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## **Project Description:**

This is the "pacman" game where a player called pacman chasing food bullets where some other ghosts chasing him. The target is to pick up all food bullets before it dies after three intersections with any ghost.

## **Classes Description:**

The project includes three main classes which are "Game", "Player", "Ghost". The Ghost inherits from the Player class and the Game includes the Player and the Ghost as composition. The main function of all classes is the "StartGame" function lying in the Game Class. This is where everything starts.

### **FrontEnd**:

- Textfile -> Shawwa && Mahmoud
- Code -> Omar

## **ClassDesign:**

• Zoom meeting.

# **Algorithms:**

- Game → Mahmoud && Omar
- Player: --→ Omar && Shawwa
- Ghost: --- → Mahmoud (Path finding)&& Shawwa

## **Bonuses:**

• Using Sprite Shapes.

### Player -shape:Sprite; -playerTexture: Texture -name: string + Player(); + Player(int, int, string, string); + setPosition(int, int): void + settexture(string imagename): void + setsize(double, double): void + move(char, int\*\* arr): void + rotatePlayer(char): void + drawPlayer(RenderWindow& window): void + drawPlayer(RenderWindow& window, Transform& trans): void + getRow(): int + getColumn(): int + getshape(): Sprite + getname(); + print\_bounds(): void + getPlayerPosition(): Vector2f Ghost mode: char result: vector<vector<int>>> grapharr: int\*\* gamearr: int\*\* ghostindex: int pacindex: int position\_to\_index(Vector2f position): int - findthepath(vector<vector<int>>): vector<int> - index to position(int): Vector2f dijkpath(int startNode): vector<vector<int>>> - Fillarray(): void + Ghost(); + ~Ghost(); + test(): void + moveGhost(Vector2f pacpos): void + Ghost(int, int, string, string) + setMode(char): void

+ FrightMode(): void + getMode(): char + destruct(): void

#### Game window: RenderWindow score: int lives: int arr: int\*\* board: RectangleShape\*\* circboard: CircleShape\*\* Pacrotation: Transform Gclock: Clock Gtime: Time setBoard(): void createWindow(int, int): void displayScore(): void displayLives():void gameover():void YouWonthegame():void increaseScore(Player pacman, Ghost Blinky, Ghost Pinky, Ghost Inky, Ghost Clyde, int):void createrandom():char moveRandomly(Ghost& Blinky, Ghost& Pinky, Ghost& Inky, Ghost& Clyde):void setInitialPositions(Player& player, Ghost& Blinky, Ghost& Pinky, Ghost& Inky, Ghost& Clyde):void setInitialPositions(Ghost&): void FrightMode(Ghost):void + Game(); + ~Game(); + setWindow(RenderWindow&):void + setScore(int):void + setlives(int):void + loop(Player, Ghost, Ghost, Ghost):void + startGame(string name):void + sendpos(Vector2f):Vector2f + getScore():int + getlives():int + getWindow(): RenderWindow