PYTHON PROJECT

Pacman using PyGame

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Specifications Of The Project:-

The aim of are project is to create our own version of the classic arcade game of the the mid 1980's " **PACMAN ".**

Pacman was first released in Japan in May 1980 and since then has been the most popular arcade game.

To achieve the above goal we are going to use a module provided by Python known as Pygame which has some built in API's which help in developement of small games.

The game will consist a maze, a pacman, a few ghosts and pellets which will act as food for the pacman.

The objective of the game will be to make the pacman eat all the pellets,but within some constraints like not being eaten by ghosts etc.

The game will also consist of super pellets. After eating these pellets our pacman gets super powerful and gains the ability to eat the ghost while it is in ' SUPER SCARED STATE ' .

The game will also have the original pacman music playing in the background.

The pacman dies whenever it encounters a ghost.

The ghosts will follow an algorithm to find the shortest path between pacman and follow the pacman.

The game can be played using the ‘ ARROW KEYS ’ on the keyboard.

***Design Of The Project*:-**

The program we intend to present basically consists of the following aspects:-

1. Movement of the ghosts and the pacman around the screen and controlling the movement of pacman using keyboard.

2. Tile based collision detection of pacman and ghosts with the wall and their response.

3. Using the concept of OOP.

4. Making of the pacman maze using Lists.

5. Grid based movement and movement from node to node.

CLASSES USED:-

1. **Level**
   The class contains the complete layout of the maze and commands to import images of all the pellets and the characters.

2. **Monster**
   The class contains the functions about the movement of the monster and about the state in which the ghost is
   eg: Wether the ghost is in normal state or in scared state.

3. **Pacman**
   This class has all the details about the movement of pacman, updating the number of pellets eaten and updating the pellets displayed on the screen and also checks for collision with wall and monster.

4. **PacmanMain**
   This class contains all the functions which will help in functioning of the game loop.

FUNCTIONS USED:-

1. MainLoop()
   Caters to the basic functioning of game loop.

2. LoadSprites()
   Loads all the basic sprites that we need and calculates the offset.

3. MonsterCollide()
   Checks for collision between monster and pacman and give a prompt for GAME OVER.

4. MoveKeyDown()
   This function sets the xMove or yMove variables that will then move the snake when update() function is called. The xMove and yMove values will be returned to normal when this keys MoveKeyUp function is called.

5. Update()
   Checks when the pacman sprite should update itself.

6. SetScared()
   Tell the monster to be scared or not
   Should we update out scared image?

7. LoadImage()
   Uses inbuilt python API's like path.join() to import and load images in the game.