McGill University
Faculty of Engineering
ECSE 321 – Introduction to Software Engineering

UML CLASS DIAGRAM

Presented by Group 9:
Matthew Beirouti (260405550)
Maxime Grégoire (260479270)
Carl Patenaude Poulin (260482798)
Antoine Tu (260327188)

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1. For the purpose of this project, we have opted to use Java as the programming language. The experience of each team members with Java is as follow:
    a. Antoine has taken COMP 202 and COMP 250 and is currently following ECSE 211 and ECSE 321. Prior to these courses, he has not done any object-oriented programming. He has not yet done any coding in Java which deals with graphical user interfaces (swing), but he has done some programming in C# which included GUIs and thinks he could apply what he learned into Java.
    b. Carl: I've first programmed in Java a year ago for COMP250 assignments, and have been consistently asked to use it in the scope of school projects. It is not a language I particularly enjoy, being extremely verbose for all but the most common operations and lacking some of the features I use a lot like passing functions as arguments. I have not used Java generics yet, meaning that my understanding of the language is still pretty rudimentary. Java however has the advantages of speed, a mature toolset and ubiquity (e.g. being known by most programmers).
    c. Matthew: Briefly and vaguely learnt Java and used it to work with data structures and implement general use algorithms. Officially learnt and practiced the basic concepts of object oriented programming and the programming language Java in COMP 202. Currently applying knowledge of Java in ECSE 211, where Java (or an extension of it) is used to program robots that perform certain tasks. Currently learning new concepts in Java and applying past knowledge to solve assignments in ECSE 321.
    d. Maxime has taken COMP 202 and COMP 250 and is taking ECSE 211, ECSE 321 and ECSE 322. He has not done any object-oriented or GUI programming before those courses. He has developed applications written in C#.

2. UML Class Diagram

Ghost

color : enum
status : enum
scatterTimer : integer
frightenedTimer : integer

updateScore()
leaveCage()
getBackToCage()
setFrightened(seconds)
scatter(seconds)
decideDirection(pacX,pacY)

Character

direction : enum
speed : integer
status : enum
x : int
y : int

die()
spawn(x,y)
move(direction)
teleport(x,y)

Pacman

killStreak : int
lastControl : enum

control(direction)
collide()

Maze

score : int
lives : int
tiles : Tile

pillsLeft()
addToScore()
killGhost()
reset()
win()

Tile

type : enum
x : int
y : int
char : Character
item : Collectable

getNextTile(direction)
getFromPosition(x,y)

Collectable

score : int
displayScore : boolean
x : int
y : int

consume()
sideEffects()
displayScore()

Fruit

Pill

Powerpill

activateSideEffects()

4   1

1   1

1   0..1

1..*   1

1   0..1

0..1   1

0..*   1

0..*   1