



# PacMan

José Alfredo Godínez Gasca

A01274993

# Description

- Pac-Man is a Japanese video game franchise created by Toru Iwatani, the father of Pac-Man, but published, developed and owned by Bandai Namco Entertainment (formerly Namco).
- Single Player.
- Food dots inside the board.
- Enemy ghosts move randomly.
- Pacman can eat enemies with a special food dots and .
- Pacman has three lives and loses when an enemy touches it.
- Pacman wins the game when it has taken all food dots in the map.

# Architecture and Technical details

- Programming language: C
- The game's maze layout can be static.
- Pacman gamer must be controlled by the user.
- Enemies are autonomous entities that will move a random way.
- Enemies and pacman should respect the layout limits and walls.
- Each enemy's behaviour will be implemented as a separated thread.
- Display obtained pacman's scores.



# Class and flow diagram.

## Clase UML

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### pacman

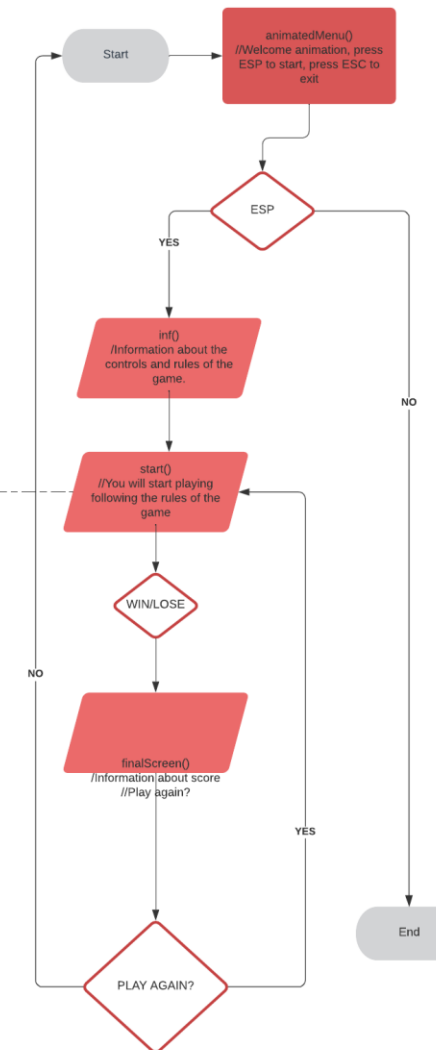
```
typedef struct Pacman{}
typedef struct Ghost{}

+ void delay(int milliseconds):
+ void gotoxy(int x, int y):
+ void timer(int tStart, int tEnd):
+ int difTimer(int tStart, int tEnd):return int, int
+ void animatedMenu():
+ void inf():
+ void screenPoint():
+ char screenFinal(int* score):return char
+ void start(Pacman* pm, Ghost* ghost, Ghost* ghost2, Ghost* ghost3, Ghost* ghost4, int mapa[][30], int mapaO[][30]):
+ void copyMapa(int mapaO[][30], int mapa[][30]):
+ void mapaDraw(int mapa[][30]):
+ void printMapa(int map[][30],int i,int j):
+ void printPac(int Nx, int Ny, int Ox, int Oy, char charc, int mapa[][30], int a):
+ void auxPrintPac(int Ox, int Oy, int mapa[][30], char perso):
+ void pause(char key):
+ void setSpeed(char key, int* speed):
+ void checkStatus(Pacman* pm, Ghost* ghost, int* qtd_comeu, int* score):
+ void checkWin(int mapa[][30], Pacman *pm):
+ void points(int *score,int mapa[][30], Pacman* pm):
+ int verMovX(char** key,char** keepMove,int x, int y,int mapa[][30]):return int
+ int verMovY(char** key,char** keepMove, int y, int x,int mapa[][30]):return int
+ void movPac( Pacman* pm, char* key, char* keepMove, int mapa[][30]):
+ int calculadist(int PMx, int PMy, int GHx, int GHy):return int
+ void movGhost(Ghost* ghost, Pacman* pacman, int mapa[][30]):
+ void movGhost2(Ghost* ghost, Pacman* pacman, int mapa[][30]):
+ void randomMov(Ghost** ghost, int mapa[][30]):
+ void follPac(Ghost** ghost, Pacman** pacman, int mapa[][30]):
+ void goPac(Ghost** ghost, Pacman** pacman, int mapa[][30]):
+ void teleport(Pacman **pm):
+ void teleportGhost(Ghost*** ghost):
+ int main(int argc, char** argv):return int
```

## Diagrama de Flujo PacMan Game

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In the start() method is where the magic happens, the map is created and it is where the methods of movement of the player and the enemies are called in order to start playing.



## KEY LEARNINGS

