CS640 Project Presentation

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Breakout

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History

Built by Steve Wozniak aided by Steve Jobs

First version released by Atari Inc. in April 1976.

The Game

The game is made using Stanford's open graphics library.

It is a graphical game which lets the user break bricks with a moving ball which is controlled by a paddle.

Structure of Game

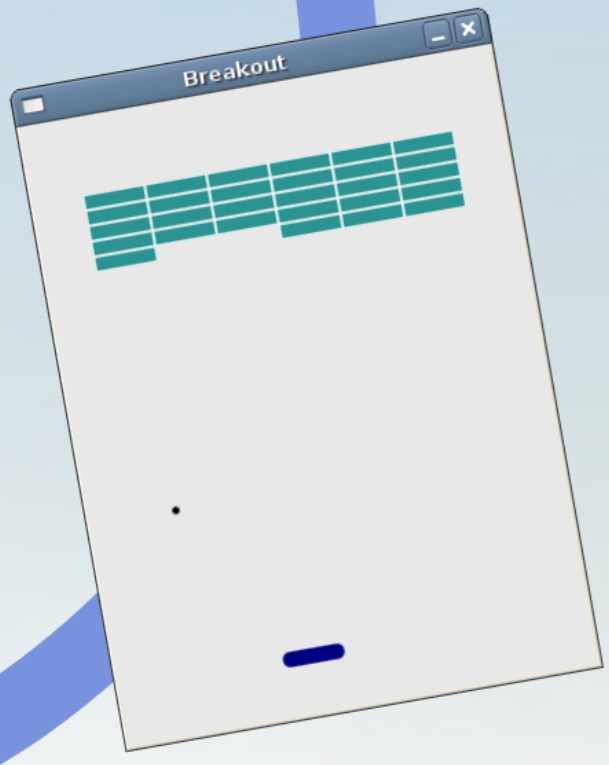
The game window is 400 X 600 pixels.

5 rows of 10 bricks each.

Each brick of size 37 X 15.

One paddle which follows the mouse.

3 lives for the player.



Stanford Classes I used

GWindow - To create the window and other functions related to the window.
GObject - Object Functions.
GRect - To create the bricks and the paddle.
GOval - To create the ball.
GEvents - To get mouse events.

Collision Detection

The basic principle is that the ball cannot collide with itself.
At x (and also y) location + 2*radius
    check for object type
if (object type!= NULL)
    return object

Algorithms

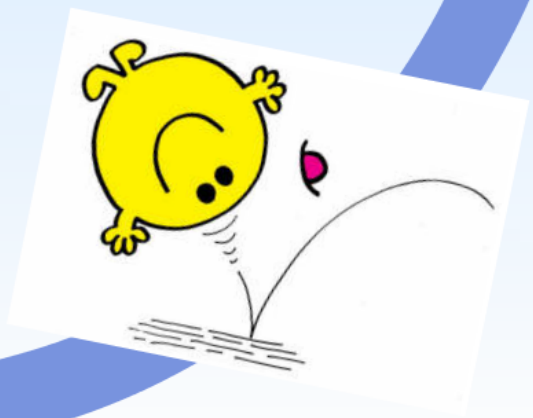
Brick Break -

```
Check the type of object in contact with the ball
if (rectangle):
    if (paddle)
        reverse y velocity
    else
        remove object
        reverse y velocity
        increase ball velocity
```

Look, I'm bouncing

Bounce off the walls:

```
If (x location > window width)
    reverse x velocity
else if (x location + x velocity <= 0)
    reverse x velocity
else if (y location > window height)
    oops, you lost a life
else if (y location + y velocity <= 0)
    reverse y velocity
```



Challenges

For me -

- Using the Stanford library functions and various classes. Seeing which class will be useful for what.
- Figuring out the various algorithms.

For the player -

- Speed increases after each brick is broken.
- After you break around 40 bricks, the game becomes difficult to play.

Questions
and
Volunteers

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