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Assignment Coversheet

Please complete all details required clearly. For softcopy submissions, please ensure this cover sheet is included at the start of your document or in the file folder.

Assignment & Course Details:

| | | | |
|--|-----------------|---|------------------|
| Subject Code: (e.g. XCAT1234) XBGD10033N | | Subject Name (e.g. Fundamentals of Computing): Fundamentals of Game Technology | |
| Course (e.g. Bachelor in Computing) : Bachelor of Game Development (Hons) | | | |
| Lecturer Name: Yap Chin Kein | | | |
| Assessment Due Date: (dd/mm/yy) | 12/10/22 | Assessment Title: | Pong Game |

I/We declare that:

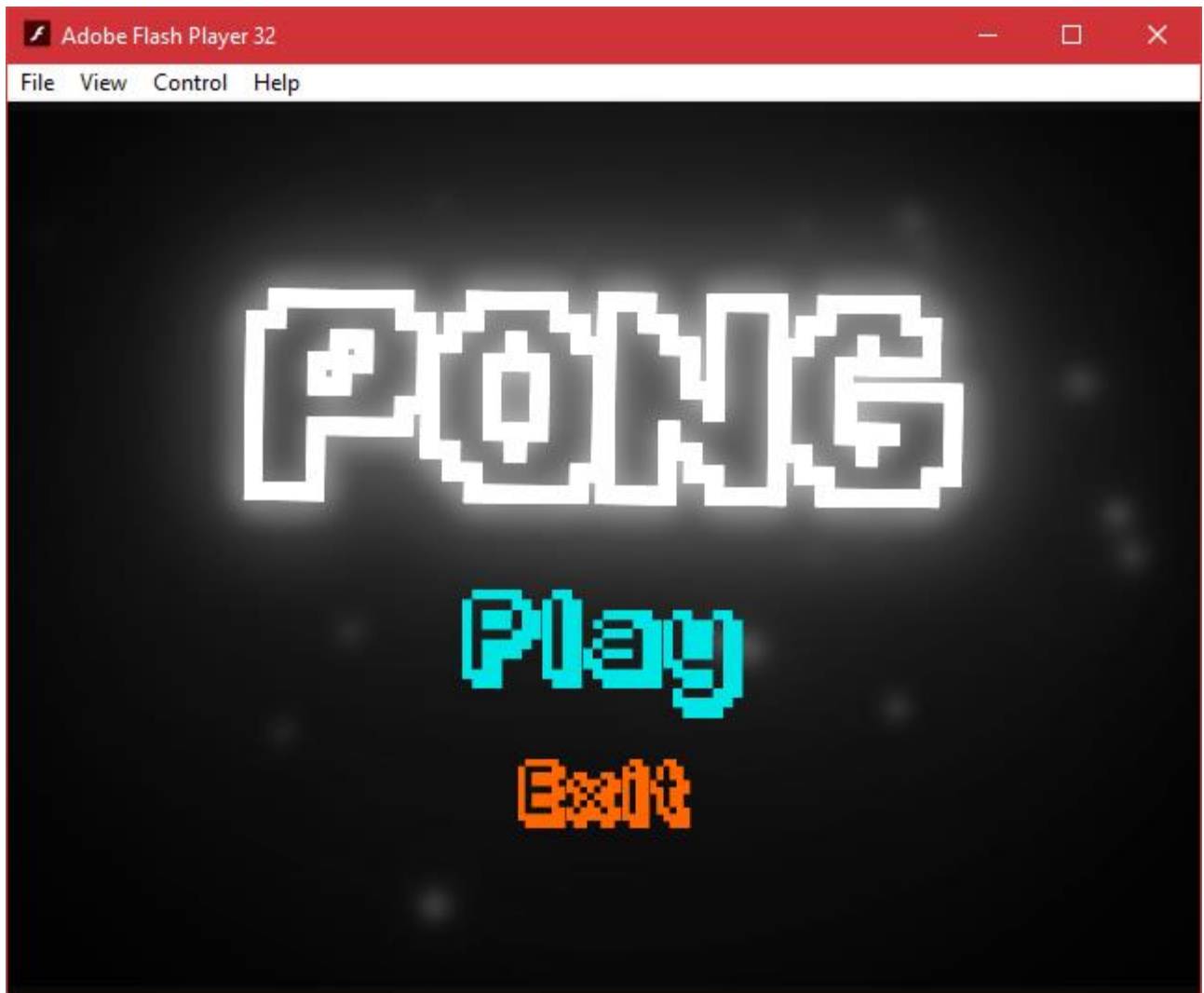
- This assignment is my/our own original work, except where I/we have appropriately cited the original source.
 - This assignment or parts of it has not previously been submitted for assessment in this or any other subject.
 - I/We allow the assessor of this assignment to test any work submitted by me/us, using text comparison software for plagiarism.
- (For more information, Please read the Academic Integrity Guidelines)

| | | |
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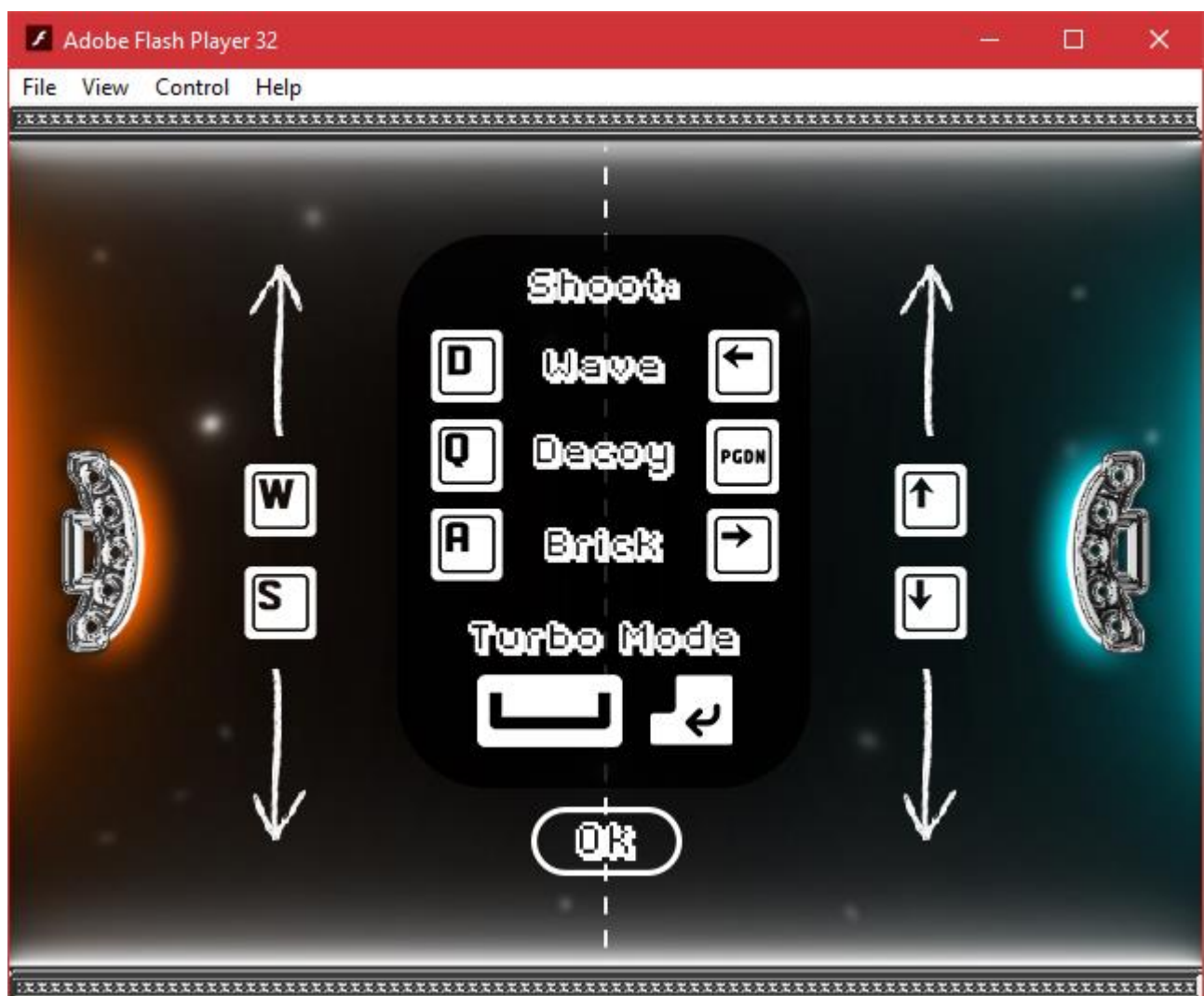
For office use only – Lecturer comments (if applicable)

Marks Breakdown

Main Menu Scene



Controls before starting



| P1 Controls | Action | P2 Controls |
|-------------|-------------------|-------------|
| W | Move up | Up arrow |
| S | Move down | Down arrow |
| D | Shoot Wave | Left Arrow |
| Q | Shoot Ball Decoys | Page Down |
| A | Shoot Brick | Right Arrow |
| Spacebar | Turbo Mode | Enter |
| Tab | Pause | P |

During Gameplay

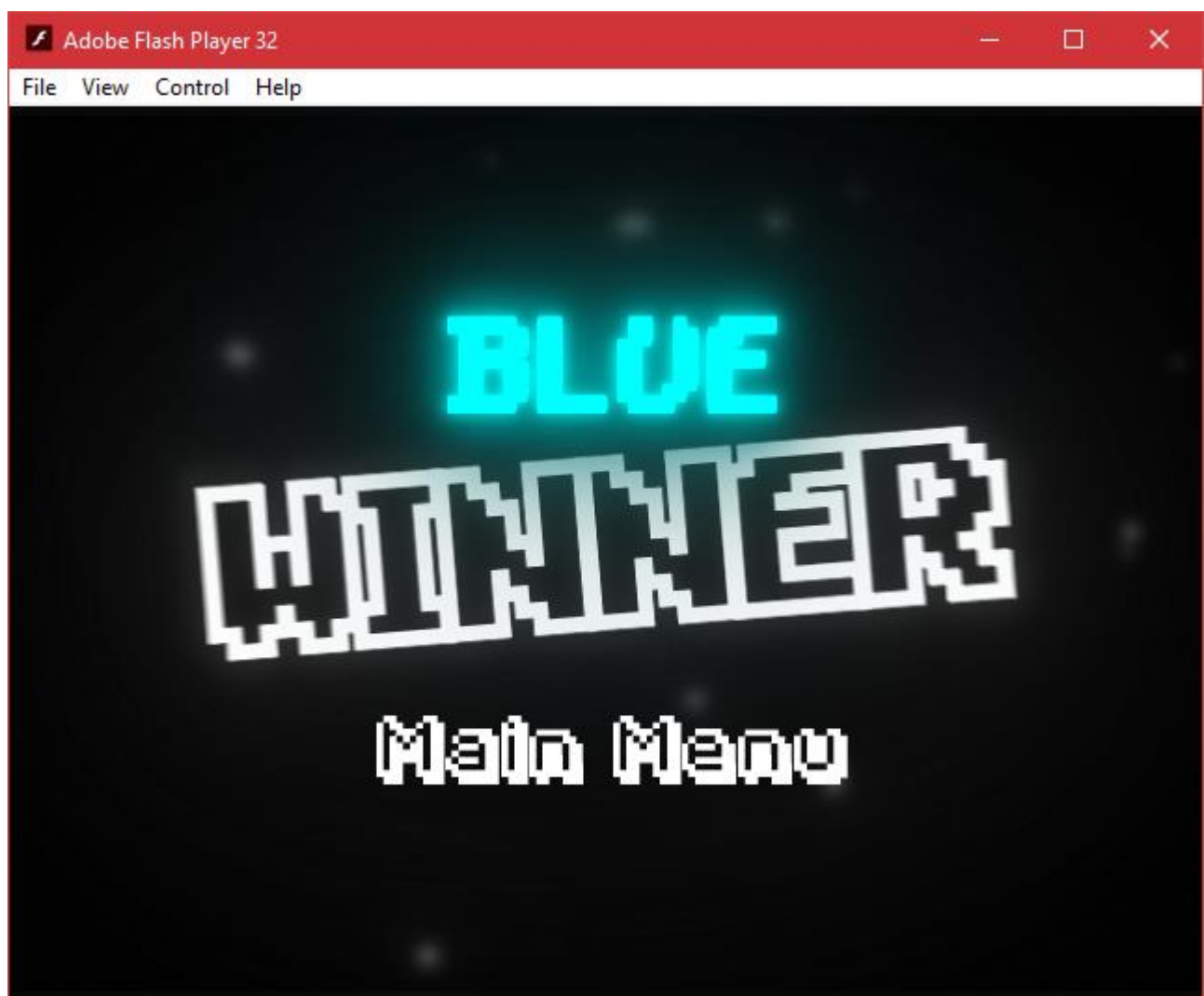


Winner Scenes

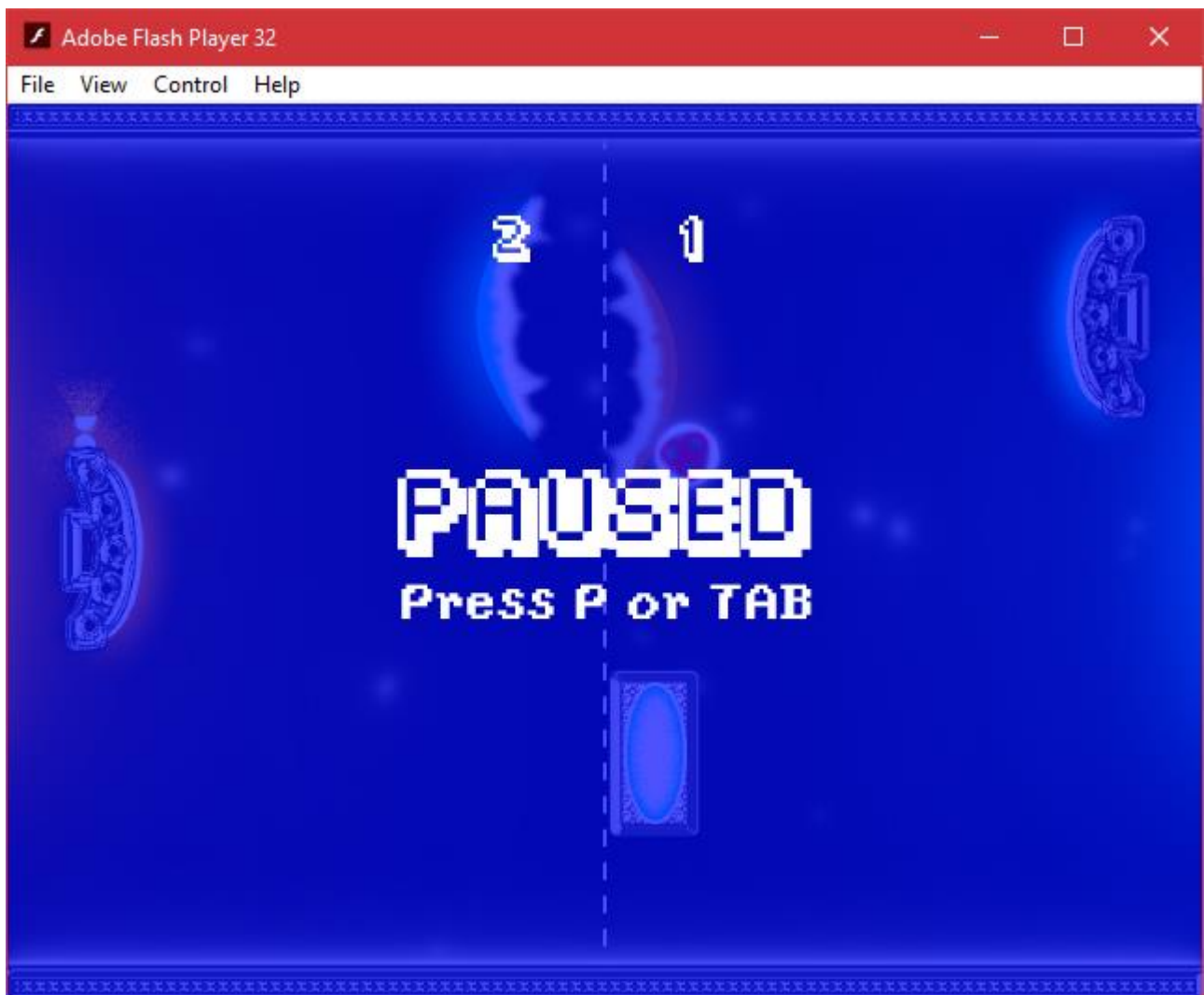
ORANGE

WINNER

Main Menu



Pausing the game



| List of Actors |
|----------------|
| Ball |
| BallFake1 |
| BallFake2 |
| Brick1 |
| Brick2 |
| btnMainMenu |
| btnOk |
| btnPlay |
| btnQuit |
| Paddle1 |
| Paddle2 |
| Tutorial |
| Wave1 |
| Wave2 |

Rules:

Either player must reach a score of 15 to win. They earn 1 point for each ball is scored at the opponent's goal.

The ball will increase in velocity the more times it hits the paddles.

Player Ability features:

Shoot Wave:

Shoot a wave in a straight line. Used to change the direction and push the ball from afar. Disappears after touching the ball. Has a 5 second cooldown after a shot.

Pseudocode:

When level is loaded

- Set wave cooldown attribute to 5

After every second

- If game has started and not paused
 - o Subtract 1 from wave cooldown attribute

Check every tick

- If wave cooldown attribute is 0 or less and wave key is pressed
 - o Set wave cooldown attribute to 5
 - o Play paddle recoil animation
 - o Play wave shoot sound effect
 - o Create wave at x and y of paddle
 - o set x speed to 50 for created wave

Shoot Bricks:

Shoot a brick in a straight line that stops before the middle line. Used to block and change the direction of the ball when it hits. Has a 1 second cooldown after a shot. Has a limited ammo reserve of 4 bricks per player.

Pseudocode:

When level is loaded

- Set brick cooldown attribute to 1

After every second

- If game has started and not paused
 - o Subtract 1 from brick cooldown attribute

Check every tick

- If brick cooldown attribute is 0 or less and brick key is pressed
 - o Set brick cooldown attribute to 1
 - o Play paddle recoil animation
 - o Play brick shoot sound effect

- Create brick at x and y+70 of paddle

When brick is created

- Set x speed to 100 for brick

After every .1 second

- If x speed of brick is more than 0
 - Subtract 20 from current x speed of brick

Check every tick

- If x speed of brick is 0 or less
- Set x speed to 0 for brick

Create behaviour for ball colliding with brick:

When ball hits a brick

- Play brick hit sound effect
- Negate y speed of ball
- Set velocity of ball to 30 at a random angle between 30 and -30 degrees
- If turbo is bot active
 - Add 5 to current velocity speed

Check every tick

- If turbo is active
 - Change velocity to 150

Shoot Ball Decoys:

Shoot 2 fake balls at a random angle and speed to distract the opponent. Fake balls will not score points, and will disappear after hitting the opponent, or their wave and bricks. Has a 10 second cooldown after a shot.

Pseudocode:

When level is loaded

- Set fake ball cooldown attribute to 5

After every second

- If game has started and not paused
 - Subtract 1 from fake ball cooldown attribute

Check every tick

- If fake ball cooldown attribute is 0 or less and fake ball key is pressed
 - Set fake ball cooldown attribute to 5
 - Play paddle recoil animation

- Play fake ball shoot sound effect
- Create 2 fake balls at x+45 and random y between 15 and 115 of paddle

When fake ball is created

- Set a random velocity between 30 and 60 at a random angle between -75 and 75 degrees

When fake ball exits scene

- If x is 640 or more or if x is -85 or less
- Kill itself

When fake ball hits opponent's paddle, wave, or brick

- Fade out over .25 seconds
- After .25 seconds
 - Kill itself

Create behaviour for fake ball movement

Check every tick

- If y of fake ball is less than -20 or more than 385
 - Play ball hit wall sound effect
 - Negate y speed for fake ball

Turbo Mode:

Speeds up the paddle movement speed of both players and the ball's velocity. It lasts for 20 seconds, and has a 20 second cooldown after the effect ends.

Pseudocode:

When level is loaded

- Set turbo cooldown attribute to 20
- Set turbo mode attr to false
- Set turbo active attr to false

After every second

- If game has started and not paused
 - Subtract 1 from turbo cooldown attribute

Check every tick

- If turbo cooldown attribute is more than 0
 - Set turbo active attribute to false
- If turbo cooldown attr is 0 or less
 - Set turbo mode attr to true

When turbo key is pressed

- If game has started and not paused and turbo active is false and turbo mode is true

- Set turbo cooldown to 40
- Set turbo mode to false
- Set turbo active to true
- Play turbo sound effect
- Loop turbo music on channel 4
- Stop all sounds on channel 3
- Show turbo background layer
- Hide normal background layer
- Multiply current paddle velocity by 2.5
- After 20 seconds
 - o Set turbo active to false
 - o Play normal music on channel 3
 - o Stop turbo music on channel 4
 - o Show normal background layer
 - o Hide turbo background layer
 - o Change paddle velocity to 5

Credits:

Stencyl

Adobe Photoshop – Art

Adobe After Effects – Animations

Various video games – Sound effects

Monster Crafter OST – Music