**CS 100 Project Proposal – Pacman++ (21100130, 21100113)**

The project is an ASCII text-based C++ 2D Console version of Pacman, where the map of the level is stored as a 2D character array 'level' with specific dimensions. 2 threads (**pac** and **ghost1**) are used for the parallel processing of the Pacman and the Ghost, with their required variables

We use 2 similar boolean type functions (**ghost\_moveAllowed()** and **pac\_moveAllowed()**) for the interactions of the Pacman and Ghost with the next character to be checked to move onto.

In the main Pacman thread, input is taken using **getch()** for movement (4D - w, a, s, d) within a **kbhit()** if selection, to only take it when a key press is detected.

Whenever the ghost collides with a wall, we call **changeGhostDirection()** that acts as a basic pathfinding decision maker by finding the best direction to change to, to get closer to the Pacman using horizontal and vertical distances from it.

**resetCursor()** is used before printing to reset the position of the active screen buffer cursor to origin (0,0),so that the previous map display is overwritten without the need to clear the screen every time.

In **printbox()**, **putchar()** is used for printing the level array within dual for loops. Also, here **SetConsoleColor()** is used that sets the screen buffer's current color attribute to the specified color value, we use this for color coding the array characters by using a switch.

**titleScreen()** displays the initial game menu allowing the user to start or quit the game.

Mainly, what’s left is the Pacman’s Super Mode, further interactions with the Ghost, conversion of all global to local variables, and a simple conversion to a round based system for game over and retrying.