

Phase 1 CRC

Main

Public static void Main
Runs a session

Session

Session

Public void run - calls Update and Draw
in a loop
Private void Update
Private void Draw
Stores the player.

Main
OpenGL
Level
CollisionManager
EntityManager
InteractionManager
Player

InputController

Takes keyboard input

Session

Level

Stores all the information of a level

Stores an instance of GraphGenerator and uses it to generate the layout of the level.

Populates each state in the graph with a Room object.

Stores current room

Public Room GetCurrentRoom - returns the current room

Public void WalkThroughDoor - takes a value that represents which door the player has walked through. This updates the current room.

Session
GraphGenerator
Room

GraphGenerator

Generates a connected planar graph
with given number of states.

Level

Room

Stores a collection of Entities that will be placed in that room (enemies, chests, items).

Stores the dimensions of the room.

Stores the background image of the room.

- Level
- Drawable
- Enemy
- Item
- Entity

Drawdata

Represents an image and coordinates to be drawn on screen. (and which layer to draw on)

Drawable

Has a method draw() which returns drawdata to be drawn.

Interface

Room
Item
Entity

Collidable

Interface

Has a method `getHitBoxArray()` which returns an array of circles. These circles represent that hitbox of whoever implements `Collidable`.

Contains functions that specify how to react when collided with any other object that also implements `Collidable`. For example, `public void CollideWith(player)`, `public void CollideWith(Rat)`, etc.

Player
Enemy
Item

Entity

Abstract

Represents an object on the screen which changes state over time

Sprite (image representing the entity)

Has an update function.

Level
Room
Drawable
Enemy

Item

Abstract

Represents a collectable item like sword or bandages

Inherits entity

Implements Collidable

Returns ItemData to the player when picked up

Level

Room

Entity

Collidable

ItemData

Sword

Implements Item.
Contains sword image.

Contains an instance of ItemData

Item

Player

Inherits from Entity
Implements Drawable
Stores xp
Stores players health
Stores collection of ItemData (inventory)

Session
Drawable
Collidable

Enemy

Abstract

Inherits from Entity

Has an update function

Act: abstract method

Room

Drawable

Collidable

Rat

Inherits from Enemy

Has an update function, defined:
“move toward player”

Deals damage on impact

Drops xp when killed (directly transferred
to the player)

Room
Drawable
Collidable

Chest

Inherits from Entity

Allows interaction when collided with.

Spawns random items when opened.

Level

Room

Drawable

Collidable

ItemData

Represents items that are not entities. All the details that the player class needs in order to use that item. For example, damage per shot, speed factor, type of ammo, image to be displayed in inventory, number of available uses, etc.

Player
Item