Basic concept of 2D game design and development

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19th January 2007

Analysis

What makes a 2D Game?

Transformation of the Design Analysis into a Software Model.

Modeling

The Game class.

Animations and Sounds("The moving pictures")

Events and Collision Detection

Events

Collision Detection

Good Bye

The Idea

Beside the fact that a good "programming" is in not the only key to a successful game, we will focus on thinking of "how" to develop a game in a technical approach.
The most important thing ,of course is the Idea, closely followed by good design (audio and video) and a stable realization. Keep in mind that games are made for entertainment.
But also, games can be a source for powerful ideas...

Recognizable parts of a 2D game

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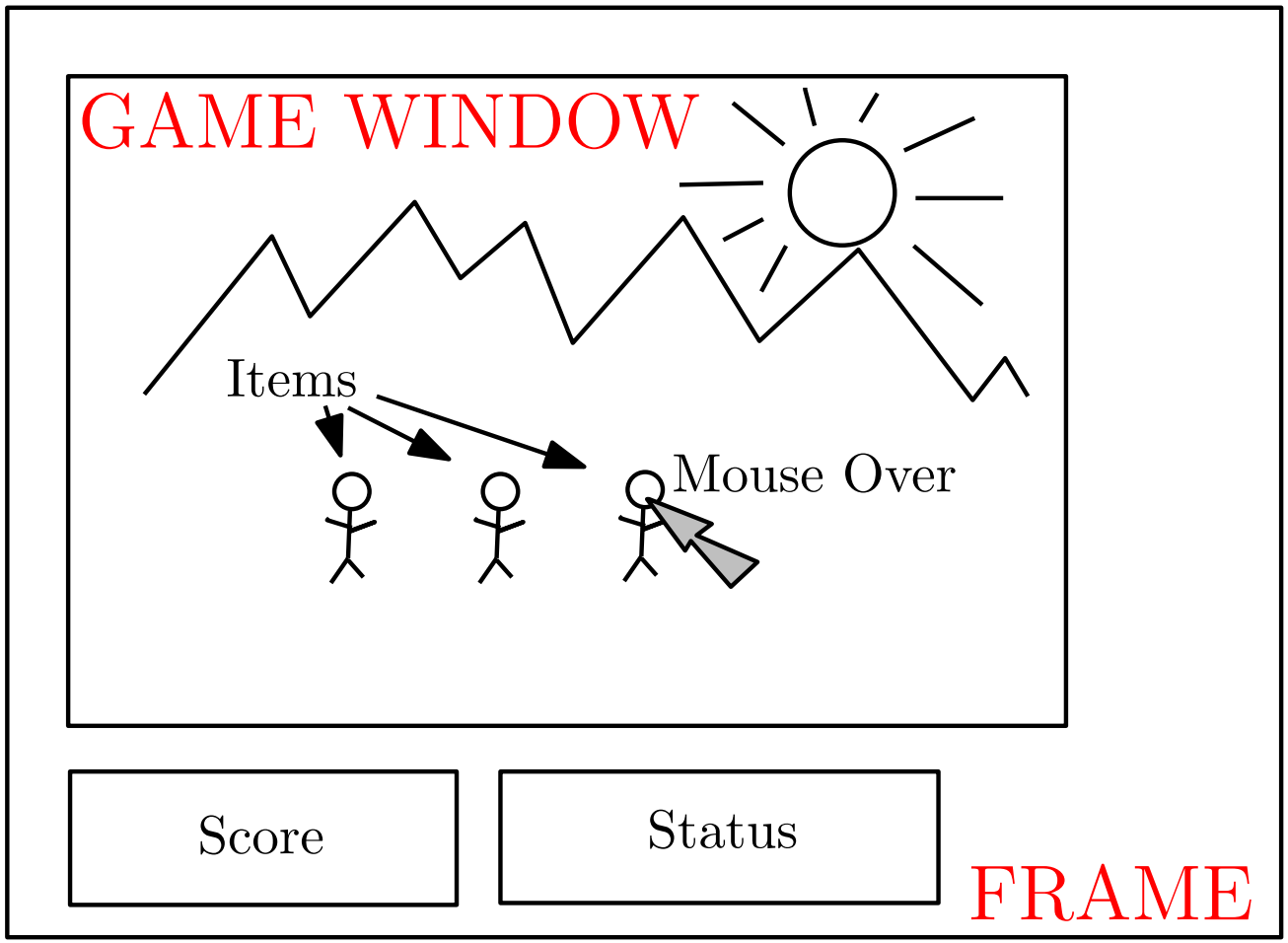
Recognizable parts of a 2D game (continued)



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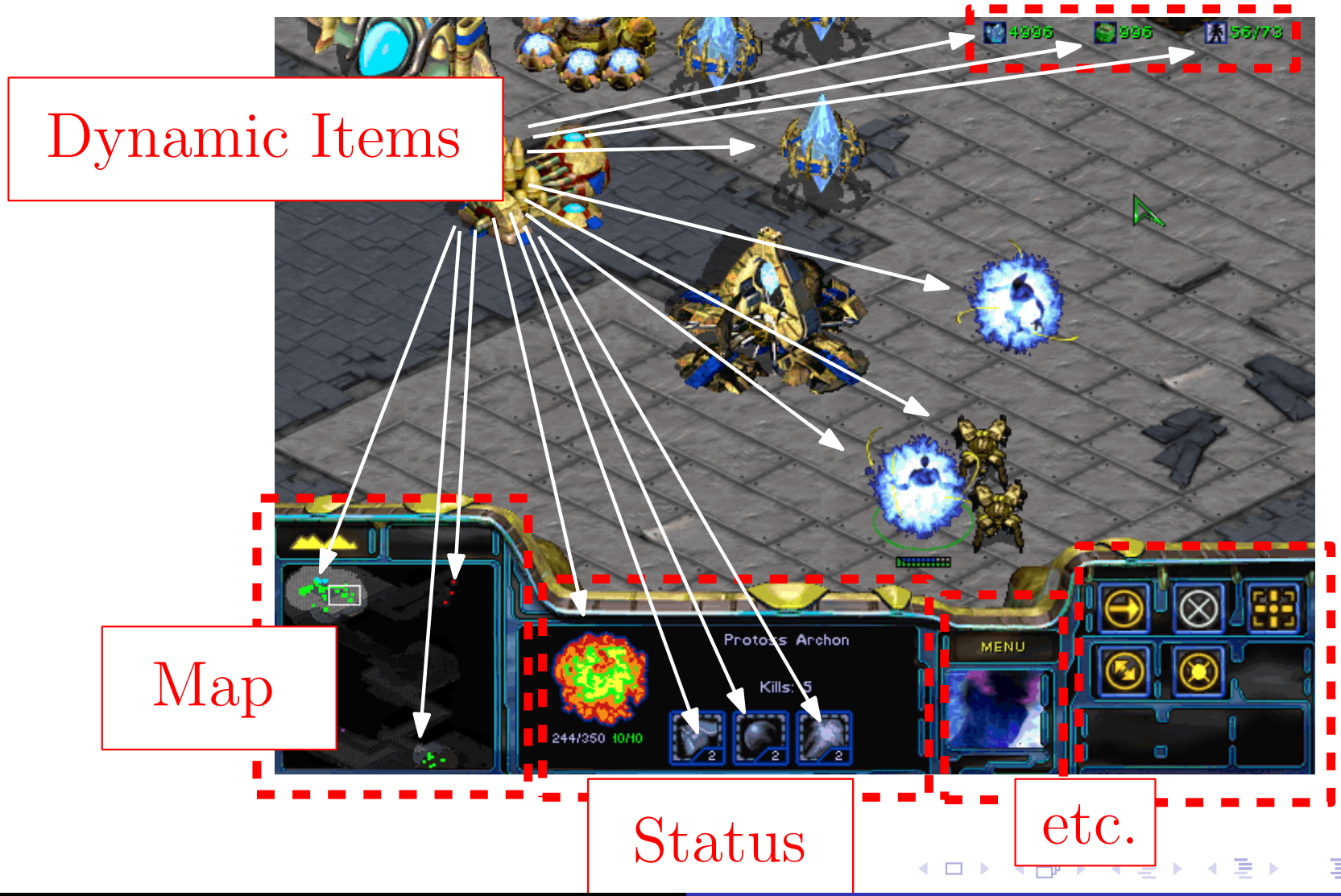
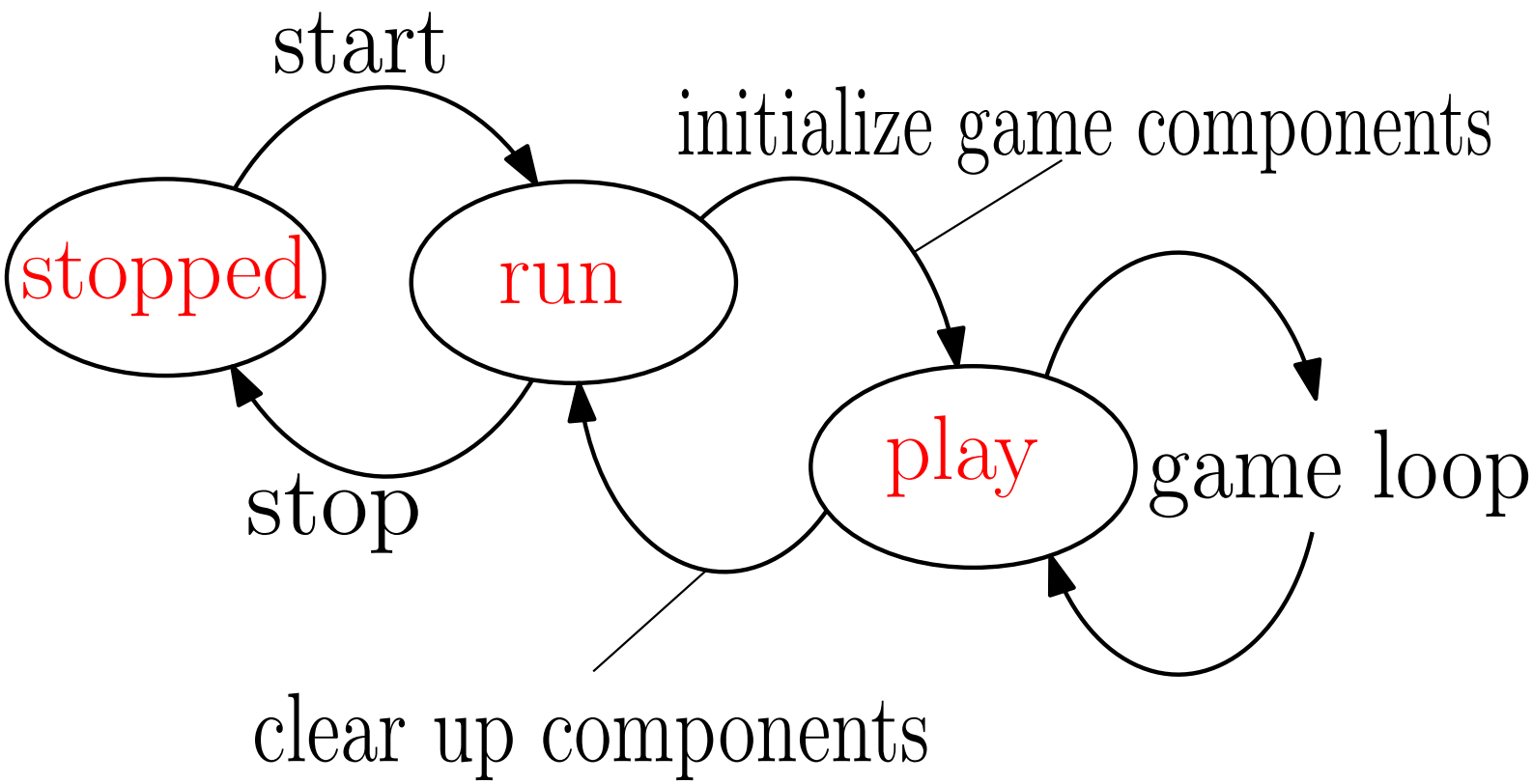
  - Should play its sounds.

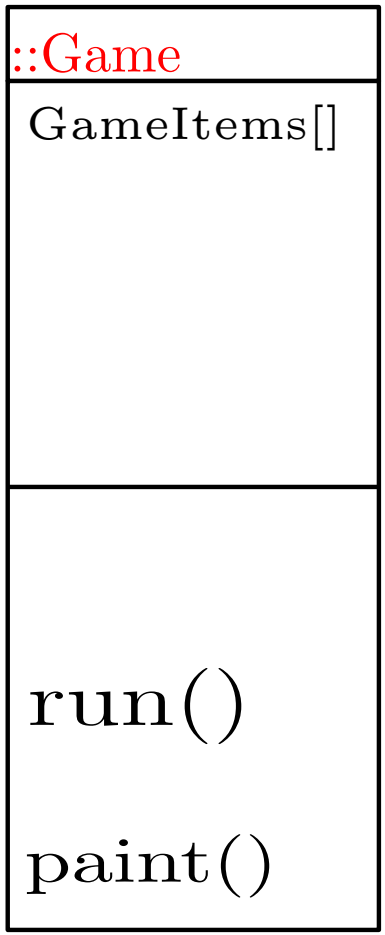
Transformation from Design Analysis to Software Model



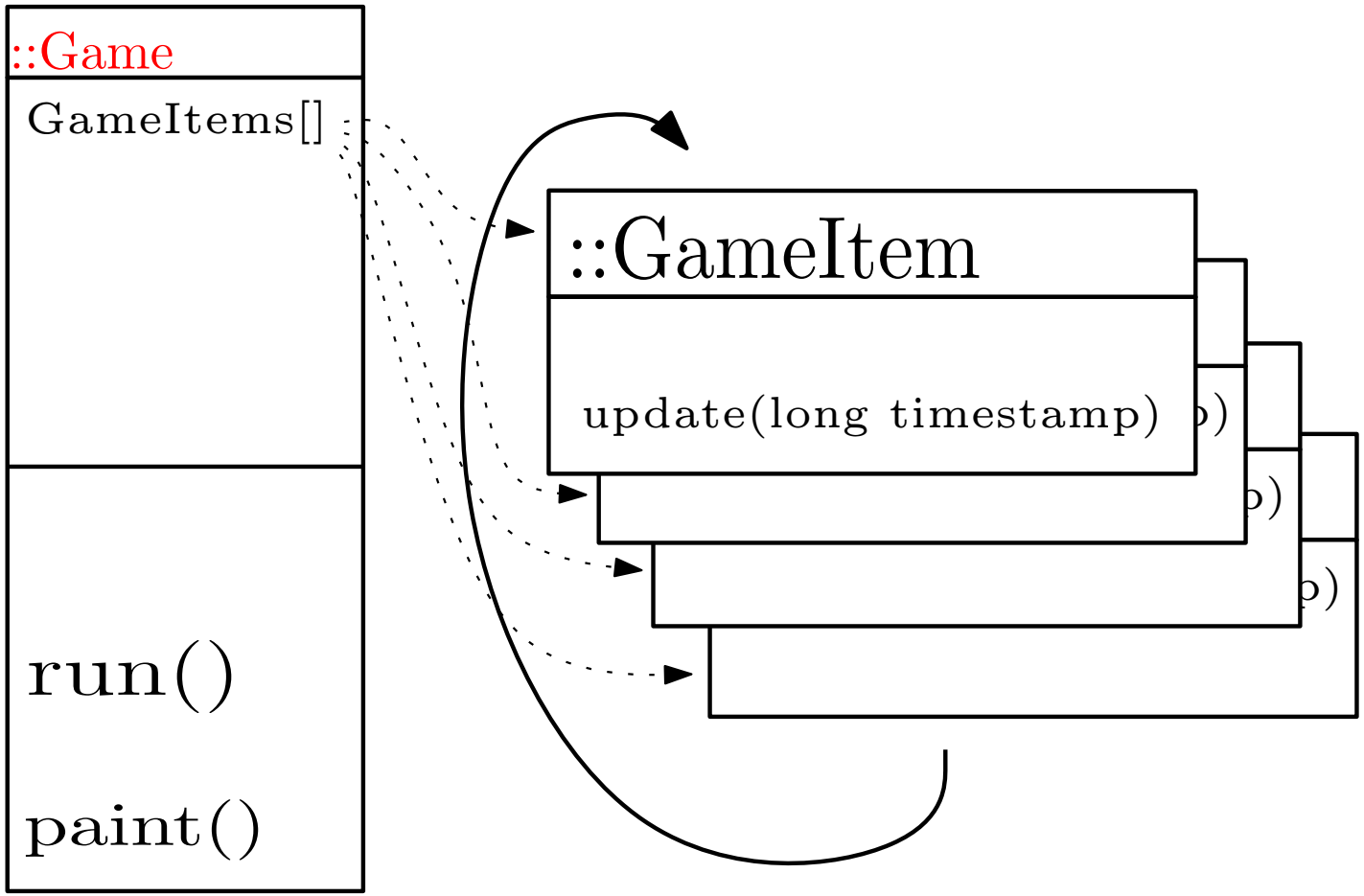
The Game class states.



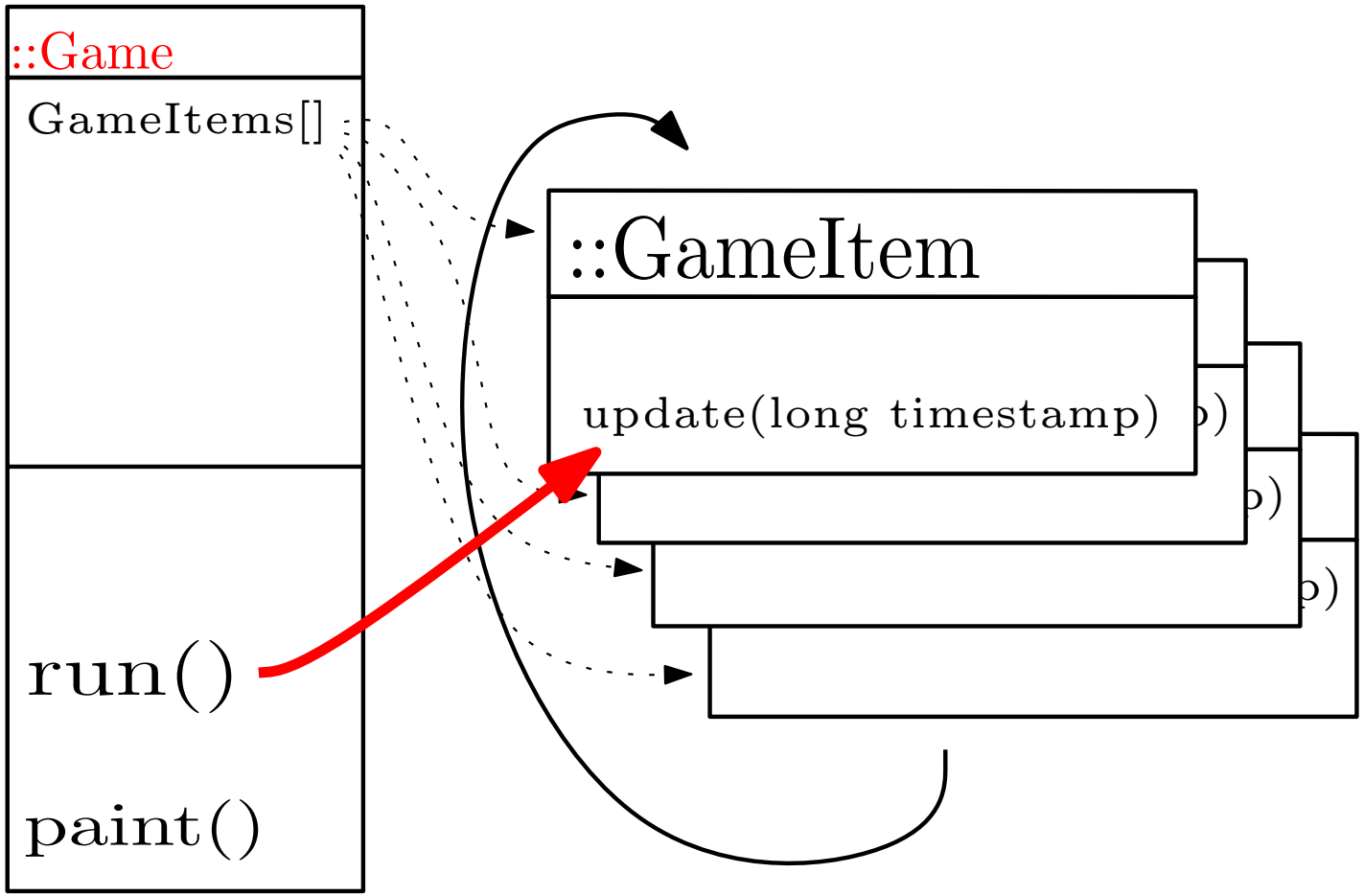
The Game Class's basic methods



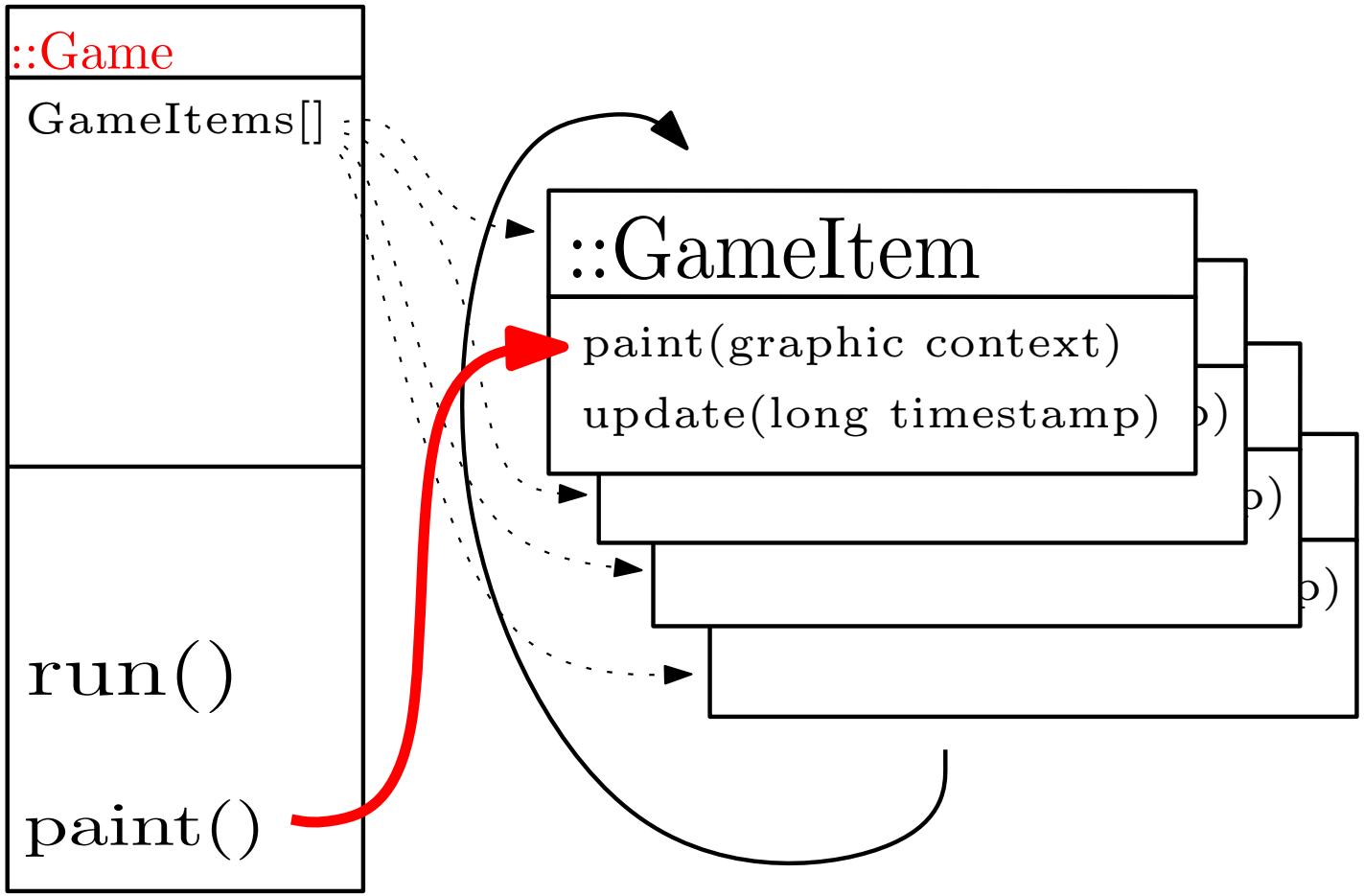
The Games' GameItem Collection



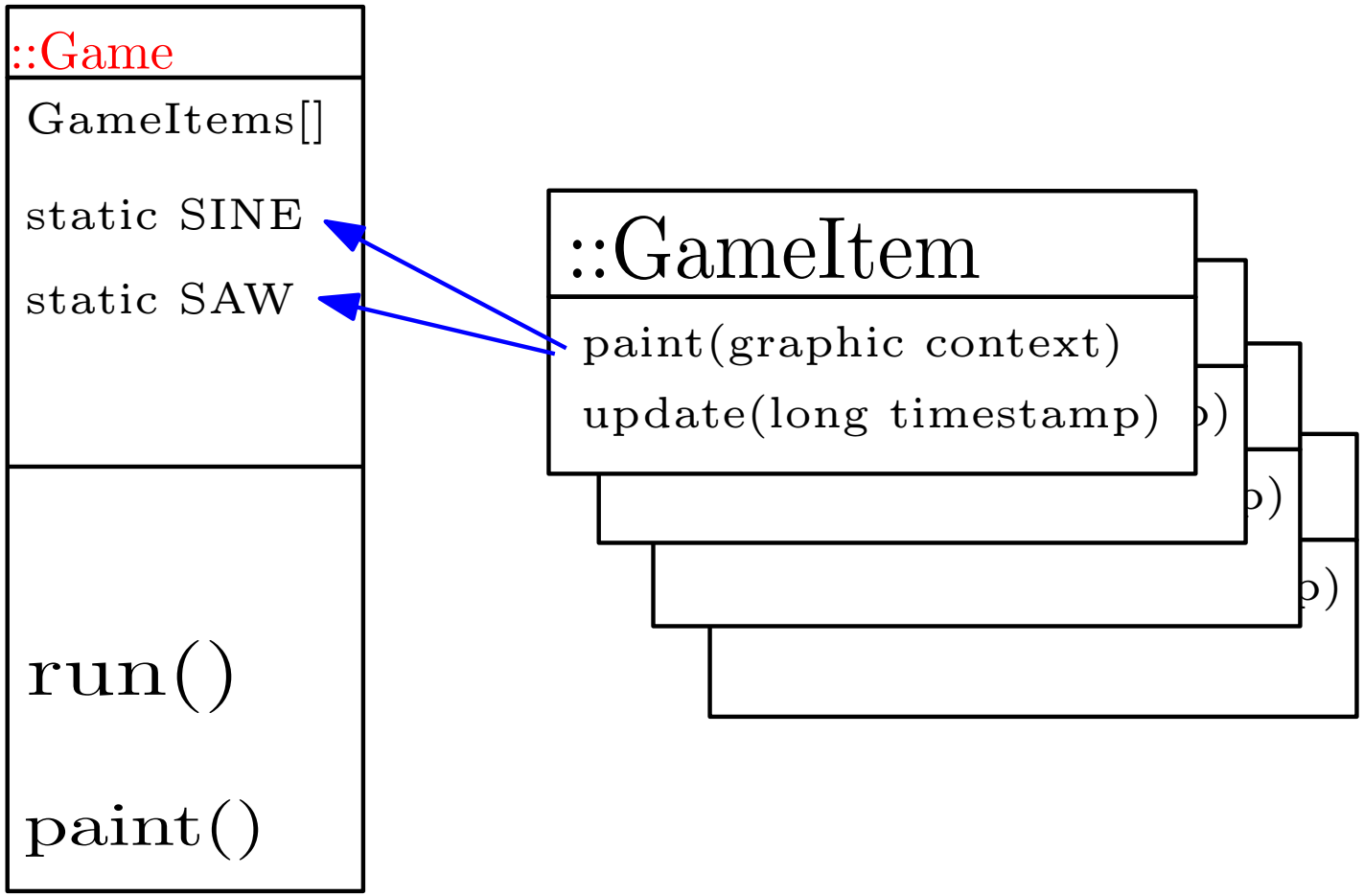
The update iteration (loop)



The paint iteration (loop)



Time based global values (statics)



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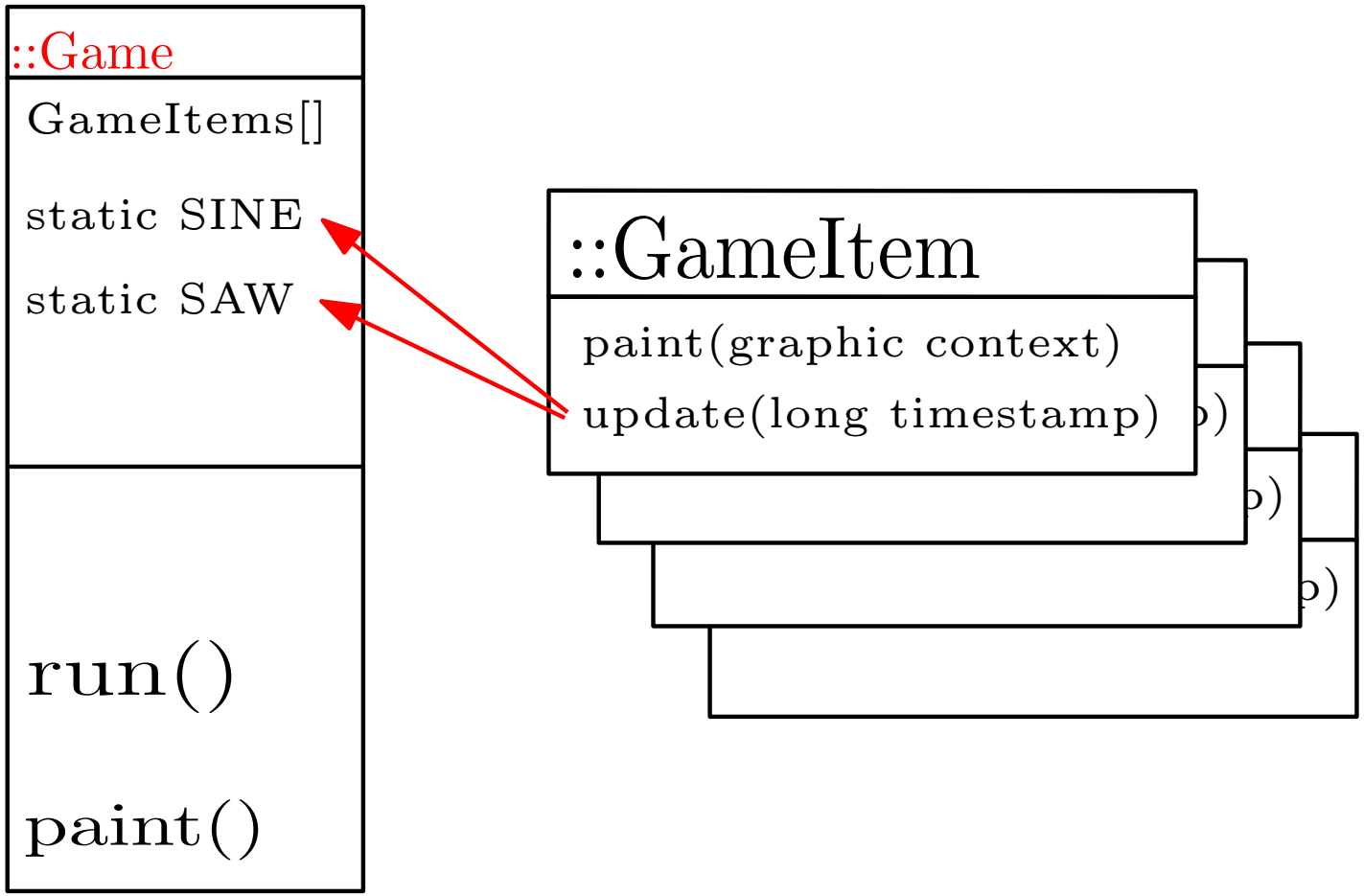
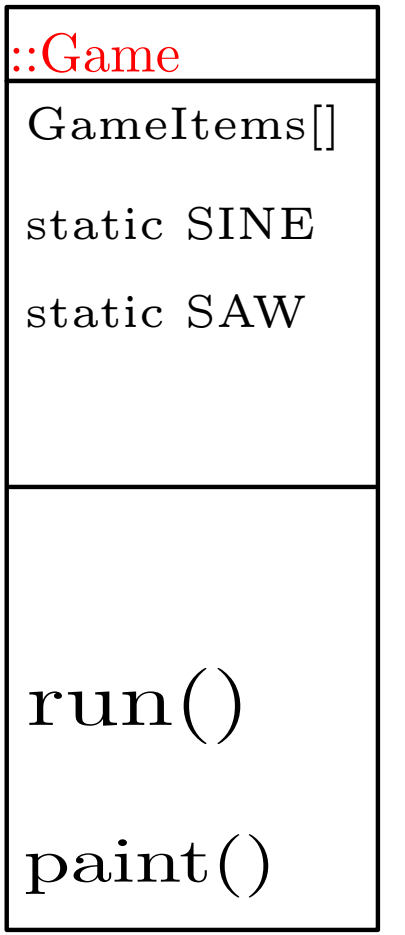
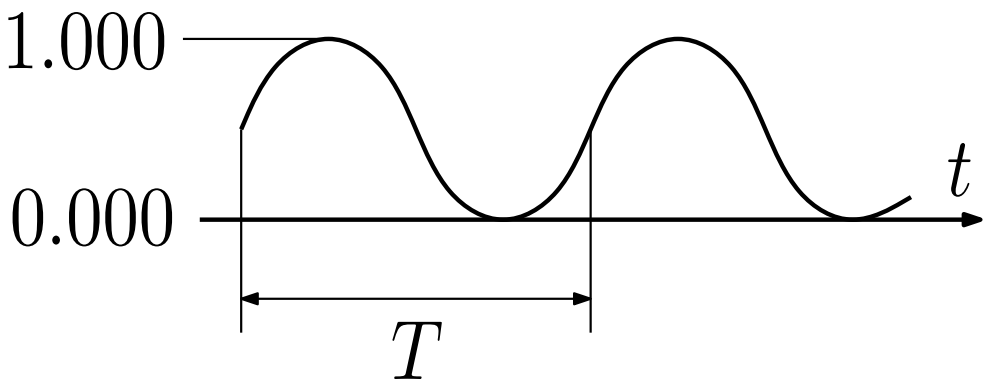
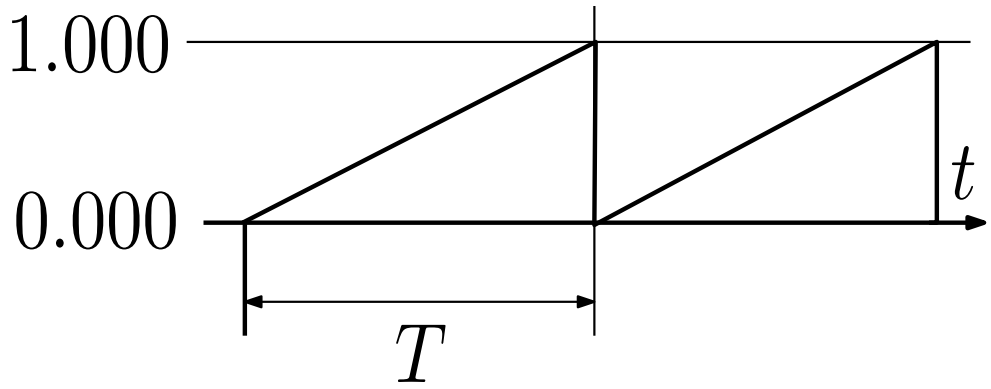


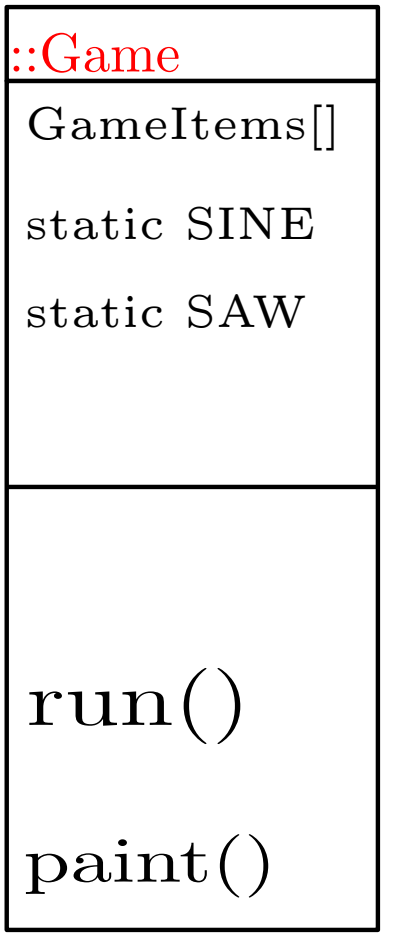
Time based global values (cont'd)

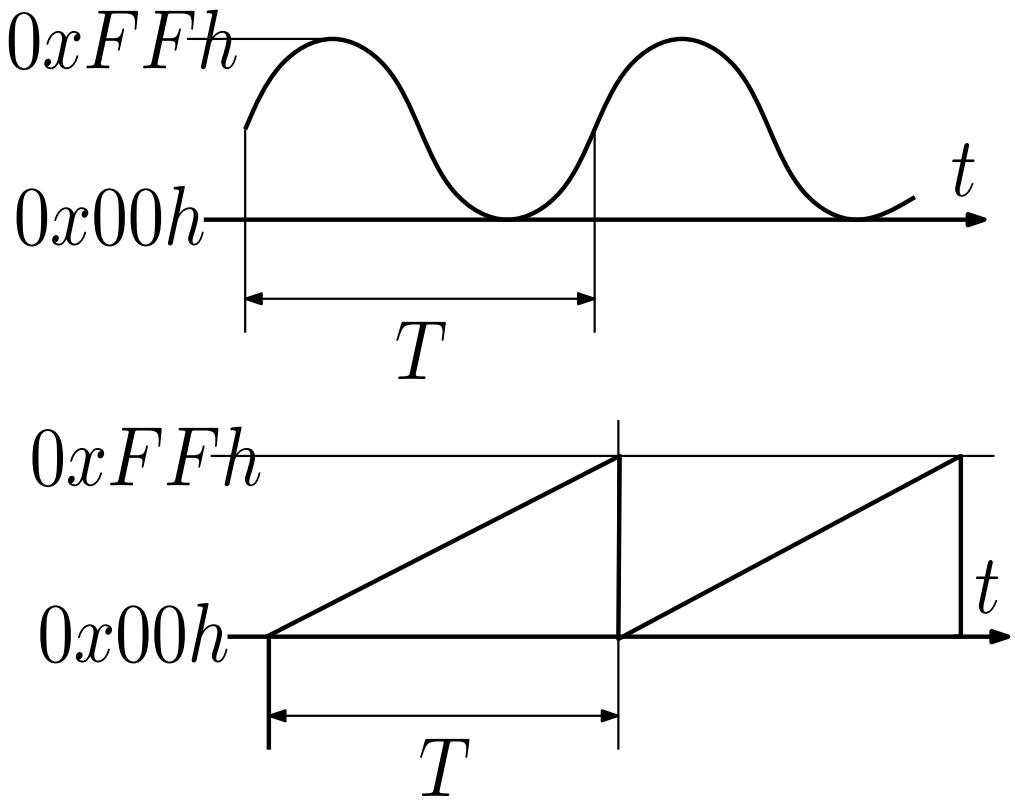




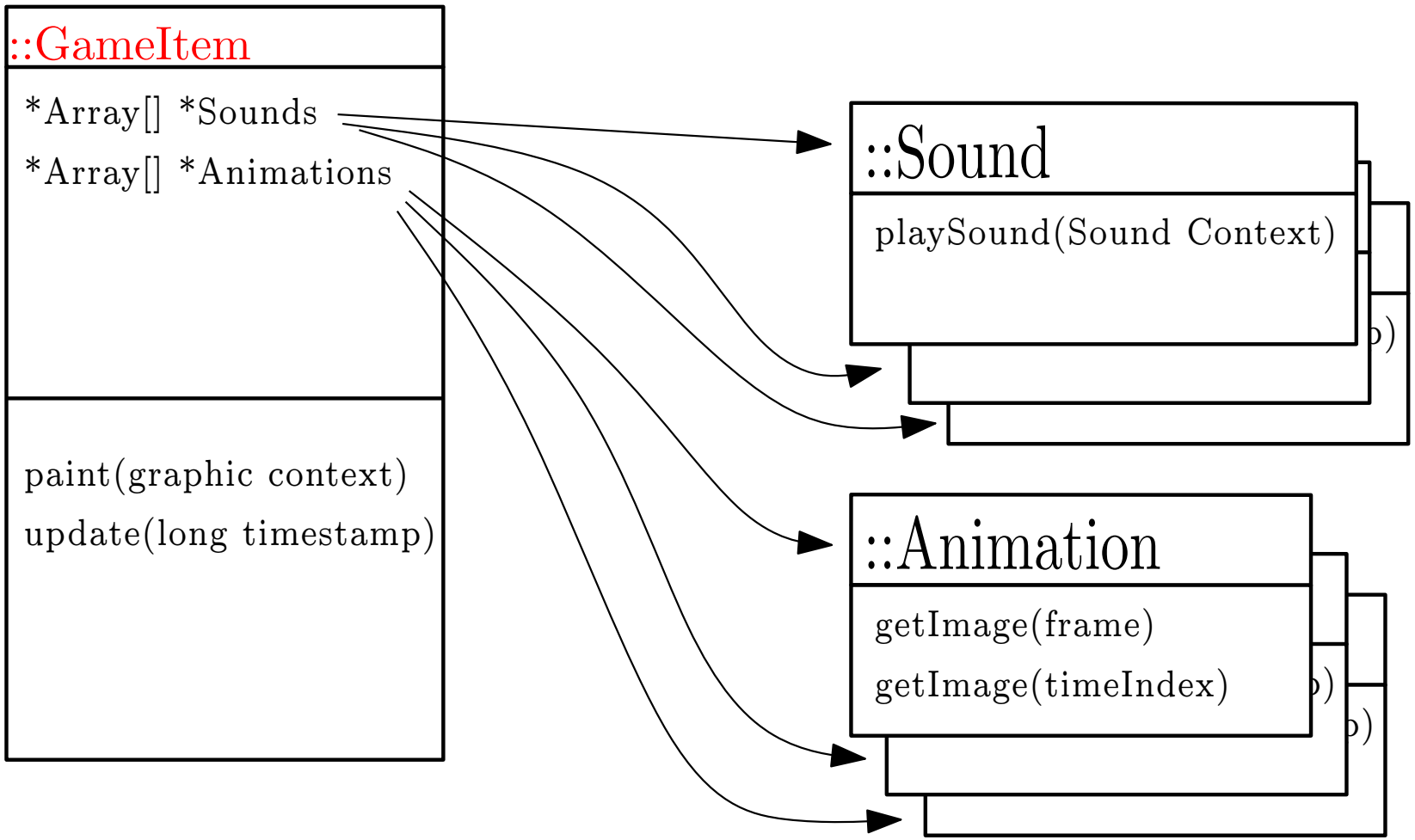


Time based global values (cont'd)

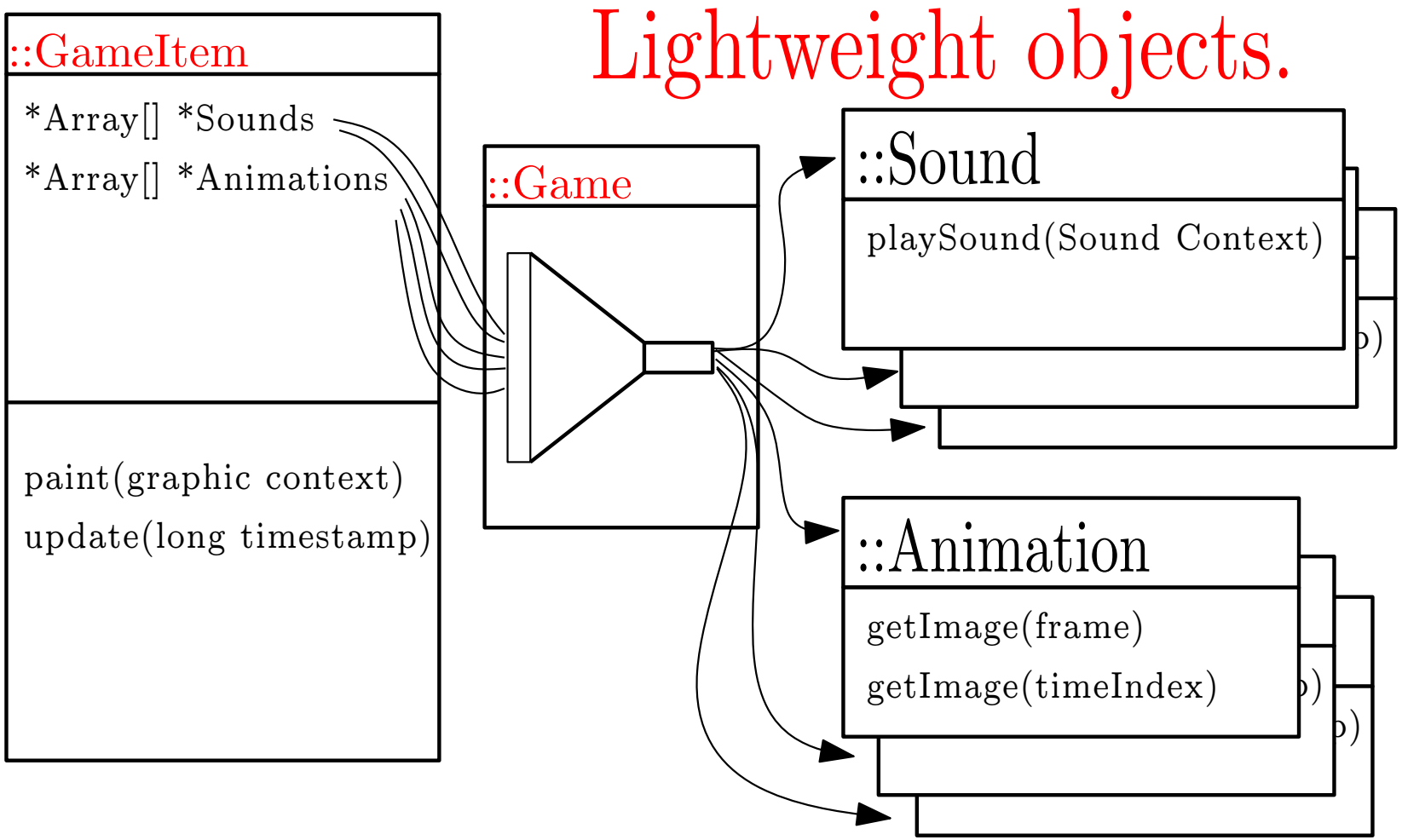




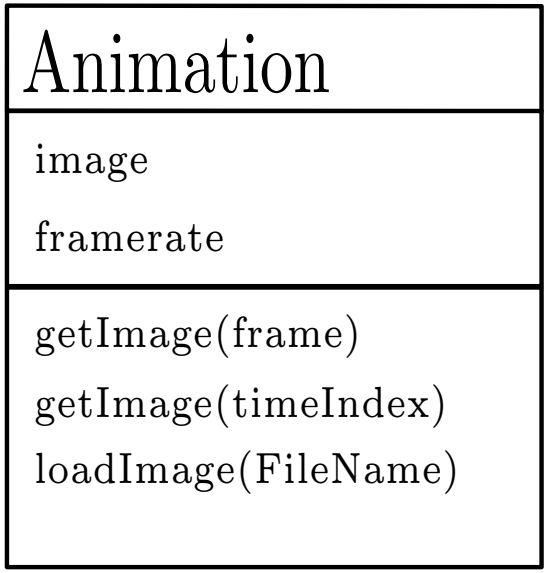
The GameItem as Container



The GameItem as Container cont'd



Animation


Animation
image
framerate
getImage(frame)
getImage(timeIndex)
loadImage(FileName)

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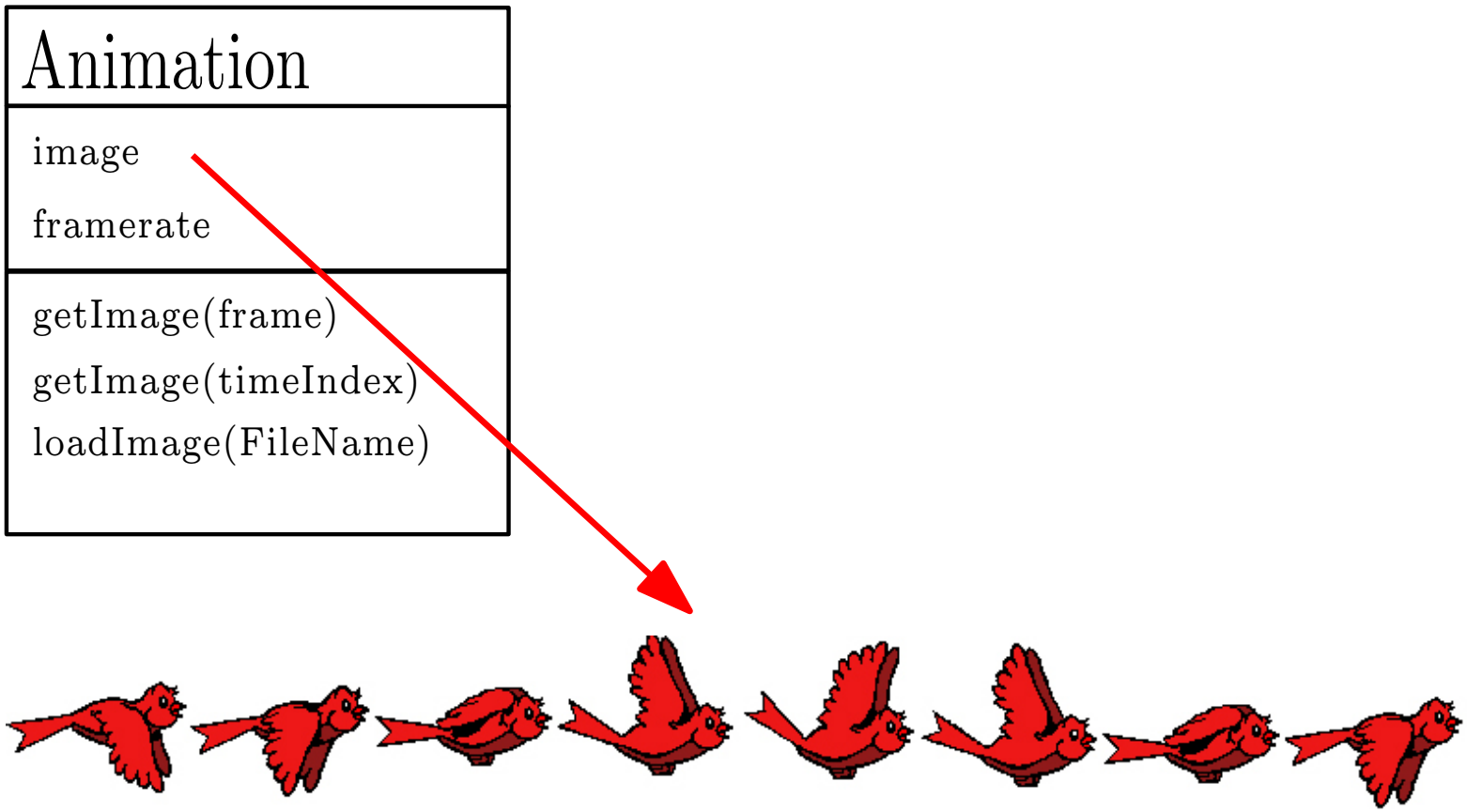

Animation (cont'd)

Animation
image framerate
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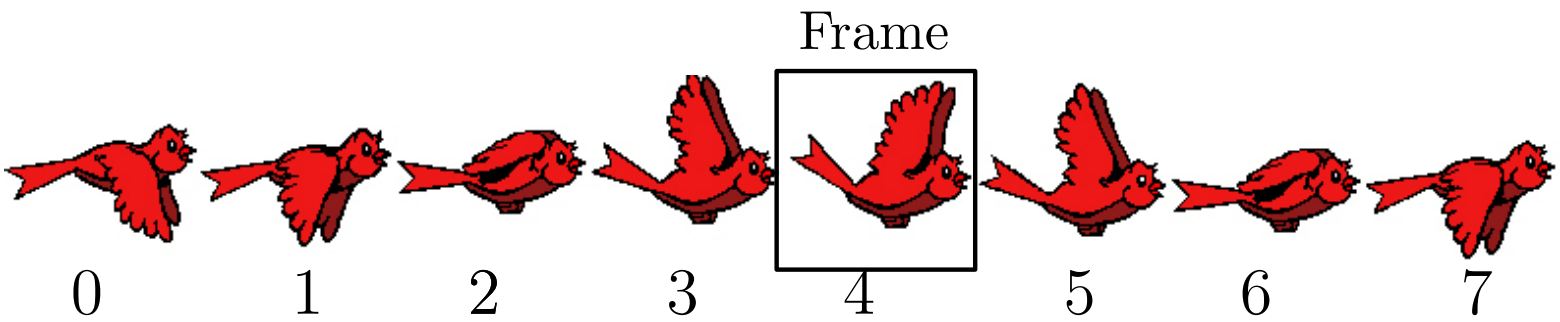

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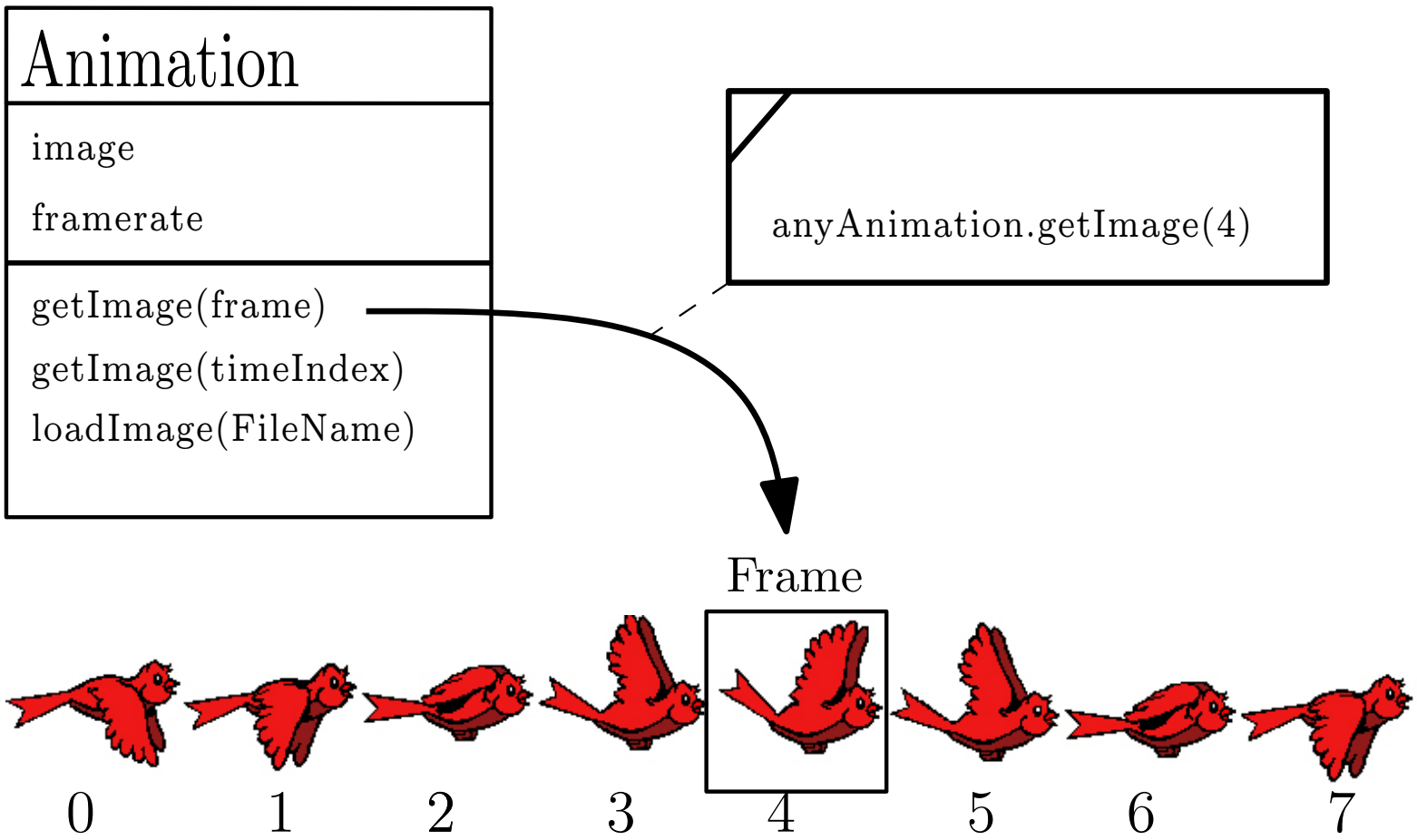

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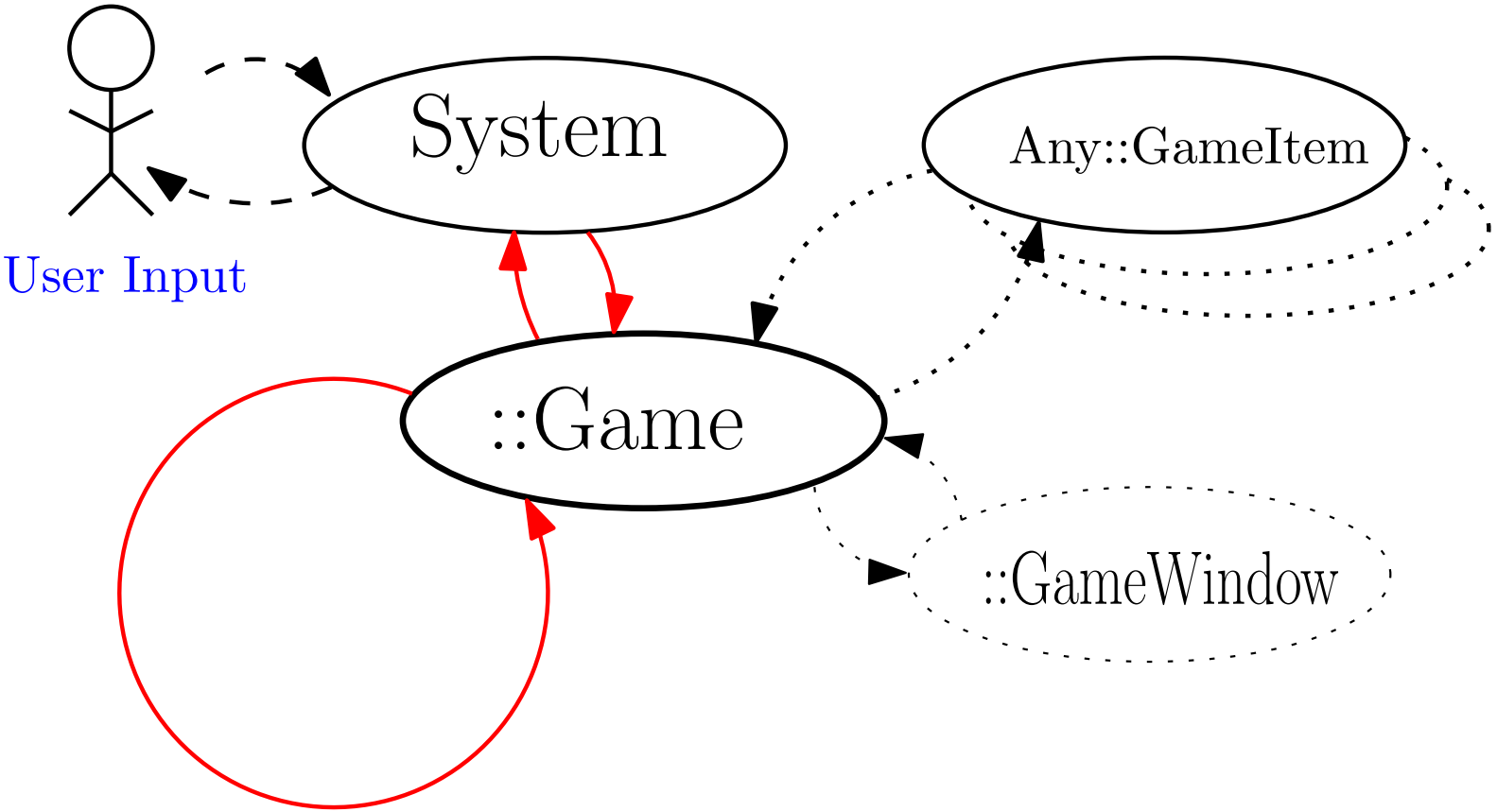
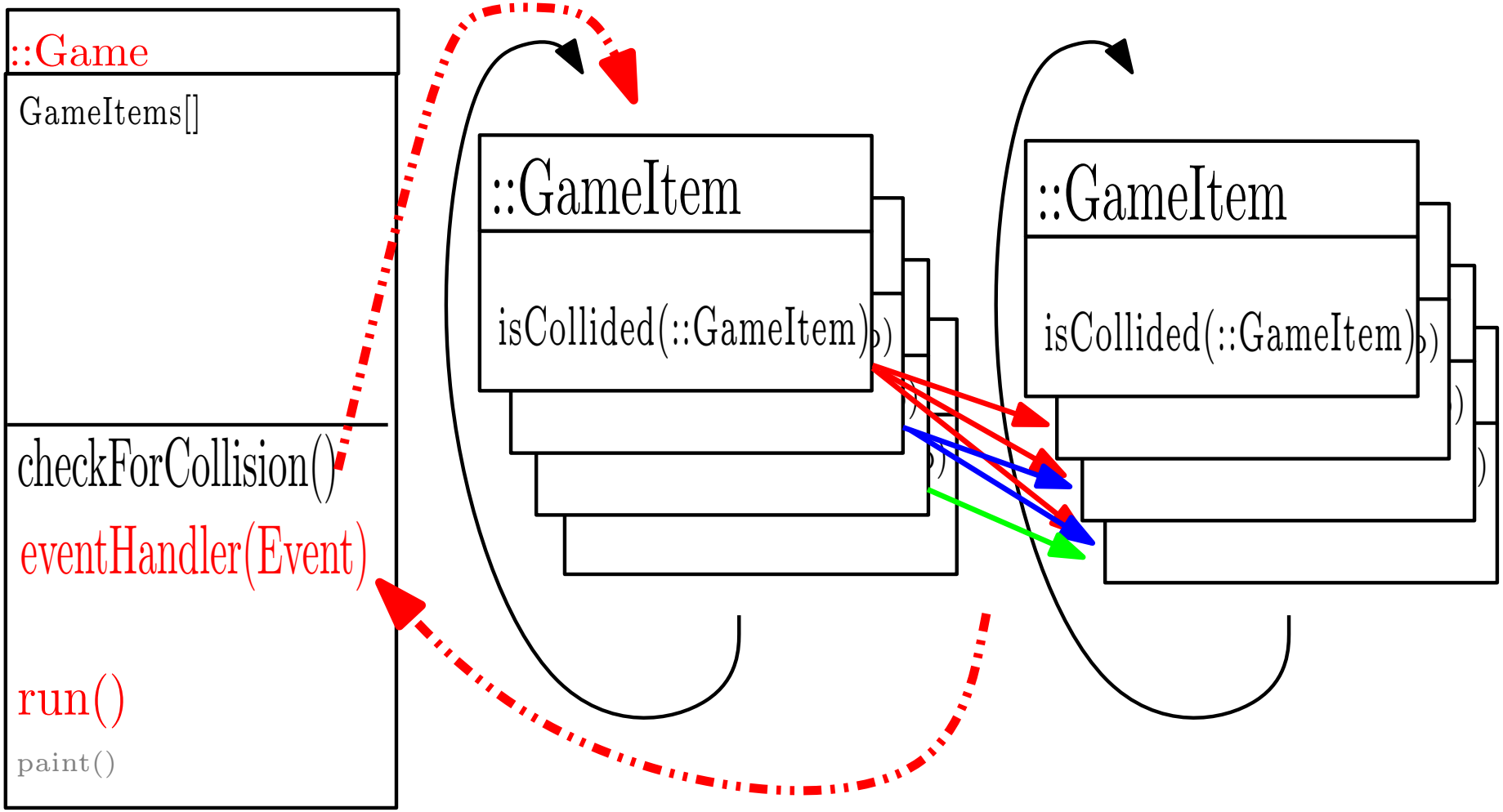
  - Other System Events.
    - Forced Repaint.
    - Forced Shutdown.
    - Set to Background, Timer Event (external) etc.

Event processing



Collision detection



Collision detection (cont'd)

This basic algorithm would have the complexity:

$$C = \frac{n * (n-1)}{2}$$

$$O(n) = n^2$$

n... number of GameItems which may collide. Of course this can be Improved, but that is a different story...

Farewell

- Thank you for your participation...