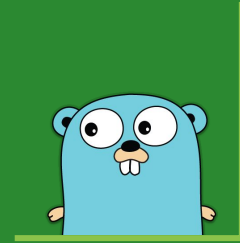# Snake

Dalia Vázquez   A0165883
Alma Anguiano   A01634819

Description

Classic game developed and published in 1976

Single-player

Food dots randomly located

Enemy snakes will move random way

Main snake grow one unit on every eaten food dot, and the enemy snakes too when they touch food dots

Main snake loses when it has been hit 10 times by other snake or it touches the limits

Main snake win the game when eats all food dots and has the largest length

In the game's start is configure the number of food dots and the number of enemy snakes
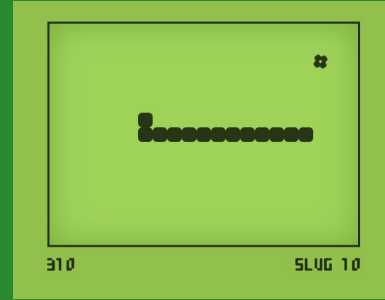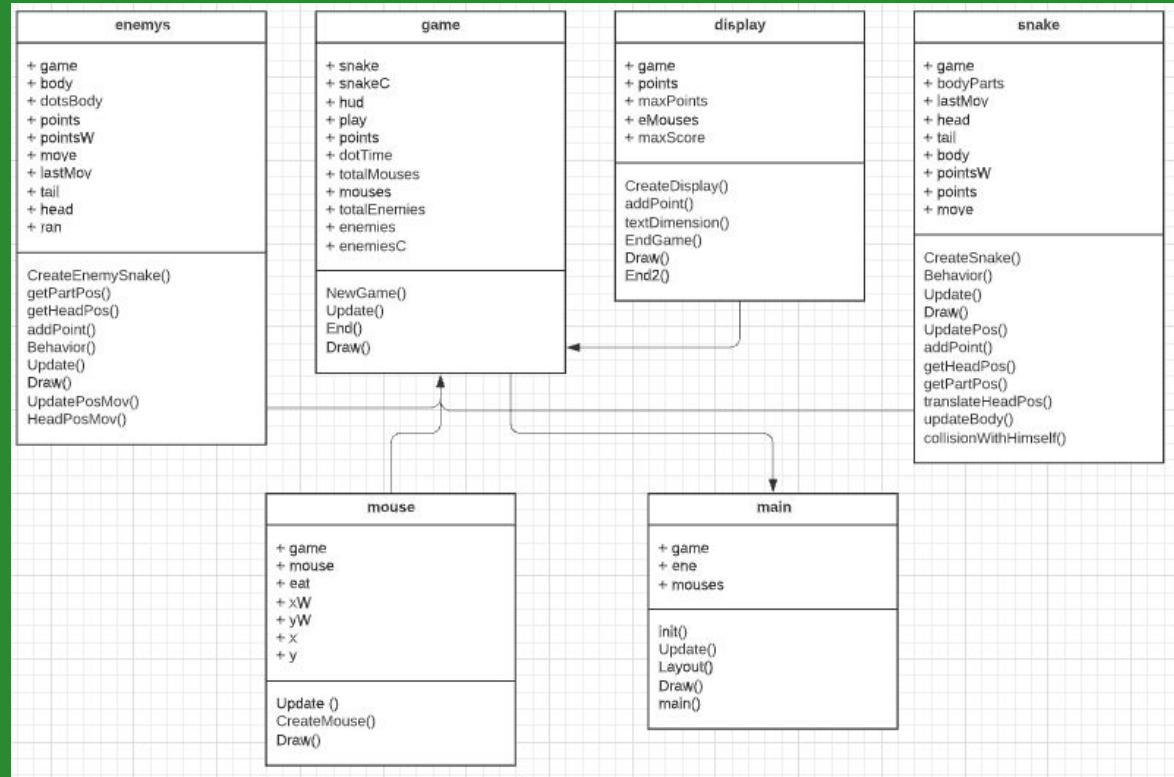
Architecture

Technical details

- Programming language: Go
  - Open source programming language
  - static typing and run-time efficiency like C
  - readability and usability like Python or JavaScript
  - high-performance networking and multiprocessing

- Library: Ebiten
  - Open source game library
  - Quickly and easily develop 2D games
  - Everything is an imagej
  - Multiplatform
  - High performance
  - Production-ready

Architecture Diagram of flows

enemys

+ game
+ body
+ dotsBody
+ points
+ pointsW
+ move
+ lastMov
+ tail
+ head
+ ran

CreateEnemySnake()
getPartPos()
getHeadPos()
addPoint()
Behavior()
Update()
Draw()
UpdatePosMov()
HeadPosMov()

game

+ snake
+ snakeC
+ hud
+ play
+ points
+ dotTime
+ totalMouses
+ mouses
+ totalEnemies
+ enemies
+ enemiesC

NewGame()
Update()
End()
Draw()

display

+ game
+ points
+ maxPoints
+ eMouses
+ maxScore

CreateDisplay()
addPoint()
textDimension()
EndGame()
Draw()
End2()

snake

+ game
+ bodyParts
+ lastMov
+ head
+ tail
+ body
+ pointsW
+ points
+ move

CreateSnake()
Behavior()
Update()
Draw()
UpdatePos()
addPoint()
getHeadPos()
getPartPos()
translateHeadPos()
updateBody()
collisionWithHimself()

mouse

+ game
+ mouse
+ eat
+ xW
+ yW
+ x
+ y

Update ()
CreateMouse()
Draw()

main

+ game
+ ene
+ mouses

Init()
Update()
Layout()
Draw()
main()

Code Structure

- Project:
  - Assets / Methods / main.go

- Methods
  - snake.go
  - mouse.go
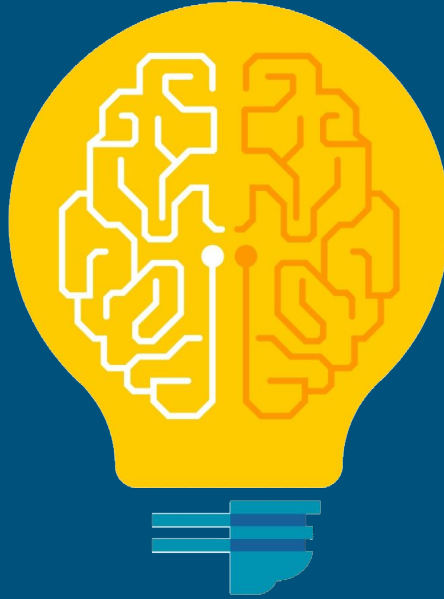 - enemys.go
  - display.go
  - game.go
  - main.go

Demo

Requirements

- The game's layout can be static.
- Food dots can be randomly located in the layout.
- Number of food dots must be configured in the game's tart.
- The main snake gamer must be controlled by the user.
- Enemy snakes are autonomous entities that will move a random way.
- Enemy snakes and main snake should respect the layout limits and walls.
- Enemy snakes number can be configured on game's start.
- Each enemy's behaviour will be implemented as a separate thread.
- Enemy snakes and main sneak threads must use the same map or game layout data structure resource.
- Display obtained main snake's scores.
- Main snake grow one unit on every eaten food dot.
- Enemy snakes can also grow when they touch food dots.
- Main snake loses when it has been hit 10 times by other snake or it touches the limits or walls.
- Main snake wins the game when all food dots have eaten and main snake has the largest length.

Key Learnings