

CatchingGame

CatchingFacade

- gridHeight : int
- gridWidth : int
- context : Context
- touchHandler : touchHandler
- ingredientManager : IngredientManager
- playerManager : PlayerManager
- statisticsManager : StatisticsManager

~ CatchingFacade(height:int, width:int, context:Context, touchHandler:TouchHandler)
+ update(canvas: Canvas) : void

Ingredient

- x : int {readOnly}
- y : int
- speed : int {readOnly}
- + name : String

~ Ingredient(x:int, speed:int, name:String)
~ getYPosition() : int
~ getXposition() : int
~ getName() : String
~ update() : void

CatchingGameView

- + catchingGameFacade : CatchingGameFacade
- thread : MainThread1
- ~ background : Bitmap
- dst : RectF

~ CatchingGameView(context:Context)
+ draw(canvas:Canvas) : void
+ surfaceCreated(holder:SurfaceHolder) : void
+ surfaceChanged(holder:SurfaceHolder, format:int, width:int, height:int) : void
+ surfaceDestroyed(holder:SurfaceHolder) : void

IngredientFactory

~ makeIngredient(x: int, speed:int, ingType: String)
~ getBitmap(ingredientName:String, context:Context) : Bitmap

IngredientManager

- ingredients : ArrayList<Ingredient>
- numberOfLanes : int {readOnly}
- lanes : int[]
- speed : int {readOnly}
- ingredientWidth : int {readOnly}
- ingredientHeight : int {readOnly}
- names : String[]
- ingredientFactory : IngredientFactory
- ingredientCard : IngredientCard
- frame : int
- lastSpawnFrame : int

~ IngredientManager(gameWidth:int, numberOfLanes:int)
~ update(canvas:Canvas, context:Context, playerLocation:int[], playerDimensions:int[]) : void
- createIngredient() : void
- moveIngredients() : void
- removableIngredients(yPlayer:int, heightPlayer:int) : void
- checkCollision(playerLocation:int[], playerDimensions:int[]) : void
- draw(canvas:Canvas, context:Context) : void

CatchingGame

Main1Activity

```
# onCreate(savedInstanceState:Bundle) : void
```

PlayerManager

```
- x :int  
- y : int {readOnly}  
- width : int {readOnly}  
- height : int {readOnly}
```

```
~ PlayerManager(gridHeight:int, gridWidth:int,  
numberOfLanes:int)  
~ update(canvas:Canvas, context:Context,  
touchHandler:TouchHandler) : void  
- draw(canvas:Canvas, context:Context) : void  
~ getLocation() : int[]  
~ getDimenseions() : int[]  
- setXPosition(x:int) : void
```

CatchingActivity

```
# onCreate(savedInstanceState:Bundle) : void
```

IngredientCard

```
- x : int {readOnly}  
- y : int {readOnly}  
- width : int {readOnly}  
- height : int {readOnly}  
- ingredientFactory : IngredientFactory  
- wantedIngredient : String  
- screenWidth : int
```

```
~ IngredientCard(gridWidth:int,  
ingredientType:String)  
~ draw(canvas:Canvas, context:Context)  
: void  
~ setRandomWanted(ingredient:String)  
: void  
~ getWanted() : String
```

MazeGame

FoodFactory

```
~ makeFood(foodType:String, playerLocation:int[],
maze:String[][] , foods:ArrayList<Food>) : Food
- createNewLocation(playerLocation:int[],
maze:String[][] , foods:ArrayList<Food>) : int[]
- isOpenCell(location:int[],
mazeAppearance:String[][] ,
playerLocation:int[],
foods:ArrayList<Food>) : boolean
```

FoodManager

```
- foods : ArrayList<Food>
- tileSize : int
- maze : String[][]
- foodFactory : FoodFactory
```

```
~ FoodManager(tileSize:int,
maze:String[][] , playerLocation: int[])
~ update(playerLocation:int[], canvas:Canvas,
context:Context) :int
~ draw(canvas:Canvas,
context:Context) : void
```

MazeManager

```
- mazeAppearance : String[][]
- tileSize : int
- allBackground : Bitmap
- randomMaze : int
- dimension : int
```

```
~ MazeManager(context:Context, screenWidth:int,
screenHeight:int)
~ getTileSize() : int
~ playerStart() : int[]
- makeMaze(context:Context) : String[][]
- combineMaze(context:Context, background:Bitmap,
width:int, height:int) : Bitmap
- combineNonMoving(context:Context, width:int,
height:int) : Bitmap
~ draw(canvas:Canvas, width:int, height:int) : void
~ getMazeAppearance() : String[][]
```

«abstract»Food

```
- location : int[]
```

```
~ Food(location:int[])
~ getLocation() : int[]
~ getEaten() : int
~ draw(canvas:Canvas,
context:Context) : void
```

MazeActivity

```
# onCreate(savedInstanceState:
Bundle) : void
```

GoodFood

```
~ GoodFood(location:int[])
~ getEaten() : int
~ draw(canvas:Canvas,
context:Context, tileSize:int) : void
```

BadFood

```
~ BadFood(location:int[])
~ getEaten() : int
~ draw(canvas:Canvas,
context:Context, tileSize:int) : void
```

MazeGame

MazeFacade

- foodManager : FoodManager
- statisticsManager : StatisticsManager
- joystickManager : JoystickManager
- mazeManager : MazeManager
- playerManager : PlayerManager
- screenHeight : int
- screenWidth : int
- ~ context : Context
- touchHandler : TouchHandler

~ MazeFacade(height:int, width:int, cnt:Context, touchHandler:TouchHandler)
 ~ update(canvas:Canvas) : void

JoystickManager

- radius : int
- positionX : int
- positionY : int
- direction : String
- centerX : int
- centerY : int

~ JoystickManager()
 ~ update(th:TouchHandler, canvas:Canvas, context:Context) : void
 ~ getDirection() : String
 - calAngle(x:float, y:float) : double
 - calDirection(angle:double) : String
 - setPosition(x:int, y:int) : void
 - draw(canvas:Canvas, context:Context) : void

PlayerManager

- healthPoints : double
- x : int
- y : int
- direction : String
- tileSize : int

~ PlayerManager(tileSize:int, startingPosition:int[])
 ~ getLocation() : int[]
 - getDirection() : String
 ~ setDirection(newDirection:String) : void
 ~ addHealthPoints(change:double) : void
 ~ update(maze:String[][], canvas:Canvas, context:Context) : void
 - checkWall(mazeAppearance:String[][]) : boolean
 - isOpenCell(location:int[], mazeAppearance:String[][]) : boolean
 ~ draw(canvas:Canvas, context:Context) : void

MazeFactory

~ makeMaze(n:int) : int[]

MazeGameView

~ manager : MazeFacade
 - thread : MainThread

~ MazeGameView(context:Context)
 + draw(canvas:Canvas) : void
 + surfaceCreated(holder: SurfaceHolder) : void
 + surfaceChanged(holder: SurfaceHolder, format:int, width:int, height:int) : void
 + surfaceDestroyed(holder: SurfaceHolder) : void

MonsterGame

Monster

```
# x : int
# y : int
# speed : int
- gameHeight : int
~ gameWidth : int
# size : int {readOnly}
```

```
~ Monster(x:int, speed:int, gameHeight:int,
gameWidth:int, size:int)
~ getYPosition() : int
~ getXPosition() : int
~ setYPosition(y:int) : void
~ isPassed() : boolean
# draw(canvas:Canvas, context:Context) : void
```

HorizontalFollowMonster

```
- xVelocity : float
```

```
~ HorizontalFollowMonster(initialX:int,
speed:int, gameHeight:int, gameWidth:int,
size:int)
~ update(playerX:int) : void
```

MonsterActivity

```
# onCreate(savedInstanceState:Bundle) : void
```

CircularMoveMonster

```
- radius : int
- noCircleX : int {readOnly}
- noCircleY : int
```

```
~ CircularMoveMonster(speed:int,
gameHeight:int, gameWidth:int, size:int)
~ update(frame:int) : void
```

MonsterManager

```
- gameHeight : int
gameWidth : int
- monsterSize : int
- lastSpawnFrame : long
- frame : int
- speed : int
- monsterFactory : MonsterFactory
- monsters : ArrayList<Monster>
```

```
~ MonsterManager(gameHeight:int,
gameWidth:int, monsterSize:int)
~ update(playerX:int, playerY:int,
canvas:Canvas, context:Context) : void
- updateSpeed() : void
- deleteOffscreenMonsters() : void
- moveMonsters(playerX:int) : void
- checkCollision(playerX:int, playerY:int
canvas:Canvas, context:Context) : void
- drawMonsters(canvas:Canvas,
context:Context) : void
- createMonster() : void
- createWallBounceInPlaceOfTwoBouncing(
monster:Monster, mon:int) : void
```



