **+ staticFriction : double**  **+ kineticFriction : double**  **+ colour : colour**  **+ forces : double[2]**  **+ velocity : double[2]**  **+ mass : double**  **+ position : double[2]**  **+ motionBlur : pixelChainNode** |

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| **Login Window** |
| - isConnected : bool |
| + connect() : bool  + verifyConnection() : void  + serverID : string  + userID : string  + password : string |

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| **Player** |
| **- timeUntilLogout : int** |
| **+ tick() : void**  **+ reverify() : void**  **+ move(x : double, y : double) : void**  **+ position : double[2]**  **+ cursorPosition : double[2]**  **+ userID : string**  **+ userPW : string**  **+ isMining : bool** |

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| **Player Client** |
| + tick() : void  + getWorldState() : List<x : double, y : double, c : colour>  + getPlayerLocations() : List<x : double, y : double, d : metadata> |