

Comp 222 – 2020 – First CA Assignment

Individual coursework

Arkanoid-like Game

Checklist:

Step	Name	Is implemented
1	Modelling the environment 20%	✓
2	Physics 35% total	✓
2.1	Ball motion 5%	✓
2.2	Collision with the boundary and the paddle 10%	✓
2.3	Collision with the green balls 10%	✓
2.4	Removal of physics entities 10%	✓
3	Keyboard (and/or mouse) interaction 10%	✓
4	Gameplay 15%	✓

Extra Features:

1. Texture

Textures are added to the red ball and 'bricks'.

'Bricks' in two levels have different texture.

2. Audio

4 kinds of sounds are added to the game, one of them will play when:

1. the ball collides with the paddle.
2. the ball collides with the 'bricks'.
3. a player wins the game.
4. a player loses the game.

3. Effect

1. Explosion:

When the ball destroys one brick, there will be an explosion effect at the position of the destroyed brick.

2. Fire tail:

When game starts, there will always be a fire tail following the ball which indicates its moving trail.

4. Keyboard interaction

Key name	Description
KEY_LEFT (←)	Move the paddle to left.
KEY_RIGHT (→)	Move the paddle to right.
KEY_P (P)	Press 'P': pause the game. Press again: continue the game.
KEY_R (R)	When losing the game: restart from current level When winning the game: restart from Level 1.
KEY_SPACE (SPACE)	Before the game start, the player can choose when to launch the ball and start game.

5. Gameplay

1. Paddle

To provide better play experience, when the ball collides with the paddle, its next moving direction will depend on the collision position on the paddle. For example, if the ball hits the left side of the paddle, the ball will deviate to left base on its current moving direction.

2. How to start

Before the game really starts, player can choose a place and press 'space' to launch the ball from paddle.

3. Boundaries

When the ball collides with boundaries, the boundaries will change to a random colour.

4. Multiple-hit 'bricks'

In level 2, 'bricks' will be destroyed if the ball hits them twice.

5. Avoid angles close to the horizontal line

When the ball hit the left/right, a new direction will be generated to replace the original one if the angle is close to the horizontal line.

6. Speed of the ball

At the beginning, the ball will move slowly. Then it will speed up whenever the player destroys a brick.