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# PACMAN GAME

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| **CLASSES USED :**Game;enitity;Pacman;Enemy;Player;map;Audio;ScoreBoard;PlayersData;losewinSound; |
| INTRODUCTION : A take on the age old game of Pacman using the concepts of Object Oriented Programming on C++  The Game has relied heavily on Composition, Association, Abstraction while also having Inheritance. |
| **1)Game :**  **Variables :**  -p1:Player ; -recorder:PlayersData ; -M:map ; -song:Audio ;  **Functions :**  +void:gamewind()  **2)Player :**  **Variables :**  -p1:Player ; -recorder:PlayersData ; -M:map ; -song:Audio ;  **Functions :**  +void:gamewind()  **3)Audio :**  **Functions :**  virtual PlayAudio(char n):void  **4)losewinSound :**  **Functions :**  virtual PlayAudio(char string):void  **5)Entity :**  **Variable :**  -xpos:int -ypos:int -symbol:char  **Functions :**  +void setpos(int x, int y) +void setsymbol(char c) +void moveup() +void movedown() +void moveleft() +void moveright() +char getSymbol() +int getXpos() +int getYpos()  **7)Pacman :**  **Variable :**  -int goal; -int level; -friend Enemy; +map m2; **Functions :**  -Pacman() : goal(0), level(0) +void setGoalnMap(int mapnumber) +void SetPColor()/ +Pacman& operator=(const Pacman& other)  **8) Enemy :**  **Variables :**  -Pacman P; -int level; -int old\_x; -int old\_y; -map m; -char m1[18][32]; -friend Player;  **Functions :**  +SetEColor(int color):void +setEnemy(int x, int y, char c, Pacman p):void  **9)ScoreBoard :**  **Variables :**  #points:int = 0;  **Functions :**  +Scoreplusvoid  +ShowScore:void  +getpoints():int  **10)Map:**  **Variables :**  + map1:char[] + map2:char[] - map3:char[]  **Functions :**  + printmap(int level):void +checkpoint(int level,int xpos,int ypos ):bool +Set\_Hashcolor():void +Set\_Barcolor():void +SetMap(char tmp\_map[][], map obj, int maplevel):void  **GLOBAL FUNCTIONS :**  void FindPath(int sx, int sy, int x, int y, int level, string name) void AddArray(int x, int y, int wc, int back, string name)  **GLOBAL VARIABLES :**  vector<target> walk\_queue\_Red;  vector<target> walk\_queue\_Pink;  vector<target> walk\_queue\_Purple;   vector<walk> BFSArray\_Pink;  vector<walk> BFSArray\_Red;  vector<walk> BFSArray\_Purple;    **CHANGES :**  1)Initially Collision detection was going to work as a friend-function but to make it easy to understand and maintain for the developers, we changed the relation between Pacman and Map obstacles to Associative relationship.  2) The motion of the enemies was supposed to be derived somewhat from that of the Pacman but to incorporate the entire random motion on the basis of BFS array, we changed it to the use of Global variables and Global Functions, working on vectors. We thought that simply changing the “change in position” by rand() would work, but then realized how it will only cause problematic motion.  3) We initially thought that the game would work majorly on Inheritance, but as it got developed, our logic and needs declared it to be majorly based on Association and Composition , while still incorporating Inheritance and Abstraction.  4) The use of SFML was dropped as we were told to leave GUI, hence we went to printing and moving the characters via change of cursor on input rather than actually moving the object as is done in SFML.  INSTRUCTIONS :  CONTROLS :  1-Arrow Keys for UP, DOWN,LEFT and RIGHT.  2- Music can be changed upon user selection from the Music Menu.  -To move to ‘Music Menu’-Press m/M on main menu input.  -Press 1,2,3,4 to select desired song.  3-Press ‘D’ on main menu to check UserData.  4-Press ‘E’ on main menu to EndGame.  5- Eat all the coins making sure not to get caught by Ghosts, once u do so, u win or u will lose.  ENJOY THE GAME. |