

# Computer Games Exercises: 2024s s04 (non-physics)

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## Answer header

Please put the author information in the header of all code files.

- `name` (Name)
- `coauthor list`

## G04: Pong

### Preparation

Please read the source code of the "Pong" game and understand the game logic.

### Task

Please extend the game.

- Update the scene:
  - As the playground has a fixed size, the scene should not be resizable. Change this property in the project settings.

- To add some additional stuff to the game, increase the scene height to 500.
- Add a panel to the scene to cover the extended space.
- Add four labels to count the points of the players, two on the left side of the new panel and two on the right side.
- On each side, use one label to show static text like "Points of Player A:", and use the other one to display the points during runtime.
- Add one label in the middle of the panel to show the final result.
- Add one button to the panel to restart the game.
- Update the script:
  - Adjust the game so that the paddles can only move in the old area.
  - Update the label points of one player when the ball hits the end of the playing area on the other side.
  - The ball starts randomly toward left or right whenever it is reset.
  - The game ends when one player wins 3 points. In this case, the ball stays at the middle position, and the label in the middle should display which player wins the game.
  - Whenever the restart button is pressed, all objects in the scene are reset to the initial status.

## Questions

Write the corresponding answers in the script file.

- How are the actions of the ball implemented in this game? (considering different cases in the game)
- How is the scoring system implemented in this game?