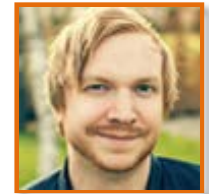


Game Programming with Python & PyGame

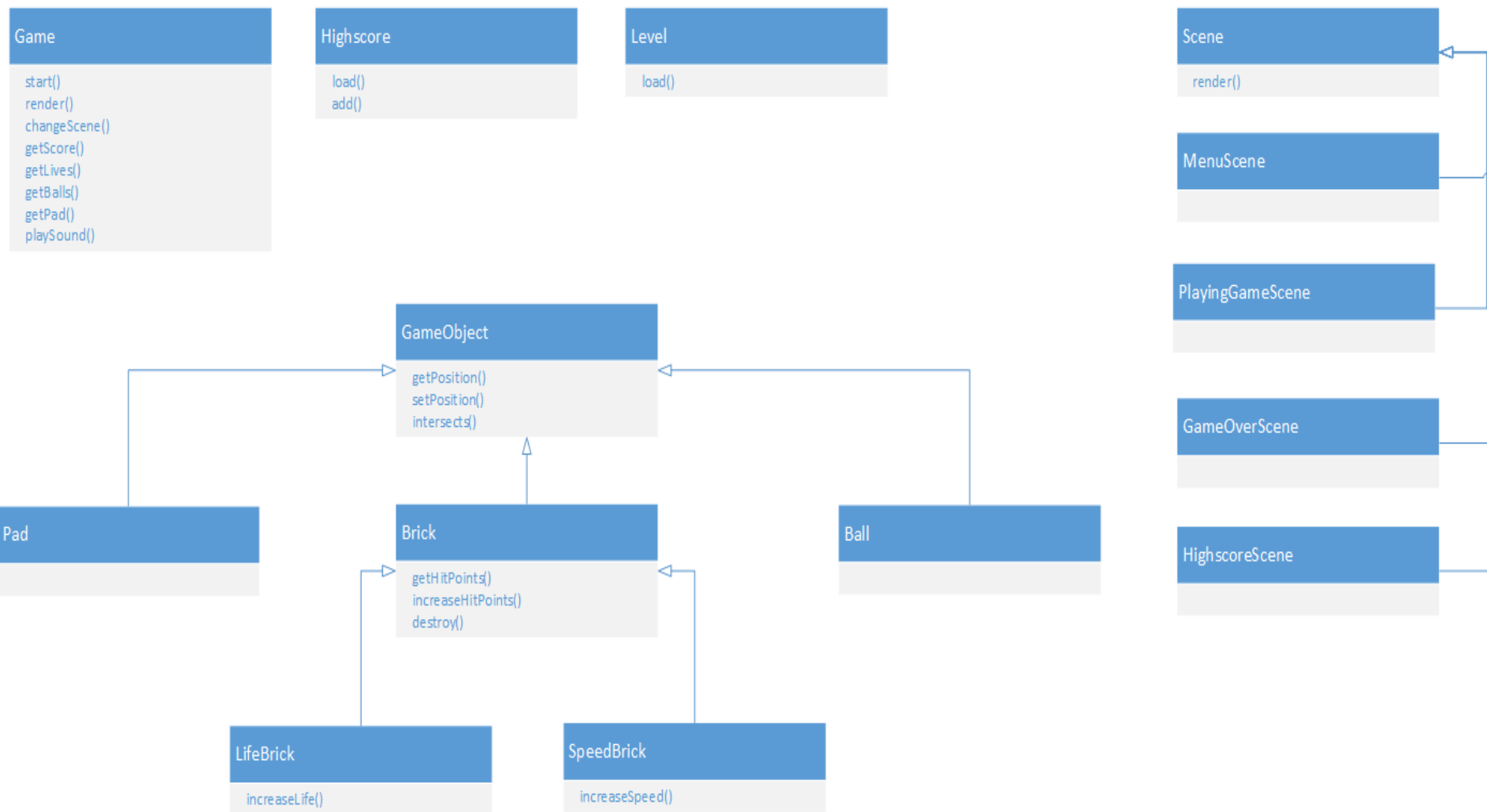
Setting up the Architecture of the Game

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pluralsight 
hardcore developer training

Class diagram



Identify difficulties

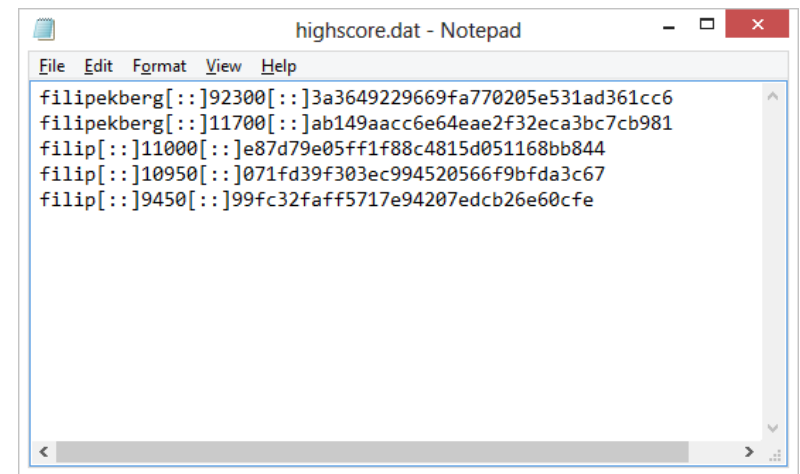
- How do we determine if two objects collide?
- How do we render different scenes?
- How do we handle high scores?
- How do we define different levels?

Collision detection

- The hit-box is a square even if the ball is round
- Check if:
 - Intersects in X-axis
 - My X coordinate is \geq than the other objects X coordinate **AND**
 - My X coordinate is \leq than the other objects X coordinate + its width **OR**
 - My X coordinate + width is \geq than the other objects X coordinate **AND**
 - My X coordinate + width is \leq than the other objects X coordinate + its width
 - Intersects in Y-axis
 - My Y coordinate is \geq than the other objects Y coordinate **AND**
 - My Y coordinate is \leq than the other objects Y coordinate + its height **OR**
 - My Y coordinate + height is \geq than the other objects Y coordinate **AND**
 - My Y coordinate + height is \leq than the other objects Y coordinate + its height

High score

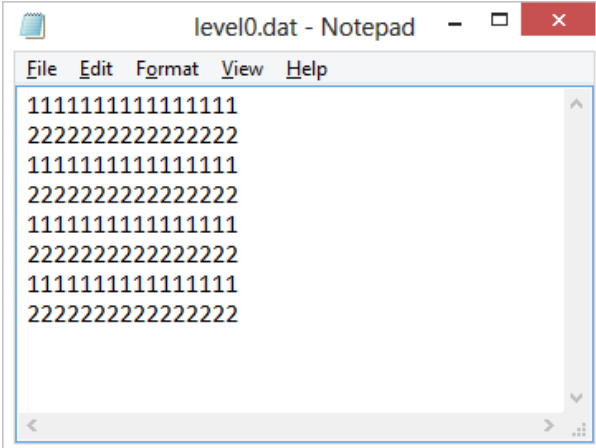
- Where do you want to store the high scores?
 - Text file
 - Online
- Make sure that it is not too easy to manipulate
- Use a hash to determine if the data is correct
 - md5(name + score + salt)



```
highscore.dat - Notepad
File Edit Format View Help
filipekberg[::]92300[::]3a3649229669fa770205e531ad361cc6
filipekberg[::]11700[::]ab149aacc6e64eae2f32eca3bc7cb981
filip[::]11000[::]e87d79e05ff1f88c4815d051168bb844
filip[::]10950[::]071fd39f303ec994520566f9bfda3c67
filip[::]9450[::]99fc32faff5717e94207edcb26e60cfe
```

Levels

- Use a text file to define the levels
- Each number represents a different type of brick
 - Normal
 - Increase speed
 - Extra life
- Fixed width
 - How many bricks per row do we want?
- Name the file accordingly



```
level0.dat - Notepad
File Edit Format View Help
111111111111111
222222222222222
111111111111111
222222222222222
111111111111111
222222222222222
111111111111111
222222222222222
```

Summary

- Higher level class diagram – what do we need?
- Identified some of the difficulties we might face
- How do we determine when two objects collide
- How to handle both levels and high scores