

# Breakout Game Workshop Documentation

## Description

Build a small Browser game and learn the basic concepts of programming. Also host your browser game for free to show everyone what you managed to do in only one afternoon.

Language: JavaScript

## Prerequisites

- GitHub account (can be created during the workshop)
- own Laptop (can be provided in offline sessions) with Visual Studio Code (<https://code.visualstudio.com/Download>) or a similar Text Editor
- the repository downloaded (<https://github.com/CodingClubs-Berlin/BreakoutGame-CodingClub>)

## Steps

1. Draw Gameboard  
New: use a function
2. Create gameboard variables  
New: create variables
3. Draw Circle  
New: Use variables
4. Create Ball object  
New: create an object
5. Move Ball  
New: write functions, use an object
6. Create Ball-Wall Collision  
New: use "if-conditions"
7. Set game over condition
8. Create paddle object and draw it
9. Read user input and move paddle
10. Paddle-Ball collision
11. Create brick template object and create the bricks
12. Draw bricks  
new: use local variable, use function as variable
13. Brick-Ball collision

Bonus:

14. Update score and lives
15. Let bricks respawn
16. Modify reflect of ball on paddle to control the direction of the ball

## Available Functions

### Drawing:

- function drawBoard (width, height, colour)  
draw the gameboard
- function drawCircle(x, y, radius, colour)  
draw a circle at the x, y coordinates on the gameboard
- function drawRect(x, y, width, height, colour)  
draw a rectangle at the coordinates x, y on the gameboard
- function drawScore (score)  
draw the score
- function drawLives(lives)  
draw the lives
- function showGameOver()  
display the gameOver screen

### Bricks:

- function createBricks(brickTemplate, rows, columns, padding)  
create the object containing all bricks
- function foreachBrick(bricks, rows, columns, func)  
apply the function to each brick

### General:

- function rectCircleCollision(circle, rectangle)